DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)

SEP 05 2013

Colonel Tom D. Miller
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB NM 87117-5600

Mr. John Kieling, Manager
RCRA Permits Management Program
Hazardous Waste Bureau (HWB)
New Mexico Environment Department (NMED)
2905 Rodeo Park Road
Santa Fe New Mexico 87505

Dear Mr. Kieling

Kirtland Air Force Base (AFB) is submitting the *January to June 2013 Interim Corrective Measures (ICM) Report for Solid Waste Management Unit (SWMU) ST-70, Buildings 481/482 Oil/Water Separator (OWS) (Former ST-219), August 2013*. The report was prepared to document results of the operation, performance, and monitoring of the soil vapor extraction system and the monitoring of soil vapor and groundwater at SWMU ST70.

Please contact Ms. Victoria R. Martinez at (505) 846-6362 or at victoria.martinez@kirtland.af.mil if you have any questions.

Sincerely

TOM D. MILLER, Colonel, USAF
Commander

Attachment:
January to June 2013 ICM Report for SWMU ST-70, Bldgs 481/482 OWS (Former ST-219), August 2013

cc:
NMED-HWB (W. Moats), w/ attach electronic and hard copy
(W. McDonald), w/ attach electronic only
EPA Region 6 (L. King), w/out attach
AFCEE/CMSE (Mr. Oyelowo), w/out attach
/EXEC (Mr. Urrutia), w/out attach
Public Info Repository (Central New Mexico), w/ attach
Administrative Record/Information Repository (AR/IR), w/ attach
File, w/ attach

KIRTLAND AIR FORCE BASE, NEW MEXICO

JANUARY 2013 THROUGH JUNE 2013
INTERIM CORRECTIVE MEASURES OPERATION REPORT
FOR SOLID WASTE MANAGEMENT UNIT ST-70, BUILDINGS 481/482
OIL WATER SEPARATOR (FORMER ST-219)

August 2013

377 MSG/CEANR
2050 Wyoming Blvd. SE
Kirtland AFB, New Mexico 87117-5670

ENVIRONMENTAL RESTORATION PROGRAM
KIRTLAND AIR FORCE BASE, NEW MEXICO

JANUARY 2013 THROUGH JUNE 2013 INTERIM CORRECTIVE MEASURES OPERATION REPORT FOR SOLID WASTE MANAGEMENT UNIT ST-70, BUILDINGS 481/482 OIL WATER SEPARATOR (FORMER ST-219)

August 2013

Prepared for
Air Force Civil Engineer Center
Environmental Restoration Division
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Lackland Air Force Base, TX 78226

Prepared by
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NOTICE

This Interim Corrective Measures Operation Report has been prepared for the U.S. Air Force by Bhate Environmental Associates and CH2M HILL for the purpose of aiding in the implementation of a final remedial action plan under the Environmental Restoration Program (ERP). As the report relates to actual or possible releases of potentially hazardous substances, its release prior to an Air Force final decision on remedial action may be in the public's interest. The limited objectives of this report and the ongoing nature of the ERP, along with the evolving knowledge of site conditions and chemical effects on the environment and health, must be considered when evaluating this report, since subsequent facts may become known which may make this report premature or inaccurate.

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED *(From - To)***
30-08-2013	Interim Corrective Measures Operation Report	January 2013 through June 2013

4. TITLE AND SUBTITLE
Kirtland Air Force Base, New Mexico
January 2013 through June 2013 Interim Corrective Measures Operation Report for the Solid Waste Management Unit ST-70, Buildings 481/482 Oil Water Separator (Former ST-219)

5a. CONTRACT NUMBER
FA8903-10-D-8594

5b. GRANT NUMBER
F2MUAA2131B002

5c. PROGRAM ELEMENT NUMBER
CLIN000501

6. AUTHOR(S)
Gardner, Frank
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5d. PROJECT NUMBER
MHMV20127030

5e. TASK NUMBER
0049

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) AND ADDRESS(ES)

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AFCEC

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES
CDRL: A001d, Quarterly SVE Report

14. ABSTRACT
Semi-annual reporting on the site monitoring results and interim corrective measure performance at Solid Waste Management Unit ST-70 at Kirtland Air Force Base, New Mexico.

15. SUBJECT TERMS

Solid Waste Management Unit (SWMU) ST-70; Soil Vapor Extraction (SVE); vapor monitoring

16. SECURITY CLASSIFICATION OF: Unclassified			**17. LIMITATION OF ABSTRACT**	**18. NO. OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**	**UU**	298	Frank Gardner **19b. TELEPHONE NUMBER *(include area code)*** 303-597-2450

Standard Form 298 (Rev. 8-98)

40 CFR 270.11
DOCUMENT CERTIFICATION
AUGUST 2013

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TOM D. MILLER, COLONEL, USAF
Commander, 377th Air Base Wing

This document has been approved for public release.

KIRTLAND AIR FORCE BASE
377th Air Base Wing Public Affairs

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NATURAL RESOURCE INJURY

The Department of Defense (DoD) policy requires the identification of Natural Resource Injury (NRI) and, whenever practicable, the rectification of any NRI during the site assessment, investigation, and remedy selection and implementation process for cleanup actions (DoD, 2000). As stated in the policy, DoD's objectives are

"…to promote earlier and more complete consideration of the risks to natural resources associated with past activities and cleanup alternatives; to ensure that Components exercise their statutory Trustee authorities to address NRI on behalf of the public; to lower the total life-cycle costs of the Components' remediation programs; and to reduce the potential for response cost recovery or natural resource damage claims against the Components."

Based on the above discussions and the site-specific conditions presented in this report, implementation of the selected remedial alternative of soil vapor extraction (SVE) at Solid Waste Management Unit ST-70 (Former ST-219) will not result in any NRIs. Site contamination is largely restricted to soil and soil gas present in the vadose zone below paved surfaces. Site conditions prevent migration of contamination to surface soil or the atmosphere, and SVE is expected to prevent further migration to the groundwater. Therefore, contamination at the site does not pose any harm to natural resources such as groundwater or ecological receptors. Likewise, the continued implementation of selected remedial alternative will create no significant disturbance to native soils, or ecological habitat.

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ENVIRONMENTAL JUSTICE CONSIDERATION

Presidential Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of federal programs, policies, and activities on minority and low-income populations. For purposes of this report, the population within a 50-mile radius around Kirtland Air Force Base (AFB) was considered. Demographic and economic census information presented in Addressing Environmental Justice under the National Environmental Policy Act at Sandia National Laboratories/New Mexico (Sandia National Laboratory, 1997) and the United States Census web site (http://quickfacts.census.gov/ qfd/states/35/3502000.html accessed on 6 October 2010) were used as primary references.

The population living within a 50-mile radius of Kirtland AFB, which exceeds 49 percent of the total population according to census data (Sandia National Laboratory, 1997), was evaluated with regard to health and environmental effects from activities at Kirtland AFB. Similarly, the low-income population, which exceeds 21 percent of the general population, was analyzed for effects from corrective measures activities at Kirtland AFB.

Minority populations are considered to be all people of all color except white people who are not Hispanic. In 1990, 49 percent (51 percent by 1996, 54.2 percent by 2000) of New Mexico's population was minority (Bureau of the Census, 1998; http://quickfacts.census.gov/qfd/states/35/3502000.html accessed on 6 October 2010). Neighborhoods having minority population percentages exceeding the minority population percentage of 49 percent (slightly more conservative than 51 percent) were identified on a block-by-block basis, with clusters of blocks known as block groups.

The Bureau of the Census characterizes persons in poverty (low-income persons) as those whose incomes are less than a statistical poverty threshold. The threshold is a weighted-average based on family size and age of family members. For instance, the 1990 census threshold for a family of four was based on a 1989 household income of $12,674 (Census, 1990). By 1996, the household income threshold rose to $16,036 (Census, 1997). In 1989, 21 percent of New Mexico's population was listed in poverty or designated as having low income (Census, 1996). By 1996, the estimated percentage stood at 24 percent (Census, 1997) and by 2000, the state-wide percent decreased to 18.4 (http://quickfacts.census.gov/qfd/states/35/3502000.html accessed on 6 October 2010). In this analysis, low-income block groups (same as above) occur where the low-income population percentage in the block group exceeds the poverty percentage for the state of New Mexico.

According to 1990 census data, approximately 280,360 minority individuals from an approximate total population of 609,500 reside within the 50-mile radius. This represents 46 percent of the total radius-of-influence population (Sandia National Laboratory, 1997).

Block groups having less than 21 percent low-income individuals were not considered to contain a large number of low-income neighborhoods because they contain less than or equal to the state average of 21 percent. Approximately 85,330 persons were identified as being low income, representing approximately 14 percent of the radius-of-influence population.

This distribution of low-income population has a strong correlation to minority populations of Blacks, Native Americans, and Hispanics. For example, portions of the Pueblo of Isleta, south of the city, have

high percentages of low-income individuals. To the southeast of Kirtland AFB, the rural Hispanic villages of Tajique, Torreon, and Escobosa are also low income.

To the north of Kirtland AFB, high concentrations of low-income populations are located in the Pueblos of Jemez, Santo Domingo, and Cochiti, as well as in the rural Hispanic villages of La Cienega and Jemez Springs. High concentrations of low-income populations occur west of Kirtland AFB, along the Rio Grande, in the predominantly Hispanic South Valley neighborhoods. In addition, small pockets of low-income populations reflect the locations of Black neighborhoods such as the Kirtland Addition and South Broadway/East San Jose areas.

Based on the findings of this report, there are no identified negative impacts from Solid Waste Management Unit ST-70, (Former ST-219) that would pose adverse health effects on the general human populations. Based on the analysis of any potential impacts, there would be no disproportionately high or adverse impacts to minority and low-income populations. Any impacts due to restrictions of access to cultural sites would be removed by coordination between the Kirtland AFB and the local Tribes to develop processes to allow access during periods in which safety standards and practices would be maintained.

PREFACE

This Interim Corrective Measures Operation Report for the period of January 2013 through June 2013 was prepared to document the operations and monitoring activities associated with the soil vapor extraction system at Solid Waste Management Unit (SWMU) ST-70 (Former ST-219) at Kirtland Air Force Base, New Mexico.

This report was prepared by Bhate Environmental Associates and CH2M HILL in July 2013. Mr. Joe Urrutia of the Air Force Civil Engineer Center (AFCEC) served as the AFCEC Contracting Officers Representative.

Frank Gardner, P.G.
Bhate Environmental Associates
Project Manager

Sharon L. Minchak, P.G.
CH2M HILL
Program Manager

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CONTENTS

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FIGURES

TABLES

ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
bgs	below ground surface
cfm	cubic feet per minute
cis-1,2-DCE	Cis-1,2-Dichloroethene
COPC	contaminants of potential concern
DoD	Department of Defense
DOE	Department of Energy
EPA	U.S. Environmental Protection Agency
ERP	Environmental Restoration Program
ft	foot/feet
ft^3	cubic feet
GAC	granular activated carbon
ICM	Interim Corrective Measures
kg	Kilogram
kg/d	kilogram per day
kg/L	kilogram per liter
L	Liter
MEK	methyl ethyl ketone
µg/L	microgram per liter
mg/kg	milligrams per kilograms
mg/L	milligrams per liter
NMWQCC	New Mexico Water Quality Control Commission
NRI	Natural Resource Injury
OWS	oil water separator
PCE	Tetrachloroethene
ppbv	parts per billion by volume
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SVE	soil vapor extraction
SVOC	semivolatile organic compounds
SWMU	solid waste management unit

TCE	Trichloroethene
TPH	total petroleum hydrocarbons
USAF	United States Air Force
UST	underground storage tank
VOC	volatile organic compound

EXECUTIVE SUMMARY

Soil vapor extraction (SVE) has been identified as the preferred interim abatement option for the volatile organic compound (VOC) contamination within the vadose zone at Solid Waste Management Unit (SWMU) ST-70 (Former ST-219). Chlorinated VOC and total petroleum hydrocarbon (TPH) impacts at the site appear to be a result of leaks from the former Oil Water Separator (OWS) and the associated drains and piping. This Interim Corrective Measures (ICM) Operation Report for the SVE system has been prepared to document the operation, performance, and monitoring of the SVE system for the period from January through June 2013.

The primary objective of the SWMU ST-70 ICM is to remove VOC contamination released from the former OWS to the underlying vadose zone through the operation of a SVE system. This objective is evaluated by measuring the decrease in concentrations of contaminants of potential concern (COPCs) and VOCs within the extracted soil vapor. The primary COPCs for SWMU ST-70 are trichloroethene (TCE), tetrachloroethene (PCE), and TPH-gasoline, as established in the ICM Construction Summary Report (USAF, 2009).

Quarterly monitoring was performed in January and April 2013. Groundwater monitoring results indicate that TCE concentrations in groundwater have stabilized at approximately 1.7 micrograms per liter. Soil vapor contaminant concentrations were similar to those detected in recent monitoring events. High concentrations of chlorinated VOCs persist adjacent to the former OWS and high concentrations of fuel contaminants persist near the area drain.

The SWMU ST-70 (Former ST-219) SVE system operated for approximately 117 days during this reporting period. During planned maintenance downtime, the SVE blower was manually turned off for short periods to allow for sampling and maintenance. The scheduled winter shut down occurred from December 21, 2012 to March 5, 2013 and included much of the first calendar quarter of 2013. During the current monitoring period, 1.0×10^7 cubic feet (ft^3) (2.9×10^8 liters) of soil vapor were extracted and treated. From the time the SVE system was placed into full-scale operation on April 15, 2008 through the end of the reporting period, the SVE system has operated for approximately 1,560 days and has extracted and treated approximately 1.4×10^8 ft^3 (4.0×10^9 liters) of soil vapor.

The total contaminant mass removed by the SVE system since the start of ICM operations is estimated to be 18,200 kilograms (kg). The contaminant mass removed by the SVE system is composed primarily of petroleum hydrocarbon compounds with only about 11 kg of the total mass composed of chlorinated VOCs (primarily TCE, PCE and cis-1,2-DCE). The contaminant mass removal rates have ranged from approximately 4 and 22 kilograms per day since 2011. Mass removal rates calculated for the reporting period were within that range during the reporting period.

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1.0 INTRODUCTION

The *Resource Conservation and Recovery Act* (RCRA) Facility Investigation (RFI) Report for Solid Waste Management Unit (SWMU) ST-70 Building 481/482 Oil Water Separator (OWS) (Former ST-219) (United States Air Force [USAF], 2005) identified soil vapor extraction (SVE) as the preferred interim remedial option for the volatile organic compound (VOC) contamination within the vadose zone. Chlorinated solvent VOC and total petroleum hydrocarbon (TPH) impacts at the site appear to be a result of leaks from the former OWS and the associated drains and piping located near buildings 481and 482 (Figure 1-1). The SVE system was designed to recover chlorinated solvent and petroleum hydrocarbon VOCs present within the subsurface and was constructed according to the design presented in the Interim Corrective Measures (ICM) Work Plan for SWMU ST-70 (Former ST-219) (USAF, 2008).

This ICM Report was prepared to document the operation, performance, and monitoring of the SVE system for the period of January through June 2013. The performance of the ICM is evaluated and recommendations are proposed based on this evaluation.

1.1 Interim Corrective Measures Remediation Objectives

The primary objective of the SWMU ST-70 ICM is to remove soil VOC contamination at the site through the operation of a SVE system. This objective is evaluated by measuring the VOC concentrations within the extracted soil vapor and flow rates of the SVE system to calculate the contaminant mass removed. In addition to the contaminant mass recovery objective, a secondary objective of the ICM is to protect groundwater from chlorinated solvent VOC impacts. This is accomplished through pneumatic containment of the vapor phase plume by the SVE system to minimize or eliminate vapor phase contaminant transport to groundwater.

This semi-annual operations report includes data on the ICM performance, system management, and site monitoring. Data evaluations, updates to the conceptual site model, and recommendations for future site monitoring, investigations, and corrective measures are presented in the Annual Characterization and Optimization Report that will cover the period from July 2012 through June 2013. This semi-annual report is limited to:

System operation and maintenance information;

Analytical data and field measurements information from the SVE system;

Analytical data and field measurement information from SWMU ST-70 monitoring locations; and

Calculations of contaminant mass removal.

1.2 Report Organization

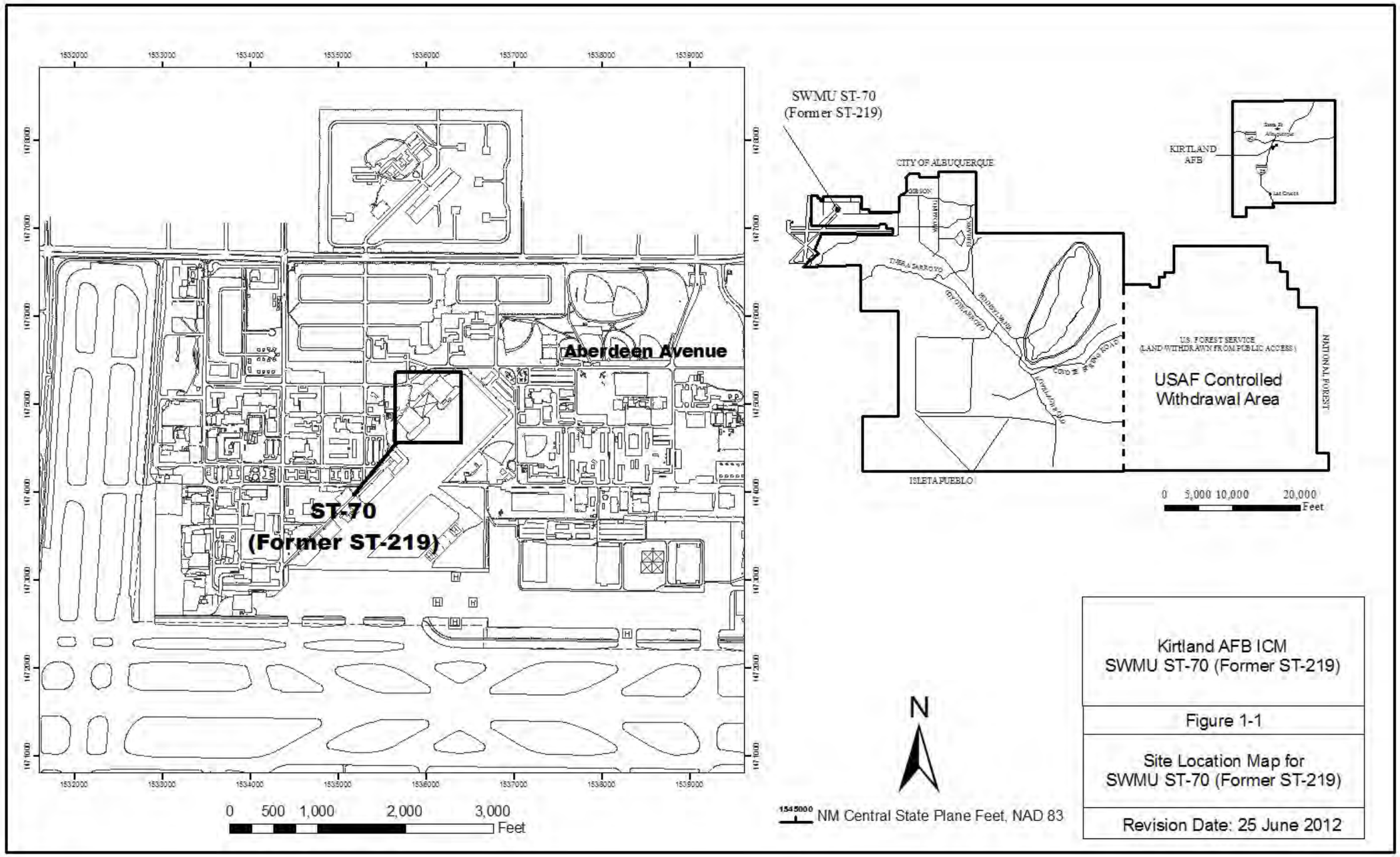
This report is organized into four sections, including this introduction, with additional material provided in three appendices.

Section 2 contains a brief discussion of site operations and documentation of the system operation and maintenance performed between January and June 2013.

Section 3 contains summaries of all SVE system and site monitoring data. A summary of system performance including mass removal calculations is included in Section 3.

Section 4 contains a summary of ICM operation for the monitoring period.

The appendices provide documentation of the operation and maintenance activities, field measurement data, waste disposal records, and analytical data evaluation reports.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Kirtland AFB ICM
SWMU ST-70 (Former ST-219)
Figure 1-1
Site Location Map for
SWMU ST-70 (Former ST-219)
Revision Date: 25 June 2012

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2.0 SYSTEM OPERATION AND MAINTENANCE

A brief description of the SWMU ST-70 (Former ST-219) site and SVE system are presented in this section.

2.1 Site Background

2.1.1 Site Description

The SWMU ST-70 (Former ST-219) is located in the northwestern part of Kirtland AFB, southeast of the intersection of Aberdeen Avenue and MacDill Street (Figure 1-1). The SWMU ST-70 area was previously used for aircraft movement and parking associated with Hangar Buildings 481 and 482. As such, the area was potentially subject to releases of fluids associated with aircraft maintenance such as fuels, lubricants, and degreasers. More recently the areas adjacent to SWMU ST-70 have been used as a passenger aircraft terminal. The Department of Energy (DOE) operates an airline passenger terminal housed in the portable office buildings between Buildings 481 and 482 and within Building 481. Additionally, a covered hazardous materials storage and containment area is present directly northeast of the SVE system, and within the SWMU ST-70 investigation boundary. Building 482 is rarely used for aircraft maintenance or parking.

The SWMU ST-70 is located within an unrestricted portion of the flightline between the two buildings. The concrete tarmac between Buildings 481 and 482 comes to an end approximately 30 feet (ft) southeast of the northwestern extent of the two buildings, with asphalt pavement located northwest of the concrete. The site is located on both concrete tarmac and asphalt pavement. A chain link fence (the flightline fence) topped with barbed wire separates the parking lot northwest of Buildings 481 and 482 from the flightline. Immediately west-northwest of the former OWS location is a set of portable office buildings that comprise a small air passenger terminal operated by a DOE contractor. An OWS separator was located roughly midway between the two hangar buildings. The OWS collected surface water drainage from the tarmac and separated the oily residues from aircraft operations from the surface water prior to discharge to the sanitary sewer system.

2.1.2 Site Release History

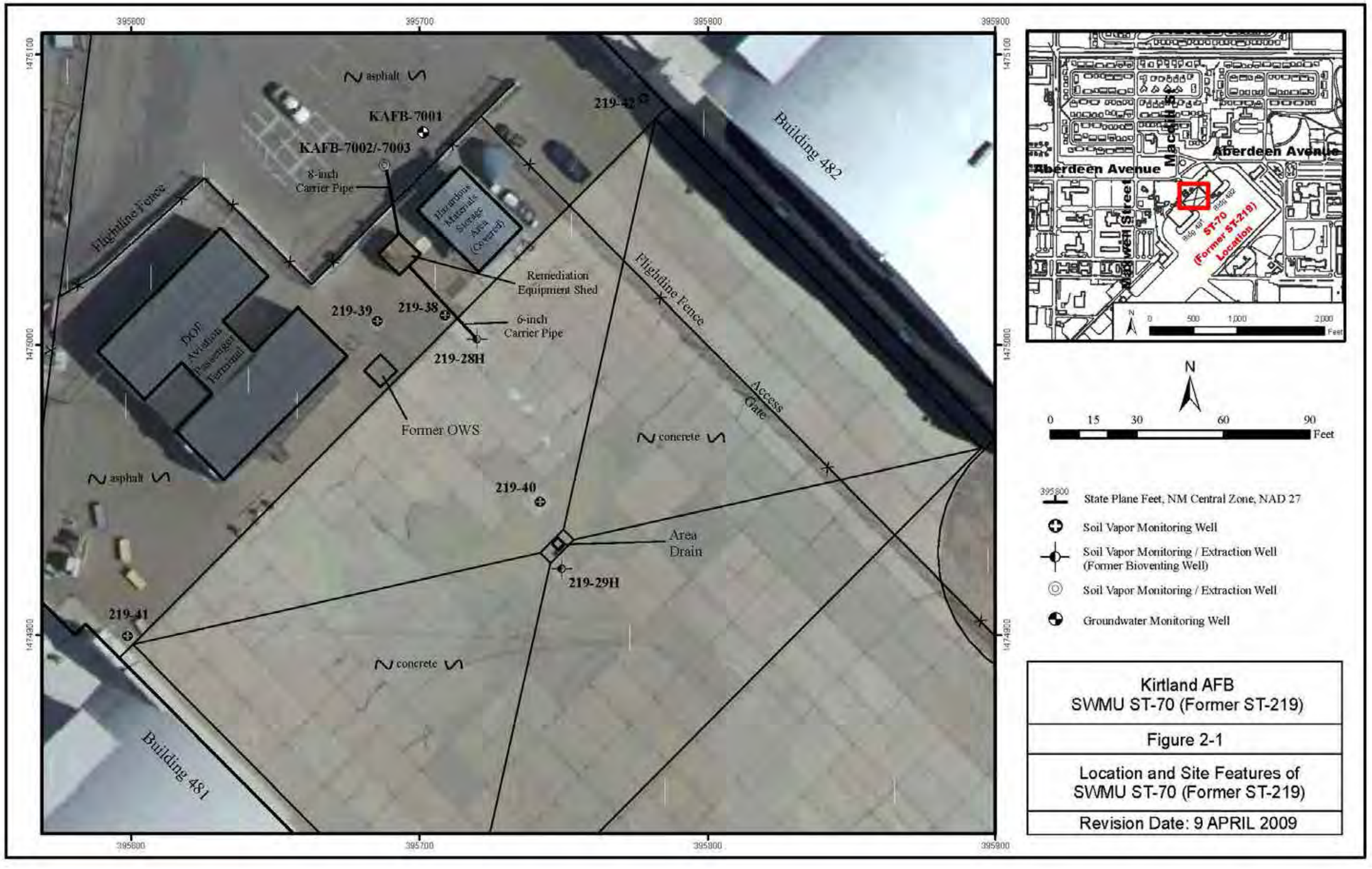
The OWS at SWMU ST-70 was identified as a contaminant release site from visual inspections and samples collected from inside the OWS in 1990 and 1992. Several phases of an RFI were performed at the site in subsequent years. Data from the RFIs indicated petroleum hydrocarbon contamination was present in soils and soil vapor adjacent to the OWS. The OWS was removed in 1994 and piping was reconfigured to direct drainage to the sanitary sewer. A covered hazardous materials storage and containment area is present within the flightline fence to the northeast of the SWMU ST-70 OWS location. The hazardous materials storage area consists of a concrete pad surrounded by a 6-inch concrete containment curb. A floor drain within the hazardous materials storage area which formerly led to the OWS has also been re-directed to the sanitary sewer.

2.2 Soil Vapor Extraction System Construction and Operation

The SVE system was installed within the flightline fence, between the hazardous waste storage area and the DOE contractor passenger terminal trailers. The SVE system is contained primarily within a wooden 10-ft x 12-ft storage shed. The shed houses the extraction blower, above grade piping, gauges, and carbon vessels that are connected to subsurface piping for three extraction wells (219-28H, KAFB-7002, and KAFB-7003).

Between November 2007 and April 2008, the pilot-scale SVE system was modified into a full-scale SVE system with vapor monitoring wells KAFB-7002 and KAFB-7003 converted into extraction wells. The full-scale SVE system was put into operation on April 15, 2008. The performance of the SVE operations is monitored using soil vapor monitoring points, soil vapor extraction wells, and groundwater monitoring well KAFB-7001. The site features are shown on Figure 2-1.

The contaminant mass removal efficiency of the SVE system has been observed to fluctuate seasonally and a rebound study was proposed in prior ICM monitoring reports (USAF, 2011; USAF, 2012a) to evaluate the fluctuation. A limited rebound study was conducted in June 2011 and the results indicated that extended system downtime would not result in significant environmental impacts. An extended rebound study was conducted from January to April 2012. The results indicated that a seasonal system shut down of between one and three months would decrease the volume of waste generated and reduce wear on SVE components without significant adverse effects on the overall ICM performance (USAF, 2012b).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Building 482
Flightline Fence
Hazardous Materials Storage Area (Covered)
Remediation Equipment Shed
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219-38
6-inch
Carrier Pipe
219-28H
DOP Aviation Passenger Terminal
Former OWS
Access Gate
concrete
asphalt
219-40
Area
Drain
219-29H
219-41
concrete
Building 481
Aberdeen Avenue
MacDill Street
Bldg 482
Bldg 481
ST-70
(Former ST-219)
Location
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Feet
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15
30
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Feet
State Plane Feet, NM Central Zone, NAD 27
Soil Vapor Monitoring Well
Soil Vapor Monitoring / Extraction Well
(Former Bioventing Well)
Soil Vapor Monitoring / Extraction Well
Groundwater Monitoring Well
Kirtland AFB
SWMU ST-70 (Former ST-219)
Figure 2-1
Location and Site Features of
SWMU ST-70 (Former ST-219)
Revision Date: 9 APRIL 2009

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2.3 System Operations and Maintenance

The SVE system at SWMU ST-70 operated with little downtime during the reporting period. The SVE system was re-started on March 5, 2013, after the scheduled seasonal shut down, and operated to the end of this reporting period with fewer than three hours of maintenance downtime. The flow configuration was adjusted twice in response to field screening data in order to maximize contaminant mass removal and enhance the protection of groundwater quality.

2.3.1 Operating Hours and System Maintenance

The SVE system operated for a total of 117 days during the monitoring period with no unplanned shut downs and with minimal downtime for routine monitoring and maintenance activities. The SVE system was offline for the greater part of the first calendar quarter of 2013. The seasonal shut down began December 21, 2012, and ended March 5, 2013. The system was re-started without incident. Routine maintenance and monitoring activities required system shut down on four occasions. Downtime was effectively minimized and lasted no longer than 1 hour for each event. Following restart on March 5, 2013, the SVE system was off for approximately 3 hours total during the monitoring period.

Routine maintenance activities included exchange of granular activated carbon (GAC) exhaust treatment vessels, draining of condensate liquids from the system piping, waste management, and replacement of a corroded metal lock on the SVE shed and fitting on one vapor monitoring point. Field monitoring and maintenance records are presented in Appendix A. Waste disposal records are presented in Appendix B. No non-routine maintenance was performed and inspections did not identify any required major maintenance.

During the reporting period, approximately 1.0×10^7 cubic feet (ft^3) (2.9×10^8 liters) of soil vapor were extracted and treated. From the time the SVE system was placed into full-scale operation on April 15, 2008 through the end of the reporting period, the SVE system has operated for approximately 1,560 days and has extracted and treated approximately 1.4×10^8 ft^3 (4.0×10^9 liters) of soil vapor. The reporting period operational statistics are presented in Table 2-1.

Table 2-1. Soil Vapor Extraction System Operation and Downtime at Solid Waste Management Unit ST-70

Date	SVE Down Time (hours)	Cumulative Time		Percent Downtime (%)	Flow Rate (scfm)	Cumulative Volume Extracted (ft^3)	Notes[a]
		Total Downtime (days)	Total Operation Time (days)				
Previously Reported Operation (April 2008 through December 2012)							
04/15/08	N/A	0	0	0	70	0	Initial start-up
12/31/12	OFF	21.17	1447	1.46	0	1.32E+08	End of historical operating period
01/16/13	OFF	21.17	1447	1.46	0	1.32E+08	Downtime monitoring
02/25/13	OFF	21.17	1447	1.46	0	1.32E+08	Downtime monitoring
03/05/13	Restart	21.17	1447	1.46	58	1.32E+08	System restart
03/21/13	0.5	21.19	1463	1.45	57	1.34E+08	Maintenance downtime
04/24/13	1	21.23	1497	1.42	63	1.37E+08	Monitoring downtime
05/22/13	0.5	21.26	1525	1.39	59	1.39E+08	Maintenance downtime
06/26/13	0.5	21.3	1560	1.36	64	1.42E+08	Maintenance downtime
06/30/13	0.0	21.3	1564	1.36	64	1.43E+08	End of reporting period

[a] Items noted as maintenance downtime indicate that the SVE system was off for a minimal amount of time

ft^3 = cubic feet
N/A = not applicable
scfm = standard cubic feet per minute
SVE = soil vapor extraction

2.3.2 SVE System Configuration

The combined intake of the SVE system remained consistent at rates between 57 and 63 cubic feet per minute (cfm) during the monitoring period. The intake configuration is maintained to maximize intake contaminant concentrations and protect groundwater quality. During the monitoring period, adjustments were made twice to the flow configuration based on field monitoring data. During the SVE re-start, the SVE well flow valves were maintained in the positions established from 2012. On April 24, 2013, the valve for extraction well ST-70-02 was opened to ¼ open due to significant PID readings from that extraction well. On May 22, 2013 the valve from extraction well ST-70-03 was closed to ⅛ open in order to induce a greater upward gradient and enhance the protection of groundwater.

The following flow rates were recorded from March 5 to April 24, 2013:
40 to 50 cfm from ST219-28H (open full);
0 to 1 cfm from ST-70-02 (extraction point closed); and
14 to 15 cfm from ST-70-03 (open ¼).

The following flow rates were recorded from April 24 to May 22, 2013:
30 to 40 cfm from ST219-28H (open full);
15 to 20 cfm from ST-70-02 (open ¼); and
15 cfm from ST-70-03 (open ¼).

The following flow rates were recorded from May 22 to June 26, 2013:
30 to 40 cfm from ST219-28H (open full);
15 to 20 cfm from ST-70-02 (open ¼); and
2 to 6 cfm from ST-70-03 (open ⅛).

The maintenance activities for the reporting period are summarized in Table 2-2.

Table 2-2. Soil Vapor Extraction System Operation and Maintenance at Solid Waste Management Unit ST-70

Date	Down Time (hours)	Maintenance Performed	Notes
01/09/13	OFF[a]	Quarterly groundwater sampling	Collected the first quarter 2013 groundwater sample.
01/16/13	OFF[a]	Downtime[a] monitoring	Performed vapor pressure and soil vapor fix gas measurements.
02/25/13	OFF[a]	Downtime[a] monitoring	Performed vapor pressure and fixed gas measurements.
02/28/13	OFF[a]	GAC delivered to site	
03/05/13	OFF[a]	SVE system Inspection, Restart SVE system, Monthly field monitoring	Open valves, check hoses, check electrical, and restart blower. Collect pressure and fixed gas measurements at all active monitoring locations. Set extraction well valves based on PID readings, recorded flow rate and pressure readings for the SVE system.
03/21/13	0.50	SVE system Inspection, SVE system readings, GAC change	Collected flow rate and pressure readings for the SVE system. Performed regular system maintenance.
04/22/13	0.00	Quarterly groundwater sampling	Collected the second quarter 2013 groundwater sample.
04/24/13	1.00	SVE system Inspection, Quarterly vapor sampling, Monthly field monitoring, GAC change	Collected the second quarter 2013 soil vapor samples. Collected PID and pressure readings from all active monitoring locations.
05/25/13	0.50	SVE system Inspection, Monthly field monitoring, GAC change	Collect flow rate and pressure readings. Performed routine system maintenance.
06/26/13	0.50	SVE system Inspection, Monthly field monitoring, GAC change	Collected flow rate, PID, and pressure readings. Performed FOD management, waste management, and routine system maintenance.

Notes:
(a) The winter downtime was from December 21, 2012 to March 5, 2013
GAC = granular activated carbon
N/A = not applicable
SVE = soil vapor extraction
PID = photoionization detector
FOD = foreign object debris, or material presenting hazards to aircraft

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3.0 SOIL VAPOR, GROUNDWATER, AND SYSTEM PERFORMANCE DATA

This section presents the monitoring analytical data collected from the site and treatment system at SWMU ST-70 for the current reporting period between January and June 2013. A brief discussion of the detected constituents and contaminant mass removal calculations for the ICM are also presented.

3.1 Monitoring Activities

During the six-month reporting period the following activities were performed:

- Two vapor sampling events were conducted, one in January and one in April 2013;
- Two groundwater sampling events were conducted, one in January and one in April 2013; and
- Seven field monitoring events were conducted from January through June 2013.

Measurements of the monitoring point vapor pressures and SVE system flow rates were collected on a monthly basis. Monitoring of soil vapor parameters was conducted quarterly during active SVE operations and monthly during the winter shut down based on the recommendations from the previous monitoring report (USAF, 2012b).

The following data was collected quarterly at soil vapor monitoring points, active monitoring wells, and SVE system sample ports using field instrumentation:

- Vapor pressures or vacuums;
- Total VOCs as measured by a photoionization detector;
- Fixed gas measurements of carbon dioxide, carbon monoxide, methane, nitrogen, and oxygen as measured by an air monitoring meter of similar design to landfill gas monitoring devices; and
- Depth to water and groundwater quality parameter measurements of pH, temperature, specific conductance, and turbidity at groundwater monitoring well KAFB-7001.

Total VOC readings were measured monthly during the scheduled winter shut down to determine whether an early system re-start was warranted. The SVE system was re-started approximately 10 days early due to consistent mild weather conditions that reduced condensate accumulation in the system piping.

Quarterly vapor sampling was performed at all active monitoring wells, soil vapor monitoring points, and SVE system sample ports for laboratory analysis. The following laboratory analyses were performed for the vapor samples:

- VOCs by the U.S. Environmental Protection Agency (EPA) Method TO 15;
- TPH-gasoline by EPA Method SW8015M; and
- Fixed gasses by Method SM2720C.

Quarterly groundwater sampling was conducted at monitoring well KAFB-0701. The following laboratory analyses were performed for the groundwater samples:

- VOCs by the EPA Method SW8260B;
- TPH-gasoline by EPA Method SW8015;
- Nitrate-nitrogen by EPA Method E300; and
- Dissolved RCRA metals by Methods SW6010C and SW7470A.

Soil vapor and SVE system vapor analytical results are presented in Table 3.1. The groundwater sample analytical results are presented in Table 3.2. The field monitoring data are presented in Appendix A. The laboratory data quality evaluation report is presented in Appendix C.

3.2 Soil Vapor Monitoring Results

Contaminants detected in soil vapor are primarily associated with chlorinated solvents, hydrocarbon fuel-related compounds, and their breakdown products. The highest soil vapor concentrations of VOC contaminants were detected adjacent to the former OWS and the area drain. The contaminant concentration and distribution patterns were consistent with the historical site data. Vapor monitoring data are presented in Table 3-1 and concentration trends of the primary COPCs are presented in Figures 3-1 through 3-4.

During the reporting period, 15 contaminants related to chlorinated solvents were detected in soil vapor samples, 10 of which are considered COPCs. However, only PCE, TCE, and cis-1,2-DCE were detected at relatively high concentrations above 500 ppb. The highest concentrations of these three compounds were detected in samples collected from vapor monitoring point 219-39-42 in both the January and April 2013 monitoring events. This location is the shallow soil vapor monitoring port adjacent to the former OWS.

Ten contaminants related to hydrocarbon fuels were detected in soil vapor samples, all of which are considered COPCs. However, only 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, xylenes, and TPH-gasoline were detected at relatively high concentrations above 500 ppb. The highest concentrations of all these analytes were detected in samples collected from vapor monitoring point 219-40-20 in both the January and April 2013 monitoring events. This location is the shallow soil vapor monitoring port adjacent to the area drain.

In addition to hydrocarbon fuel and chlorinated solvent-related contaminants, three chlorofluorocarbons and one brominated VOC were detected in samples collected during the reporting period. All of these detections were at low concentrations below 10 ppb. No spatial pattern associated with any known source area was observed for the data.

Monitoring point pressure readings indicate that the SVE system is performing as designed and that it has a significant radius of influence across a large portion of the shallow vadose zone at the site (Appendix A). Vapor monitoring points typically exhibit low vacuum conditions across much of the monitoring area, indicating vapor flow to the SVE system. During the reporting period, occasional positive soil vapor pressures were observed as the result of atmospheric pressure or temperature changes.

Table 3-1. January through June 2013 Soil Vapor Analytical Sample Results at Solid Waste Management Unit ST-70 (Page 1 of 2)

Chemical Class & Analytical Method	Location	Inlet		Exhaust		70-01		70-02		70-03		28H		29H		38-41		38-99		39-42		40-20		41	
	Sample ID	ST70-AR-INLET-160113	ST70-AR-INLET-240413	ST70-AR-Exhaust-160113	ST70-AR-Exhaust-240413	ST70-AR-7001-160113	ST70-AR-7001-240413	ST70-AR-7002-160113	ST70-AR-7002-240413	ST70-AR-7003-160113	ST70-AR-7003-240413	ST70-AR-28H-160113	ST70-AR-28H-240413	ST70-AR-29H-160113	ST70-AR-29H-240413	ST70-AR-38-41-160113	ST70-AR-38-41-240413	ST70-AR-38-99-160113	ST70-AR-38-99-240413	ST70-AR-39-42-160113	ST70-AR-39-42-240413	ST70-AR-40-20-160113	ST70-AR-40-20-240413	ST70-AR-41-160113	ST70-AR-41-240413
	Sample Date	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013
	Analyte / Screen Depth	not applicable		not applicable		454-479		85-90		315-330		10-35 / 50-90		50-90		38-43		98-103		40-45		18-23		10-15	
VOCs (ppbv) Method TO-15[a]	1,1,1-Trichloroethane	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,1,2,2-Tetrachloroethane	<0.24	<3.09	<0.25	<0.26	<0.24	1.85	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,1,2-Trichloroethane	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	0.85J	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,1,2-Trichloro-1,2,2-trifluoroethane	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	3.73	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,1-Dichloroethane	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,1-Dichloroethene	<0.24	6.25J	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	3.69	<0.6	7.56J	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,2,4-Trichlorobenzene	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	4.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,2,4-Trimethylbenzene	4.17	34.9	<0.25	<0.26	0.29J	0.63J	2.85	4.18J	1.41	3.56	4.2	44.1	2.79J	1.96	65.1	385	1,910	263	67.4	119	5,070	5,740	6.05	6.95
	1,2-Dichloroethane (EDC)	0.31J	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,2-Dichlorobenzene	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,2-Dichloro-1,1,2,2-tetrafluoroethane	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,2-Dichloropropane	38.7	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,2-Dibromoethane (EDB)	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,3,5-Trimethylbenzene	3.48	53.2	<0.25	<0.26	<0.24	0.56J	2.26	4.17J	1.01J	3.4	3.6	70.8	11.6	1.49	72.4	454	1,800	297	85.7	142	4,140	4,560	5.1	5.96
	1,3-Dichlorobenzene	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	1,4-Dichlorobenzene	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	1.48J	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	Acetone	79.8	17.1J	10.6	8.5	6.68	12.3	23.3	19.6	29.5	28	8.86	115	7.2J	29.3	8.12	63.6J	153	142	<18.9	147J	<30.3	59J	7.24	10.7
	Benzene	0.53J	<3.09	0.44J	<0.26	0.28J	<0.25	0.56J	<1.27	0.54J	1.69J	0.66J	<3.15	<1.18	0.26J	1.36J	54.6J	21.1J	41.4J	194	292	<30.3	<45.2	0.25J	<1.25
	Bromomethane	0.85	<3.09	<0.25	0.36J	<0.24	<0.25	<0.24	<1.27	<0.4	0.95J	<0.6	<3.15	<1.18	0.49J	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	Carbon tetrachloride	<0.24	4.03J	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	14.4J	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	Chlorobenzene	<0.24	<3.09	<0.25	<0.26	<0.24	0.32J	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	Chloroethane	0.35J	<3.09	<0.25	<0.26	<0.24	<0.25	1.27	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	Chloroform	0.61J	5.65J	<0.25	<0.26	<0.24	<0.25	<0.24	7.3	<0.4	7.56	<0.6	5.85J	<1.18	<0.24	<1.18	<30.3	94.2	48.5J	32J	39.2J	<30.3	<45.2	0.52J	<1.25
	Chloromethane	3.03	<3.09	0.4J	1.19	0.42J	0.48J	0.91	<1.27	0.56J	1.43J	<0.6	<3.15	<1.18	1.22	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	cis-1,2-Dichloroethene	1.8	51.8	<0.25	<0.26	<0.24	<0.25	<0.24	9.78	<0.4	5.93	1.9J	82.4	6.94	0.33J	172	3,270	1,010	2,600	5,030	7,980	445	342	0.91	1.27J
	cis-1,3-Dichloropropene	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	Dichlorodifluoromethane	0.37J	<3.09	0.38J	0.41J	0.38J	0.43J	0.36J	<1.27	<0.4	0.89J	<0.6	<3.15	<1.18	0.45J	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	0.37J	<1.25
	Ethylbenzene	0.27J	<3.09	<0.25	<0.26	<0.24	0.28J	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	7.57	103	104	70	<18.9	<28.2	293	358	<0.24	<1.25

Table 3-1. January through June 2013 Soil Vapor Analytical Sample Results at Solid Waste Management Unit ST-70 (Concluded, Page 2 of 2)

Chemical Class & Analytical Method	Location	Inlet		Exhaust		70-01		70-02		70-03		28H		29H		38-41		38-99		39-42		40-20		41	
	Sample ID	ST70-AR-INLET-160113	ST70-AR-INLET-240413	ST70-AR-Exhaust-160113	ST70-AR-Exhaust-240413	ST70-AR-7001-160113	ST70-AR-7001-240413	ST70-AR-7002-160113	ST70-AR-7002-240413	ST70-AR-7003-160113	ST70-AR-7003-240413	ST70-AR-28H-160113	ST70-AR-28H-240413	ST70-AR-29H-160113	ST70-AR-29H-240413	ST70-AR-38-41-160113	ST70-AR-38-41-240413	ST70-AR-38-99-160113	ST70-AR-38-99-240413	ST70-AR-39-42-160113	ST70-AR-39-42-240413	ST70-AR-40-20-160113	ST70-AR-40-20-240413	ST70-AR-41-160113	ST70-AR-41-240413
	Sample Date	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013	1/16/2013	4/24/2013
	Analyte Screen Depth	not applicable		not applicable		454-479		85-90		315-330		10-35 / 50-90		50-90		38-43		98-103		40-45		18-23		10-15	
VOCs (ppbv) Method TO15[a]	Hexachlorobutadiene	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	m,p-Xylene	1.17J	6.55J	<0.49	<0.52	<0.47	0.68J	0.74J	<2.54	0.94J	<1.68	<1.19	8.15J	<2.36	0.55J	40.8	402	429	279	58.5J	91.5J	2,300	2,640	1.15J	<2.49
	MEK (2-Butanone)	8.4	<3.09	1.79	1.02J	1.65	2.98	12.6	5.71J	19.7	5.23J	3.8J	<3.15	<1.18	3.13	<1.18	<30.3	<18.9	71.6J	<18.9	<28.2	<30.3	<45.2	2.67	<1.25
	Methylene chloride	0.49J	<3.09	0.32J	0.33J	0.27J	0.33J	0.32J	<1.27	0.45J	1.46J	<0.6	<3.15	<1.18	0.39J	<1.18	<30.3	21.6J	16.6J	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	MTBE (Methyl tert-butyl ether)	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	o-Xylene	<0.24	<3.09	<0.25	<0.26	<0.24	0.3J	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	3.65J	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	Styrene	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	TCE (Trichloroethene)	12.6	234	<0.25	0.43J	<0.24	0.31J	1.14	138	0.55J	283	13.8	231	27.3	1.18	14.7	1,070	8,800	5,400	10,800	13,900	203	222	4.69	6.78
	PCE (Tetrachloroethene)	103	167	<0.25	<0.26	<0.24	1.68	1.07	15.1	1.45	10.7	131	223	25.5	0.81	1.57J	87.5J	168	122	1,940	3,360	<30.3	<45.2	5.78	15.1
	Toluene	0.72J	<3.09	0.73J	0.44J	0.44J	0.47J	0.62J	<1.27	1.17J	1.04J	0.7J	<3.15	<1.18	0.4J	1.68J	<30.3	22J	26.6J	55.5J	94.7	34.9J	57.4J	0.25J	<1.25
	trans-1,3-Dichloropropene	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
	Trichlorofluoromethane	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	2.33J	<0.6	<3.15	1.23J	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	0.95	1.73J
	Vinyl chloride	<0.24	<3.09	<0.25	<0.26	<0.24	<0.25	<0.24	<1.27	<0.4	<0.84	<0.6	<3.15	<1.18	<0.24	<1.18	<30.3	<18.9	<15.5	<18.9	<28.2	<30.3	<45.2	<0.24	<1.25
TPH-Gasoline (µg/L) SW8015M[b]	Gasoline Range Organics (GRO)	96.6	666	<10.9	30.8J	<11	11.4J	<20.9	41.7J	<22.9	41.9J	110	946	122	17.8J	435	3,910	2,410	1,990	1,360	1,670	4,190	6,080	<27.1	36.8J
Fixed Gases (%) Method SM2720C[c]	Carbon Dioxide	0.71J	1.74	<0.14	<0.15	<0.13	<0.15	<0.13	0.9J	<0.13	0.29J	0.79J	2.6	8.28	0.32J	0.95J	13.7	11.5	12.2	15.2	14.7	13.4	13.4	1.23	1.13
	Carbon Monoxide	<0.13	<0.14	<0.14	<0.15	<0.13	<0.15	<0.13	<0.15	<0.13	<0.15	<0.14	<0.15	<0.13	<0.14	<0.13	<0.14	<0.13	<0.14	<0.14	<0.15	<0.13	<0.14	<0.14	<0.14
	Methane	<0.13	<0.14	<0.14	<0.15	<0.13	<0.15	<0.13	<0.15	<0.13	<0.15	<0.14	<0.15	<0.13	<0.14	<0.13	0.77J	<0.13	<0.14	<0.14	<0.15	0.21J	<0.14	<0.14	<0.14
	Nitrogen	75	74.6	74.4	74.3	74.4	74.5	74.4	74.3	74.5	75.1	75	74.5	78	74.3	74.5	76.6	76.7	76	77.1	77.3	78.7	79.1	74.3	74.1
	Oxygen	24.3	23.7	25.6	25.6	25.6	25.5	25.5	24.8	25.5	24.6	24.2	22.9	13.7	25.3	24.5	8.97	11.7	11.8	7.6	7.99	7.7	7.36	24.5	24.7

[a] EPA, 1999. Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air-Second Edition. U.S. Environmental Protection Agency. EPA/625/R-96/010b. January.
b EPA, 2008. EPA Integrated Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846) 3rd ed. with final updates I, II, IIA, IIB, III, IIIA, IIIB, and IV. U.S. Environmental Protection Agency.
c AWWA, 1997. Standard Methods Committee, 2720 Anaeobic Sludge Digester Gas Analysis, Gas Chromatigraph Method.
Shading indicates the analyte was detected.
% = percent
ID = identification
J = estimated value, the concentration is less than PQL but greater than Laboratory MDL
MDL = method detection limit
ppbv = parts per billion by volume
PQL = practical quantitation limit
TPH = total petroleum hydrocarbons
µg/L = microgram per liter
VOC = volatile organic compound

Figure 3-1. Tetrachloroethene Vapor Concentrations at Solid Waste Management Unit ST-70 Soil Vapor Extraction Wells

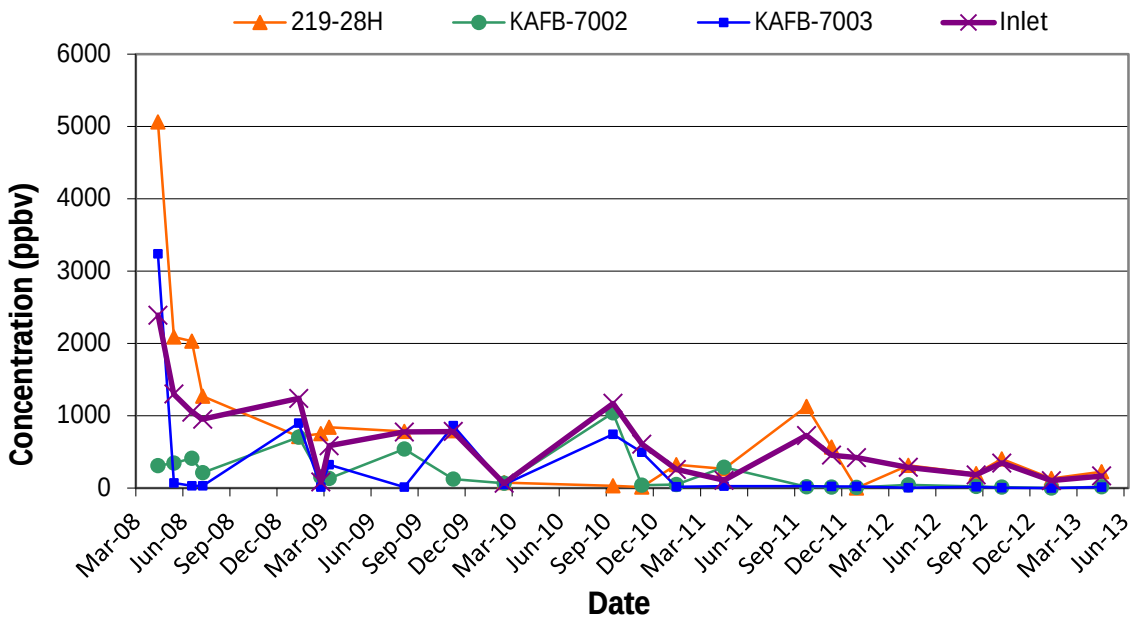


Figure 3-2. Trichloroethene Vapor Concentrations at Solid Waste Management Unit ST-70 Soil Vapor Extraction Wells

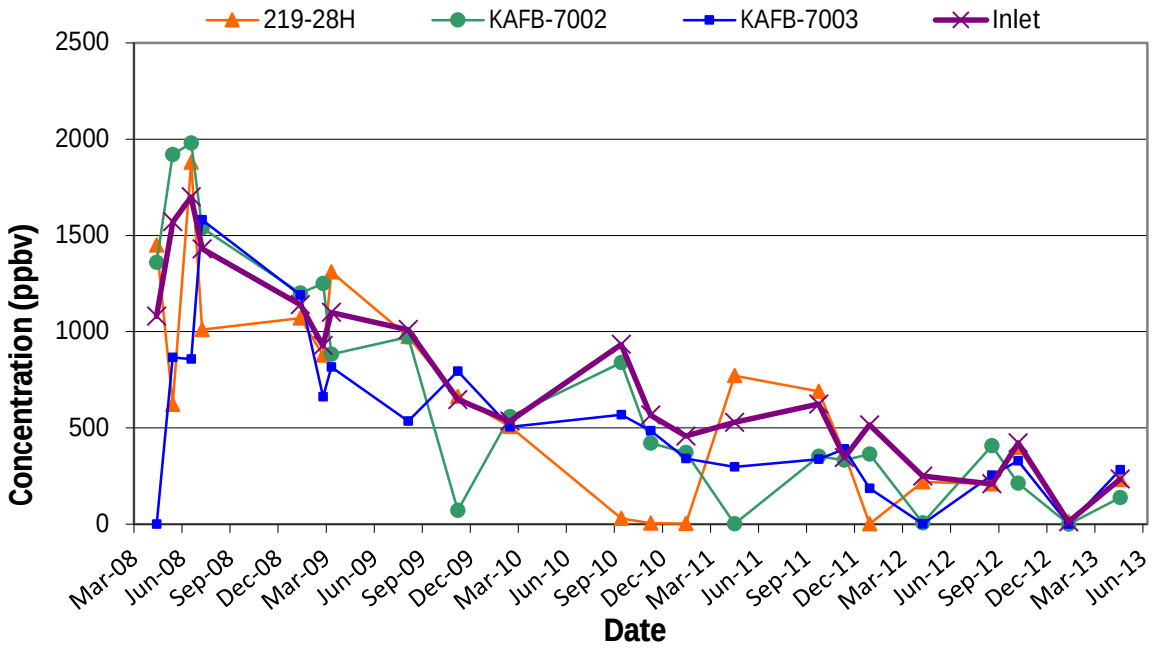


Figure 3-3. Trichloroethene Vapor Concentrations at Solid Waste Management Unit ST-70 Soil Vapor Monitoring Points

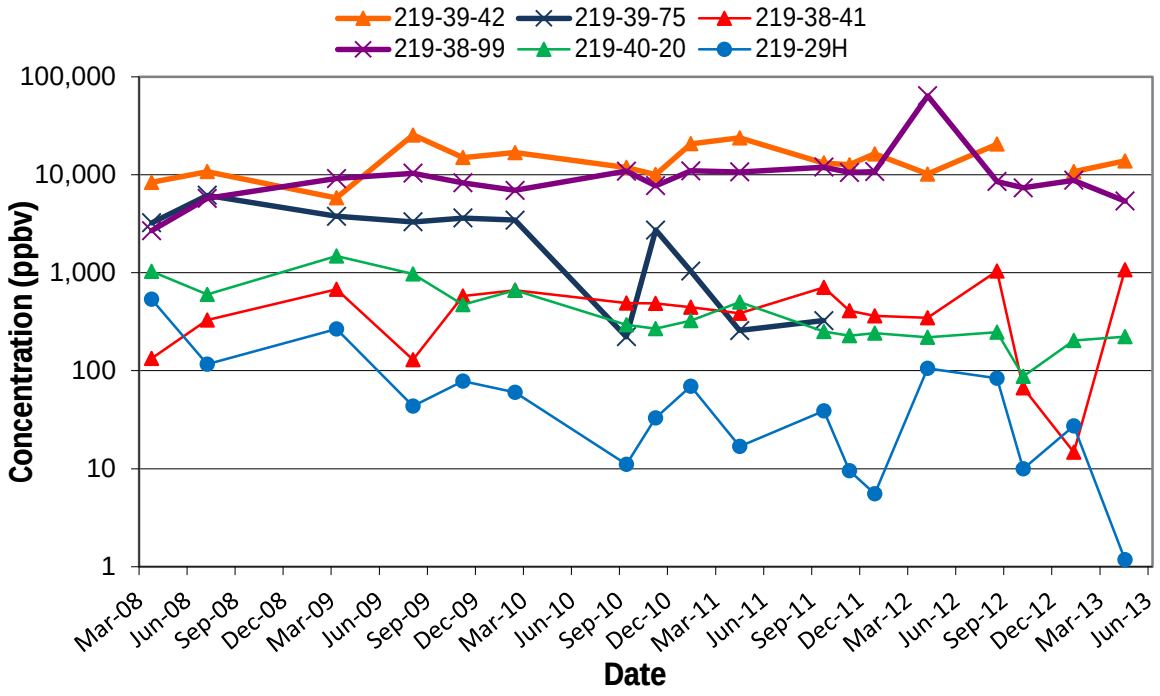
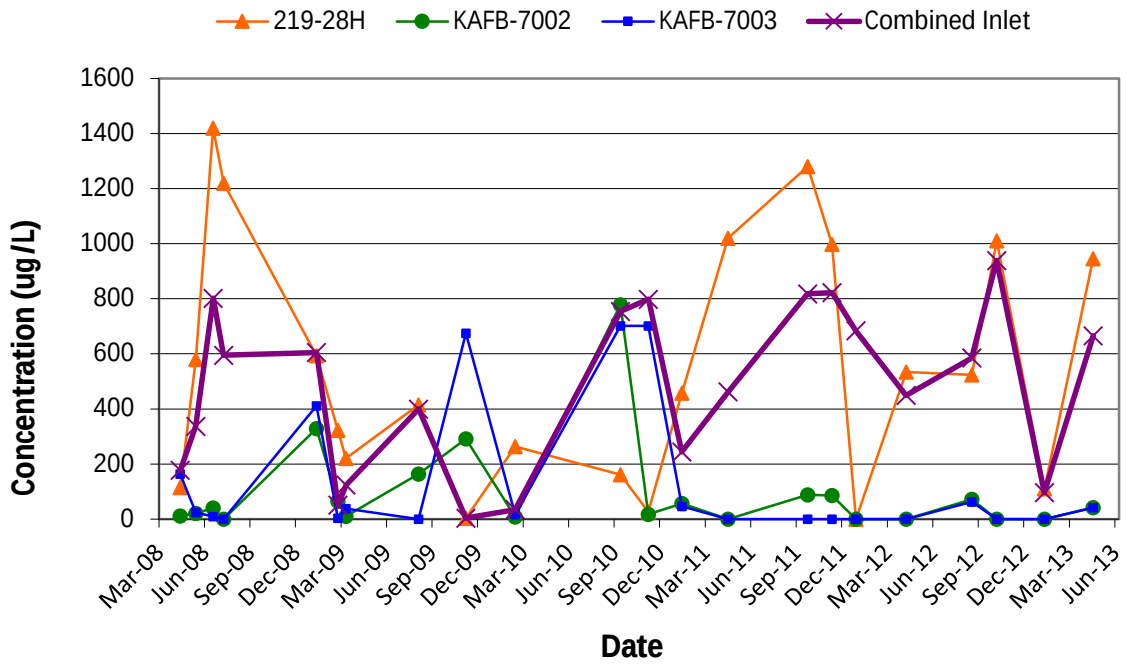


Figure 3-4. Total Petroleum Hydrocarbon-Gasoline Vapor Concentrations at Solid Waste Management Unit ST-70 Soil Vapor Extraction Wells



3.3 Groundwater Monitoring Results

The purpose of groundwater monitoring is to evaluate whether COPCs have impacted groundwater quality in the area. To date, groundwater has not been impacted by contaminants at concentrations above regulatory screening levels. Monitoring for nitrate-nitrogen and dissolved metals is performed to provide supplementary data for upgradient and cross-gradient contaminant plumes. Nitrate and metals are not considered COPCs at SWMU ST-70.

The primary groundwater COPC is TCE. Laboratory analyses of groundwater samples from the January and April 2013 monitoring events detected TCE at concentrations of 1.7 and 1.8 µg/L, respectively. Groundwater concentrations of TCE appear to have stabilized since 2012. Groundwater TCE concentrations remain significantly below the regulatory screening level of 5.0 µg/L. Chloroform and dichlorobromomethane were also detected in groundwater samples collected during the reporting period at low J-flagged concentrations below 1 µg/L. No hydrocarbon fuel-related contaminants were detected during the reporting period. The laboratory analytical results for the January and April 2013 monitoring events are summarized in Table 3-2. The trends of groundwater TCE concentrations in monitoring well KAFB-7001 are presented in Figure 3-5.

Table 3-2. Groundwater Analytical Results at Solid Waste Management Unit ST-70 (Page 1 of 2)

Chemical Class & Analytical Method	Analyte	Location	KAFB-7001	KAFB-7001	KAFB-7001
		Sample Date	1/9/2013	1/9/2013	4/22/2013
		Sample ID	ST70-GW-7001-090113	ST70-FD-7001-090113	ST70-GW-7001-220413
		EPA MCLs [a]			
VOCs (µg/L) Method SW8260B[b]	1,1,1,2-Tetrachloroethane	N/A	< 0.2	< 0.2	< 0.2
	1,1,1-Trichloroethane	60 [c]	< 0.2	< 0.2	< 0.2
	1,1,2,2-Tetrachloroethane	10 [c]	< 0.4	< 0.4	< 0.4
	1,1,2-Trichloroethane	5.0	< 0.4	< 0.4	< 0.4
	1,1-Dichloroethane	25 [c]	< 0.2	< 0.2	< 0.2
	1,1-Dichloroethene	5.0 [c]	< 0.2	< 0.2	< 0.2
	1,1-Dichloropropene	N/A	< 0.4	< 0.4	< 0.4
	1,2,3-Trichlorobenzene	N/A	< 0.4	< 0.4	< 0.4
	1,2,3-Trichloropropane	N/A	< 0.8	< 0.8	< 0.8
	1,2,4-Trichlorobenzene	70	< 0.8	< 0.8	< 0.8
	1,2,4-Trimethylbenzene	N/A	< 0.2	< 0.2	< 0.2
	1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 1.6	< 1.6	< 1.6
	1,2-Dibromoethane (EDB)	0.05	< 0.2	< 0.2	< 0.2
	1,2-Dichlorobenzene	600	< 0.2	< 0.2	< 0.2
	1,2-Dichloroethane	5.0	< 0.2	< 0.2	< 0.2
	1,2-Dichloropropane	5.0	< 0.2	< 0.2	< 0.2
	1,3,5-Trimethylbenzene	N/A	< 0.4	< 0.4	< 0.4
	1,3-Dichlorobenzene	N/A	< 0.2	< 0.2	< 0.2
	1,3-Dichloropropane	N/A	< 0.2	< 0.2	< 0.2
	1,4-Dichlorobenzene	75	< 0.4	< 0.4	< 0.4
	2,2-Dichloropropane	N/A	< 0.4	< 0.4	< 0.4
	2-Butanone (MEK)	N/A	< 3.2	< 3.2	< 3.2
	2-Chlorotoluene	N/A	< 0.4	< 0.4	< 0.4
	2-Hexanone	N/A	< 3.2	< 3.2	< 3.2
	4-Chlorotoluene	N/A	< 0.4	< 0.4	< 0.4
	4-Isopropyltoluene	N/A	< 0.4	< 0.4	< 0.4
	4-Methyl-2-pentanone	N/A	< 3.2	< 3.2	< 3.2
	Acetone	N/A	< 6.4	< 6.4	< 6.4
	Benzene	5.0	< 0.2	< 0.2	< 0.2
	Bromobenzene	N/A	< 0.2	< 0.2	< 0.2
	Bromoform	N/A	< 0.4	< 0.4	< 0.4
	Bromomethane	N/A	< 0.4	< 0.4	< 0.4
	Carbon disulfide	N/A	< 0.8	< 0.8	< 0.8
	Carbon tetrachloride	5.0	< 0.4	< 0.4	< 0.4
	Chlorobenzene	100	< 0.2	< 0.2	< 0.2
	Chloroethane	N/A	< 1.6	< 1.6	< 1.6
	Chloroform	100 [c]	0.16J	0.17J	0.17J
	Chloromethane	N/A	< 0.8	< 0.8	< 0.8
	cis-1,2-Dichloroethene	70	< 0.2	< 0.2	< 0.2
	cis-1,3-Dichloropropene	N/A	< 0.2	< 0.2	< 0.2
	Dibromochloromethane	N/A	0.18J	< 0.2	0.18J
	Dibromomethane	N/A	< 0.4	< 0.4	< 0.4
	Dichlorodifluoromethane	N/A	< 0.8	< 0.8	< 0.8
	Ethylbenzene	700	< 0.2	< 0.2	< 0.2
	Hexachlorobutadiene	N/A	< 0.4	< 0.4	< 0.4
	Isopropylbenzene	N/A	< 0.4	< 0.4	< 0.4
	Methylene chloride	N/A	< 0.4	< 0.4	< 0.4
	Methyl tert-butyl ether (MtBE)	5.0	< 0.4	< 0.4	< 0.4

Table 3-2. Groundwater Analytical Results at Solid Waste Management Unit ST-70 (Concluded, Page 2 of 2)

Chemical Class & Analytical Method	Analyte	Location	KAFB-7001	KAFB-7001	KAFB-7001
		Sample Date	1/9/2013	1/9/2013	4/22/2013
		Sample ID	ST70-GW-7001-090113	ST70-FD-7001-090113	ST70-GW-7001-220413
		EPA MCLs [a]			
VOCs (µg/L) Method SW8260B[b]	Naphthalene	30 [d]	< 0.8	< 0.8	< 0.8
	n-Butylbenzene	N/A	< 0.4	< 0.4	< 0.4
	n-Propylbenzene	N/A	< 0.2	< 0.2	< 0.2
	sec-Butylbenzene	N/A	< 0.4	< 0.4	< 0.4
	Styrene	100	< 0.4	< 0.4	< 0.4
	tert-Butylbenzene	N/A	< 0.4	< 0.4	< 0.4
	Tetrachloroethene	5.0	< 0.4	< 0.4	< 0.4
	Toluene	750 [c]	< 0.4	< 0.4	< 0.4
	trans-1,2-Dichloroethene	100	< 0.2	< 0.2	< 0.2
	trans-1,3-Dichloropropene	N/A	< 0.4	< 0.4	< 0.4
	Trichloroethene	5.0	1.7	1.8	1.7
	Trichlorofluoromethane	N/A	< 0.8	< 0.8	< 0.8
	Vinyl chloride	1.0 [c]	< 0.8	< 0.8	< 0.4
	Xylenes (total)	620 [c]	< 1.6	< 1.6	< 1.6
TPH (µg/L) EPA Method 8015	Gasoline Range Organics (GRO) C6-C10	N/A	< 20	< 25	< 20
Dissolved Metals (mg/L) EPA Methods SW6010C[b] and SW7470A[b]	Arsenic	0.01	< 0.012	< 0.012	< 0.012
	Barium	2.0	0.041	0.04	0.039
	Cadmium	0.05	0.49J	0.04	0.00046J
	Chromium	0.05	0.0013J	0.0015J	0.0058J
	Lead	0.015	< 0.005	< 0.005	< 0.005
	Selenium	0.05	0.019J	0.019J	0.022
	Silver	0.1	< 0.002	< 0.002	< 0.002
	Mercury	0.00063 [c]	< 0.00008	< 0.00008	< 0.00008
Anions (mg/L) EPA Method 300	Nitrate as nitrogen	10	6.9	7	6.7

[a] EPA National Primary Drinking Water Standards - Maximum Contaminant Levels (MCLs) unless otherwise specified.

[b] Analytical methods are detailed in the EPA, 1993 and EPA, 1996 documents.

[c] Denotes values that are NMWQCC standards that are used because values are lower than the EPA MCLs for the compound.

Shading indicates the analyte was detected

Data Flags:

< - The analyte was not detected above the associated method detection limit (MDL).

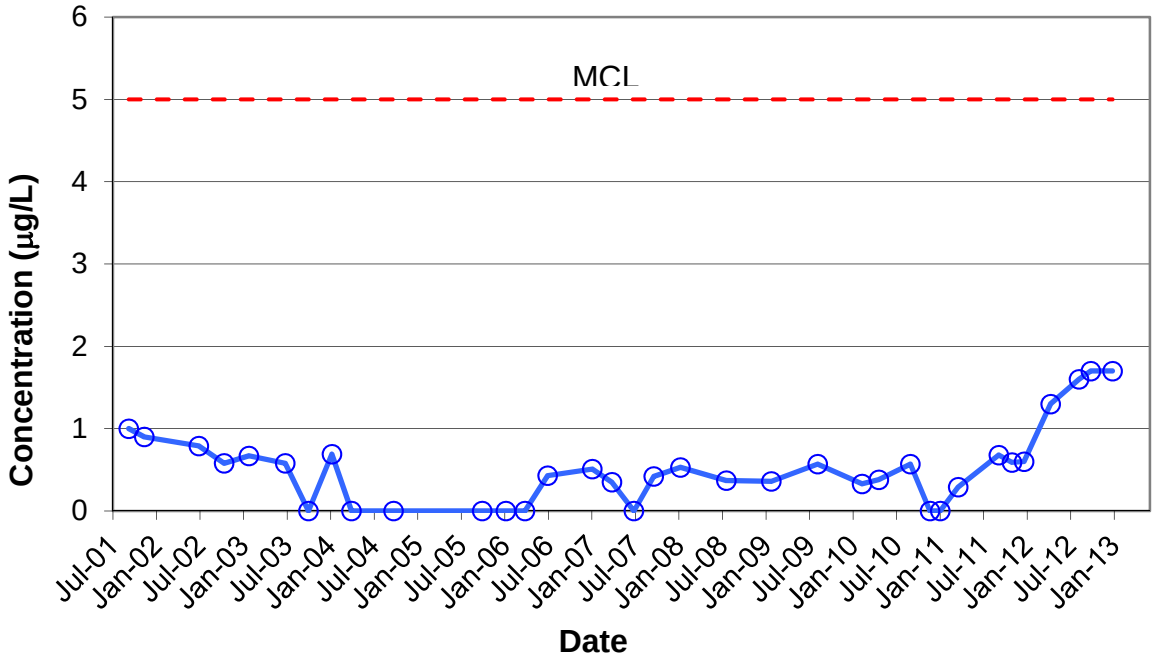
J - estimated value, concentration is less than the practical quantitation limit, but greater than Laboratory MDL.

U - analyzed for, but not detected

Abbreviations and acronyms:

µg/L = micrograms per liter
mg/L = milligrams per liter
EPA = U.S. Environmental Protection Agency
ID = identifier
MDL = method detection limit
N/A = not applicable
NA = Not Analyzed
NMWQCC = New Mexico Water Quality Control Commission
VOC = volatile organic compound

Figure 3-5. Trichloroethene Concentrations in Groundwater at Solid Waste Management Unit ST-70, Well KAFB-7001



3.4 Soil Vapor Extraction System Performance

This section discusses the SVE system performance at SWMU ST-70. The system performance is measured by the contaminant mass removed from the subsurface through the extraction wells.

The estimates of contaminant mass removed were calculated using the SVE system flow readings and vapor sample laboratory analytical data from the combined inlet (between the blower and the condensate drums). The mass of fuel hydrocarbons removed was estimated from the vapor sample TPH-gasoline concentrations. The mass of halogenated VOCs removed was estimated from the sum of all halogenated VOC concentrations in the vapor sample.

Contaminant mass removed was estimated using the following equation:

$M = CQT$ (Equation 1)

where: M = cumulative mass removed (kilogram [kg])

C = vapor concentration ppbv converted to kilograms per liter [kg/L])

Q = extraction flow rate (standard cubic feet per minute [ft^3/m] converted to liters per day [L/day])

T = operational period (day)

In order to calculate the mass removed of halogenated VOCs, the concentrations of each analyte were converted from ppbv to µg/L using the following equation:

$$C = \frac{(conc)(MW)}{RT} \qquad \text{(Equation 2)}$$

where: *conc* = vapor concentration (ppbv)

MW = molecular weight of the analyte

R = ideal gas constant for standard ambient pressure (24.04×10^{-3})

T = temperature for standard ambient temperature (25 ^{o}C)

The sum of all reported halogenated VOC detections are converted to mass using Equation 1. The petroleum hydrocarbon mass removed is calculated by multiplying the soil vapor TPH-gasoline concentration in mg/L by the number of liters processed by the SVE system during the operational period. The contaminant mass removed estimates are presented in Table 3-3.

The rate at which contaminant mass is removed from the subsurface is calculated by dividing the mass calculated in Equation 1 above by the time between sample events:

$E = M/T$ (Equation 3)

where: *E* = estimated mass removal rate (kg or gram [g]/day)

M = mass calculated in Equation 1(kg), mass is converted to grams for halogenated contaminants

T = operational period between sampling events (day)

The mass removal rate estimates are presented in Table 3-4.

Table 3-3. Estimated Total Contaminant Mass Removed at Solid Waste Management Unit ST-70

Period of Performance		Cumulative Volume Extracted (ft^3)	Analytical Data from SVE inlet			Cumulative Mass Removed	
			Dates of Inlet Sample	Sum of Halogenated VOCs (µg/L)	TPH-G (µg/L)	Chlorinated Mass (kg)	TPH Mass (kg)
04/15/08	03/14/09	1.94E+07	multiple	0.4 to 0.9	50 to 800	3.13	2,280
03/14/09	06/30/09	3.00E+07	03/14/09	0.359	51.4	4.20	2,440
07/01/09	09/30/09	3.92E+07	03/14/09 08/07/09	0.359 0.386	51.4 400	5.21	3,480
10/01/09	12/31/09	4.68E+07	08/07/09 11/11/09	0.386 0.428	400 3.75	6.13	3,490
01/01/10	03/31/10	5.46E+07	11/11/09 02/10/10	0.428 0.128	3.75 34.1	6.42	3,560
04/01/10	06/30/10	6.33E+07	02/10/10	0.128	34.1	6.73	3,650
07/01/10	09/30/10	7.22E+07	02/10/10 09/17/10	0.128 0.482	34.1 754	7.94	5,540
10/01/10	12/31/10	8.07E+07	09/17/10 11/12/10	0.482 0.265	754 798	8.58	7,460
01/01/11	03/31/11	8.65E+07	11/12/10 01/18/11	0.265 0.249	798 244	8.99	7,860
04/01/11	06/30/11	9.50E+07	01/18/11 04/21/11	0.249 0.167	244 462	9.39	8,970
07/01/11	09/30/11	1.04E+08	04/21/11 09/28/11	0.167 0.281	462 818	10.08	10,970
10/01/11	12/31/11	1.11E+08	09/28/11 11/16/11	0.281 0.162	818 822	10.4	12,800
01/01/12	06/30/12	1.18E+08	01/03/12 04/13/12	[1]Rebound Period 0.0990	 449	10.6	13,600
07/01/12	09/30/12	1.26E+08	04/13/12 08/23/12	0.0990 0.0816	449 585	10.8	15,000
10/01/12	12/21/12	1.33E+08	08/23/12 10/12/12	0.0816 0.164	585 939	11.1	16,700
12/22/12	03/31/13	1.35E+08	10/12/12 01/16/13	[2]Winter Downtime 0.0195	 96.6	11.1	16,700
04/01/13	06/30/13	1.42E+08	01/16/13 04/24/13	0.0195 0.0833	96.6 666	11.3	18,200

ft^3 = cubic foot of soil vapor at standard temperature and pressure
kg = kilograms
µg/L = micrograms per liter
TPH-G = total petroleum hydrocarbon-gasoline
VOCs = volatile organic compound
Notes:
1) No mass was removed during the scheduled downtime from 01/03/12 to 04/20/12
2) No mass was removed during the scheduled downtime from 12/21/12 to 03/05/13

Table 3-4. Estimated Contaminant Mass Removal Rates at Solid Waste Management Unit ST-70

Period of Performance		Chlorinated Mass Removal Rate (kg/day)	TPH Mass Removal Rate (kg/day)
04/15/08	07/10/08	0.0199	15.7
03/14/09	06/30/09	0.00993	1.42
07/01/09	09/30/09	0.0186	19.3
10/01/09	12/31/09	0.0101	0.088
01/01/10	03/31/10	0.00312	0.831
04/01/10	06/30/10	0.00350	0.931
07/01/10	09/30/10	0.01316	20.59
10/01/10	12/31/10	0.00693	20.8
01/01/11	03/31/11	0.00452	4.42
04/01/11	06/30/11	0.00444	12.3
07/01/11	09/30/11	0.00748	21.7
10/01/11	12/31/11	0.00383	19.4
01/01/12	04/20/12	[1]Rebound Downtime Period	
04/20/12	06/30/12	0.00266	12.0
07/01/12	09/30/12	0.00209	15.0
10/01/12	12/21/12	0.00354	20.3
12/22/12	03/31/13	0.000121[2]	0.60[2]
04/01/13	06/30/13	0.00206	16.4

kg = kilograms
Notes:
1) No mass was removed during the scheduled downtime from 01/03/12 to 04/20/12
2) No mass was removed during the scheduled downtime from 12/21/12 to 03/05/13

Contaminant mass removed by the SVE ICM at SWMU ST-70 is approximately 18,200 kilograms (kg) to date. Contaminant mass removal rates continue to remain above 10 kilograms per day (kg/d). During most of the first calendar quarter 2013, the SVE system was off for the scheduled winter shut down and the calculated mass removed is not considered comparable to other quarters. During the second quarter 2013, approximately 1,500 kg of contaminant mass was removed by the SVE system. Less than 1 kg of the total mass removed during the reporting period was chlorinated VOC mass. Total contaminant mass removal rates have ranges from 4 to 22 kg/d (or 400 to 2,000 kg per quarter) during full-scale operation. Rates of chlorinated VOC mass removal are roughly three orders of magnitude less, and have ranged from 2 to 7 grams per day (or 0.2 to 0.7 kg per quarter).

During the entire reporting period, from January through June 2013, the SVE system operated for 117 days. SVE system inlet contaminant concentrations fluctuate by an order of magnitude over the annual operating cycle. System inlet contaminant concentrations have historically been at their lowest and blower efficiency poorest, during the first quarter of each year. The low contaminant concentrations and poor blower efficiency is believed to be the result of low temperatures and the accumulation of fuel condensate liquids in the extraction well piping. Therefore, an annual winter shut down period was instituted during the first quarter of the year.

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4.0 INTERIM CORRECTIVE MEASURE PERFORMANCE SUMMARY

The primary COPCs at SWMU ST-70 are TCE, PCE, and TPH-gasoline for soil and TCE for groundwater. Soil vapor and groundwater COPC concentrations are relatively stable at the site. The highest chlorinated VOC concentrations were detected at the shallow soil vapor monitoring point adjacent to the former OWS. The highest hydrocarbon fuel related VOC concentrations were detected at the shallow soil vapor monitoring point adjacent to the area drain. Groundwater concentrations of TCE appear to have stabilized at 1.7 mg/L. No fuel-related hydrocarbon compounds were detected in groundwater samples during the reporting period.

The cumulative contaminant mass removed by the SVE system since initiation of ICM operation is calculated to be approximately 18,200 kg. However, only 11 kg of the total contaminant mass removed was composed of chlorinated VOCs, primarily the compounds TCE, PCE, and cis-1,2-DCE. The bulk of the contaminant mass removed from the subsurface by the SVE system was composed primarily of petroleum hydrocarbons.

The SVE system ICM at SWMU ST-70 operated for approximately 117 days during the reporting period. Less than three hours of system downtime occurred due to routine maintenance and monitoring during the period. The SVE system continues to perform reliably. The total downtime for the system, not including the scheduled winter shut downs, was approximately 1.4 percent of the total full-scale operational time. Since 2011, contaminant mass has been removed by the SVE system at rates of ranging between 4 and 22 kg/day. Contaminant mass removal rates were in the upper end of that range during the reporting period. Chlorinated VOC mass continues to comprise a very small portion of the total contaminant mass removed by SVE operations.

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REFERENCES

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APPENDIX A

Field Documentation and Measurements

SWMU ST-70 (Former ST-219) Field Measurements - Vacuum Readings

		SVE System					Vapor Extraction Wells		
Date	System ON/OFF	Combined Inlet	Pre-Blower	Post-Blower	Primary Exhaust	Final Exhaust	219-28H	ST-7002	ST-7003
1/16/2013	OFF	0.0	0.0	0.0	0.0	0.0	0	0	0
2/25/2013	OFF	0.0	0.0	0.0	0.0	0.0	0	0	0
3/5/2013	Restart	19.0	20.0	10.5	5.6	0.04	18	1.0	6.0
3/21/2013	ON	21.0	22.5	8.6	4.0	0.04	15	0.0	6.0
4/24/2013	ON	18.0	20.0	10.0	5.0	0.05	15	5.0	3.0
5/22/2013	ON	16.0	14.5	10.5	3.6	0.04	7.5	3.6	0.0
6/26/2013	ON	13.5	15.0	10.8	4.7	0.08	9	4.9	2.0

		Vapor Monitoring Wells						Groundwater Monitoring Well
		219-29H	219-38-41	219-38-99	219-39-42	219-40-20	219-41	KAFB-7001
1/16/2013	OFF	0.04	atm	atm	0.05	0.09	atm	0.05
2/25/2013	OFF	0.02	0.01	0.02	atm	atm	atm	0.18
3/5/2013	Restart	0.4	0.22	0.09	0.25	0.26	0.08	0.09
3/21/2013	ON	NM	NM	NM	NM	NM	NM	NM
4/24/2013	ON	0.62	atm	atm	0.05	0.03	0.21	0.18
5/22/2013	ON	0.24	0.04	0.06	0.04	0.02	0.02	0.18
6/26/2013	ON	0.20	0.06	0.02	0.04	atm	0.01	0.21

All vacuum readings are in pressure readings of negative inches of water
shading indicates that the pressure is in positive inches of water
atm = atmospheric pressure
NM = not measured
OFF = SVE was offline for seasonal downtime
SVE = soil vapor extraction system
Vapor monitoring wells 219-38-74, 219-37-75, 219-40-40, and 219-42 are no longer functional

SWMU ST-70 (Former ST-219) Field Measurements
Vapor Quality Readings

Location	PID Reading (ppmv)	Fixed Gas Readings (%)				
		O_2	CO_2	CO	CH_4	N_2
SVE System 01/16/13						
Combined Inlet	12.6	20.4	0.8	0	0.0	78.7
Primary Exhaust	NM	NM	NM	NM	NM	NM
Final Exhaust	0.0	20.9	0.0	0	0.0	79.1
Vapor Extraction Wells 01/16/13						
219-28H	17.4	20.1	1.0	1	0.0	78.9
ST-70-02	1.7	21.5	0.1	0	0.0	78.3
ST-70-03	1.1	21.6	0.1	0	0.0	78.2
Vapor Monitoring Points 01/16/13						
ST-70-01	0.2	21.5	0.1	0	0.0	78.3
219-29H	2.8	20.4	0.6	0	0.0	79.1
219-38-41	27	21.1	0.1	0	0.0	78.7
219-38-99	49.1	21.0	0.1	3	0.0	78.9
219-39-42	9.2	20.7	0.5	0	0.0	78.8
219-39-75	clogged	clogged	clogged	clogged	clogged	clogged
219-40-20	62.3	20.9	0.3	0	0.0	78.9
219-41	0.0	21.3	0.1	0	0.0	78.5
SVE System 02/25/13						
Combined Inlet	14.2	20.3	0.8	0	0.0	78.9
Primary Exhaust	NM	NM	NM	NM	NM	NM
Final Exhaust	0.0	20.9	0.0	0	0.0	79.1
Vapor Extraction Wells 02/25/13						
219-28H	21	20.0	1.0	0	0.0	79.0
ST-70-02	0.7	21.5	0.2	0	0.0	78.3
ST-70-03	1.0	21.6	0	0	0.0	78.3
SVE System 03/05/13						
Combined Inlet	24.3	20.5	0.6	0	0.3	78.6
Primary Exhaust	NM	NM	NM	NM	NM	NM
Final Exhaust	0.0	20.6	0.6	0	0.2	78.6
Vapor Extraction Wells 03/05/13						
219-28H	25	20.3	0.8	0	0.3	78.6
ST-70-02	14.0	20.1	0.7	0	0.1	78.9
ST-70-03	0.2	21.5	0.1	0	0.3	78
Vapor Monitoring Points 03/05/13						
ST-70-01	10.7	21.2	0.0	0	0.0	78.8
219-29H	1.1	19.7	0.7	0	0.2	79.4
219-38-41	312	0.0	18.1	0	3.1	78.8
219-38-99	391	0.1	18.2	0	0.5	81.2
219-39-42	239	0.0	20.0	0	0.4	79.6
219-39-75	clogged	clogged	clogged	clogged	clogged	clogged
219-40-20	678	0.0	16.8	0	1.4	81.8
219-41	18.3	19.7	1.1	0	0.0	79.2
SVE System 04/24/13						
Combined Inlet	357	NM	NM	NM	NM	NM
Primary Exhaust	NM	NM	NM	NM	NM	NM
Final Exhaust	2.8	NM	NM	NM	NM	NM
Vapor Extraction Wells 04/24/13						
219-28H	395	NM	NM	NM	NM	NM
ST-70-02	38.7	NM	NM	NM	NM	NM
ST-70-03	13.1	NM	NM	NM	NM	NM
Vapor Monitoring Points 04/24/13						
ST-70-01	0.0	NM	NM	NM	NM	NM
219-29H	4.8	NM	NM	NM	NM	NM
219-38-41	35.6	NM	NM	NM	NM	NM
219-38-99	53.0	NM	NM	NM	NM	NM
219-39-42	52.5	NM	NM	NM	NM	NM
219-39-75	clogged	clogged	clogged	clogged	clogged	clogged
219-40-20	81.5	NM	NM	NM	NM	NM
219-41	2.6	NM	NM	NM	NM	NM

SWMU ST-70 (Former ST-219) Field Measurements
Vapor Quality Readings

Location	PID Reading (ppmv)	Fixed Gas Readings (%)				
		O_2	CO_2	CO	CH_4	N_2
SVE System 05/22/13						
Combined Inlet	287	NM	NM	NM	NM	NM
Primary Exhaust	NM	NM	NM	NM	NM	NM
Final Exhaust	0.7	NM	NM	NM	NM	NM
Vapor Extraction Wells 05/22/13						
219-28H	318	NM	NM	NM	NM	NM
ST-70-02	27.6	NM	NM	NM	NM	NM
ST-70-03	12.7	NM	NM	NM	NM	NM
SVE System 06/26/13						
Combined Inlet	144	NM	NM	NM	NM	NM
Primary Exhaust	64.1	NM	NM	NM	NM	NM
Final Exhaust	1.3	NM	NM	NM	NM	NM
Vapor Extraction Wells 06/26/13						
219-28H	224	NM	NM	NM	NM	NM
ST-70-02	4.9	NM	NM	NM	NM	NM
ST-70-03	4.1	NM	NM	NM	NM	NM

SWMU ST-70 (Former ST-219) Field Measurements
Groundwater Sampling Field Data Sheet

Site:	Kirtland Air Force Base	Well Number:	KAFB-7001
Date:	1/19/2013	Field Team:	B Moayyad
Job No.:	458580.01.03.03	Project/Event:	ST-70/ 1st Quarter 2013
Field Conditions			

Equipment Calibration

Water Quality Meter: Horiba U-22 #C102521

pH:	4.00	SC:	4.48	Turbidity:	0.0	DO:	9.77
Temp:	16.25	Salinity:	0.23	ORP:	+194		

Pump Type: Dedicated Bennett Sample Pump (Model 1800-8, SN 1808-287)

Well and Purge Data

Initial Water Level: 460.40 Diameter: 4-inch

Final Water Level: Borehole Purge Volume: 30.0

Water Quality Readings

Time	Volume (gal)	pH	SC (mS/cm)	Temp. (C)	Turb (NTU)	DO (mg/L)	ORP (mV)
11:10	0.5					Start pump	
11:40	10	7.57	1.45	18.63	0.0	0.69	7
11:50	20	7.57	1.44	18.88	0.0	0.72	7
11:55	28	7.57	1.44	18.97	0.0	0.72	8
11:58	29	7.57	1.44	18.99	0.0	0.73	10
12:01	30	7.57	1.44	19.01	0.0	0.74	11

Observations/Notes: Total purge = 35 gallons

Sample Information

Sample Date/Time: 1/9/13 12:05 Sample ID: ST70-GW-7001-090113

Analysis: VOCs - SW8260B, Nitrate - E300.0,
Dissolved Metals SW6010, TPH- Gasoline SW8015C

QA/QC Sample ID: ST70-TB-090113 Time 9:00 Type: TB

FD = ST70-FD-7001-090113 at 12:30

C = Celsius	NTU = nephalothematic units
DO = dissolved oxygen	ORP = oxygen reduction potential
F = Fahrenheit	pH = hydrogen concentration
ft = feet	QA/QC = quality assurance/quality control
gal = gallons	SC = specific conductivity
L = liter	TB = trip blank
mg/L = milligram per liter	Temp = temperature
MS = matrix spike	TPH = total petroleum hydrocarbon(s)
mS/cm = millisiemens per centimeter	Turb = turbidity
MSD = matrix spike duplicate	VOCs = volatile organic compounds
mV = millivolts	

SWMU ST-70 (Former ST-219) Field Measurements
Groundwater Sampling Field Data Sheet

Site:	Kirtland Air Force Base	Well Number:	KAFB-7001
Date:	4/22/2013	Field Team:	B Moayyad
Job No.:	458580.01.03.03	Project/Event:	ST-70/ 2nd Quarter 2013
Field Conditions			

Equipment Calibration

Water Quality Meter:	Horiba U-22 #C102521						
pH:	4.00	SC:	4.48	Turbidity:	0.0	DO:	9.37
Temp:	18.52	Salinity:	0.23	ORP:	+198		
Pump Type:	Dedicated Bennett Sample Pump (Model 1800-8, SN 1808-287)						

Well and Purge Data

Initial Water Level:	458.56	Diameter:	4-inch
Final Water Level:		Borehole Purge Volume:	30.0

Water Quality Readings

Time	Volume (gal)	pH	SC (mS/cm)	Temp. (C)	Turb (NTU)	DO (mg/L)	ORP (mV)
14:05	0					Start pump	
14:15	12	7.59	1.39	19.63	0.0	1.09	22
14:20	18	7.62	1.38	19.83	0.0	0.88	12
14:25	23	7.60	1.38	19.87	0.0	0.79	13
14:30	29	7.59	1.39	19.89	0.0	0.77	14
14:35	34	7.59	1.37	19.91	0.0	0.78	13

Observations/Notes: Total purge = 35 gallons

Sample Information

Sample Date/Time:	4/22/13 14:35	Sample ID:	ST70-GW-7001-220413
Analysis: VOCs - SW8260B, Nitrate - E300.0, Dissolved Metals SW6010, TPH- Gasoline SW8015C			
QA/QC Sample ID:	ST70-TB-220413	Time	12:00 Type: TB

C = Celsius	NTU = nephalothematic units
DO = dissolved oxygen	ORP = oxygen reduction potential
F = Fahrenheit	pH = hydrogen concentration
ft = feet	QA/QC = quality assurance/quality control
gal = gallons	SC = specific conductivity
L = liter	TB = trip blank
mg/L = milligram per liter	Temp = temperature
MS = matrix spike	TPH = total petroleum hydrocarbon(s)
mS/cm = millisiemens per centimeter	Turb = turbidity
MSD = matrix spike duplicate	VOCs = volatile organic compounds
mV = millivolts	

APPENDIX B

Waste Disposal Records

Re-Certification of Generator's Non-Hazardous Waste Profile Sheet

Profile #: 101142NM New Expiration Date: _____

A. GENERATOR INFORMATON

1. Generator Name: Kirtland AFB
2. Address: 2050 Wyoming SE, Albuquerque, NM 87117
3. Technical Contact: Victoria Martinez Title: Environmental Management
4. Telephone: 502-846-6362 Fax #: NA
5. Email: NA

B. BILLING INFORMATION - Optional (Mail WM Invoices To:) ☐ Same as above

1. Company Name: Advanced Environmental Solutions, Inc.
2. Address: 2318 Roldan Drive, Belen, NM 87002
3. Contact: Doug Roshau Title: Project Manager
4. Telephone: 505-861-1700 P.O. Box: NA
5. Special Billing Requirements: NA
6. Email: droshau@aesnm.com

C. RECERTIFICATION INFORMATION

1. Waste Name: Carbon-NM Special Waste
2. Have you obtained any laboratory analysis of this waste within the past year? ☑ Yes ☐ No
3. Have you changed the raw materials used in the waste generating process or the process itself? ☐ Yes ☑ No
4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain ture and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) L. W. Bowers Jr. Title: Chief, Environmental Restoration

Signature: _____ Date: _____

This is an extension of the original WM Decision. All conditions continue to apply.

Acceptable for use in the following states as sanctioned by Waste Management's waste review and approval process. Some waste streams will require the use of a new profile rather than the re-certification form.

AK, AL, AR, CO, DE, FL, GA, HI, IL, IN, KY, LA, MA, MD, ME, MI, MS, NC, NH, NY, OK, OR, SC, TX, VA & WA.

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation ☐ Non-hazardous solidification ☐ Other: _____ ☐ Transfer ☐ See attached conditions

Approval Decision: ☐ Approved ☐ Not Approved

Waste Approval Expiration Date: _____

Management Facility Precautions, Special Handling Procedures or Limitation on approval: _____

☐ Shall not contain free liquid
☐ Shipment must be scheduled into disposal facility
☐ Approval number must accompany each shipment
☐ Waste Manifest must accompany load

WM Authorization Name / Title: _____ Date: _____

State Authorization (if Required): _____ Date: _____

ADVANCED ENVIRONMENTAL SOLUTIONS, INC.

Waste Stream

SVE Condensation Water

Profile No. PROF000576
Alternate No. Kirtland AFB

GENERATOR INFORMATION

Generator Name: Kirtland Air Force Base
Address: 2050 Wyoming Blvd. SE
Albuquerque, NM 87117
County:
EPA ID No: NM9570024423

Contact: Victoria Martinez
Telephone: (505)846-6362 Ext: Fax: ( ) -
Billing Address:
Billing Contact:
Telephone: Ext:

SHIPPING INFORMATION

Non-Hazardous: [x] DOT Hazardous: [ ] RCRA Regulated: [ ] State Hazardous: [ ]

Shipping Name:
DOT Hazard Class: UN/NA #: Packing Group: EPA Hazard Class: ERG #: Guide Year: 2000

EPA Waste Codes	State Waste Codes	Additional Description (Section J) Profile #: PROF000576

DOT Shipping Description: Water with Trace VOCs, Non-RCRA Regulated, Non-DOT Hazardous

Special Handling (Section 15):

CHARACTERISTICS

Reactivity
- [ ] DOT Explosive
- [ ] Pyrophoric
- [ ] Oxidizer
- [ ] Cyanides
- [ ] Sulfides
- [ ] Shock Sensitive
- [ ] Water Reactive
- [ ] Air Reactive
- [ ] Acid Reactive
- [ ] Alkaline Reactive
- [ ] Polymerizable

Physical State: Liquid
Liquid 100.00 % Solid 0.00 %
Sludge 0.00 % Gas 0.00 %
Phases/Layers: Single
Viscosity: Light
Chlorine Content: N/A %
pH: 4.1 - 10 BTU / Lb: >10000

Density: 7.29 lbs/gal Specific Gravity: 0.87
Flash Point (F): >200 Boiling Point (F):
Color/Appearance: Varies
Odor: [x] None [ ] Mild [ ] Strong
Describe:

CONSTITUENTS

		Avg %	Min %	Max %
Acetone	ug/L	4.90	0.00	0.00
n-Nitrosodi-n-propylamine	ug/L	2.60	0.00	0.00
n-Nitrosodi-n-propylamine	ug/L	2.70	0.00	0.00
Di-n-octyl phthalate	ug/L	18.00	0.00	0.00
Di-n-butyl phthalate	ug/L	890.00	0.00	0.00
Tetrachloroethene	ug/L	9.10	0.00	0.00
Dimethyl phthalate	ug/L	9.00	0.00	0.00
Naphthalene	ug/L	0.40	0.00	0.00
Trichloroethene	ug/L	100.00	0.00	0.00
Water	%	99.90	99.00	100.00
Bis (2-Ethylhexyl) Phthalate	ug/L	10.00	0.00	0.00
cis-1,2-Dichloroethene	ug/L	11.00	0.00	0.00

METALS

[x] None [ ] TOTAL (ppm) [ ] TCLP (mg/L)

	Avg	Min	Max		Avg	Min	Max
Antimony	0.00	0.00	0.00	Lead	0.00	0.00	0.00
Arsenic	0.00	0.00	0.00	Mercury	0.00	0.00	0.00
Barium	0.00	0.00	0.00	Nickel	0.00	0.00	0.00
Beryllium	0.00	0.00	0.00	Selenium	0.00	0.00	0.00
Cadmium	0.00	0.00	0.00	Silver	0.00	0.00	0.00
Chromium	0.00	0.00	0.00	Thallium	0.00	0.00	0.00
Copper	0.00	0.00	0.00	Zinc	0.00	0.00	0.00

OTHER COMPONENTS

PCB's 0 ppm
Cyanides 0.00 ppm Phenolics 0.00 ppm
Sulfides 0.00 ppm Dioxins 0.00 ppm
Pesticides 0.00 ppm Halogens 0.00 %

ANNUAL REPORT CODES

Source Code: A65 Point of Measure: 1
Form Code: B101 Radioactive Mixed: 2
Origin Code: 3 System Code: M032

REGULATORY INFORMATION

Generating Process: Low level VOC contaminant soil vapor-Soil gas pulled out of the ground hitting colder air and

Infectious or Biological Waste? No
NRC Regulated Radioactive? No
Is this waste regulated under Subpart CC (VOC>=500ppm)? No
Spent solvent? No
Is this waste regulated as an ozone depleting substance (40 CFR part 82)? No
Does the waste contain scap metal pieces greater than 2 inches in size? No
Is this waste TSCA Regulated PCB Waste (From source >50 ppm)? No
Is this waste subject to Benzene NESHAP Regulations (D018, U019)? No
Is this waste stored in drums? Yes
Is this waste pumpable? Yes

Generator's Certification:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine that no deliberate or willful omissions of composition properties exist and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all material described by this profile.

Generator Signature: L. W. Zirkle CHIEF, ENVIRONMENTAL RESTORATION Date: 9 FEB 11

WASTE MANAGEMENT

Generator's Nonhazardous Waste Profile Sheet

Requested Disposal Facility _____ Profile Number

☑ Renewal for Profile Number 101142NM Waste Approval Expiration Date _____

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: Kirtland AFB
2. Site Address: 2050 Wyoming SE
3. City/ZIP: Albuquerque. 87117
4. State: NM
5. County: Bernalillo
6. Contact Name/Title: Victoria Martinez
7. Email Address: NA
8. Phone: 505-846-6362
9. FAX: NA
10. NAICS Code: 928110
11. Generator USEPA ID #: NM9570024423
12. State ID# (if applicable): NA

B. Customer Information ❑ same as above

P. O. Number: _____

1. Customer Name: Advanced Environmental Solutions, Inc.
2. Billing Address: 2318 Roldan Drive
3. City, State and ZIP: Belen, NM 87002
4. Contact Name: Doug Roshau
5. Contact Email: droshau@aesnm.com
6. Phone: 5058611700 FAX: 5058641710
7. Transporter Name: Advanced Environmental Solutions, Inc.
8. Transporter ID # (if appl.): NMR000006502
9. Transporter Address: 2318 Roldan Drive
10. City, State and ZIP: Belen, NM 87002

C. Waste Stream Information

1. DESCRIPTION

a. Common Waste Name: Carbon-NM Special Waste (industrial Waste) State Waste Code(s): NA

b. Describe Process Generating Waste or Source of Contamination:

Air Filtration - replacing carbon from vapor extraction system

c. Typical Color(s): Black

d. Strong Odor? ❑ Yes ☑ No Describe: _____

e. Physical State at 70°F: ☑ Solid ❑ Liquid ❑ Powder ❑ Semi-Solid or Sludge ❑ Other: _____

f. Layers? ☑ Single layer ❑ Multi- layer ❑ NA

g. Water Reactive? ❑ Yes ☑ No If Yes, Describe: _____

h. Free Liquid Range (%): _____ to _____ ☑ NA(solid)

i. pH Range: ❑ ≤2 ❑ 2.1-12.4 ❑ ≥12.5 ☑ NA(solid) ❑ Actual: _____

j. Liquid Flash Point: ❑ < 140°F ❑ ≥ 140°F ☑ NA(solid) ❑ Actual: _____

k. Flammable Solid: ❑ Yes ☑ No

l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ❑ (See Attached)

Constituents *(Total Composition Must be ≥ 100%)*	Concentration %	Constituents *(Total Composition Must be ≥ 100%)*	Concentration %
1. Carbon	to 100%	4.	
2. Comments: Analytical Provided: Hall En		5. TCLP VOCs, SVOCs, Metals,	
3. Analysis Lab, 04/11/08, 0803263-01;		6. All Results ND	

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION

a. ❑ Event ☑ Base/Ongoing (Check One)

b. Estimated Annual Quantity: 2-20 ❑ Tons ☑ Cubic Yards ☑ Drums ❑ Gallons ❑ Other (specify): _____

c. Shipping Frequency: _____ Units per ❑ Month ❑ Quarter ❑ Year ☑ One Time ❑ Other

d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ❑ Yes ☑ No

e. USDOT Shipping Description (if applicable): _____

3. SAFETY REQUIREMENTS (Handling, PPE, etc.): Level D

WASTE MANAGEMENT

Generator's Nonhazardous Waste Profile Sheet

D. Regulatory Status (Please check appropriate responses)

1. Is this a USEPA (40 CFR Part 261)/State hazardous waste? If yes, contact your sales representative. ☐ Yes ☑ No
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☑ No
   - ☐ Delisted Hazardous Waste
   - ☐ Excluded Wastes Under 40 CFR 261.4
   - ☐ Treated Hazardous Waste Debris
   - ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☑ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☑ No
   a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☐ No
   b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☐ No
5. Does the waste represented by this waste profile sheet contain concentrations of regulated Polychlorinated Biphenyls (PCBs)? ☐ Yes ☑ No
   a. If yes, is disposal regulated under TSCA? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated, medical or infectious waste? ☐ Yes ☑ No
7. Does the waste contain asbestos? ☐ Yes ☑ No If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☑ No
   If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☐ No

E. Generator Certification (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the Contractor if applicable).
5. Check all that apply:
   - ☐ Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: _____ # Pages: _____
   - ☐ Only the analyses identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #: _____
   - ☐ Additional information necessary to characterize the profiled waste has been attached (other than analytical). Indicate the number of attached pages: _____
   - ☑ I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.
   - ☑ By Generator process knowledge, the ~~following~~ waste is not a listed waste and is below all TCLP regulatory limits.

Certification Signature: _____ **Title:** CHIEF, ENVIRONMENTAL RESTORATION

Company Name: KIRTLAND AFB **Name (Print):** L. W. LITNER

Date: 9/26/11

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation ☐ Non-hazardous solidification ☐ Other: _____

Approval Decision: ☐ Approved ☐ Not Approved

Waste Approval Expiration Date: _____

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

- ☐ Shall not contain free liquid
- ☐ Shipment must be scheduled into disposal facility
- ☐ Approval Number must accompany each shipment
- ☐ Waste Manifest must accompany load

WM Authorization Name / Title: _____ **Date:** _____

State Authorization (if Required): _____ **Date:** _____

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
NM9570024423	1 of 1	1-505-861-1700 X-7	KAF10

GENERATOR

5. Generator's Name and Mailing Address
Kirtland Air Force Base
2050 Wyoming Blvd. SE
Albuquerque, NM 87117
c/o VICTORIA R MARTINEZ
Bldg 20635
Generator's Phone: (505)846-6362

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Advanced Environmental Solutions, Inc.
U.S. EPA ID Number: NMR000006502

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Advanced Environmental Solutions, Inc.
2318 Roldan Drive
Belen, NM 87002
Facility's Phone: (505)861-1700
U.S. EPA ID Number: NMR000006502

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1	Water with Trace VOCs, Non-RCRA Regulated, Non-DOT Hazardous	1	DM	50	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
a) Profile #: PROF000576, 1 x 55g

Job #:J10669 , Shipment:4663

NONHAZ
9.1.) A4950

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
VICTORIA R. MARTINEZ		03	26	2013

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
RAY MARQUEZ		03	26	13
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name	Signature	Month	Day	Year
JOHN J. SANCHEZ		3	26	13

DESIGNATED FACILITY TO GENERATOR

SPECIAL WASTE SHIPMENT RECORD

Rio Rancho Sanitary Landfill / Valencia Regional Landfill & Recycling Facility Shipment № 66205

Mailing Address:
P.O. Box 15700
Rio Rancho, NM 87174
505/892-2055

☐ *Physical Address:*
33rd St. & Northern Blvd.
Rio Rancho, NM 87144
SWM #231402

☒ *Physical Address:*
1600 W. Highway 6
Los Lunas, NM 87031
SWM #013230 (sp)

Profile # 101142NM

1. Generator's work site name and address
Kirtland Air Force Base

2. Generator's name and address
c/o VICTORIA R MARTINEZ
Kirtland Air Force Base
Bldg 20685
2050 Wyoming Blvd. SE - 377 MSG/~~GEANC~~ CEIR VRM 3/26/2013
Albuquerque, NM 87117

Generator's Telephone no.
(505)846-6362

3. Authorized Agent's name and mailing address (if different from #2)
Advanced Environmental Solutions, Inc.
2318 Roldan Drive
Belen, New Mexico 87002

Agent's Telephone no.
(505)861-1700

4. Proper name and type of waste	5. Containers No.	Type	6. Total quantity (yd3)	(tons)
Carbon, NM Special Waste, Non-Hazardous, Non-DOT Regulated	1	DT	1	Y

7. Special handling instructions:
Job #:J10669, Shipment:SHIP0004662, WMI P.O. # P11788 6 x 55g 1AZ drums

8. GENERATOR'S OR AUTHORIZED AGENT'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway in accordance with applicable international and government regulations.

I hereby certify that the above named material does not contain free liquid as defined by 40CFR Part 258.28 and is not a hazardous waste as defined by 40CFR 261 or any applicable state law.

Generator's or Authorized Agent's printed/typed name	Signature	Month / Day / Year
x VICTORIA R MARTINEZ	Victoria R Martinez	03 / 26 / 2013

9. Transporter 1 (Acknowledgement of receipt of materials)

Printed/typed name, address, telephone no.	Signature	Month / Day / Year
Name: Ray Marquez Advanced Environmental Solutions, Inc. 2318 Roldan Dr. Belen, NM 87002 (505) 861-1700	Ray Marquez	03 / 26 / 13

10. Transporter 2 (Acknowledgement of receipt of materials)

Printed/typed name, address, telephone no.	Signature	Month / Day / Year
		/ /

11. Discrepancy indication space

12. Waste disposal site location coordinates
Cell 3 N: 34°43.211' W: 107° 2.352' Elevation: 5493'

Received By (printed/typed name):	Signature	Month / Day / Year
Brian Bode	Brian Bode	3 / 26 / 13

White/GEN Yellow/CUSTOMER Pink/LANDFILL

CH2M HILL
4041 Jefferson Plaza NE
Suite 200
Albuquerque, NM 87109
Tel 505.884.5600
Fax 505.883.7507

28 February 2013

Ms. Victoria Martinez
377 MSG/CEANR
2050 Wyoming Boulevard, S.E.
Kirtland Air Force Base, NM 87117-5270

Subject: Notification of Disposal of Purge Water from Monitoring Well KAFB-7001.

Dear Ms. Martinez:

CH2M HILL is providing notification for disposal of purge water generated during the sampling of groundwater monitoring well KAFB-7001 according to the base-wide purge water agreements between Kirtland AFB and NMED. In January 2013, CH2M HILL conducted quarterly groundwater sampling activities for the solid waste municipal unit ST-70 site.

Monitoring well KAFB-7001 is sampled as part of the monitoring effort associated with the active SVE remediation located at ST-70. Contamination is primarily detected in the vadose zone at this site. Nitrate-nitrogen was detected during these quarterly events at concentrations below drinking water standards. The volatile organic compound (VOC), trichloroethene (TCE) is commonly detected in KAFB-7001 groundwater at concentrations below the 5 microgram per liter (µg/L) drinking water standard. TCE was detected at 1.7 µg/L in the January 2013 sample from this well. Bromodichloromethane, chloroform, and chloromethane were also detected this quarter at a trace concentrations less than 1 µg/L. Nitrate-nitrogen was detected at 7 milligrams per liter (mg/L). Naturally occurring dissolved metals were also detected at concentrations below drinking water standards. All detections are consistent with historical values and no detections were greater than 90 percent of the EPA drinking water standards (or maximum contaminant levels [MCLs]). The purge water from KAFB-7001 meets the NMED guidance for surface disposal of Kirtland AFB, where purge water concentrations are less than 90 percent of applicable MCLs.

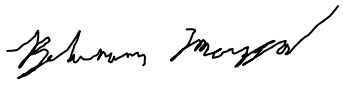
Table 2 presents a summary of the groundwater analytical results. The sample was analyzed for VOCs by EPA method 8260, metals by EPA method 6010 and 7470A, and nitrate by EPA method E300. Analytical results are compared to the New Mexico Water Quality Control Commission Regulations - Human Health Standards (NMWQCC-HHS) (20.6.2.3103NMAC, February, 2012). Regulatory standards used for comparison are included in Table 2.

Sampling efforts produced approximately 35 gallons of purge water. This purge water is currently staged in a polyethylene drum at the waste storage location adjacent to the site treatment system. Table 1 contains details of the purge water. The proposed method of disposal is discharging the groundwater onto the ground surface north of the ST-70 soil vapor extraction (SVE) shed onto a paved empty lot. During disposal, the discharge flow will be regulated to ensure that water will not flow into storm sewers or arroyos, and will remain confined to the ground surface in the paved lot.

CH2M HILL will proceed with disposal as stated above on March 20, 2013 with the verbal approval of Kirtland AFB.

Sincerely,

CH2M HILL, Inc.



Behnaum Moayyad
Staff Geologist

Attachments: Table 1. Summary of Purge Water Quantity, Sources, Sample IDs and Proposed Disposal Locations.
Table 2. Groundwater Analytical Results Summary, Monitoring Well KAFB-7001, Kirtland AFB, New Mexico.

Table 1. Summary of Purge Water Quantity, Sources, Sample IDs and Proposed Disposal Locations

Source [Well ID]	Volume of Purge Water	Sample ID	Proposed Disposal Location
KAFB-7001	35 gallons	ST70-GW-7001-090113	On paved ground surface north of the ST70 soil vapor extraction shed, outside flightline fence.

Table 2. Groundwater Analytical Results Summary, Monitoring Well KAFB-7001

Chemical Class & Analytical Method	Analyte	NMWQCC-HHSs [a]	KAFB-7001	KAFB-7001 Duplicate
			1/9/2013	1/9/2013
VOCs (µg/L)	1,1,1,2-Tetrachloroethane	NA	0.20 U	0.20 U
Method SW8260	1,1,1-Trichloroethane	60	0.20 U	0.20 U
	1,1,2,2-Tetrachloroethane	10	0.40 U	0.40 U
	1,1,2-Trichloroethane	10	0.40 U	0.40 U
	1,1-Dichloroethane	25	0.20 U	0.20 U
	1,1-Dichloroethene	5	0.20 U	0.20 U
	1,1-Dichloropropene	NA	0.40 U	0.40 U
	1,2,3-Trichlorobenzene	NA	0.40 U	0.40 U
	1,2,3-Trichloropropane	NA	0.80 U	0.80 U
	1,2,4-Trichlorobenzene	NA	0.80 U	0.80 U
	1,2,4-Trimethylbenzene	NA	0.20 U	0.20 U
	1,2-Dibromo-3-chloropropane (DBCP)	NA	1.6 U	1.6 U
	1,2-Dibromoethane (EDB)	0.1	0.20 U	0.20 U
	1,2-Dichlorobenzene	NA	0.20 U	0.20 U
	1,2-Dichloroethane	10	0.20 U	0.20 U
	1,2-Dichloropropane	NA	0.20 U	0.20 U
	1,3,5-Trimethylbenzene	NA	0.40 U	0.40 U
	1,3-Dichlorobenzene	NA	0.20 U	0.20 U
	1,3-Dichloropropane	NA	0.20 U	0.20 U
	1,4-Dichlorobenzene	NA	0.40 U	0.40 U
	2,2-Dichloropropane	NA	0.40 U	0.40 U
	2-Butanone (MEK)	NA	3.2 U	3.2 U
	2-Chlorotoluene	NA	0.40 U	0.40 U
	2-Hexanone	NA	3.2 U	3.2 U
	4-Chlorotoluene	NA	0.40 U	0.40 U
	4-Isopropyltoluene	NA	0.40 U	0.40 U
	4-Methyl-2-pentanone	NA	3.2 U	3.2 U
	Acetone	NA	6.4 U	6.4 U
	Benzene	10	0.20 U	0.20 U
	Bromobenzene	NA	0.20 U	0.20 U
	Bromodichloromethane	60	0.18 J	0.20 U
	Bromoform	NA	0.40 U	0.40 U
	Bromomethane	NA	0.40 U	0.40 U
	Carbon disulfide	NA	0.80 U	0.80 U
	Carbon tetrachloride	10	0.40 U	0.40 U
	Chlorobenzene	NA	0.20 U	0.20 U
	Chlorodibromomethane	NA	0.22 J	0.22 J
	Chloroethane	NA	1.60 U	1.60 U
	Chloroform	100	0.16 J	0.17 J
	Chloromethane	NA	0.80 U	0.80 U
	cis-1,2-Dichloroethene	NA	0.20 U	0.20 U
	cis-1,3-Dichloropropene	NA	0.20 U	0.20 U
	Dibromochloromethane	NA	0.40 U	0.40 U
	Dibromomethane	NA	0.20 U	0.20 U
	Dichlorodifluoromethane	NA	0.80 U	0.80 U
	Ethylbenzene	750	0.20 U	0.20 U
	Hexachlorobutadiene	NA	0.40 U	0.40 U
	Isopropylbenzene	NA	0.40 U	0.40 U
	Methyl tert-butyl ether	NA	0.40 U	0.40 U
	Methylene chloride	100	1.30 U	0.40 U
	Naphthalene	30 [b]	0.80 U	0.80 U

Table 2. Groundwater Analytical Results Summary, Monitoring Well KAFB-7001

Chemical Class & Analytical Method	Analyte	NMWQCC-HHSs [a]	KAFB-7001	KAFB-7001 Duplicate
			1/9/2013	1/9/2013
VOCs (µg/L) Method SW8260	n-Butylbenzene	NA	0.40 U	0.40 U
	n-Propylbenzene	NA	0.20 U	0.20 U
	sec-Butylbenzene	NA	0.40 U	0.40 U
	Styrene	NA	0.40 U	0.40 U
	tert-Butylbenzene	NA	0.40 U	0.40 U
	Tetrachloroethene	NA	0.40 U	0.40 U
	Toluene	750	0.40 U	0.40 U
	trans-1,2-Dichloroethene	NA	0.20 U	0.20 U
	trans-1,3-Dichloropropene	NA	0.40 U	0.40 U
	Trichloroethene	100	1.7	1.8
	Trichlorofluoromethane	NA	0.80 U	0.80 U
	Vinyl chloride	1	0.80 U	0.80 U
	Xylenes (total)	620	0.60 U	0.40 U
Dissolved Metals (µg/L) Methods SW6010/ 7470A	Arsenic	2.0	12.0 U	12.0 U
	Barium	120	41	40
	Cadmium	5.0	0.49 J	0.80 U
	Chromium	50	1.3 J	1.50 J
	Lead	10	5.00 U	5.00 U
	Selenium	50	19 J	19 J
	Silver	10	2.0 U	2.0 U
	Mercury	0.626	0.08 U	0.08 U
Total Petroleum Hydrocarbons (µg/L) Method SW8015C	Total Petroleum Hydrocarbons-Gasoline Range	NA	25.0 U	25.0 U
Nitrate Nitrogen (mg/L) Method E300	Nitrate as nitrogen	10[c]	6.9	7.0

a New Mexico Water Quality Control Commission Regulations - Human Health Standards (NMWQCC-HHS) (20.6.2.3103NMAC, September 26, 2004)

b Standard for combined napthalene and methyl-naphthalenes

c United States Environmental Protection Agency - Maximum Contaminant Limit

Shading indicates the analyte was detected.

NA - not applicable NS = not sampled U - not detected above Laboratory Reporting Limit

J - estimated value, concentration is less than Laboratory Reporting Limit but greater than Laboratory Method Detection Limit

From: Martinez, Victoria R Civ USAF AFMC 377 MSG/CEIR
To: Moayyad, Ben/ABQ
Cc: Minchak, Sharon/ABQ; Martinez, Victoria R Civ USAF AFMC 377 MSG/CEIR
Subject: RE: ST-70 Purge water disposal notification
Date: Friday, March 01, 2013 9:50:08 AM

Mr. Moayyad,

I agree that the water can be discharged to the ground surface.

Thank you,

Victoria R. Martinez
Environmental Restoration
Kirtland Air Force Base
505 846-6362
DSN 246-6362

-----Original Message-----
From: Ben.Moayyad@ch2m.com [mailto:Ben.Moayyad@ch2m.com]
Sent: Thursday, February 28, 2013 4:45 PM
To: Martinez, Victoria R Civ USAF AFMC 377 MSG/CEIR
Cc: Sharon.Minchak@ch2m.com
Subject: ST-70 Purge water disposal notification

Ms. Martinez,

Please see attached purge water disposal notification for Kirtland AFB well KAFB-7001. Analytical results are similar to previous results and comply with criteria established for surface release. CH2MHILL would like to empty the purge water during waste disposal activities currently scheduled for 20 March 2013.

Please advise if you will be available to review and sign non-hazardous manifests for ST-70 waste carbon on the same date (20 March).

Regards,

Ben

CH2MHILL

Behnaum Moayyad, P.G.

Hydrogeologist

4041 Jefferson Plaza NE. Ste 200

Albuquerque, NM 87109

Direct Phone: 505 855-5201

Mobile Phone 505 504-2214

Direct Fax: 505 816-0598

CH2M HILL
4041 Jefferson Plaza NE
Suite 200
Albuquerque, NM 87109
Tel 505.884.5600
Fax 505.883.7507

22 May 2013

Ms. Victoria Martinez
377 MSG/CEANR
2050 Wyoming Boulevard, S.E.
Kirtland Air Force Base, NM 87117-5270

Subject: Notification of Disposal of Purge Water from Monitoring Well KAFB-7001.

Dear Ms. Martinez:

CH2M HILL is providing notification for disposal of purge water generated during the sampling of groundwater monitoring well KAFB-7001 according to the base-wide purge water agreements between Kirtland AFB and NMED. In April 2013, CH2M HILL conducted quarterly groundwater sampling activities for the solid waste municipal unit ST-70 site.

Monitoring well KAFB-7001 is sampled as part of the monitoring effort associated with the active SVE remediation located at ST-70. Contamination is primarily detected in the vadose zone at this site. Nitrate-nitrogen was detected during these quarterly events at concentrations below drinking water standards. The volatile organic compound (VOC), trichloroethene (TCE) is commonly detected in KAFB-7001 groundwater at concentrations below the 5 microgram per liter (µg/L) drinking water standard. TCE was detected at 1.7 µg/L in the April 2013 sample from this well. Bromodichloromethane, chloroform, and chloromethane were also detected this quarter at a trace concentrations less than 1 µg/L. Nitrate-nitrogen was detected at 6.7 milligrams per liter (mg/L). Naturally occurring dissolved metals were also detected at concentrations below drinking water standards. All detections are consistent with historical values and no detections were greater than 90 percent of the EPA drinking water standards (or maximum contaminant levels [MCLs]). The purge water from KAFB-7001 meets the NMED guidance for surface disposal of Kirtland AFB, where purge water concentrations are less than 90 percent of applicable MCLs.

Table 2 presents a summary of the groundwater analytical results. The sample was analyzed for VOCs by EPA method 8260, metals by EPA method 6010 and 7470A, and nitrate by EPA method E300. Analytical results are compared to the New Mexico Water Quality Control Commission Regulations - Human Health Standards (NMWQCC-HHS) (20.6.2.3103NMAC, February, 2012). Regulatory standards used for comparison are included in Table 2.

Sampling efforts produced approximately 38 gallons of purge water. This purge water is currently staged in a polyethylene drum at the waste storage location adjacent to the site treatment system. Table 1 contains details of the purge water. The proposed method of disposal is discharging the groundwater onto the ground surface north of the ST-70 soil vapor extraction (SVE) shed onto a paved empty lot. During disposal, the discharge flow will be regulated to ensure that water will not flow into storm sewers or arroyos, and will remain confined to the ground surface in the paved lot.

CH2M HILL will proceed with disposal as stated above on June 17, 2013 with the verbal approval of Kirtland AFB.

Sincerely,

CH2M HILL, Inc.

Behnaum Moayyad
Staff Geologist

Attachments: Table 1. Summary of Purge Water Quantity, Sources, Sample IDs and Proposed Disposal Locations.
Table 2. Groundwater Analytical Results Summary, Monitoring Well KAFB-7001, Kirtland AFB, New Mexico.

Table 1. Summary of Purge Water Quantity, Sources, Sample IDs and Proposed Disposal Locations

Source [Well ID]	Volume of Purge Water	Sample ID	Proposed Disposal Location
KAFB-7001	38 gallons	ST70-GW-7001-220413	On paved ground surface north of the ST70 soil vapor extraction shed, outside flightline fence.

Table 2. Groundwater Analytical Results Summary, Monitoring Well KAFB-7001

Chemical Class & Analytical Method	Analyte	NMWQCC-HHSs [a]	KAFB-7001
			4/22/2013
VOCs (μg/L)	1,1,1,2-Tetrachloroethane	NA	0.20 U
Method SW8260	1,1,1-Trichloroethane	60	0.20 U
	1,1,2,2-Tetrachloroethane	10	0.40 U
	1,1,2-Trichloroethane	10	0.40 U
	1,1-Dichloroethane	25	0.20 U
	1,1-Dichloroethene	5	0.20 U
	1,1-Dichloropropene	NA	0.40 U
	1,2,3-Trichlorobenzene	NA	0.40 U
	1,2,3-Trichloropropane	NA	0.80 U
	1,2,4-Trichlorobenzene	NA	0.80 U
	1,2,4-Trimethylbenzene	NA	0.20 U
	1,2-Dibromo-3-chloropropane (DBCP)	NA	1.6 U
	1,2-Dibromoethane (EDB)	0.1	0.20 U
	1,2-Dichlorobenzene	NA	0.20 U
	1,2-Dichloroethane	10	0.20 U
	1,2-Dichloropropane	NA	0.20 U
	1,3,5-Trimethylbenzene	NA	0.40 U
	1,3-Dichlorobenzene	NA	0.20 U
	1,3-Dichloropropane	NA	0.20 U
	1,4-Dichlorobenzene	NA	0.40 U
	2,2-Dichloropropane	NA	0.40 U
	2-Butanone (MEK)	NA	3.2 U
	2-Chlorotoluene	NA	0.40 U
	2-Hexanone	NA	3.2 U
	4-Chlorotoluene	NA	0.40 U
	4-Isopropyltoluene	NA	0.40 U
	4-Methyl-2-pentanone	NA	3.2 U
	Acetone	NA	6.4 U
	Benzene	10	0.20 U
	Bromobenzene	NA	0.20 U
	Bromodichloromethane	60	0.20 U
	Bromoform	NA	0.40 U
	Bromomethane	NA	0.40 U
	Carbon disulfide	NA	0.80 U
	Carbon tetrachloride	10	0.40 U
	Chlorobenzene	NA	0.20 U
	Chlorodibromomethane	NA	0.25 J
	Chloroethane	NA	1.60 U
	Chloroform	100	0.17 J
	Chloromethane	NA	0.80 U
	cis-1,2-Dichloroethene	NA	0.20 U
	cis-1,3-Dichloropropene	NA	0.20 U
	Dibromochloromethane	NA	0.40 U
	Dibromomethane	NA	0.20 U
	Dichlorodifluoromethane	NA	0.80 U
	Ethylbenzene	750	0.20 U
	Hexachlorobutadiene	NA	0.40 U
	Isopropylbenzene	NA	0.40 U
	Methyl tert-butyl ether	NA	0.40 U
	Methylene chloride	100	1.30 U
	Naphthalene	30 [b]	0.80 U

Table 2. Groundwater Analytical Results Summary, Monitoring Well KAFB-7001

Chemical Class & Analytical Method	Analyte	NMWQCC-HHSs [a]	KAFB-7001
			4/22/2013
VOCs (µg/L) Method SW8260	n-Butylbenzene	NA	0.40 U
	n-Propylbenzene	NA	0.20 U
	sec-Butylbenzene	NA	0.40 U
	Styrene	NA	0.40 U
	tert-Butylbenzene	NA	0.40 U
	Tetrachloroethene	NA	0.40 U
	Toluene	750	0.40 U
	trans-1,2-Dichloroethene	NA	0.20 U
	trans-1,3-Dichloropropene	NA	0.40 U
	Trichloroethene	100	1.7
	Trichlorofluoromethane	NA	0.80 U
	Vinyl chloride	1	0.80 U
	Xylenes (total)	620	1.20 U
Dissolved Metals (µg/L) Methods SW6010/ 7470A	Arsenic	2.0	12.0 U
	Barium	120	39
	Cadmium	5.0	0.46 J
	Chromium	50	5.8 J
	Lead	10	5.00 U
	Selenium	50	22 J
	Silver	10	2.0 U
	Mercury	0.626	0.08 U
Total Petroleum Hydrocarbons (µg/L) Method SW8015C	Total Petroleum Hydrocarbons-Gasoline Range	NA	25.0 U
Nitrate Nitrogen (mg/L) Method E300	Nitrate as nitrogen	10[c]	6.7

a New Mexico Water Quality Control Commission Regulations - Human Health Standards (NMWQCC-HHS) (20.6.2.3103NMAC, September 26, 2004)

b Standard for combined napthalene and methyl-naphthalenes

c United States Environmental Protection Agency **-** Maximum Contaminant Limit

Shading indicates the analyte was detected.

NA - not applicable NS = not sampled U - not detected above Laboratory Reporting Limit

J - estimated value, concentration is less than Laboratory Reporting Limit but greater than Laboratory Method Detection Limit

From: Martinez, Victoria R Civ USAF AFMC 377 MSG/CEIR
To: Moayyad, Ben/ABQ
Cc: Martinez, Victoria R Civ USAF AFMC 377 MSG/CEIR
Subject: RE: Kirtland ST-70 Purge Water Disposal
Date: Thursday, June 06, 2013 2:57:57 PM

Hi Ben,

You are free to dispose to ground surface, as specified in the letter and as allowed by NMED gw bureau "Kirtland AFB Development and Sampling Purge Water Decision Tree for Ground Water Restoration Activities - 2/14/2011".

BTW, do you have a handy-dandy tracking (excel spreadsheet or whatever) for ST70 which you can share and which has the following info?

1) locations/method of disposal
2) depths to gw at disposal locations
3) dates of disposal
4) source, type, and volumes of water disposed?

I need to send the annual report to g.w. bureau.

Thanks,
Vic

-----Original Message-----
From: Ben.Moayyad@ch2m.com [mailto:Ben.Moayyad@ch2m.com]
Sent: Wednesday, May 22, 2013 4:38 PM
To: Martinez, Victoria R Civ USAF AFMC 377 MSG/CEIR
Subject: Kirtland ST-70 Purge Water Disposal

Ms. Martinez,

Attached is a disposal notification for purge water from monitoring well KAFB-7001 from the SWMU ST-70 site.

All analytical results were below the drinking water standards, and criteria met the NMED-Kirtland AFB agreement for surface disposal.

Disposal is scheduled for June 17. Please reply to confirm that Kirtland AFB is in concurrence with surface disposal of specified purge water.

Thank you,

Ben

CH2MHILL

Behnaum Moayyad, P.G.

Hydrogeologist

4041 Jefferson Plaza NE. Ste 200

Albuquerque, NM 87109

Direct Phone: 505 855-5201

Mobile Phone 505 504-2214

Direct Fax: 505 816-0598

APPENDIX C

Soil Vapor and Groundwater Data Quality Evaluation Report

Data Validation Report

This report contains the results of the review and validation of the specified data package performed by Marcia Olive, Bhate Environmental Associates, Denver, Colorado.

Introduction

This data validation report covers samples taken from former Kirtland Air Force Base, New Mexico, on January 16, 2013. Thirteen air samples were collected from Solid Waste Management Unit (SWMU) ST-70 for long term monitoring. The analyses were performed by Applied Sciences Laboratory Corvallis, Oregon. The specific samples included in this validation were:

Sample ID	Matrix	Collection Date	Analyses
ST70-AR-40-20-160113	Air	1/16/13	TO-15, Fixed gases (SM2720C), TPH (SW8015M)
ST70-AR-29H-160113			
ST70-AR-38-99-160113			
ST70-AR-38-41-160113			
ST70-AR-39-42-160113			
ST70-AR-41-160113			
ST70-AR-INLET-160113			
ST70-AR-MID-160113			
ST70-AR-Exhaust-160113			
ST70-AR-28H-160113			
ST70-AR-7002-160113			
ST70-AR-7003-160113			
ST70-AR-7001-160113			

This data was validated against the laboratory's QA/QC limits using the guidelines and practices published in the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, June 2008), the *UFPQAPP Interim Remedial Action Operations at Solid Waste Management Unit ST-70(*AFCEE, December 2010*).*

Sample Handling and Holding times

The samples were prepared and analyzed within method specific sample holding times.

Blanks

TPH was detected in the method blank between the detection limit (DL) and reporting limit (RL). Samples ST70-AR-41-160113, ST70-AR-Exhaust-160113, ST70-AR-7003-160113, ST70-AR-7001-160113 and ST70-AR-7002-160113 yielded concentrations <5x the blank concentration and were considered a non-detect and flagged "U" at the detected concentration.

Laboratory control sample (LCS)

The LCS recoveries for all compounds were within control limits for all analyses.

Project specific quality assurance/quality control

No field duplicate was collected with this laboratory package.

Compound quantitation and reporting limits

Where dilutions were required elevated reporting limits were reported.

Overall assessment of data

The percent drift (%D) for 1,2,4-trichlorobenzene (37.2%) in the continuing calibration, CV1-0125, exceeded acceptance criteria. Since this compound was not detected in any sample; using professional judgment no qualification was necessary.

All analyses were performed, and the data met the required QC criteria except where noted. The data is 100% complete.

Summary of Qualified Data

Sample ID	Parameter	*Qualifier
ST70-AR-41-160113	TPH-GRO	27.1 U
ST70-AR-Exhaust-160113	TPH-GRO	10.9 U
ST70-AR-7002-160113	TPH-GRO	20.9 U
ST70-AR-7003-160113	TPH-GRO	22.9 U
ST70-AR-7001-160113	TPH-GRO	11.0 U

* in mg/L

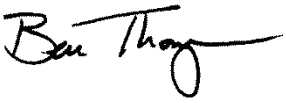
CH2MHILL
Applied Sciences Laboratory

ANALYTICAL REPORT

For:
BHATE/KAFB - ST-70, TO-24/TO-49

ASL Report #: M1056
Project ID: 458580.01.03.02
Attn: Marcia Olive
cc:
Ben Moayyad/ABQ
Paul Clement/ABQ

Authorized and Released By:



Laboratory Project Manager
Ben Thompson
(541) 758-0235 ext.23132
February 04, 2013

This data package meets standards requested by client and is not intended or implied to meet any other standard.

All analyses performed by CH2M HILL are clearly indicated. Any subcontracted analyses are included as appended reports as received from the subcontracted laboratory. The results included in this report only relate to the samples listed on the following Sample Cross-Reference page. This report shall not be reproduced except in full, without the written approval of the laboratory.

Any unusual difficulties encountered during the analysis of your samples are discussed in the attached case narratives.

CH2M HILL Applied Sciences Laboratory • 1100 NE Circle Boulevard, Suite 300 • Corvallis, Oregon 97330 • www.ch2mhill.com/asl

ASL Report #: M1056

Sample Receipt Comments

We certify that the test results meet all standard ASL requirements except those listed below:

- Samples were received at a temperature of 20C.

Sample Cross-Reference

ASL Sample ID	Client Sample ID	Date/Time Collected	Date Received
M105601	ST70-AR-40-20-160113	01/16/13 13:15	01/17/13
M105602	ST70-AR-29H-160113	01/16/13 13:05	01/17/13
M105603	ST70-AR-38-99-160113	01/16/13 13:35	01/17/13
M105604	ST70-AR-38-41-160113	01/16/13 13:30	01/17/13
M105605	ST70-AR-39-42-160113	01/16/13 13:40	01/17/13
M105606	ST70-AR-41-160113	01/16/13 13:55	01/17/13
M105607	ST70-AR-INLET-160113	01/16/13 14:10	01/17/13
M105608	ST70-AR-Exhaust-160113	01/16/13 14:05	01/17/13
M105609	ST70-AR-28H-160113	01/16/13 14:15	01/17/13
M105610	ST70-AR-7002-160113	01/16/13 14:20	01/17/13
M105611	ST70-AR-7003-160113	01/16/13 14:25	01/17/13
M105612	ST70-AR-7001-160113	01/16/13 14:50	01/17/13

ASL Report M1056

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CH2MHILL
Applied Sciences Laboratory (ASL)

CH2M HILL
Applied Sciences Laboratory (ASL)
1100 NE Circle Blvd
Suite 300
Corvallis, OR 97330
Tel 541.768.3120
Fax 541.752.0276

Organic CLP-Like Data Qualifiers

U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
P	The primary and confirmation analyte result recoveries do not match.
E	The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Inorganic CLP-Like Data Qualifiers

U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
E	The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.
N	The matrix spike/matrix spike duplicate recovery for the analyte is outside of acceptance criteria—qualifier is applied to the native sample only.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TO-15

CASE NARRATIVE
GC/MS VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: M1056

Project: BHATE/KAFB Project #: 458580.01.03.02

I. Method(s):

Analysis: TO15
Preparation: NONE

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

The %D for 1,2,4-Trichlorobenzene(37.2%) in CV1-0125 exceeded acceptance criteria of 30%.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):

All acceptance criteria were met.

G. BFB Tune Verification(s):

All acceptance criteria were met.

H. Internal Standard(s):

All acceptance criteria were met.

I. Analytical Exception(s):

None.

J. Manual Integration(s):

None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: _____ Date: 2/5/13

Reviewed by: _____ Date: 2/5/13

Sample ID	Client ID	Date Collected	Time Collected	Canister ID	Incoming pressure inHG	Incoming pressure torr	Primary Dilution Factor
M105601	ST70-AR-40-20-160113	1/16/2013	13:15	SG1777	4.3	651	1.86
M105602	ST70-AR-29H-160113	1/16/2013	13:05	SG1439	4.6	644	1.90
M105603	ST70-AR-38-99-160113	1/16/2013	13:35	SG1849	4.7	641	1.90
M105604	ST70-AR-38-41-160113	1/16/2013	13:30	SG1463	4.8	638	1.90
M105605	ST70-AR-39-42-160113	1/16/2013	13:40	SG1894	5.0	634	1.93
M105606	ST70-AR-41-160113	1/16/2013	13:55	SG1788	5.1	630	1.95
M105607	ST70-AR-INLET-160113	1/16/2013	14:10	SG1414	5.0	633	1.91
M105608	ST70-AR-Exhaust-160113	1/16/2013	14:05	SG1843	5.9	610	2.01
M105609	ST70-AR-28H-160113	1/16/2013	14:15	SG1879	5.1	630	1.93
M105610	ST70-AR-7002-160113	1/16/2013	14:20	SG1702	4.8	637	1.92
M105611	ST70-AR-7003-160113	1/16/2013	14:25	SG1394	4.7	640	1.92
M105612	ST70-AR-7001-160113	1/16/2013	14:50	SG1682	4.8	639	1.90

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Base/Command: KIRTLAND AFB (AIR) Prime Contractor: CH2M HILL

Project: BHATE/KAFB

Field Sample ID	Lab Sample ID
ST70-AR-40-20-160113	M105601
ST70-AR-29H-160113	M105602
ST70-AR-38-99-160113	M105603
ST70-AR-38-41-160113	M105604
ST70-AR-39-42-160113	M105605
ST70-AR-41-160113	M105606
ST70-AR-INLET-160113	M105607
ST70-AR-Exhaust-160113	M105608
ST70-AR-28H-160113	M105609
ST70-AR-7002-160113	M105610
ST70-AR-7003-160113	M105611
ST70-AR-7001-160113	M105612

Comments:

See attached narrative

SAMPLE DATA SUMMARY

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-40-20-160113 Lab Sample ID: M105601 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-40-20-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	30.3	101	30.3	202		U
Chloromethane	30.3	101	30.3	202		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	30.3	101	30.3	202		U
Vinyl chloride	30.3	101	30.3	202		U
Bromomethane	30.3	101	30.3	202		U
Chloroethane	30.3	101	30.3	202		U
Trichlorofluoromethane	30.3	101	30.3	202		U
Acetone	30.3	202	30.3	202		U
1,1-DCE	30.3	101	30.3	202		U
Methylene chloride	30.3	101	30.3	202		U
1,1,2-Trichloro-1,2,2-trifluoroethane	30.3	101	30.3	202		U
MTBE (Methyl tert-Butyl Ether)	30.3	202	30.3	202		U
1,1-DCA	30.3	101	30.3	202		U
MEK (2-Butanone)	30.3	202	30.3	202		U
cis-1,2-DCE	30.3	101	**445**	202		
Chloroform	30.3	101	30.3	202		U
1,2-DCA	30.3	101	30.3	202		U
1,1,1-TCA	30.3	101	30.3	202		U
Carbon tetrachloride	30.3	101	30.3	202		U
Benzene	30.3	101	30.3	202		U
1,2-Dichloropropane	30.3	101	30.3	202		U
TCE	30.3	101	**203**	202		
cis-1,3-Dichloropropene	30.3	101	30.3	202		U
trans-1,3-Dichloropropene	30.3	101	30.3	202		U
1,1,2-TCA	30.3	101	30.3	202		U
Toluene	30.3	101	**34.9**	202		F
1,2-EDB	30.3	101	30.3	202		U
Tetrachloroethylene	30.3	101	30.3	202		U
Chlorobenzene	30.3	101	30.3	202		U
Ethylbenzene	30.3	101	**293**	202		
m,p-Xylene	60.6	202	**2300**	202		
Styrene	30.3	101	30.3	202		U
o-Xylene	30.3	101	30.3	202		U
1,1,2,2-Tetrachloroethane	30.3	101	30.3	202		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-40-20-160113 Lab Sample ID: M105601 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-40-20-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	30.3	101	**4140**	202		
1,2,4-Trimethylbenzene	30.3	101	**5070**	202		
1,3-DCB	30.3	101	30.3	202		U
1,4-DCB	30.3	101	30.3	202		U
1,2-DCB	30.3	101	30.3	202		U
1,2,4-Trichlorobenzene	30.3	101	30.3	202		U
Hexachlorobutadiene	30.3	101	30.3	202		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	101	60-140	
4-Bromofluorobenzene	105	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-29H-160113 Lab Sample ID: M105602 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-29H-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	1.18	3.9	1.18	7.85		U
Chloromethane	1.18	3.9	1.18	7.85		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.18	3.9	1.18	7.85		U
Vinyl chloride	1.18	3.9	1.18	7.85		U
Bromomethane	1.18	3.9	1.18	7.85		U
Chloroethane	1.18	3.9	1.18	7.85		U
Trichlorofluoromethane	1.18	3.9	**1.23**	7.85		F
Acetone	1.18	7.9	**7.20**	7.85		F
1,1-DCE	1.18	3.9	1.18	7.85		U
Methylene chloride	1.18	3.9	1.18	7.85		U
1,1,2-Trichloro-1,2,2-trifluoroethane	1.18	3.9	1.18	7.85		U
MTBE (Methyl tert-Butyl Ether)	1.18	7.9	1.18	7.85		U
1,1-DCA	1.18	3.9	1.18	7.85		U
MEK (2-Butanone)	1.18	7.9	1.18	7.85		U
cis-1,2-DCE	1.18	3.9	**6.94**	7.85		
Chloroform	1.18	3.9	1.18	7.85		U
1;2-DCA	1.18	3.9	1.18	7.85		U
1,1,1-TCA	1.18	3.9	1.18	7.85		U
Carbon tetrachloride	1.18	3.9	1.18	7.85		U
Benzene	1.18	3.9	1.18	7.85		U
1,2-Dichloropropane	1.18	3.9	1.18	7.85		U
TCE	1.18	3.9	**27.3**	7.85		
cis-1,3-Dichloropropene	1.18	3.9	1.18	7.85		U
trans-1,3-Dichloropropene	1.18	3.9	1.18	7.85		U
1,1,2-TCA	1.18	3.9	1.18	7.85		U
Toluene	1.18	3.9	1.18	7.85		U
1,2-EDB	1.18	3.9	1.18	7.85		U
Tetrachloroethylene	1.18	3.9	**25.5**	7.85		
Chlorobenzene	1.18	3.9	1.18	7.85		U
Ethylbenzene	1.18	3.9	1.18	7.85		U
m,p-Xylene	2.36	7.9	2.36	7.85		U
Styrene	1.18	3.9	1.18	7.85		U
o-Xylene	1.18	3.9	1.18	7.85		U
1,1,2,2-Tetrachloroethane	1.18	3.9	1.18	7.85		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-29H-160113 Lab Sample ID: M105602 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-29H-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	1.18	3.9	**11.6**	7.85		
1,2,4-Trimethylbenzene	1.18	3.9	**2.79**	7.85		F
1,3-DCB	1.18	3.9	1.18	7.85		U
1,4-DCB	1.18	3.9	1.18	7.85		U
1,2-DCB	1.18	3.9	1.18	7.85		U
1,2,4-Trichlorobenzene	1.18	3.9	1.18	7.85		U
Hexachlorobutadiene	1.18	3.9	1.18	7.85		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	98	60-140	
4-Bromofluorobenzene	102	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-99-160113 Lab Sample ID: M105603 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-99-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	18.9	63.0	18.9	126		U
Chloromethane	18.9	63.0	18.9	126		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	18.9	63.0	18.9	126		U
Vinyl chloride	18.9	63.0	18.9	126		U
Bromomethane	18.9	63.0	18.9	126		U
Chloroethane	18.9	63.0	18.9	126		U
Trichlorofluoromethane	18.9	63.0	18.9	126		U
Acetone	18.9	126	**153**	126		
1,1-DCE	18.9	63.0	18.9	126		U
Methylene chloride	18.9	63.0	**21.6**	126		F
1,1,2-Trichloro-1,2,2-trifluoroethane	18.9	63.0	18.9	126		U
MTBE (Methyl tert-Butyl Ether)	18.9	126	18.9	126		U
1,1-DCA	18.9	63.0	18.9	126		U
MEK (2-Butanone)	18.9	126	18.9	126		U
cis-1,2-DCE	18.9	63.0	**1010**	126		
Chloroform	18.9	63.0	**94.2**	126		
1,2-DCA	18.9	63.0	18.9	126		U
1,1,1-TCA	18.9	63.0	18.9	126		U
Carbon tetrachloride	18.9	63.0	18.9	126		U
Benzene	18.9	63.0	**21.1**	126		F
1,2-Dichloropropane	18.9	63.0	18.9	126		U
TCE	18.9	63.0	**8800**	126		
cis-1,3-Dichloropropene	18.9	63.0	18.9	126		U
trans-1,3-Dichloropropene	18.9	63.0	18.9	126		U
1,1,2-TCA	18.9	63.0	18.9	126		U
Toluene	18.9	63.0	**22.0**	126		F
1,2-EDB	18.9	63.0	18.9	126		U
Tetrachloroethylene	18.9	63.0	**168**	126		
Chlorobenzene	18.9	63.0	18.9	126		U
Ethylbenzene	18.9	63.0	**104**	126		
m,p-Xylene	37.8	126	**429**	126		
Styrene	18.9	63.0	18.9	126		U
o-Xylene	18.9	63.0	18.9	126		U
1,1,2,2-Tetrachloroethane	18.9	63.0	18.9	126		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-99-160113 Lab Sample ID: M105603 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-99-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	18.9	63.0	**1800**	126		
1,2,4-Trimethylbenzene	18.9	63.0	**1910**	126		
1,3-DCB	18.9	63.0	18.9	126		U
1,4-DCB	18.9	63.0	18.9	126		U
1,2-DCB	18.9	63.0	18.9	126		U
1,2,4-Trichlorobenzene	18.9	63.0	18.9	126		U
Hexachlorobutadiene	18.9	63.0	18.9	126		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	99	60-140	
4-Bromofluorobenzene	102	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-41-160113 Lab Sample ID: M105604 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-41-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	1.18	3.9	1.18	7.85		U
Chloromethane	1.18	3.9	1.18	7.85		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.18	3.9	1.18	7.85		U
Vinyl chloride	1.18	3.9	1.18	7.85		U
Bromomethane	1.18	3.9	1.18	7.85		U
Chloroethane	1.18	3.9	1.18	7.85		U
Trichlorofluoromethane	1.18	3.9	1.18	7.85		U
Acetone	1.18	7.9	**8.12**	7.85		
1,1-DCE	1.18	3.9	1.18	7.85		U
Methylene chloride	1.18	3.9	1.18	7.85		U
1,1,2-Trichloro-1,2,2-trifluoroethane	1.18	3.9	1.18	7.85		U
MTBE (Methyl tert-Butyl Ether)	1.18	7.9	1.18	7.85		U
1,1-DCA	1.18	3.9	1.18	7.85		U
MEK (2-Butanone)	1.18	7.9	1.18	7.85		U
cis-1,2-DCE	1.18	3.9	**172**	7.85		
Chloroform	1.18	3.9	1.18	7.85		U
1,2-DCA	1.18	3.9	1.18	7.85		U
1,1,1-TCA	1.18	3.9	1.18	7.85		U
Carbon tetrachloride	1.18	3.9	1.18	7.85		U
Benzene	1.18	3.9	**1.36**	7.85		F
1,2-Dichloropropane	1.18	3.9	1.18	7.85		U
TCE	1.18	3.9	**14.7**	7.85		
cis-1,3-Dichloropropene	1.18	3.9	1.18	7.85		U
trans-1,3-Dichloropropene	1.18	3.9	1.18	7.85		U
1,1,2-TCA	1.18	3.9	1.18	7.85		U
Toluene	1.18	3.9	**1.68**	7.85		F
1,2-EDB	1.18	3.9	1.18	7.85		U
Tetrachloroethylene	1.18	3.9	**1.57**	7.85		F
Chlorobenzene	1.18	3.9	1.18	7.85		U
Ethylbenzene	1.18	3.9	**7.57**	7.85		
m,p-Xylene	2.36	7.9	**40.8**	7.85		
Styrene	1.18	3.9	1.18	7.85		U
o-Xylene	1.18	3.9	**3.65**	7.85		F
1,1,2,2-Tetrachloroethane	1.18	3.9	1.18	7.85		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-41-160113 Lab Sample ID: M105604 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-41-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	1.18	3.9	**72.4**	7.85		
1,2,4-Trimethylbenzene	1.18	3.9	**65.1**	7.85		
1,3-DCB	1.18	3.9	1.18	7.85		U
1,4-DCB	1.18	3.9	1.18	7.85		U
1,2-DCB	1.18	3.9	1.18	7.85		U
1,2,4-Trichlorobenzene	1.18	3.9	1.18	7.85		U
Hexachlorobutadiene	1.18	3.9	1.18	7.85		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	99	60-140	
4-Bromofluorobenzene	101	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-39-42-160113 Lab Sample ID: M105605 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-39-42-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	18.9	63.0	18.9	126		U
Chloromethane	18.9	63.0	18.9	126		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	18.9	63.0	18.9	126		U
Vinyl chloride	18.9	63.0	18.9	126		U
Bromomethane	18.9	63.0	18.9	126		U
Chloroethane	18.9	63.0	18.9	126		U
Trichlorofluoromethane	18.9	63.0	18.9	126		U
Acetone	18.9	126	18.9	126		U
1,1-DCE	18.9	63.0	18.9	126		U
Methylene chloride	18.9	63.0	18.9	126		U
1,1,2-Trichloro-1,2,2-trifluoroethane	18.9	63.0	18.9	126		U
MTBE (Methyl tert-Butyl Ether)	18.9	126	18.9	126		U
1,1-DCA	18.9	63.0	18.9	126		U
MEK (2-Butanone)	18.9	126	18.9	126		U
cis-1,2-DCE	18.9	63.0	**5030**	126		
Chloroform	18.9	63.0	**32.0**	126		F
1,2-DCA	18.9	63.0	18.9	126		U
1,1,1-TCA	18.9	63.0	18.9	126		U
Carbon tetrachloride	18.9	63.0	18.9	126		U
Benzene	18.9	63.0	**194**	126		
1,2-Dichloropropane	18.9	63.0	18.9	126		U
TCE	18.9	63.0	**10800**	126		
cis-1,3-Dichloropropene	18.9	63.0	18.9	126		U
trans-1,3-Dichloropropene	18.9	63.0	18.9	126		U
1,1,2-TCA	18.9	63.0	18.9	126		U
Toluene	18.9	63.0	**55.5**	126		F
1,2-EDB	18.9	63.0	18.9	126		U
Tetrachloroethylene	18.9	63.0	**1940**	126		
Chlorobenzene	18.9	63.0	18.9	126		U
Ethylbenzene	18.9	63.0	18.9	126		U
m,p-Xylene	37.8	126	**58.5**	126		F
Styrene	18.9	63.0	18.9	126		U
o-Xylene	18.9	63.0	18.9	126		U
1,1,2,2-Tetrachloroethane	18.9	63.0	18.9	126		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-39-42-160113 Lab Sample ID: M105605 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-39-42-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	18.9	63.0	**85.7**	126		
1,2,4-Trimethylbenzene	18.9	63.0	**67.4**	126		
1,3-DCB	18.9	63.0	18.9	126		U
1,4-DCB	18.9	63.0	18.9	126		U
1,2-DCB	18.9	63.0	18.9	126		U
1,2,4-Trichlorobenzene	18.9	63.0	18.9	126		U
Hexachlorobutadiene	18.9	63.0	18.9	126		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	97	60-140	
4-Bromofluorobenzene	99	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-41-160113 Lab Sample ID: M105606 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-41-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.24	0.8	**0.37**	1.6		F
Chloromethane	0.24	0.8	0.24	1.6		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.24	0.8	0.24	1.6		U
Vinyl chloride	0.24	0.8	0.24	1.6		U
Bromomethane	0.24	0.8	0.24	1.6		U
Chloroethane	0.24	0.8	0.24	1.6		U
Trichlorofluoromethane	0.24	0.8	**0.95**	1.6		
Acetone	0.24	1.6	**7.24**	1.6		
1,1-DCE	0.24	0.8	0.24	1.6		U
Methylene chloride	0.24	0.8	0.24	1.6		U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.24	0.8	0.24	1.6		U
MTBE (Methyl tert-Butyl Ether)	0.24	1.6	0.24	1.6		U
1,1-DCA	0.24	0.8	0.24	1.6		U
MEK (2-Butanone)	0.24	1.6	**2.67**	1.6		
cis-1,2-DCE	0.24	0.8	**0.91**	1.6		
Chloroform	0.24	0.8	**0.52**	1.6		F
1,2-DCA	0.24	0.8	0.24	1.6		U
1,1,1-TCA	0.24	0.8	0.24	1.6		U
Carbon tetrachloride	0.24	0.8	0.24	1.6		U
Benzene	0.24	0.8	**0.25**	1.6		F
1,2-Dichloropropane	0.24	0.8	0.24	1.6		U
TCE	0.24	0.8	**4.69**	1.6		
cis-1,3-Dichloropropene	0.24	0.8	0.24	1.6		U
trans-1,3-Dichloropropene	0.24	0.8	0.24	1.6		U
1,1,2-TCA	0.24	0.8	0.24	1.6		U
Toluene	0.24	0.8	**0.25**	1.6		F
1,2-EDB	0.24	0.8	0.24	1.6		U
Tetrachloroethylene	0.24	0.8	**5.78**	1.6		
Chlorobenzene	0.24	0.8	0.24	1.6		U
Ethylbenzene	0.24	0.8	0.24	1.6		U
m,p-Xylene	0.48	1.6	**1.15**	1.6		F
Styrene	0.24	0.8	0.24	1.6		U
o-Xylene	0.24	0.8	0.24	1.6		U
1,1,2,2-Tetrachloroethane	0.24	0.8	0.24	1.6		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-41-160113 Lab Sample ID: M105606 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-41-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.24	0.8	**5.10**	1.6		
1,2,4-Trimethylbenzene	0.24	0.8	**6.05**	1.6		
1,3-DCB	0.24	0.8	0.24	1.6		U
1,4-DCB	0.24	0.8	0.24	1.6		U
1,2-DCB	0.24	0.8	0.24	1.6		U
1,2,4-Trichlorobenzene	0.24	0.8	0.24	1.6		U
Hexachlorobutadiene	0.24	0.8	0.24	1.6		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	97	60-140	
4-Bromofluorobenzene	102	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-INLET-160113 Lab Sample ID: M105607 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-INLET-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.24	0.8	**0.37**	1.57		F
Chloromethane	0.24	0.8	**3.03**	1.57		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.24	0.8	0.24	1.57		U
Vinyl chloride	0.24	0.8	0.24	1.57		U
Bromomethane	0.24	0.8	**0.85**	1.57		
Chloroethane	0.24	0.8	**0.35**	1.57		F
Trichlorofluoromethane	0.24	0.8	0.24	1.57		U
Acetone	0.24	1.6	**79.8**	1.57		
1,1-DCE	0.24	0.8	0.24	1.57		U
Methylene chloride	0.24	0.8	**0.49**	1.57		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.24	0.8	0.24	1.57		U
MTBE (Methyl tert-Butyl Ether)	0.24	1.6	0.24	1.57		U
1,1-DCA	0.24	0.8	0.24	1.57		U
MEK (2-Butanone)	0.24	1.6	**8.40**	1.57		
cis-1,2-DCE	0.24	0.8	**1.80**	1.57		
Chloroform	0.24	0.8	**0.61**	1.57		F
1,2-DCA	0.24	0.8	**0.31**	1.57		F
1,1,1-TCA	0.24	0.8	0.24	1.57		U
Carbon tetrachloride	0.24	0.8	0.24	1.57		U
Benzene	0.24	0.8	**0.53**	1.57		F
1,2-Dichloropropane	0.24	0.8	**38.7**	1.57		
TCE	0.24	0.8	**12.6**	1.57		
cis-1,3-Dichloropropene	0.24	0.8	0.24	1.57		U
trans-1,3-Dichloropropene	0.24	0.8	0.24	1.57		U
1,1,2-TCA	0.24	0.8	0.24	1.57		U
Toluene	0.24	0.8	**0.72**	1.57		F
1,2-EDB	0.24	0.8	0.24	1.57		U
Tetrachloroethylene	0.24	0.8	**103**	1.57		
Chlorobenzene	0.24	0.8	0.24	1.57		U
Ethylbenzene	0.24	0.8	**0.27**	1.57		F
m,p-Xylene	0.47	1.6	**1.17**	1.57		F
Styrene	0.24	0.8	0.24	1.57		U
o-Xylene	0.24	0.8	0.24	1.57		U
1,1,2,2-Tetrachloroethane	0.24	0.8	0.24	1.57		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-INLET-160113 Lab Sample ID: M105607 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-INLET-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.24	0.8	**3.48**	1.57		
1,2,4-Trimethylbenzene	0.24	0.8	**4.17**	1.57		
1,3-DCB	0.24	0.8	0.24	1.57		U
1,4-DCB	0.24	0.8	0.24	1.57		U
1,2-DCB	0.24	0.8	0.24	1.57		U
1,2,4-Trichlorobenzene	0.24	0.8	0.24	1.57		U
Hexachlorobutadiene	0.24	0.8	0.24	1.57		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	98	60-140	
4-Bromofluorobenzene	102	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-Exhaust-160113 Lab Sample ID: M105608 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-Exhaust-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 24 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.25	0.8	**0.38**	1.64		F
Chloromethane	0.25	0.8	**0.40**	1.64		F
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.25	0.8	0.25	1.64		U
Vinyl chloride	0.25	0.8	0.25	1.64		U
Bromomethane	0.25	0.8	0.25	1.64		U
Chloroethane	0.25	0.8	0.25	1.64		U
Trichlorofluoromethane	0.25	0.8	0.25	1.64		U
Acetone	0.25	1.6	**10.6**	1.64		
1,1-DCE	0.25	0.8	0.25	1.64		U
Methylene chloride	0.25	0.8	**0.32**	1.64		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.25	0.8	0.25	1.64		U
MTBE (Methyl tert-Butyl Ether)	0.25	1.6	0.25	1.64		U
1,1-DCA	0.25	0.8	0.25	1.64		U
MEK (2-Butanone)	0.25	1.6	**1.79**	1.64		
cis-1,2-DCE	0.25	0.8	0.25	1.64		U
Chloroform	0.25	0.8	0.25	1.64		U
1,2-DCA	0.25	0.8	0.25	1.64		U
1,1,1-TCA	0.25	0.8	0.25	1.64		U
Carbon tetrachloride	0.25	0.8	0.25	1.64		U
Benzene	0.25	0.8	**0.44**	1.64		F
1,2-Dichloropropane	0.25	0.8	0.25	1.64		U
TCE	0.25	0.8	0.25	1.64		U
cis-1,3-Dichloropropene	0.25	0.8	0.25	1.64		U
trans-1,3-Dichloropropene	0.25	0.8	0.25	1.64		U
1,1,2-TCA	0.25	0.8	0.25	1.64		U
Toluene	0.25	0.8	**0.73**	1.64		F
1,2-EDB	0.25	0.8	0.25	1.64		U
Tetrachloroethylene	0.25	0.8	0.25	1.64		U
Chlorobenzene	0.25	0.8	0.25	1.64		U
Ethylbenzene	0.25	0.8	0.25	1.64		U
m,p-Xylene	0.49	1.6	0.49	1.64		U
Styrene	0.25	0.8	0.25	1.64		U
o-Xylene	0.25	0.8	0.25	1.64		U
1,1,2,2-Tetrachloroethane	0.25	0.8	0.25	1.64		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-Exhaust-160113 Lab Sample ID: M105608 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-Exhaust-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 24 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.25	0.8	0.25	1.64		U
1,2,4-Trimethylbenzene	0.25	0.8	0.25	1.64		U
1,3-DCB	0.25	0.8	0.25	1.64		U
1,4-DCB	0.25	0.8	0.25	1.64		U
1,2-DCB	0.25	0.8	0.25	1.64		U
1,2,4-Trichlorobenzene	0.25	0.8	0.25	1.64		U
Hexachlorobutadiene	0.25	0.8	0.25	1.64		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	99	60-140	
4-Bromofluorobenzene	93	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-28H-160113 Lab Sample ID: M105609 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-28H-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.60	2.0	0.60	3.98		U
Chloromethane	0.60	2.0	0.60	3.98		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.60	2.0	0.60	3.98		U
Vinyl chloride	0.60	2.0	0.60	3.98		U
Bromomethane	0.60	2.0	0.60	3.98		U
Chloroethane	0.60	2.0	0.60	3.98		U
Trichlorofluoromethane	0.60	2.0	0.60	3.98		U
Acetone	0.60	4.0	**8.86**	3.98		
1,1-DCE	0.60	2.0	0.60	3.98		U
Methylene chloride	0.60	2.0	0.60	3.98		U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.60	2.0	0.60	3.98		U
MTBE (Methyl tert-Butyl Ether)	0.60	4.0	0.60	3.98		U
1,1-DCA	0.60	2.0	0.60	3.98		U
MEK (2-Butanone)	0.60	4.0	**3.80**	3.98		F
cis-1,2-DCE	0.60	2.0	**1.90**	3.98		F
Chloroform	0.60	2.0	0.60	3.98		U
1,2-DCA	0.60	2.0	0.60	3.98		U
1,1,1-TCA	0.60	2.0	0.60	3.98		U
Carbon tetrachloride	0.60	2.0	0.60	3.98		U
Benzene	0.60	2.0	**0.66**	3.98		F
1,2-Dichloropropane	0.60	2.0	0.60	3.98		U
TCE	0.60	2.0	**13.8**	3.98		
cis-1,3-Dichloropropene	0.60	2.0	0.60	3.98		U
trans-1,3-Dichloropropene	0.60	2.0	0.60	3.98		U
1,1,2-TCA	0.60	2.0	0.60	3.98		U
Toluene	0.60	2.0	**0.70**	3.98		F
1,2-EDB	0.60	2.0	0.60	3.98		U
Tetrachloroethylene	0.60	2.0	**131**	3.98		
Chlorobenzene	0.60	2.0	0.60	3.98		U
Ethylbenzene	0.60	2.0	0.60	3.98		U
m,p-Xylene	1.19	4.0	1.19	3.98		U
Styrene	0.60	2.0	0.60	3.98		U
o-Xylene	0.60	2.0	0.60	3.98		U
1,1,2,2-Tetrachloroethane	0.60	2.0	0.60	3.98		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-28H-160113 Lab Sample ID: M105609 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-28H-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.60	2.0	**3.60**	3.98		
1,2,4-Trimethylbenzene	0.60	2.0	**4.20**	3.98		
1,3-DCB	0.60	2.0	0.60	3.98		U
1,4-DCB	0.60	2.0	0.60	3.98		U
1,2-DCB	0.60	2.0	0.60	3.98		U
1,2,4-Trichlorobenzene	0.60	2.0	0.60	3.98		U
Hexachlorobutadiene	0.60	2.0	0.60	3.98		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	98	60-140	
4-Bromofluorobenzene	101	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7002-160113 Lab Sample ID: M105610 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7002-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.24	0.8	**0.36**	1.58		F
Chloromethane	0.24	0.8	**0.91**	1.58		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.24	0.8	0.24	1.58		U
Vinyl chloride	0.24	0.8	0.24	1.58		U
Bromomethane	0.24	0.8	0.24	1.58		U
Chloroethane	0.24	0.8	**1.27**	1.58		
Trichlorofluoromethane	0.24	0.8	0.24	1.58		U
Acetone	0.24	1.6	**23.3**	1.58		
1,1-DCE	0.24	0.8	0.24	1.58		U
Methylene chloride	0.24	0.8	**0.32**	1.58		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.24	0.8	0.24	1.58		U
MTBE (Methyl tert-Butyl Ether)	0.24	1.6	0.24	1.58		U
1,1-DCA	0.24	0.8	0.24	1.58		U
MEK (2-Butanone)	0.24	1.6	**12.6**	1.58		
cis-1,2-DCE	0.24	0.8	0.24	1.58		U
Chloroform	0.24	0.8	0.24	1.58		U
1,2-DCA	0.24	0.8	0.24	1.58		U
1,1,1-TCA	0.24	0.8	0.24	1.58		U
Carbon tetrachloride	0.24	0.8	0.24	1.58		U
Benzene	0.24	0.8	**0.56**	1.58		F
1,2-Dichloropropane	0.24	0.8	0.24	1.58		U
TCE	0.24	0.8	**1.14**	1.58		
cis-1,3-Dichloropropene	0.24	0.8	0.24	1.58		U
trans-1,3-Dichloropropene	0.24	0.8	0.24	1.58		U
1,1,2-TCA	0.24	0.8	0.24	1.58		U
Toluene	0.24	0.8	**0.62**	1.58		F
1,2-EDB	0.24	0.8	0.24	1.58		U
Tetrachloroethylene	0.24	0.8	**1.07**	1.58		
Chlorobenzene	0.24	0.8	0.24	1.58		U
Ethylbenzene	0.24	0.8	0.24	1.58		U
m,p-Xylene	0.47	1.6	**0.74**	1.58		F
Styrene	0.24	0.8	0.24	1.58		U
o-Xylene	0.24	0.8	0.24	1.58		U
1,1,2,2-Tetrachloroethane	0.24	0.8	0.24	1.58		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7002-160113 Lab Sample ID: M105610 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7002-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 26 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.24	0.8	**2.26**	1.58		
1,2,4-Trimethylbenzene	0.24	0.8	**2.85**	1.58		
1,3-DCB	0.24	0.8	0.24	1.58		U
1,4-DCB	0.24	0.8	0.24	1.58		U
1,2-DCB	0.24	0.8	0.24	1.58		U
1,2,4-Trichlorobenzene	0.24	0.8	0.24	1.58		U
Hexachlorobutadiene	0.24	0.8	0.24	1.58		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	98	60-140	
4-Bromofluorobenzene	102	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7003-160113 Lab Sample ID: M105611 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7003-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.40	1.3	0.40	2.63		U
Chloromethane	0.40	1.3	**0.56**	2.63		F
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.40	1.3	0.40	2.63		U
Vinyl chloride	0.40	1.3	0.40	2.63		U
Bromomethane	0.40	1.3	0.40	2.63		U
Chloroethane	0.40	1.3	0.40	2.63		U
Trichlorofluoromethane	0.40	1.3	0.40	2.63		U
Acetone	0.40	2.6	**29.5**	2.63		
1,1-DCE	0.40	1.3	0.40	2.63		U
Methylene chloride	0.40	1.3	**0.45**	2.63		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.40	1.3	0.40	2.63		U
MTBE (Methyl tert-Butyl Ether)	0.40	2.6	0.40	2.63		U
1,1-DCA	0.40	1.3	0.40	2.63		U
MEK (2-Butanone)	0.40	2.6	**19.7**	2.63		
cis-1,2-DCE	0.40	1.3	0.40	2.63		U
Chloroform	0.40	1.3	0.40	2.63		U
1,2-DCA	0.40	1.3	0.40	2.63		U
1,1,1-TCA	0.40	1.3	0.40	2.63		U
Carbon tetrachloride	0.40	1.3	0.40	2.63		U
Benzene	0.40	1.3	**0.54**	2.63		F
1,2-Dichloropropane	0.40	1.3	0.40	2.63		U
TCE	0.40	1.3	**0.55**	2.63		F
cis-1,3-Dichloropropene	0.40	1.3	0.40	2.63		U
trans-1,3-Dichloropropene	0.40	1.3	0.40	2.63		U
1,1,2-TCA	0.40	1.3	**0.85**	2.63		F
Toluene	0.40	1.3	**1.17**	2.63		F
1,2-EDB	0.40	1.3	0.40	2.63		U
Tetrachloroethylene	0.40	1.3	**1.45**	2.63		
Chlorobenzene	0.40	1.3	0.40	2.63		U
Ethylbenzene	0.40	1.3	0.40	2.63		U
m,p-Xylene	0.79	2.6	**0.94**	2.63		F
Styrene	0.40	1.3	0.40	2.63		U
o-Xylene	0.40	1.3	0.40	2.63		U
1,1,2,2-Tetrachloroethane	0.40	1.3	0.40	2.63		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7003-160113 Lab Sample ID: M105611 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7003-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.40	1.3	**1.01**	2.63		F
1,2,4-Trimethylbenzene	0.40	1.3	**1.41**	2.63		
1,3-DCB	0.40	1.3	0.40	2.63		U
1,4-DCB	0.40	1.3	0.40	2.63		U
1,2-DCB	0.40	1.3	0.40	2.63		U
1,2,4-Trichlorobenzene	0.40	1.3	0.40	2.63		U
Hexachlorobutadiene	0.40	1.3	0.40	2.63		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	99	60-140	
4-Bromofluorobenzene	99	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7001-160113 Lab Sample ID: M105612 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7001-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.24	0.8	**0.38**	1.57		F
Chloromethane	0.24	0.8	**0.42**	1.57		F
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.24	0.8	0.24	1.57		U
Vinyl chloride	0.24	0.8	0.24	1.57		U
Bromomethane	0.24	0.8	0.24	1.57		U
Chloroethane	0.24	0.8	0.24	1.57		U
Trichlorofluoromethane	0.24	0.8	0.24	1.57		U
Acetone	0.24	1.6	**6.68**	1.57		
1,1-DCE	0.24	0.8	0.24	1.57		U
Methylene chloride	0.24	0.8	**0.27**	1.57		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.24	0.8	0.24	1.57		U
MTBE (Methyl tert-Butyl Ether)	0.24	1.6	0.24	1.57		U
1,1-DCA	0.24	0.8	0.24	1.57		U
MEK (2-Butanone)	0.24	1.6	**1.65**	1.57		
cis-1,2-DCE	0.24	0.8	0.24	1.57		U
Chloroform	0.24	0.8	0.24	1.57		U
1,2-DCA	0.24	0.8	0.24	1.57		U
1,1,1-TCA	0.24	0.8	0.24	1.57		U
Carbon tetrachloride	0.24	0.8	0.24	1.57		U
Benzene	0.24	0.8	**0.28**	1.57		F
1,2-Dichloropropane	0.24	0.8	0.24	1.57		U
TCE	0.24	0.8	0.24	1.57		U
cis-1,3-Dichloropropene	0.24	0.8	0.24	1.57		U
trans-1,3-Dichloropropene	0.24	0.8	0.24	1.57		U
1,1,2-TCA	0.24	0.8	0.24	1.57		U
Toluene	0.24	0.8	**0.44**	1.57		F
1,2-EDB	0.24	0.8	0.24	1.57		U
Tetrachloroethylene	0.24	0.8	0.24	1.57		U
Chlorobenzene	0.24	0.8	0.24	1.57		U
Ethylbenzene	0.24	0.8	0.24	1.57		U
m,p-Xylene	0.47	1.6	0.47	1.57		U
Styrene	0.24	0.8	0.24	1.57		U
o-Xylene	0.24	0.8	0.24	1.57		U
1,1,2,2-Tetrachloroethane	0.24	0.8	0.24	1.57		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7001-160113 Lab Sample ID: M105612 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7001-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 25 Jan 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.24	0.8	0.24	1.57		U
1,2,4-Trimethylbenzene	0.24	0.8	**0.29**	1.57		F
1,3-DCB	0.24	0.8	0.24	1.57		U
1,4-DCB	0.24	0.8	0.24	1.57		U
1,2-DCB	0.24	0.8	0.24	1.57		U
1,2,4-Trichlorobenzene	0.24	0.8	0.24	1.57		U
Hexachlorobutadiene	0.24	0.8	0.24	1.57		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	98	60-140	
4-Bromofluorobenzene	95	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

FIXED GASES ANALYSIS
BY SM 2720C

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Base/Command: KIRTLAND AFB (AIR) Prime Contractor: CH2M HILL

Project: BHATE/KAFB

Field Sample ID	Lab Sample ID
ST70-AR-40-20-160113	M105601
ST70-AR-29H-160113	M105602
ST70-AR-38-99-160113	M105603
ST70-AR-38-41-160113	M105604
ST70-AR-39-42-160113	M105605
ST70-AR-41-160113	M105606
ST70-AR-INLET-160113	M105607
ST70-AR-Exhaust-160113	M105608
ST70-AR-28H-160113	M105609
ST70-AR-7002-160113	M105610
ST70-AR-7003-160113	M105611
ST70-AR-7001-160113	M105612

Comments:

See attached narrative

CASE NARRATIVE
GC VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: M1056

Project: BHATE/KAFB Project #: 458580.01.03.02

I. Method(s):

Analysis: SM2720C
Preparation: NONE

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Not applicable.

F. Surrogate Standard(s):

Not applicable.

G. Analytical Exception(s):

None.

H. Manual Integration(s):

None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Doug Malcolm Date: 1-21-13

Reviewed by: Date: 1-21-13

WATER/WASTEWATER
SOLID/HAZ WASTE
AIR/PROCESS EMISSIONS
SEDIMENTS/TISSUE
CONSULTING & OPERATIONS
CH2MHILL *Applied Sciences Laboratory*

Sample ID	Client ID	Date Collected	Time Collected	Canister ID	Incoming pressure inHG	Incoming pressure torr	Primary Dilution Factor
M105601	ST70-AR-40-20-160113	1/16/2013	13:15	SG1777	4.3	651	1.86
M105602	ST70-AR-29H-160113	1/16/2013	13:05	SG1439	4.6	644	1.90
M105603	ST70-AR-38-99-160113	1/16/2013	13:35	SG1849	4.7	641	1.90
M105604	ST70-AR-38-41-160113	1/16/2013	13:30	SG1463	4.8	638	1.90
M105605	ST70-AR-39-42-160113	1/16/2013	13:40	SG1894	5.0	634	1.93
M105606	ST70-AR-41-160113	1/16/2013	13:55	SG1788	5.1	630	1.95
M105607	ST70-AR-INLET-160113	1/16/2013	14:10	SG1414	5.0	633	1.91
M105608	ST70-AR-Exhaust-160113	1/16/2013	14:05	SG1843	5.9	610	2.01
M105609	ST70-AR-28H-160113	1/16/2013	14:15	SG1879	5.1	630	1.93
M105610	ST70-AR-7002-160113	1/16/2013	14:20	SG1702	4.8	637	1.92
M105611	ST70-AR-7003-160113	1/16/2013	14:25	SG1394	4.7	640	1.92
M105612	ST70-AR-7001-160113	1/16/2013	14:50	SG1682	4.8	639	1.90

SAMPLE DATA SUMMARY

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-40-20-160113 Lab Sample ID: M105601 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-40-20-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.47	1.1	**7.70**	1.86		
Nitrogen	0.47	1.9	**78.7**	1.86		
Carbon Monoxide	0.13	0.9	0.13	1.86		U
Methane	0.13	0.9	**0.21**	1.86		F
Carbon Dioxide	0.13	0.9	**13.4**	1.86		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-29H-160113 Lab Sample ID: M105602 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-29H-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.48	1.1	**13.7**	1.9		
Nitrogen	0.48	1.9	**78.0**	1.9		
Carbon Monoxide	0.13	1.0	0.13	1.9		U
Methane	0.13	1.0	0.13	1.9		U
Carbon Dioxide	0.13	1.0	**8.28**	1.9		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-99-160113 Lab Sample ID: M105603 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-99-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.48	1.1	**11.7**	1.9		
Nitrogen	0.48	1.9	**76.7**	1.9		
Carbon Monoxide	0.13	1.0	0.13	1.9		U
Methane	0.13	1.0	0.13	1.9		U
Carbon Dioxide	0.13	1.0	**11.5**	1.9		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-41-160113 Lab Sample ID: M105604 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-41-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.48	1.1	**24.5**	1.9		
Nitrogen	0.48	1.9	**74.5**	1.9		
Carbon Monoxide	0.13	1.0	0.13	1.9		U
Methane	0.13	1.0	0.13	1.9		U
Carbon Dioxide	0.13	1.0	**0.95**	1.9		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-39-42-160113 Lab Sample ID: M105605 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-39-42-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.48	1.2	**7.60**	1.93		
Nitrogen	0.48	1.9	**77.1**	1.93		
Carbon Monoxide	0.14	1.0	0.14	1.93		U
Methane	0.14	1.0	0.14	1.93		U
Carbon Dioxide	0.14	1.0	**15.2**	1.93		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-41-160113 Lab Sample ID: M105606 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-41-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.49	1.2	**24.5**	1.95		
Nitrogen	0.49	2.0	**74.3**	1.95		
Carbon Monoxide	0.14	1.0	0.14	1.95		U
Methane	0.14	1.0	0.14	1.95		U
Carbon Dioxide	0.14	1.0	**1.23**	1.95		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-INLET-160113 Lab Sample ID: M105607 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-INLET-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.48	1.1	**24.3**	1.91		
Nitrogen	0.48	1.9	**75.0**	1.91		
Carbon Monoxide	0.13	1.0	0.13	1.91		U
Methane	0.13	1.0	0.13	1.91		U
Carbon Dioxide	0.13	1.0	**0.71**	1.91		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-Exhaust-160113 Lab Sample ID: M105608 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-Exhaust-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.50	1.2	**25.6**	2.01		
Nitrogen	0.50	2.0	**74.4**	2.01		
Carbon Monoxide	0.14	1.0	0.14	2.01		U
Methane	0.14	1.0	0.14	2.01		U
Carbon Dioxide	0.14	1.0	0.14	2.01		U

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-28H-160113 Lab Sample ID: M105609 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-28H-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.48	1.2	**24.2**	1.93		
Nitrogen	0.48	1.9	**75.0**	1.93		
Carbon Monoxide	0.14	1.0	0.14	1.93		U
Methane	0.14	1.0	0.14	1.93		U
Carbon Dioxide	0.14	1.0	**0.79**	1.93		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7002-160113 Lab Sample ID: M105610 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7002-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.48	1.2	**25.5**	1.92		
Nitrogen	0.48	1.9	**74.4**	1.92		
Carbon Monoxide	0.13	1.0	0.13	1.92		U
Methane	0.13	1.0	0.13	1.92		U
Carbon Dioxide	0.13	1.0	0.13	1.92		U

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7003-160113 Lab Sample ID: M105611 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7003-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.48	1.2	**25.5**	1.92		
Nitrogen	0.48	1.9	**74.5**	1.92		
Carbon Monoxide	0.13	1.0	0.13	1.92		U
Methane	0.13	1.0	0.13	1.92		U
Carbon Dioxide	0.13	1.0	0.13	1.92		U

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7001-160113 Lab Sample ID: M105612 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7001-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.48	1.1	**25.6**	1.9		
Nitrogen	0.48	1.9	**74.4**	1.9		
Carbon Monoxide	0.13	1.0	0.13	1.9		U
Methane	0.13	1.0	0.13	1.9		U
Carbon Dioxide	0.13	1.0	0.13	1.9		U

Comments:

TPH-GAS IN AIR BY SW 8015M

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Base/Command: KIRTLAND AFB (AIR) Prime Contractor: CH2M HILL

Project: BHATE/KAFB

Field Sample ID	Lab Sample ID
ST70-AR-40-20-160113	M105601
ST70-AR-29H-160113	M105602
ST70-AR-38-99-160113	M105603
ST70-AR-38-41-160113	M105604
ST70-AR-39-42-160113	M105605
ST70-AR-41-160113	M105606
ST70-AR-INLET-160113	M105607
ST70-AR-Exhaust-160113	M105608
ST70-AR-28H-160113	M105609
ST70-AR-7002-160113	M105610
ST70-AR-7003-160113	M105611
ST70-AR-7001-160113	M105612

Comments:

See attached narrative

CASE NARRATIVE
GC VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: M1056

Project: BHATE/KAFB Project #: 458580.01.03.02

I. Method(s):

Analysis: SW8015M
Preparation: NONE

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):
All acceptance criteria were met.

B. Calibration Verification(s):
All acceptance criteria were met.

C. Blank(s):
All acceptance criteria were met.

D. Laboratory Control Sample(s):
All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):
Not applicable.

F. Surrogate Standard(s):
Not applicable.

G. Analytical Exception(s):
None.

H. Manual Integration(s):
Level 1 of the initial calibration was manually integrated.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Doug Malcolm Date: 1-21-13

Reviewed by: Date: 1-21-13

Sample ID	Client ID	Date Collected	Time Collected	Canister ID	Incoming pressure inHG	Incoming pressure torr	Primary Dilution Factor
M105601	ST70-AR-40-20-160113	1/16/2013	13:15	SG1777	4.3	651	1.86
M105602	ST70-AR-29H-160113	1/16/2013	13:05	SG1439	4.6	644	1.90
M105603	ST70-AR-38-99-160113	1/16/2013	13:35	SG1849	4.7	641	1.90
M105604	ST70-AR-38-41-160113	1/16/2013	13:30	SG1463	4.8	638	1.90
M105605	ST70-AR-39-42-160113	1/16/2013	13:40	SG1894	5.0	634	1.93
M105606	ST70-AR-41-160113	1/16/2013	13:55	SG1788	5.1	630	1.95
M105607	ST70-AR-INLET-160113	1/16/2013	14:10	SG1414	5.0	633	1.91
M105608	ST70-AR-Exhaust-160113	1/16/2013	14:05	SG1843	5.9	610	2.01
M105609	ST70-AR-28H-160113	1/16/2013	14:15	SG1879	5.1	630	1.93
M105610	ST70-AR-7002-160113	1/16/2013	14:20	SG1702	4.8	637	1.92
M105611	ST70-AR-7003-160113	1/16/2013	14:25	SG1394	4.7	640	1.92
M105612	ST70-AR-7001-160113	1/16/2013	14:50	SG1682	4.8	639	1.90

SAMPLE DATA SUMMARY

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-40-20-160113 Lab Sample ID: M105601 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-40-20-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.58	46.5	**4190**	1.86		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-29H-160113 Lab Sample ID: M105602 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-29H-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.70	47.5	122	1.9		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-99-160113 Lab Sample ID: M105603 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-99-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.70	47.5	**2410**	1.9		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-41-160113 Lab Sample ID: M105604 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-41-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.70	47.5	435	1.9		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-39-42-160113 Lab Sample ID: M105605 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-39-42-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.79	48.3	**1360**	1.93		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-41-160113 Lab Sample ID: M105606 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-41-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.85	48.8	27.1	1.95		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-INLET-160113 Lab Sample ID: M105607 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-INLET-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.73	47.8	96.6	1.91		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-Exhaust-160113 Lab Sample ID: M105608 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-Exhaust-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.03	50.3	10.9	2.01		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-28H-160113 Lab Sample ID: M105609 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-28H-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.79	48.3	**110**	1.93		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7002-160113 Lab Sample ID: M105610 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7002-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.76	48.0	**20.9**	1.92		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7003-160113 Lab Sample ID: M105611 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7003-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.76	48.0	22.9	1.92		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1056

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7001-160113 Lab Sample ID: M105612 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7001-160113

Date Received: 17 Jan 13 Date Prepared: Date Analyzed: 18 Jan 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.70	47.5	**11.0**	1.9		F

Comments:

CHAIN OF CUSTODY/SHIPPING DOCUMENTS

20.0°C

Project/Contact Information	
Project #	458580.01.03.02
Project Name	KAFB ST-70, TO-24/TO-49
Report Copy to	Molive@Bhate.com
Company Name/Contact	CH2M HILL- ABQ\ Ben Moayyad

Sampling		Type		Matrix			Client Sample ID	LAB QC	Total Number of Containers	Requested Analysis: VOC TO-15 (including acetone, MTBE, and MEK)	Requested Analysis: TPH-gasoline SW8015M	Requested Analysis: Fixed Gasses SM2320C		THIS AREA FOR LAB USE ONLY: Cooler Temperature	
Date	Time	Comp	Grab	Water	Soil	Air				Preservative: none	none	none		Alternate Description	Lab ID
1/16/13	1315		X			X	ST70-AR- 40-20 -160113		1	X	X	X		Can #: SG 1777	1
1/16/13	1305		X			X	ST70-AR- 29H -160113		1	X	X	X		Can #: SG 1439	2
1/16/13	1335		X			X	ST70-AR- 38-99 -160113		1	X	X	X		Can #: SG 1849	3
1/16/13	1330		X			X	ST70-AR- 38-41 -160113		1	X	X	X		Can #: SG 1463	4
1/16/13	1340		X			X	ST70-AR- 39-42 -160113		1	X	X	X		Can #: SG 1894	5
1/16/13	1355		X			X	ST70-AR- 41 -160113		1	X	X	X		Can #: SG 1788	6
1/16/13	1410		X			X	ST70-AR- INLET -160113		1	X	X	X		Can #: SG 1414	7
1/16/13	1405		X			X	ST70-AR- Exhaust -160113		1	X	X	X		Can #: SG 1843	8
1/16/13	1415		X			X	ST70-AR- 28H -160113		1	X	X	X		Can #: SG 1879	9
1/16/13	1420		X			X	ST70-AR- 7002 -160113		1	X	X	X		Can #: SG 1702	10
1/16/13	1425		X			X	ST70-AR- 7003 -160113		1	X	X	X		Can #: SG 1394	11
1/16/13	1450		X			X	ST70-AR- 7001 -160113		1	X	X	X		Can #: SG 1682	12
														Note - 1 extra cannister not used	

THIS AREA FOR LAB USE ONLY	
Lab # M1056	Pg 1 of 1
Lab PM	Custody Review
Log In	LIMS Verification
pH	Cust Seals Y N Ice
QC Level 1 2 3	

Sampled By	Ben Moayyad	Relinquished By	1/16/13 1600
Received By	Milo Quinn 1/17/13 10:45 Milo Quinn	Relinquished By	SHIPPED:
Received By		Date/Time	AIRBILL:
Special Instructions			

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: M1056
Client/Project: KAFB

Date received: 1-17-13
Checked by: CB
Checked by: _____

VERIFICATION OF SAMPLE CONDITIONS (verify all items), HD = Client Hand delivered Samples	NA	YES	NO
Radiological Screening for DoD	✓		
Were custody seals intact and on the outside of the cooler?		✓	
Type of packing material: Ice Blue Ice (Bubble wrap)		✓	
Was a Chain of Custody (CoC) Provided?		✓	
Was the CoC correctly filled out (If No, document in the SRER)		✓	
Did the CoC list a correct bottle count and the preservative types (Y=OK, N=Corrected on CoC)		✓	
Were the sample containers in good condition (broken or leaking)?		✓	
Containers supplied by ASL?		✓	
Any sample with < 1/2 holding time remaining? If so contact LPM			✓
Samples have multi-phase? If yes, document on SRER			✓
Was there ice in the cooler? Enter temp. If >6°C contact client/SRER °C	✓		
All VOCs free of air bubbles? No, document on SRER	✓		
pH of all samples checked and met requirements? No, then document in SRER	✓		
Enough sample volume provided for analysis? No, document in SRER	✓		
Did sample labels agree with COC? No, document in SRER		✓	
Dissolved/Soluble metals filtered in the field?	✓		
Dissolved/Soluble metals have sediment in bottom of container? Document in SRER	✓		

Sample ID	Reagent	Reagent Lot Number	Volume Added	Initials

Data Validation Report

This report contains the results of the review and validation of the specified data package performed by Marcia Olive, Bhate Environmental Associates, Denver, Colorado.

Introduction

This data validation report covers samples taken from former Kirtland Air Force Base, New Mexico, on January 9, 2013. One aqueous sample, field duplicate and associated trip blank were collected from Solid Waste Management Unit (SWMU) ST-70. The analyses were performed by Test America Laboratory Denver, Colorado. The specific samples included in this validation were:

Sample ID	Matrix	Collection Date	Analyses
ST70-GW-7001-090113	Water	1/9/13	VOCs(SW8260B), Nitrate (EPA 300), RCRA 8 Metals (SW6010C/7470A), TPH-GRO (SW8015C)
ST70-FD-7001-090113			

This data was validated against the laboratory's QA/QC limits using the guidelines and practices published in the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, June 2008), the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, January 2010).

Sample Handling and Holding times

The samples were prepared and analyzed within method specific sample holding times.

Blanks

No compounds were detected in the trip blank.

A low level detection of TPH-GRO was detected in the method blank. The positive detection in the field duplicate sample data was flagged "U" and raised to the reporting limit.

Laboratory control sample (LCS)/surrogates

The laboratory control sample (LCS) and surrogate recoveries were within QC control limits.

Project specific quality assurance/quality control

The matrix spike (MS) and/or matrix spike duplicate (MSD) recoveries for all compounds were within control limits.

Compound quantitation and reporting limits

No dilutions were required. All compounds were reported down to their respective reporting limits.

Overall assessment of data

Cadmium exceeded the limit of detection in the interference check standard solution A (ICSA). The vendor confirmed that this element is a trace impurity of this solution. The detection of cadmium in the parent sample was qualified estimated, "J".

All analyses were performed, and the data met the required QC criteria except where noted. The data is 100% complete.

Summary of Qualified Data

Sample ID	Parameter	*Qualifier
ST70-GW-7001-090113	Cadmium	0.49 J
ST70-FD-7001-090113	TPH-GRO	25 U (18 J)

*in mg/l

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-37713-1
Client Project/Site: Bhate - Kirtland AFB, NM / ST70

For:
Bhate Environmental
445 Union Blvd Ste.129
Lakewood, Colorado 80226

Attn: Marcia Olive

Authorized for release by:
1/18/2013 10:42:13 AM

Lisa Uriell
Project Manager II
lisa.uriell@testamericainc.com

Table of Contents

Job ID: 280-37713-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Bhate Environmental

Project: Kirtland AFB, NM / ST70

Report Number: 280-37713-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Please note, all references to reporting limit and method detection limit in the case narrative are equivalent to the limit of quantitation (LOQ) and detection limit (DL).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Sample Receiving
One water sample, one field duplicate and one trip blank were received under Chain of Custody on January 10, 2013 at a temperature of 2.2°C. The samples arrived in good condition, properly preserved and on ice.

No anomalies were observed during sample receipt.

GCMS Volatiles, SW846 8260B
No anomalies were observed.

GC Volatiles, SW846 8015B Gasoline Range Organics
A low level of Gasoline Range Organics (GRO)-C6-C10 was detected in the method blank associated with batch 280-155496. The value should be considered an estimate, and has been flagged “J”. Because the concentration in the method blank was not present at a level greater than one half the reporting limit, corrective action was deemed unnecessary. Usability of the sample data is not compromised.

No other anomalies were observed.

Dissolved Metals, SW846 6010C/7470A
The interference check standard solution (ICSA) for the method 6010C analysis associated with analytical batch 280-155634 was greater than the Limit of Detection (LOD) for Cadmium. The laboratory has confirmed with the vendor that this element is a trace impurity in the ICSA solution, and not due to matrix interference. Therefore, no corrective action was needed. The associated data have been flagged “Q” per the DoD QSM.

No other anomalies were observed.

General Chemistry - 300.0 Nitrate
No anomalies were observed.

Definitions/Glossary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

GC VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
Q	One or more quality control criteria failed.

General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

Client Sample ID: ST70-GW-7001-090113 — Lab Sample ID: 280-37713-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Chlorodibromomethane	0.22	J	1.0	0.17	ug/L	1		8260B/DoD	Total/NA
Chloroform	0.16	J	1.0	0.16	ug/L	1		8260B/DoD	Total/NA
Dichlorobromomethane	0.18	J	1.0	0.17	ug/L	1		8260B/DoD	Total/NA
Trichloroethene	1.7		1.0	0.16	ug/L	1		8260B/DoD	Total/NA
Barium	41		10	0.58	ug/L	1		6010C	Dissolved
Cadmium	0.49	J Q	5.0	0.45	ug/L	1		6010C	Dissolved
Chromium	1.3	J	15	0.66	ug/L	1		6010C	Dissolved
Selenium	19	J	22	4.9	ug/L	1		6010C	Dissolved
Nitrate as N	6.9		0.50	0.042	mg/L	1		300.0	Total/NA

Client Sample ID: ST70-FD-7001-090113 — Lab Sample ID: 280-37713-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Chlorodibromomethane	0.22	J	1.0	0.17	ug/L	1		8260B/DoD	Total/NA
Chloroform	0.17	J	1.0	0.16	ug/L	1		8260B/DoD	Total/NA
Trichloroethene	1.8		1.0	0.16	ug/L	1		8260B/DoD	Total/NA
Gasoline Range Organics (GRO) -C6-C10	18	J M	25	10	ug/L	1		8015C	Total/NA
Barium	40		10	0.58	ug/L	1		6010C	Dissolved
Chromium	1.5	J	15	0.66	ug/L	1		6010C	Dissolved
Selenium	19	J	22	4.9	ug/L	1		6010C	Dissolved
Nitrate as N	7.0		0.50	0.042	mg/L	1		300.0	Total/NA

Client Sample ID: ST70-TB-7001-090113 — Lab Sample ID: 280-37713-3

No Detections

Method Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

Method	Method Description	Protocol	Laboratory
8260B/DoD	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL DEN
6010C	Metals (ICP)	SW846	TAL DEN
7470A	Mercury (CVAA)	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-37713-1	ST70-GW-7001-090113	Water	01/09/13 12:05	01/10/13 09:00
280-37713-2	ST70-FD-7001-090113	Water	01/09/13 12:30	01/10/13 09:00
280-37713-3	ST70-TB-7001-090113	Water	01/09/13 09:00	01/10/13 09:00

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Client Sample ID: ST70-GW-7001-090113
Date Collected: 01/09/13 12:05
Date Received: 01/10/13 09:00

Lab Sample ID: 280-37713-1
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.20	U	1.0	0.17	ug/L			01/11/13 15:26	1
1,1,1-Trichloroethane	0.20	U	1.0	0.16	ug/L			01/11/13 15:26	1
1,2,3-Trichloropropane	0.80	U	3.0	0.77	ug/L			01/11/13 15:26	1
1,2,3-Trichlorobenzene	0.40	U	1.0	0.18	ug/L			01/11/13 15:26	1
1,1-Dichloroethane	0.20	U	1.0	0.16	ug/L			01/11/13 15:26	1
1,2,4-Trichlorobenzene	0.80	U	1.0	0.32	ug/L			01/11/13 15:26	1
1,2-Dibromo-3-Chloropropane	1.6	U	5.0	0.81	ug/L			01/11/13 15:26	1
1,1-Dichloropropene	0.40	U	1.0	0.15	ug/L			01/11/13 15:26	1
1,1-Dichloroethene	0.20	U	1.0	0.14	ug/L			01/11/13 15:26	1
1,1,2-Trichloroethane	0.40	U	1.0	0.32	ug/L			01/11/13 15:26	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.20	ug/L			01/11/13 15:26	1
1,2,4-Trimethylbenzene	0.20	U	1.0	0.14	ug/L			01/11/13 15:26	1
1,2-Dichlorobenzene	0.20	U	1.0	0.13	ug/L			01/11/13 15:26	1
1,2-Dichloroethane	0.20	U	1.0	0.13	ug/L			01/11/13 15:26	1
1,3-Dichlorobenzene	0.20	U	1.0	0.16	ug/L			01/11/13 15:26	1
1,3-Dichloropropane	0.20	U	1.0	0.15	ug/L			01/11/13 15:26	1
1,3,5-Trimethylbenzene	0.40	U	1.0	0.14	ug/L			01/11/13 15:26	1
2-Butanone (MEK)	3.2	U	6.0	1.8	ug/L			01/11/13 15:26	1
1,4-Dichlorobenzene	0.40	U	1.0	0.16	ug/L			01/11/13 15:26	1
1,2-Dichloropropane	0.20	U	1.0	0.13	ug/L			01/11/13 15:26	1
2,2-Dichloropropane	0.40	U	1.0	0.20	ug/L			01/11/13 15:26	1
2-Hexanone	3.2	U	5.0	1.4	ug/L			01/11/13 15:26	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	1.0	ug/L			01/11/13 15:26	1
4-Isopropyltoluene	0.40	U	1.0	0.17	ug/L			01/11/13 15:26	1
Benzene	0.20	U	1.0	0.16	ug/L			01/11/13 15:26	1
Acetone	6.4	U	10	1.9	ug/L			01/11/13 15:26	1
Bromobenzene	0.20	U	1.0	0.17	ug/L			01/11/13 15:26	1
Bromoform	0.40	U	1.0	0.19	ug/L			01/11/13 15:26	1
Bromomethane	0.40	U	2.0	0.21	ug/L			01/11/13 15:26	1
Carbon tetrachloride	0.40	U	2.0	0.19	ug/L			01/11/13 15:26	1
Carbon disulfide	0.80	U	2.0	0.45	ug/L			01/11/13 15:26	1
2-Chlorotoluene	0.40	U	1.0	0.17	ug/L			01/11/13 15:26	1
4-Chlorotoluene	0.40	U	1.0	0.17	ug/L			01/11/13 15:26	1
Chlorobenzene	0.20	U	1.0	0.17	ug/L			01/11/13 15:26	1
Chlorobromomethane	0.20	U	1.0	0.10	ug/L			01/11/13 15:26	1
Chlorodibromomethane	**0.22**	**J**	1.0	0.17	ug/L			01/11/13 15:26	1
Chloroform	**0.16**	**J**	1.0	0.16	ug/L			01/11/13 15:26	1
Chloroethane	1.6	U	2.0	0.41	ug/L			01/11/13 15:26	1
Chloromethane	0.80	U	2.0	0.30	ug/L			01/11/13 15:26	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			01/11/13 15:26	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.16	ug/L			01/11/13 15:26	1
Dibromomethane	0.40	U	1.0	0.17	ug/L			01/11/13 15:26	1
Dichlorobromomethane	**0.18**	**J**	1.0	0.17	ug/L			01/11/13 15:26	1
Dichlorodifluoromethane	0.80	U	2.0	0.31	ug/L			01/11/13 15:26	1
Ethylbenzene	0.20	U	1.0	0.16	ug/L			01/11/13 15:26	1
Hexachlorobutadiene	0.40	U	1.0	0.36	ug/L			01/11/13 15:26	1
Isopropylbenzene	0.40	U	1.0	0.19	ug/L			01/11/13 15:26	1
Ethylene Dibromide	0.20	U	1.0	0.18	ug/L			01/11/13 15:26	1
Methylene Chloride	0.40	U	5.0	0.32	ug/L			01/11/13 15:26	1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: ST70-GW-7001-090113 — **Lab Sample ID: 280-37713-1**
Date Collected: 01/09/13 12:05 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	0.40	U	5.0	0.25	ug/L			01/11/13 15:26	1
m-Xylene & p-Xylene	0.80	U	2.0	0.34	ug/L			01/11/13 15:26	1
Naphthalene	0.80	U	1.0	0.22	ug/L			01/11/13 15:26	1
n-Butylbenzene	0.40	U	1.0	0.32	ug/L			01/11/13 15:26	1
N-Propylbenzene	0.20	U	1.0	0.16	ug/L			01/11/13 15:26	1
o-Xylene	0.40	U	1.0	0.19	ug/L			01/11/13 15:26	1
Styrene	0.40	U	1.0	0.17	ug/L			01/11/13 15:26	1
sec-Butylbenzene	0.40	U	1.0	0.17	ug/L			01/11/13 15:26	1
tert-Butylbenzene	0.40	U	1.0	0.16	ug/L			01/11/13 15:26	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			01/11/13 15:26	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.19	ug/L			01/11/13 15:26	1
Tetrachloroethene	0.40	U	1.0	0.20	ug/L			01/11/13 15:26	1
1,2-Dichloroethene, Total	0.20	U	1.0	0.15	ug/L			01/11/13 15:26	1
Toluene	0.40	U	1.0	0.17	ug/L			01/11/13 15:26	1
Trichloroethene	**1.7**		1.0	0.16	ug/L			01/11/13 15:26	1
Trichlorofluoromethane	0.80	U	2.0	0.29	ug/L			01/11/13 15:26	1
Vinyl chloride	0.80	U	1.5	0.40	ug/L			01/11/13 15:26	1
2-Chloroethyl vinyl ether	0.40	U	3.0	0.69	ug/L			01/11/13 15:26	1
2-Nitropropane	3.2	U	5.0	1.6	ug/L			01/11/13 15:26	1
Ethyl acetate	3.2	U	5.0	1.2	ug/L			01/11/13 15:26	1
Ethyl ether	0.80	U	2.0	0.26	ug/L			01/11/13 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*85 - 120*		*01/11/13 15:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 120*		*01/11/13 15:26*	*1*
4-Bromofluorobenzene (Surr)	*112*		*75 - 120*		*01/11/13 15:26*	*1*
Dibromofluoromethane (Surr)	*103*		*85 - 115*		*01/11/13 15:26*	*1*

Client Sample ID: ST70-FD-7001-090113 — **Lab Sample ID: 280-37713-2**
Date Collected: 01/09/13 12:30 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.20	U	1.0	0.17	ug/L			01/11/13 15:47	1
1,1,1-Trichloroethane	0.20	U	1.0	0.16	ug/L			01/11/13 15:47	1
1,2,3-Trichloropropane	0.80	U	3.0	0.77	ug/L			01/11/13 15:47	1
1,2,3-Trichlorobenzene	0.40	U	1.0	0.18	ug/L			01/11/13 15:47	1
1,1-Dichloroethane	0.20	U	1.0	0.16	ug/L			01/11/13 15:47	1
1,2,4-Trichlorobenzene	0.80	U	1.0	0.32	ug/L			01/11/13 15:47	1
1,2-Dibromo-3-Chloropropane	1.6	U	5.0	0.81	ug/L			01/11/13 15:47	1
1,1-Dichloropropene	0.40	U	1.0	0.15	ug/L			01/11/13 15:47	1
1,1-Dichloroethene	0.20	U	1.0	0.14	ug/L			01/11/13 15:47	1
1,1,2-Trichloroethane	0.40	U	1.0	0.32	ug/L			01/11/13 15:47	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.20	ug/L			01/11/13 15:47	1
1,2,4-Trimethylbenzene	0.20	U	1.0	0.14	ug/L			01/11/13 15:47	1
1,2-Dichlorobenzene	0.20	U	1.0	0.13	ug/L			01/11/13 15:47	1
1,2-Dichloroethane	0.20	U	1.0	0.13	ug/L			01/11/13 15:47	1
1,3-Dichlorobenzene	0.20	U	1.0	0.16	ug/L			01/11/13 15:47	1
1,3-Dichloropropane	0.20	U	1.0	0.15	ug/L			01/11/13 15:47	1
1,3,5-Trimethylbenzene	0.40	U	1.0	0.14	ug/L			01/11/13 15:47	1
2-Butanone (MEK)	3.2	U	6.0	1.8	ug/L			01/11/13 15:47	1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: ST70-FD-7001-090113
Date Collected: 01/09/13 12:30
Date Received: 01/10/13 09:00

Lab Sample ID: 280-37713-2
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.40	U	1.0	0.16	ug/L			01/11/13 15:47	1
1,2-Dichloropropane	0.20	U	1.0	0.13	ug/L			01/11/13 15:47	1
2,2-Dichloropropane	0.40	U	1.0	0.20	ug/L			01/11/13 15:47	1
2-Hexanone	3.2	U	5.0	1.4	ug/L			01/11/13 15:47	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	1.0	ug/L			01/11/13 15:47	1
4-Isopropyltoluene	0.40	U	1.0	0.17	ug/L			01/11/13 15:47	1
Benzene	0.20	U	1.0	0.16	ug/L			01/11/13 15:47	1
Acetone	6.4	U	10	1.9	ug/L			01/11/13 15:47	1
Bromobenzene	0.20	U	1.0	0.17	ug/L			01/11/13 15:47	1
Bromoform	0.40	U	1.0	0.19	ug/L			01/11/13 15:47	1
Bromomethane	0.40	U	2.0	0.21	ug/L			01/11/13 15:47	1
Carbon tetrachloride	0.40	U	2.0	0.19	ug/L			01/11/13 15:47	1
Carbon disulfide	0.80	U	2.0	0.45	ug/L			01/11/13 15:47	1
2-Chlorotoluene	0.40	U	1.0	0.17	ug/L			01/11/13 15:47	1
4-Chlorotoluene	0.40	U	1.0	0.17	ug/L			01/11/13 15:47	1
Chlorobenzene	0.20	U	1.0	0.17	ug/L			01/11/13 15:47	1
Chlorobromomethane	0.20	U	1.0	0.10	ug/L			01/11/13 15:47	1
Chlorodibromomethane	**0.22**	**J**	1.0	0.17	ug/L			01/11/13 15:47	1
Chloroform	**0.17**	**J**	1.0	0.16	ug/L			01/11/13 15:47	1
Chloroethane	1.6	U	2.0	0.41	ug/L			01/11/13 15:47	1
Chloromethane	0.80	U	2.0	0.30	ug/L			01/11/13 15:47	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			01/11/13 15:47	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.16	ug/L			01/11/13 15:47	1
Dibromomethane	0.40	U	1.0	0.17	ug/L			01/11/13 15:47	1
Dichlorobromomethane	0.20	U	1.0	0.17	ug/L			01/11/13 15:47	1
Dichlorodifluoromethane	0.80	U	2.0	0.31	ug/L			01/11/13 15:47	1
Ethylbenzene	0.20	U	1.0	0.16	ug/L			01/11/13 15:47	1
Hexachlorobutadiene	0.40	U	1.0	0.36	ug/L			01/11/13 15:47	1
Isopropylbenzene	0.40	U	1.0	0.19	ug/L			01/11/13 15:47	1
Ethylene Dibromide	0.20	U	1.0	0.18	ug/L			01/11/13 15:47	1
Methylene Chloride	0.40	U	5.0	0.32	ug/L			01/11/13 15:47	1
Methyl tert-butyl ether	0.40	U	5.0	0.25	ug/L			01/11/13 15:47	1
m-Xylene & p-Xylene	0.80	U	2.0	0.34	ug/L			01/11/13 15:47	1
Naphthalene	0.80	U	1.0	0.22	ug/L			01/11/13 15:47	1
n-Butylbenzene	0.40	U	1.0	0.32	ug/L			01/11/13 15:47	1
N-Propylbenzene	0.20	U	1.0	0.16	ug/L			01/11/13 15:47	1
o-Xylene	0.40	U	1.0	0.19	ug/L			01/11/13 15:47	1
Styrene	0.40	U	1.0	0.17	ug/L			01/11/13 15:47	1
sec-Butylbenzene	0.40	U	1.0	0.17	ug/L			01/11/13 15:47	1
tert-Butylbenzene	0.40	U	1.0	0.16	ug/L			01/11/13 15:47	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			01/11/13 15:47	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.19	ug/L			01/11/13 15:47	1
Tetrachloroethene	0.40	U	1.0	0.20	ug/L			01/11/13 15:47	1
1,2-Dichloroethene, Total	0.20	U	1.0	0.15	ug/L			01/11/13 15:47	1
Toluene	0.40	U	1.0	0.17	ug/L			01/11/13 15:47	1
Trichloroethene	**1.8**		1.0	0.16	ug/L			01/11/13 15:47	1
Trichlorofluoromethane	0.80	U	2.0	0.29	ug/L			01/11/13 15:47	1
Vinyl chloride	0.80	U	1.5	0.40	ug/L			01/11/13 15:47	1
2-Chloroethyl vinyl ether	0.40	U	3.0	0.69	ug/L			01/11/13 15:47	1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: ST70-FD-7001-090113 — **Lab Sample ID: 280-37713-2**
Date Collected: 01/09/13 12:30 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitropropane	3.2	U	5.0	1.6	ug/L			01/11/13 15:47	1
Ethyl acetate	3.2	U	5.0	1.2	ug/L			01/11/13 15:47	1
Ethyl ether	0.80	U	2.0	0.26	ug/L			01/11/13 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/11/13 15:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 120*		*01/11/13 15:47*	*1*
4-Bromofluorobenzene (Surr)	*107*		*75 - 120*		*01/11/13 15:47*	*1*
Dibromofluoromethane (Surr)	*101*		*85 - 115*		*01/11/13 15:47*	*1*

Client Sample ID: ST70-TB-7001-090113 — **Lab Sample ID: 280-37713-3**
Date Collected: 01/09/13 09:00 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.20	U	1.0	0.17	ug/L			01/11/13 16:08	1
1,1,1-Trichloroethane	0.20	U	1.0	0.16	ug/L			01/11/13 16:08	1
1,2,3-Trichloropropane	0.80	U	3.0	0.77	ug/L			01/11/13 16:08	1
1,2,3-Trichlorobenzene	0.40	U	1.0	0.18	ug/L			01/11/13 16:08	1
1,1-Dichloroethane	0.20	U	1.0	0.16	ug/L			01/11/13 16:08	1
1,2,4-Trichlorobenzene	0.80	U	1.0	0.32	ug/L			01/11/13 16:08	1
1,2-Dibromo-3-Chloropropane	1.6	U	5.0	0.81	ug/L			01/11/13 16:08	1
1,1-Dichloropropene	0.40	U	1.0	0.15	ug/L			01/11/13 16:08	1
1,1-Dichloroethene	0.20	U	1.0	0.14	ug/L			01/11/13 16:08	1
1,1,2-Trichloroethane	0.40	U	1.0	0.32	ug/L			01/11/13 16:08	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.20	ug/L			01/11/13 16:08	1
1,2,4-Trimethylbenzene	0.20	U	1.0	0.14	ug/L			01/11/13 16:08	1
1,2-Dichlorobenzene	0.20	U	1.0	0.13	ug/L			01/11/13 16:08	1
1,2-Dichloroethane	0.20	U	1.0	0.13	ug/L			01/11/13 16:08	1
1,3-Dichlorobenzene	0.20	U	1.0	0.16	ug/L			01/11/13 16:08	1
1,3-Dichloropropane	0.20	U	1.0	0.15	ug/L			01/11/13 16:08	1
1,3,5-Trimethylbenzene	0.40	U	1.0	0.14	ug/L			01/11/13 16:08	1
2-Butanone (MEK)	3.2	U	6.0	1.8	ug/L			01/11/13 16:08	1
1,4-Dichlorobenzene	0.40	U	1.0	0.16	ug/L			01/11/13 16:08	1
1,2-Dichloropropane	0.20	U	1.0	0.13	ug/L			01/11/13 16:08	1
2,2-Dichloropropane	0.40	U	1.0	0.20	ug/L			01/11/13 16:08	1
2-Hexanone	3.2	U	5.0	1.4	ug/L			01/11/13 16:08	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	1.0	ug/L			01/11/13 16:08	1
4-Isopropyltoluene	0.40	U	1.0	0.17	ug/L			01/11/13 16:08	1
Benzene	0.20	U	1.0	0.16	ug/L			01/11/13 16:08	1
Acetone	6.4	U	10	1.9	ug/L			01/11/13 16:08	1
Bromobenzene	0.20	U	1.0	0.17	ug/L			01/11/13 16:08	1
Bromoform	0.40	U	1.0	0.19	ug/L			01/11/13 16:08	1
Bromomethane	0.40	U	2.0	0.21	ug/L			01/11/13 16:08	1
Carbon tetrachloride	0.40	U	2.0	0.19	ug/L			01/11/13 16:08	1
Carbon disulfide	0.80	U	2.0	0.45	ug/L			01/11/13 16:08	1
2-Chlorotoluene	0.40	U	1.0	0.17	ug/L			01/11/13 16:08	1
4-Chlorotoluene	0.40	U	1.0	0.17	ug/L			01/11/13 16:08	1
Chlorobenzene	0.20	U	1.0	0.17	ug/L			01/11/13 16:08	1
Chlorobromomethane	0.20	U	1.0	0.10	ug/L			01/11/13 16:08	1
Chlorodibromomethane	0.40	U	1.0	0.17	ug/L			01/11/13 16:08	1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: ST70-TB-7001-090113
Date Collected: 01/09/13 09:00
Date Received: 01/10/13 09:00

Lab Sample ID: 280-37713-3
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	0.20	U	1.0	0.16	ug/L			01/11/13 16:08	1
Chloroethane	1.6	U	2.0	0.41	ug/L			01/11/13 16:08	1
Chloromethane	0.80	U	2.0	0.30	ug/L			01/11/13 16:08	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			01/11/13 16:08	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.16	ug/L			01/11/13 16:08	1
Dibromomethane	0.40	U	1.0	0.17	ug/L			01/11/13 16:08	1
Dichlorobromomethane	0.20	U	1.0	0.17	ug/L			01/11/13 16:08	1
Dichlorodifluoromethane	0.80	U	2.0	0.31	ug/L			01/11/13 16:08	1
Ethylbenzene	0.20	U	1.0	0.16	ug/L			01/11/13 16:08	1
Hexachlorobutadiene	0.40	U	1.0	0.36	ug/L			01/11/13 16:08	1
Isopropylbenzene	0.40	U	1.0	0.19	ug/L			01/11/13 16:08	1
Ethylene Dibromide	0.20	U	1.0	0.18	ug/L			01/11/13 16:08	1
Methylene Chloride	0.40	U	5.0	0.32	ug/L			01/11/13 16:08	1
Methyl tert-butyl ether	0.40	U	5.0	0.25	ug/L			01/11/13 16:08	1
m-Xylene & p-Xylene	0.80	U	2.0	0.34	ug/L			01/11/13 16:08	1
Naphthalene	0.80	U	1.0	0.22	ug/L			01/11/13 16:08	1
n-Butylbenzene	0.40	U	1.0	0.32	ug/L			01/11/13 16:08	1
N-Propylbenzene	0.20	U	1.0	0.16	ug/L			01/11/13 16:08	1
o-Xylene	0.40	U	1.0	0.19	ug/L			01/11/13 16:08	1
Styrene	0.40	U	1.0	0.17	ug/L			01/11/13 16:08	1
sec-Butylbenzene	0.40	U	1.0	0.17	ug/L			01/11/13 16:08	1
tert-Butylbenzene	0.40	U	1.0	0.16	ug/L			01/11/13 16:08	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			01/11/13 16:08	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.19	ug/L			01/11/13 16:08	1
Tetrachloroethene	0.40	U	1.0	0.20	ug/L			01/11/13 16:08	1
1,2-Dichloroethene, Total	0.20	U	1.0	0.15	ug/L			01/11/13 16:08	1
Toluene	0.40	U	1.0	0.17	ug/L			01/11/13 16:08	1
Trichloroethene	0.20	U	1.0	0.16	ug/L			01/11/13 16:08	1
Trichlorofluoromethane	0.80	U	2.0	0.29	ug/L			01/11/13 16:08	1
Vinyl chloride	0.80	U	1.5	0.40	ug/L			01/11/13 16:08	1
2-Chloroethyl vinyl ether	0.40	U	3.0	0.69	ug/L			01/11/13 16:08	1
2-Nitropropane	3.2	U	5.0	1.6	ug/L			01/11/13 16:08	1
Ethyl acetate	3.2	U	5.0	1.2	ug/L			01/11/13 16:08	1
Ethyl ether	0.80	U	2.0	0.26	ug/L			01/11/13 16:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*85 - 120*		*01/11/13 16:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 120*		*01/11/13 16:08*	*1*
4-Bromofluorobenzene (Surr)	*107*		*75 - 120*		*01/11/13 16:08*	*1*
Dibromofluoromethane (Surr)	*105*		*85 - 115*		*01/11/13 16:08*	*1*

Client Sample Results

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Client Sample ID: ST70-GW-7001-090113 — **Lab Sample ID: 280-37713-1**
Date Collected: 01/09/13 12:05 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	20	U	25	10	ug/L			01/11/13 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*106*		*82 - 110*		*01/11/13 16:41*	*1*

Client Sample ID: ST70-FD-7001-090113 — **Lab Sample ID: 280-37713-2**
Date Collected: 01/09/13 12:30 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**18**	**J M**	25	10	ug/L			01/11/13 18:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*106*	*M*	*82 - 110*		*01/11/13 18:39*	*1*

Client Sample Results

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: ST70-GW-7001-090113 — **Lab Sample ID: 280-37713-1**
Date Collected: 01/09/13 12:05 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12	U	25	4.4	ug/L		01/11/13 08:00	01/11/13 17:48	1
Barium	**41**		10	0.58	ug/L		01/11/13 08:00	01/11/13 17:48	1
Cadmium	**0.49**	**J Q**	5.0	0.45	ug/L		01/11/13 08:00	01/11/13 17:48	1
Chromium	**1.3**	**J**	15	0.66	ug/L		01/11/13 08:00	01/11/13 17:48	1
Lead	5.0	U	15	2.6	ug/L		01/11/13 08:00	01/11/13 17:48	1
Selenium	**19**	**J**	22	4.9	ug/L		01/11/13 08:00	01/11/13 17:48	1
Silver	2.0	U	15	0.93	ug/L		01/11/13 08:00	01/11/13 17:48	1

Client Sample ID: ST70-FD-7001-090113 — **Lab Sample ID: 280-37713-2**
Date Collected: 01/09/13 12:30 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12	U	25	4.4	ug/L		01/11/13 08:00	01/11/13 17:59	1
Barium	**40**		10	0.58	ug/L		01/11/13 08:00	01/11/13 17:59	1
Cadmium	0.80	U Q	5.0	0.45	ug/L		01/11/13 08:00	01/11/13 17:59	1
Chromium	**1.5**	**J**	15	0.66	ug/L		01/11/13 08:00	01/11/13 17:59	1
Lead	5.0	U	15	2.6	ug/L		01/11/13 08:00	01/11/13 17:59	1
Selenium	**19**	**J**	22	4.9	ug/L		01/11/13 08:00	01/11/13 17:59	1
Silver	2.0	U	15	0.93	ug/L		01/11/13 08:00	01/11/13 17:59	1

Client Sample Results

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

Method: 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: ST70-GW-7001-090113 — **Lab Sample ID: 280-37713-1**
Date Collected: 01/09/13 12:05 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.027	ug/L		01/17/13 11:20	01/17/13 15:06	1

Client Sample ID: ST70-FD-7001-090113 — **Lab Sample ID: 280-37713-2**
Date Collected: 01/09/13 12:30 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.027	ug/L		01/17/13 11:20	01/17/13 15:16	1

Client Sample Results

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

General Chemistry

Client Sample ID: ST70-GW-7001-090113 — **Lab Sample ID: 280-37713-1**
Date Collected: 01/09/13 12:05 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.9		0.50	0.042	mg/L			01/10/13 14:26	1

Client Sample ID: ST70-FD-7001-090113 — **Lab Sample ID: 280-37713-2**
Date Collected: 01/09/13 12:30 — **Matrix: Water**
Date Received: 01/10/13 09:00

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	7.0		0.50	0.042	mg/L			01/10/13 14:42	1

Surrogate Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	BFB	DBFM
Lab Sample ID	Client Sample ID	(85-120)	(70-120)	(75-120)	(85-115)
280-37713-1	ST70-GW-7001-090113	97	105	112	103
280-37713-2	ST70-FD-7001-090113	94	102	107	101
280-37713-3	ST70-TB-7001-090113	96	110	107	105
LCS 280-155438/5	Lab Control Sample	90	103	104	102
MB 280-155438/6	Method Blank	95	104	108	105

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		TFT1
Lab Sample ID	Client Sample ID	(82-110)
280-37713-1	ST70-GW-7001-090113	106
280-37713-1 MS	ST70-GW-7001-090113	106
280-37713-1 MSD	ST70-GW-7001-090113	107
280-37713-2	ST70-FD-7001-090113	106 M
LCS 280-155496/4	Lab Control Sample	106
LCSD 280-155496/5	Lab Control Sample Dup	105
MB 280-155496/6	Method Blank	107

Surrogate Legend

TFT = a,a,a-Trifluorotoluene

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-155438/6
Matrix: Water
Analysis Batch: 155438

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.20	U	1.0	0.17	ug/L			01/11/13 09:34	1
1,1,1-Trichloroethane	0.20	U	1.0	0.16	ug/L			01/11/13 09:34	1
1,2,3-Trichloropropane	0.80	U	3.0	0.77	ug/L			01/11/13 09:34	1
1,2,3-Trichlorobenzene	0.40	U	1.0	0.18	ug/L			01/11/13 09:34	1
1,1-Dichloroethane	0.20	U	1.0	0.16	ug/L			01/11/13 09:34	1
1,2,4-Trichlorobenzene	0.80	U	1.0	0.32	ug/L			01/11/13 09:34	1
1,2-Dibromo-3-Chloropropane	1.6	U	5.0	0.81	ug/L			01/11/13 09:34	1
1,1-Dichloropropene	0.40	U	1.0	0.15	ug/L			01/11/13 09:34	1
1,1-Dichloroethene	0.20	U	1.0	0.14	ug/L			01/11/13 09:34	1
1,1,2-Trichloroethane	0.40	U	1.0	0.32	ug/L			01/11/13 09:34	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.20	ug/L			01/11/13 09:34	1
1,2,4-Trimethylbenzene	0.20	U	1.0	0.14	ug/L			01/11/13 09:34	1
1,2-Dichlorobenzene	0.20	U	1.0	0.13	ug/L			01/11/13 09:34	1
1,2-Dichloroethane	0.20	U	1.0	0.13	ug/L			01/11/13 09:34	1
1,3-Dichlorobenzene	0.20	U	1.0	0.16	ug/L			01/11/13 09:34	1
1,3-Dichloropropane	0.20	U	1.0	0.15	ug/L			01/11/13 09:34	1
1,3,5-Trimethylbenzene	0.40	U	1.0	0.14	ug/L			01/11/13 09:34	1
2-Butanone (MEK)	3.2	U	6.0	1.8	ug/L			01/11/13 09:34	1
1,4-Dichlorobenzene	0.40	U	1.0	0.16	ug/L			01/11/13 09:34	1
1,2-Dichloropropane	0.20	U	1.0	0.13	ug/L			01/11/13 09:34	1
2,2-Dichloropropane	0.40	U	1.0	0.20	ug/L			01/11/13 09:34	1
2-Hexanone	3.2	U	5.0	1.4	ug/L			01/11/13 09:34	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	1.0	ug/L			01/11/13 09:34	1
4-Isopropyltoluene	0.40	U	1.0	0.17	ug/L			01/11/13 09:34	1
Benzene	0.20	U	1.0	0.16	ug/L			01/11/13 09:34	1
Acetone	6.4	U	10	1.9	ug/L			01/11/13 09:34	1
Bromobenzene	0.20	U	1.0	0.17	ug/L			01/11/13 09:34	1
Bromoform	0.40	U	1.0	0.19	ug/L			01/11/13 09:34	1
Bromomethane	0.40	U	2.0	0.21	ug/L			01/11/13 09:34	1
Carbon tetrachloride	0.40	U	2.0	0.19	ug/L			01/11/13 09:34	1
Carbon disulfide	0.80	U	2.0	0.45	ug/L			01/11/13 09:34	1
2-Chlorotoluene	0.40	U	1.0	0.17	ug/L			01/11/13 09:34	1
4-Chlorotoluene	0.40	U	1.0	0.17	ug/L			01/11/13 09:34	1
Chlorobenzene	0.20	U	1.0	0.17	ug/L			01/11/13 09:34	1
Chlorobromomethane	0.20	U	1.0	0.10	ug/L			01/11/13 09:34	1
Chlorodibromomethane	0.40	U	1.0	0.17	ug/L			01/11/13 09:34	1
Chloroform	0.20	U	1.0	0.16	ug/L			01/11/13 09:34	1
Chloroethane	1.6	U	2.0	0.41	ug/L			01/11/13 09:34	1
Chloromethane	0.80	U	2.0	0.30	ug/L			01/11/13 09:34	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			01/11/13 09:34	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.16	ug/L			01/11/13 09:34	1
Dibromomethane	0.40	U	1.0	0.17	ug/L			01/11/13 09:34	1
Dichlorobromomethane	0.20	U	1.0	0.17	ug/L			01/11/13 09:34	1
Dichlorodifluoromethane	0.80	U	2.0	0.31	ug/L			01/11/13 09:34	1
Ethylbenzene	0.20	U	1.0	0.16	ug/L			01/11/13 09:34	1
Hexachlorobutadiene	0.40	U	1.0	0.36	ug/L			01/11/13 09:34	1
Isopropylbenzene	0.40	U	1.0	0.19	ug/L			01/11/13 09:34	1
Ethylene Dibromide	0.20	U	1.0	0.18	ug/L			01/11/13 09:34	1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-155438/6
Matrix: Water
Analysis Batch: 155438

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	0.40	U	5.0	0.32	ug/L			01/11/13 09:34	1
Methyl tert-butyl ether	0.40	U	5.0	0.25	ug/L			01/11/13 09:34	1
m-Xylene & p-Xylene	0.80	U	2.0	0.34	ug/L			01/11/13 09:34	1
Naphthalene	0.80	U	1.0	0.22	ug/L			01/11/13 09:34	1
n-Butylbenzene	0.40	U	1.0	0.32	ug/L			01/11/13 09:34	1
N-Propylbenzene	0.20	U	1.0	0.16	ug/L			01/11/13 09:34	1
o-Xylene	0.40	U	1.0	0.19	ug/L			01/11/13 09:34	1
Styrene	0.40	U	1.0	0.17	ug/L			01/11/13 09:34	1
sec-Butylbenzene	0.40	U	1.0	0.17	ug/L			01/11/13 09:34	1
tert-Butylbenzene	0.40	U	1.0	0.16	ug/L			01/11/13 09:34	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			01/11/13 09:34	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.19	ug/L			01/11/13 09:34	1
Tetrachloroethene	0.40	U	1.0	0.20	ug/L			01/11/13 09:34	1
1,2-Dichloroethene, Total	0.20	U	1.0	0.15	ug/L			01/11/13 09:34	1
Toluene	0.40	U	1.0	0.17	ug/L			01/11/13 09:34	1
Trichloroethene	0.20	U	1.0	0.16	ug/L			01/11/13 09:34	1
Trichlorofluoromethane	0.80	U	2.0	0.29	ug/L			01/11/13 09:34	1
Vinyl chloride	0.80	U	1.5	0.40	ug/L			01/11/13 09:34	1
2-Chloroethyl vinyl ether	0.40	U	3.0	0.69	ug/L			01/11/13 09:34	1
2-Nitropropane	3.2	U	5.0	1.6	ug/L			01/11/13 09:34	1
Ethyl acetate	3.2	U	5.0	1.2	ug/L			01/11/13 09:34	1
Ethyl ether	0.80	U	2.0	0.26	ug/L			01/11/13 09:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*85 - 120*		*01/11/13 09:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 120*		*01/11/13 09:34*	*1*
4-Bromofluorobenzene (Surr)	*108*		*75 - 120*		*01/11/13 09:34*	*1*
Dibromofluoromethane (Surr)	*105*		*85 - 115*		*01/11/13 09:34*	*1*

Lab Sample ID: LCS 280-155438/5
Matrix: Water
Analysis Batch: 155438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	5.00	4.48		ug/L		90	80 - 130
1,1,1-Trichloroethane	5.00	4.84		ug/L		97	65 - 130
1,2,3-Trichloropropane	5.00	4.78		ug/L		96	75 - 125
1,2,3-Trichlorobenzene	5.00	4.65		ug/L		93	55 - 140
1,1-Dichloroethane	5.00	4.76		ug/L		95	70 - 135
1,2,4-Trichlorobenzene	5.00	4.53		ug/L		91	65 - 135
1,2-Dibromo-3-Chloropropane	5.00	4.58	J	ug/L		92	50 - 130
1,1-Dichloropropene	5.00	4.58		ug/L		92	75 - 130
1,1-Dichloroethene	5.00	5.61		ug/L		112	70 - 130
1,1,2-Trichloroethane	5.00	5.32		ug/L		106	75 - 125
1,1,2,2-Tetrachloroethane	5.00	5.15		ug/L		103	65 - 130
1,2,4-Trimethylbenzene	5.00	4.35		ug/L		87	75 - 130
1,2-Dichlorobenzene	5.00	4.53		ug/L		91	70 - 120
1,2-Dichloroethane	5.00	4.99		ug/L		100	70 - 130

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-155438/5
Matrix: Water
Analysis Batch: 155438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	5.00	4.66		ug/L		93	75 - 125
1,3-Dichloropropane	5.00	4.77		ug/L		95	75 - 125
1,3,5-Trimethylbenzene	5.00	4.47		ug/L		89	75 - 130
2-Butanone (MEK)	20.0	27.4		ug/L		137	30 - 150
1,4-Dichlorobenzene	5.00	4.55		ug/L		91	75 - 125
1,2-Dichloropropane	5.00	4.85		ug/L		97	75 - 125
2,2-Dichloropropane	5.00	4.83		ug/L		97	70 - 135
2-Hexanone	20.0	20.7		ug/L		103	55 - 130
4-Methyl-2-pentanone (MIBK)	20.0	21.3		ug/L		107	60 - 135
4-Isopropyltoluene	5.00	4.46		ug/L		89	75 - 130
Benzene	5.00	4.91		ug/L		98	80 - 120
Acetone	20.0	25.3		ug/L		126	40 - 140
Bromobenzene	5.00	4.62		ug/L		92	75 - 125
Bromoform	5.00	4.71		ug/L		94	70 - 130
Bromomethane	5.00	4.89		ug/L		98	30 - 145
Carbon tetrachloride	5.00	4.98		ug/L		100	65 - 140
Carbon disulfide	5.00	4.57		ug/L		91	35 - 160
2-Chlorotoluene	5.00	4.41		ug/L		88	75 - 125
4-Chlorotoluene	5.00	4.45		ug/L		89	75 - 130
Chlorobenzene	5.00	4.61		ug/L		92	80 - 120
Chlorobromomethane	5.00	5.07		ug/L		101	65 - 130
Chlorodibromomethane	5.00	4.85		ug/L		97	60 - 135
Chloroform	5.00	4.82		ug/L		96	65 - 135
Chloroethane	5.00	4.77		ug/L		95	60 - 135
Chloromethane	5.00	4.81		ug/L		96	40 - 125
cis-1,2-Dichloroethene	5.00	4.92		ug/L		98	70 - 125
cis-1,3-Dichloropropene	5.00	4.64		ug/L		93	70 - 130
Dibromomethane	5.00	5.13		ug/L		103	75 - 125
Dichlorobromomethane	5.00	5.10		ug/L		102	75 - 120
Dichlorodifluoromethane	5.00	5.09		ug/L		102	30 - 155
Ethylbenzene	5.00	4.55		ug/L		91	75 - 125
Hexachlorobutadiene	5.00	4.64		ug/L		93	50 - 140
Isopropylbenzene	5.00	4.48		ug/L		90	75 - 125
Ethylene Dibromide	5.00	4.77		ug/L		95	80 - 120
Methylene Chloride	5.00	5.17		ug/L		103	55 - 140
Methyl tert-butyl ether	5.00	4.70	J	ug/L		94	65 - 125
m-Xylene & p-Xylene	10.0	9.31		ug/L		93	75 - 130
Naphthalene	5.00	4.36		ug/L		87	55 - 140
n-Butylbenzene	5.00	4.47		ug/L		89	70 - 135
N-Propylbenzene	5.00	4.60		ug/L		92	70 - 130
o-Xylene	5.00	4.47		ug/L		89	80 - 120
Styrene	5.00	4.63		ug/L		93	65 - 135
sec-Butylbenzene	5.00	4.44		ug/L		89	70 - 125
tert-Butylbenzene	5.00	4.39		ug/L		88	70 - 130
trans-1,2-Dichloroethene	5.00	5.12		ug/L		102	60 - 140
trans-1,3-Dichloropropene	5.00	5.20		ug/L		104	55 - 140
Tetrachloroethene	5.00	4.73		ug/L		95	45 - 150
Toluene	5.00	5.07		ug/L		101	75 - 120

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-155438/5
Matrix: Water
Analysis Batch: 155438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	5.00	4.75		ug/L		95	70 - 125
Trichlorofluoromethane	5.00	4.75		ug/L		95	60 - 145
Vinyl chloride	5.00	4.77		ug/L		95	50 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*90*		*85 - 120*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 120*
4-Bromofluorobenzene (Surr)	*104*		*75 - 120*
Dibromofluoromethane (Surr)	*102*		*85 - 115*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Lab Sample ID: MB 280-155496/6
Matrix: Water
Analysis Batch: 155496

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	10.3	J	25	10	ug/L			01/11/13 13:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*107*		*82 - 110*		*01/11/13 13:44*	*1*

Lab Sample ID: LCS 280-155496/4
Matrix: Water
Analysis Batch: 155496

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	101	110	M	ug/L		109	79 - 149

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*106*		*82 - 110*

Lab Sample ID: LCSD 280-155496/5
Matrix: Water
Analysis Batch: 155496

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	101	113	M	ug/L		112	79 - 149	2	27

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*105*		*82 - 110*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: 280-37713-1 MS
Matrix: Water
Analysis Batch: 155496

Client Sample ID: ST70-GW-7001-090113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	20	U	101	111	M	ug/L		110	79 - 149

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*106*		*82 - 110*

Lab Sample ID: 280-37713-1 MSD
Matrix: Water
Analysis Batch: 155496

Client Sample ID: ST70-GW-7001-090113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	20	U	101	109	M	ug/L		109	79 - 149	2	27

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*107*		*82 - 110*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-155358/1-A
Matrix: Water
Analysis Batch: 155634

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 155358

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12	U	25	4.4	ug/L		01/11/13 08:00	01/11/13 17:43	1
Barium	1.5	U	10	0.58	ug/L		01/11/13 08:00	01/11/13 17:43	1
Cadmium	0.80	U Q	5.0	0.45	ug/L		01/11/13 08:00	01/11/13 17:43	1
Chromium	1.5	U	15	0.66	ug/L		01/11/13 08:00	01/11/13 17:43	1
Lead	5.0	U	15	2.6	ug/L		01/11/13 08:00	01/11/13 17:43	1
Selenium	12	U	22	4.9	ug/L		01/11/13 08:00	01/11/13 17:43	1
Silver	2.0	U	15	0.93	ug/L		01/11/13 08:00	01/11/13 17:43	1

Lab Sample ID: LCS 280-155358/2-A
Matrix: Water
Analysis Batch: 155634

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 155358

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	1020		ug/L		102	80 - 120
Barium	2000	2090		ug/L		104	80 - 120
Cadmium	100	107	Q	ug/L		107	80 - 120
Chromium	200	214		ug/L		107	80 - 120
Lead	500	530		ug/L		106	80 - 120
Selenium	2000	2290		ug/L		115	80 - 120
Silver	50.0	53.4		ug/L		107	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 280-37713-1 MS — **Client Sample ID: ST70-GW-7001-090113**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 155634 — **Prep Batch: 155358**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	12	U	1000	1040		ug/L		104	80 - 120
Barium	41		2000	2150		ug/L		105	80 - 120
Cadmium	0.49	J Q	100	107	Q	ug/L		106	80 - 120
Chromium	1.3	J	200	216		ug/L		107	80 - 120
Lead	5.0	U	500	518		ug/L		104	80 - 120
Selenium	19	J	2000	2290		ug/L		114	80 - 120
Silver	2.0	U	50.0	53.6		ug/L		107	80 - 120

Lab Sample ID: 280-37713-1 MSD — **Client Sample ID: ST70-GW-7001-090113**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 155634 — **Prep Batch: 155358**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	12	U	1000	1030		ug/L		103	80 - 120	2	20
Barium	41		2000	2110		ug/L		103	80 - 120	2	20
Cadmium	0.49	J Q	100	105	Q	ug/L		104	80 - 120	2	20
Chromium	1.3	J	200	214		ug/L		106	80 - 120	1	20
Lead	5.0	U	500	508		ug/L		102	80 - 120	2	20
Selenium	19	J	2000	2250		ug/L		111	80 - 120	2	20
Silver	2.0	U	50.0	52.4		ug/L		105	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-155817/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 156281 — **Prep Batch: 155817**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.027	ug/L		01/17/13 11:20	01/17/13 14:57	1

Lab Sample ID: LCS 280-155817/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 156281 — **Prep Batch: 155817**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.14		ug/L		103	80 - 120

Lab Sample ID: 280-37713-1 MS — **Client Sample ID: ST70-GW-7001-090113**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 156281 — **Prep Batch: 155817**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.080	U	5.00	4.81		ug/L		96	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 280-37713-1 MSD — **Client Sample ID: ST70-GW-7001-090113**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 156281 — **Prep Batch: 155817**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.080	U	5.00	4.79		ug/L		96	80 - 120	0	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-155468/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 155468

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.10	U	0.50	0.042	mg/L			01/10/13 11:04	1

Lab Sample ID: LCS 280-155468/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 155468

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	5.13		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-155468/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 155468

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	5.12		mg/L		102	90 - 110	0	10

Lab Sample ID: MRL 280-155468/3 MRL — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 155468

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	0.193	J	mg/L		97	50 - 150

Lab Sample ID: 280-37712-A-1 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 155468

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.10	U	5.00	5.35		mg/L		107	80 - 120

Lab Sample ID: 280-37712-A-1 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 155468

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.10	U	5.00	5.41		mg/L		108	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-37712-A-1 DU
Matrix: Water
Analysis Batch: 155468

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrate as N	0.10	U		0.10	U	mg/L				NC	15

QC Association Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

GC/MS VOA

Analysis Batch: 155438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37713-1	ST70-GW-7001-090113	Total/NA	Water	8260B/DoD	
280-37713-2	ST70-FD-7001-090113	Total/NA	Water	8260B/DoD	
280-37713-3	ST70-TB-7001-090113	Total/NA	Water	8260B/DoD	
LCS 280-155438/5	Lab Control Sample	Total/NA	Water	8260B/DoD	
MB 280-155438/6	Method Blank	Total/NA	Water	8260B/DoD	

GC VOA

Analysis Batch: 155496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37713-1	ST70-GW-7001-090113	Total/NA	Water	8015C	
280-37713-1 MS	ST70-GW-7001-090113	Total/NA	Water	8015C	
280-37713-1 MSD	ST70-GW-7001-090113	Total/NA	Water	8015C	
280-37713-2	ST70-FD-7001-090113	Total/NA	Water	8015C	
LCS 280-155496/4	Lab Control Sample	Total/NA	Water	8015C	
LCSD 280-155496/5	Lab Control Sample Dup	Total/NA	Water	8015C	
MB 280-155496/6	Method Blank	Total/NA	Water	8015C	

Metals

Prep Batch: 155358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37713-1	ST70-GW-7001-090113	Dissolved	Water	3005A	
280-37713-1 MS	ST70-GW-7001-090113	Dissolved	Water	3005A	
280-37713-1 MSD	ST70-GW-7001-090113	Dissolved	Water	3005A	
280-37713-2	ST70-FD-7001-090113	Dissolved	Water	3005A	
LCS 280-155358/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 280-155358/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 155634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37713-1	ST70-GW-7001-090113	Dissolved	Water	6010C	155358
280-37713-1 MS	ST70-GW-7001-090113	Dissolved	Water	6010C	155358
280-37713-1 MSD	ST70-GW-7001-090113	Dissolved	Water	6010C	155358
280-37713-2	ST70-FD-7001-090113	Dissolved	Water	6010C	155358
LCS 280-155358/2-A	Lab Control Sample	Total Recoverable	Water	6010C	155358
MB 280-155358/1-A	Method Blank	Total Recoverable	Water	6010C	155358

Prep Batch: 155817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37713-1	ST70-GW-7001-090113	Dissolved	Water	7470A	
280-37713-1 MS	ST70-GW-7001-090113	Dissolved	Water	7470A	
280-37713-1 MSD	ST70-GW-7001-090113	Dissolved	Water	7470A	
280-37713-2	ST70-FD-7001-090113	Dissolved	Water	7470A	
LCS 280-155817/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 280-155817/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 156281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37713-1	ST70-GW-7001-090113	Dissolved	Water	7470A	155817

QC Association Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-37713-1

Metals (Continued)

Analysis Batch: 156281 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37713-1 MS	ST70-GW-7001-090113	Dissolved	Water	7470A	155817
280-37713-1 MSD	ST70-GW-7001-090113	Dissolved	Water	7470A	155817
280-37713-2	ST70-FD-7001-090113	Dissolved	Water	7470A	155817
LCS 280-155817/2-A	Lab Control Sample	Total/NA	Water	7470A	155817
MB 280-155817/1-A	Method Blank	Total/NA	Water	7470A	155817

General Chemistry

Analysis Batch: 155468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-37712-A-1 DU	Duplicate	Total/NA	Water	300.0	
280-37712-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-37712-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-37713-1	ST70-GW-7001-090113	Total/NA	Water	300.0	
280-37713-2	ST70-FD-7001-090113	Total/NA	Water	300.0	
LCS 280-155468/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-155468/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-155468/6	Method Blank	Total/NA	Water	300.0	
MRL 280-155468/3 MRL	Lab Control Sample	Total/NA	Water	300.0	

Client Sample ID: ST70-GW-7001-090113

Lab Sample ID: 280-37713-1

Date Collected: 01/09/13 12:05

Matrix: Water

Date Received: 01/10/13 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/DoD		1	20 mL	20 mL	155438	01/11/13 15:26	TW	TAL DEN
Total/NA	Analysis	8015C		1	5 mL	5 mL	155496	01/11/13 16:41	TEM	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	155358	01/11/13 08:00	JA	TAL DEN
Dissolved	Analysis	6010C		1			155634	01/11/13 17:48	JKH	TAL DEN
Dissolved	Prep	7470A			30 mL	30 mL	155817	01/17/13 11:20	NF	TAL DEN
Dissolved	Analysis	7470A		1			156281	01/17/13 15:06	NF	TAL DEN
Total/NA	Analysis	300.0		1			155468	01/10/13 14:26	EK	TAL DEN

Client Sample ID: ST70-FD-7001-090113

Lab Sample ID: 280-37713-2

Date Collected: 01/09/13 12:30

Matrix: Water

Date Received: 01/10/13 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/DoD		1	20 mL	20 mL	155438	01/11/13 15:47	TW	TAL DEN
Total/NA	Analysis	8015C		1	5 mL	5 mL	155496	01/11/13 18:39	TEM	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	155358	01/11/13 08:00	JA	TAL DEN
Dissolved	Analysis	6010C		1			155634	01/11/13 17:59	JKH	TAL DEN
Dissolved	Prep	7470A			30 mL	30 mL	155817	01/17/13 11:20	NF	TAL DEN
Dissolved	Analysis	7470A		1			156281	01/17/13 15:16	NF	TAL DEN
Total/NA	Analysis	300.0		1			155468	01/10/13 14:42	EK	TAL DEN

Client Sample ID: ST70-TB-7001-090113

Lab Sample ID: 280-37713-3

Date Collected: 01/09/13 09:00

Matrix: Water

Date Received: 01/10/13 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/DoD		1	20 mL	20 mL	155438	01/11/13 16:08	TW	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Chain of Custody Record

Sampler ID: _____
Temperature on Receipt: 2.1°C
Drinking Water? Yes ☐ No ☑

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING — Colorado

TAL-4124-280 (0508)

Client	Project Manager (Contact)	Date	Chain of Custody Number
Bhate & Associates	Marcia Olive // Ben Moayyad	01/09/2013	169758
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number (Proj #)**	**Page 1 of 1**
445 Union Blvd Ste 129	303-592-2450 // 505-855-5201	280027724	
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Lakewood / CO / 80026	Ben Moayyad	Lisa Uriell	
Project Name and Location (State)	**Carrier/Waybill Number**		
ST70, Kirtland AFB (NM)	Fed Ex 7944-7939-1576		
Contract/Purchase Order/Quote No.			
Bhate Project 9120116			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 8015GRO	8260DOD VOCs	7470A-Hg	6010C Metals	E300-Nitrate
ST70-GW-7001-090113	01/09/2013	12:05		✓			1		1	6			✓	✓	✓	✓	✓
ST70-FD-7001-090113	↓	12:30		↓			1		1	6			✓	✓	✓	✓	✓
ST70-TB-7001-090113	↓	09:00		↓						2				✓			

Special Instructions/ Conditions of Receipt

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☑ 21 Days ☐ Other _____

QC Requirements (Specify)
Metals are Field Filtered

	Date	Time		Date	Time
1. Relinquished By: B Moayyad	01/09/12	1600	1. Received By	1/10/13	0900
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: Bhate Environmental

Job Number: 280-37713-1

Login Number: 37713

List Number: 1

Creator: Bindel, Aaron M

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Data Validation Report

This report contains the results of the review and validation of the specified data package performed by Marcia Olive, Bhate Environmental Associates, Denver, Colorado.

Introduction

This data validation report covers samples taken from former Kirtland Air Force Base, New Mexico, on April 24, 2013. Thirteen air samples were collected from Solid Waste Management Unit (SWMU) ST-70 for long term monitoring. The analyses were performed by Applied Sciences Laboratory Corvallis, Oregon. The specific samples included in this validation were:

Sample ID	Matrix	Collection Date	Analyses
ST70-AR-40-20-240413	Air	4/24/13	TO-15, Fixed gases (SM2720C), TPH (SW8015M)
ST70-AR-29H-240413			
ST70-AR-38-99-240413			
ST70-AR-38-41-240413			
ST70-AR-39-42-240413			
ST70-AR-41-240413			
ST70-AR-INLET-240413			
ST70-AR-MID-240413			
ST70-AR-Exhaust-240413			
ST70-AR-28H-240413			
ST70-AR-7002-240413			
ST70-AR-7003-240413			
ST70-AR-7001-240413			

This data was validated against the laboratory's QA/QC limits using the guidelines and practices published in the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, June 2008), the *UFPQAPP Interim Remedial Action Operations at Solid Waste Management Unit ST-70(*AFCEE, December 2010*).*

Sample Handling and Holding times

The samples were prepared and analyzed within method specific sample holding times.

Blanks

For all analyses, no compounds were detected in the method blanks.

Laboratory control sample (LCS)

The LCS recoveries for all compounds were within control limits for all analyses.

Project specific quality assurance/quality control

No field duplicate was collected with this laboratory package.

Compound quantitation and reporting limits

Where dilutions were required elevated reporting limits were reported.

Overall assessment of data

The percent drift (%D) for carbon tetrachloride (31.5%) in the initial calibration exceeded acceptance criteria. This compound was detected in only two samples and qualified estimated, "J".

All analyses were performed, and the data met the required QC criteria except where noted. The data is 100% complete.

Summary of Qualified Data

Sample ID	Parameter	Qualifier
ST70-AR-Inlet-240413	Carbon Tetrachloride	4.03 J (ppbv)
ST70-AR-7003-240413	Carbon Tetrachloride	14.4 J (ppbv)

CH2MHILL
Applied Sciences Laboratory

ANALYTICAL REPORT

For:
BHATE/KAFB

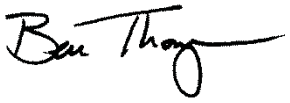
ASL Report #: M1735

Project ID: 458580.01.03.02

Attn: Marcia Olive

cc:
Ben Moayyad/ABQ
Paul Clement/ABQ

Authorized and Released By:



Laboratory Project Manager
Ben Thompson
(541) 758-0235 ext.23132
May 15, 2013

This data package meets standards requested by client and is not intended or implied to meet any other standard.

All analyses performed by CH2M HILL are clearly indicated. Any subcontracted analyses are included as appended reports as received from the subcontracted laboratory. The results included in this report only relate to the samples listed on the following Sample Cross-Reference page. This report shall not be reproduced except in full, without the written approval of the laboratory.

Any unusual difficulties encountered during the analysis of your samples are discussed in the attached case narratives.

CH2M HILL Applied Sciences Laboratory • 1100 NE Circle Boulevard, Suite 300 • Corvallis, Oregon 97330 • www.ch2mhill.com/asl

ASL Report #: M1735

Sample Receipt Comments

We certify that the test results meet all standard ASL requirements.

Sample Cross-Reference

ASL Sample ID	Client Sample ID	Date/Time Collected	Date Received
M173501	ST70-AR-40-20-240413	04/24/13 10:10	04/25/13
M173502	ST70-AR-29H-240413	04/24/13 10:05	04/25/13
M173503	ST70-AR-38-99-240413	04/24/13 10:20	04/25/13
M173504	ST70-AR-38-41-240413	04/24/13 10:25	04/25/13
M173505	ST70-AR-39-42-240413	04/24/13 10:30	04/25/13
M173506	ST70-AR-41-240413	04/24/13 10:40	04/25/13
M173507	ST70-AR-INLET-240413	04/24/13 11:35	04/25/13
M173508	ST70-AR-Exhaust-240413	04/24/13 12:00	04/25/13
M173509	ST70-AR-28H-240413	04/24/13 11:40	04/25/13
M173510	ST70-AR-7002-240413	04/24/13 11:45	04/25/13
M173511	ST70-AR-7003-240413	04/24/13 11:50	04/25/13
M173512	ST70-AR-7001-240413	04/24/13 12:05	04/25/13
M173513	ST70-AR-MID-240413	04/24/13 11:55	04/25/13

ASL Report M1735

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CH2MHILL
Applied Sciences Laboratory (ASL)

CH2M HILL
Applied Sciences Laboratory (ASL)
1100 NE Circle Blvd
Suite 300
Corvallis, OR 97330
Tel 541.768.3120
Fax 541.752.0276

Organic CLP-Like Data Qualifiers

U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
P	The primary and confirmation analyte result recoveries do not match.
E	The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Inorganic CLP-Like Data Qualifiers

U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
E	The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.
N	The matrix spike/matrix spike duplicate recovery for the analyte is outside of acceptance criteria—qualifier is applied to the native sample only.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TO-15

CASE NARRATIVE
GC/MS VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: M1735

Project: BHATE/KAFB Project #: 458580.01.03.02

I. Method(s):

Analysis: TO15
Preparation: NONE

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

The %D for Carbon tetrachloride(31.5%) in calibration 042213AA1 exceeded acceptance criteria of 30%.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):

All acceptance criteria were met.

G. BFB Tune Verification(s):

All acceptance criteria were met.

H. Internal Standard(s):

All acceptance criteria were met.

I. Analytical Exception(s):

None.

J. Manual Integration(s):

See attached.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: _____ Date: 5/14/13

Reviewed by: _____ Date: 5/15/13

Manual Integrations for 042213AA1

File ID	Compound(s)
Level 1	Ethanol, Acrylonitrile, Vinyl Acetate, n-butylbenzene and 2-methyl naphthalene
Level 2	Ehanol and Acrylonitrile
Level 5	Naphtalene
Level 6	Isopropyl alcohol and Naphthalene
Level 7	1.2.4-trichlorobenzene

Sample ID	Client ID	Date Collected	Time Collected	Canister ID	Certification Date	Incoming pressure inHG	Incoming pressure torr	Primary Dilution Factor
M173501	ST70-AR-40-20-240413	4/24/2013	10:10	SG1779	4/16/2013	5.9	609	2.00
M173502	ST70-AR-29H-240413	4/24/2013	10:05	SG1336	4/16/2013	5.8	612	1.98
M173503	ST70-AR-38-99-240413	4/24/2013	10:20	SG1814	4/17/2013	6.0	608	1.97
M173504	ST70-AR-38-41-240413	4/24/2013	10:25	SG1763	4/17/2013	6.4	597	2.06
M173505	ST70-AR-39-42-240413	4/24/2013	10:30	SG1785	4/16/2013	5.9	611	2.08
M173506	ST70-AR-41-240413	4/24/2013	10:40	SG1887	4/16/2013	6.1	606	2.04
M173507	ST70-AR-INLET-240413	4/24/2013	11:35	SG1300	4/16/2013	6.0	607	2.02
M173508	ST70-AR-Exhaust-240413	4/24/2013	12:00	SG1756	4/16/2013	7.2	576	2.13
M173509	ST70-AR-28H-240413	4/24/2013	11:40	SG1992	4/16/2013	6.5	594	2.07
M173510	ST70-AR-7002-240413	4/24/2013	11:45	SG1786	4/16/2013	6.7	591	2.09
M173511	ST70-AR-7003-240413	4/24/2013	11:50	SG1991	4/17/2013	6.5	594	2.07
M173512	ST70-AR-7001-240413	4/24/2013	12:05	SG1362	4/17/2013	6.5	595	2.07
M173513	ST70-AR-MID-240413	4/24/2013	11:55	SG1995	4/17/2013	6.5	595	2.05

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Base/Command: KIRTLAND AFB (AIR) Prime Contractor: CH2M HILL

Project: BHATE/KAFB

Field Sample ID	Lab Sample ID
ST70-AR-40-20-240413	M173501
ST70-AR-29H-240413	M173502
ST70-AR-38-99-240413	M173503
ST70-AR-38-41-240413	M173504
ST70-AR-39-42-240413	M173505
ST70-AR-41-240413	M173506
ST70-AR-INLET-240413	M173507
ST70-AR-Exhaust-240413	M173508
ST70-AR-28H-240413	M173509
ST70-AR-7002-240413	M173510
ST70-AR-7003-240413	M173511
ST70-AR-7001-240413	M173512
ST70-AR-MID-240413	M173513

Comments:

See attached narrative

SAMPLE DATA SUMMARY

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-40-20-240413 Lab Sample ID: M173501 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-40-20-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	45.2	151	45.2	301		U
Chloromethane	45.2	151	45.2	301		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	45.2	151	45.2	301		U
Vinyl chloride	45.2	151	45.2	301		U
Bromomethane	45.2	151	45.2	301		U
Chloroethane	45.2	151	45.2	301		U
Trichlorofluoromethane	45.2	151	45.2	301		U
Acetone	45.2	301	**59.0**	301		F
1,1-DCE	45.2	151	45.2	301		U
Methylene chloride	45.2	151	45.2	301		U
1,1,2-Trichloro-1,2,2-trifluoroethane	45.2	151	45.2	301		U
MTBE (Methyl tert-Butyl Ether)	45.2	301	45.2	301		U
1,1-DCA	45.2	151	45.2	301		U
MEK (2-Butanone)	45.2	301	45.2	301		U
cis-1,2-DCE	45.2	151	**342**	301		
Chloroform	45.2	151	45.2	301		U
1,2-DCA	45.2	151	45.2	301		U
1,1,1-TCA	45.2	151	45.2	301		U
Carbon tetrachloride	45.2	151	45.2	301		U
Benzene	45.2	151	45.2	301		U
1,2-Dichloropropane	45.2	151	45.2	301		U
TCE	45.2	151	**222**	301		
cis-1,3-Dichloropropene	45.2	151	45.2	301		U
trans-1,3-Dichloropropene	45.2	151	45.2	301		U
1,1,2-TCA	45.2	151	45.2	301		U
Toluene	45.2	151	**57.4**	301		F
1,2-EDB	45.2	151	45.2	301		U
Tetrachloroethylene	45.2	151	45.2	301		U
Chlorobenzene	45.2	151	45.2	301		U
Ethylbenzene	45.2	151	**358**	301		
m,p-Xylene	90.3	301	**2640**	301		
Styrene	45.2	151	45.2	301		U
o-Xylene	45.2	151	45.2	301		U
1,1,2,2-Tetrachloroethane	45.2	151	45.2	301		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-40-20-240413 Lab Sample ID: M173501 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-40-20-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	45.2	151	**4560**	301		
1,2,4-Trimethylbenzene	45.2	151	**5740**	301		
1,3-DCB	45.2	151	45.2	301		U
1,4-DCB	45.2	151	45.2	301		U
1,2-DCB	45.2	151	45.2	301		U
1,2,4-Trichlorobenzene	45.2	151	45.2	301		U
Hexachlorobutadiene	45.2	151	45.2	301		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	96	60-140	
4-Bromofluorobenzene	108	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-29H-240413 Lab Sample ID: M173502 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-29H-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 6 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.24	0.8	**0.45**	1.62		F
Chloromethane	0.24	0.8	**1.22**	1.62		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.24	0.8	0.24	1.62		U
Vinyl chloride	0.24	0.8	0.24	1.62		U
Bromomethane	0.24	0.8	**0.49**	1.62		F
Chloroethane	0.24	0.8	0.24	1.62		U
Trichlorofluoromethane	0.24	0.8	0.24	1.62		U
Acetone	0.24	1.6	**29.3**	1.62		
1,1-DCE	0.24	0.8	0.24	1.62		U
Methylene chloride	0.24	0.8	**0.39**	1.62		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.24	0.8	0.24	1.62		U
MTBE (Methyl tert-Butyl Ether)	0.24	1.6	0.24	1.62		U
1,1-DCA	0.24	0.8	0.24	1.62		U
MEK (2-Butanone)	0.24	1.6	**3.13**	1.62		
cis-1,2-DCE	0.24	0.8	**0.33**	1.62		F
Chloroform	0.24	0.8	0.24	1.62		U
1,2-DCA	0.24	0.8	0.24	1.62		U
1,1,1-TCA	0.24	0.8	0.24	1.62		U
Carbon tetrachloride	0.24	0.8	0.24	1.62		U
Benzene	0.24	0.8	**0.26**	1.62		F
1,2-Dichloropropane	0.24	0.8	0.24	1.62		U
TCE	0.24	0.8	**1.18**	1.62		
cis-1,3-Dichloropropene	0.24	0.8	0.24	1.62		U
trans-1,3-Dichloropropene	0.24	0.8	0.24	1.62		U
1,1,2-TCA	0.24	0.8	0.24	1.62		U
Toluene	0.24	0.8	**0.40**	1.62		F
1,2-EDB	0.24	0.8	0.24	1.62		U
Tetrachloroethylene	0.24	0.8	**0.81**	1.62		
Chlorobenzene	0.24	0.8	0.24	1.62		U
Ethylbenzene	0.24	0.8	0.24	1.62		U
m,p-Xylene	0.49	1.6	**0.55**	1.62		F
Styrene	0.24	0.8	0.24	1.62		U
o-Xylene	0.24	0.8	0.24	1.62		U
1,1,2,2-Tetrachloroethane	0.24	0.8	0.24	1.62		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-29H-240413 Lab Sample ID: M173502 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-29H-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 6 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.24	0.8	**1.49**	1.62		
1,2,4-Trimethylbenzene	0.24	0.8	**1.96**	1.62		
1,3-DCB	0.24	0.8	0.24	1.62		U
1,4-DCB	0.24	0.8	0.24	1.62		U
1,2-DCB	0.24	0.8	0.24	1.62		U
1,2,4-Trichlorobenzene	0.24	0.8	0.24	1.62		U
Hexachlorobutadiene	0.24	0.8	0.24	1.62		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	99	60-140	
4-Bromofluorobenzene	103	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-99-240413 Lab Sample ID: M173503 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-99-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	15.5	51.5	15.5	103		U
Chloromethane	15.5	51.5	15.5	103		U
1,2-Dichloro-1;1,2,2-tetrafluoroethane	15.5	51.5	15.5	103		U
Vinyl chloride	15.5	51.5	15.5	103		U
Bromomethane	15.5	51.5	15.5	103		U
Chloroethane	15.5	51.5	15.5	103		U
Trichlorofluoromethane	15.5	51.5	15.5	103		U
Acetone	15.5	103	**142**	103		
1,1-DCE	15.5	51.5	15.5	103		U
Methylene chloride	15.5	51.5	**16.6**	103		F
1,1,2-Trichloro-1,2,2-trifluoroethane	15.5	51.5	15.5	103		U
MTBE (Methyl tert-Butyl Ether)	15.5	103	15.5	103		U
1,1-DCA	15.5	51.5	15.5	103		U
MEK (2-Butanone)	15.5	103	**71.6**	103		F
cis-1,2-DCE	15.5	51.5	**2600**	103		
Chloroform	15.5	51.5	**48.5**	103		F
1,2-DCA	15.5	51.5	15.5	103		U
1,1,1-TCA	15.5	51.5	15.5	103		U
Carbon tetrachloride	15.5	51.5	15.5	103		U
Benzene	15.5	51.5	**41.4**	103		F
1,2-Dichloropropane	15.5	51.5	15.5	103		U
TCE	15.5	51.5	**5400**	103		
cis-1,3-Dichloropropene	15.5	51.5	15.5	103		U
trans-1,3-Dichloropropene	15.5	51.5	15.5	103		U
1,1,2-TCA	15.5	51.5	15.5	103		U
Toluene	15.5	51.5	**26.6**	103		F
1,2-EDB	15.5	51.5	15.5	103		U
Tetrachloroethylene	15.5	51.5	**122**	103		
Chlorobenzene	15.5	51.5	15.5	103		U
Ethylbenzene	15.5	51.5	**70.0**	103		
m,p-Xylene	30.9	103	**279**	103		
Styrene	15.5	51.5	15.5	103		U
o-Xylene	15.5	51.5	15.5	103		U
1,1,2,2-Tetrachloroethane	15.5	51.5	15.5	103		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-99-240413 Lab Sample ID: M173503 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-99-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	15.5	51.5	**297**	103		
1,2,4-Trimethylbenzene	15.5	51.5	**263**	103		
1,3-DCB	15.5	51.5	15.5	103		U
1,4-DCB	15.5	51.5	15.5	103		U
1,2-DCB	15.5	51.5	15.5	103		U
1,2,4-Trichlorobenzene	15.5	51.5	15.5	103		U
Hexachlorobutadiene	15.5	51.5	15.5	103		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	97	60-140	
4-Bromofluorobenzene	106	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-41-240413 Lab Sample ID: M173504 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-41-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	30.3	101	30.3	202		U
Chloromethane	30.3	101	30.3	202		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	30.3	101	30.3	202		U
Vinyl chloride	30.3	101	30.3	202		U
Bromomethane	30.3	101	30.3	202		U
Chloroethane	30.3	101	30.3	202		U
Trichlorofluoromethane	30.3	101	30.3	202		U
Acetone	30.3	202	**63.6**	202		F
1,1-DCE	30.3	101	30.3	202		U
Methylene chloride	30.3	101	30.3	202		U
1,1,2-Trichloro-1,2,2-trifluoroethane	30.3	101	30.3	202		U
MTBE (Methyl tert-Butyl Ether)	30.3	202	30.3	202		U
1,1-DCA	30.3	101	30.3	202		U
MEK (2-Butanone)	30.3	202	30.3	202		U
cis-1,2-DCE	30.3	101	**3270**	202		
Chloroform	30.3	101	30.3	202		U
1,2-DCA	30.3	101	30.3	202		U
1,1,1-TCA	30.3	101	30.3	202		U
Carbon tetrachloride	30.3	101	30.3	202		U
Benzene	30.3	101	**54.6**	202		F
1,2-Dichloropropane	30.3	101	30.3	202		U
TCE	30.3	101	**1070**	202		
cis-1,3-Dichloropropene	30.3	101	30.3	202		U
trans-1,3-Dichloropropene	30.3	101	30.3	202		U
1,1,2-TCA	30.3	101	30.3	202		U
Toluene	30.3	101	30.3	202		U
1,2-EDB	30.3	101	30.3	202		U
Tetrachloroethylene	30.3	101	**87.5**	202		F
Chlorobenzene	30.3	101	30.3	202		U
Ethylbenzene	30.3	101	**103**	202		
m,p-Xylene	60.6	202	**402**	202		
Styrene	30.3	101	30.3	202		U
o-Xylene	30.3	101	30.3	202		U
1,1,2,2-Tetrachloroethane	30.3	101	30.3	202		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-41-240413 Lab Sample ID: M173504 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-41-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	30.3	101	454	202		
1,2,4-Trimethylbenzene	30.3	101	385	202		
1,3-DCB	30.3	101	30.3	202		U
1,4-DCB	30.3	101	30.3	202		U
1,2-DCB	30.3	101	30.3	202		U
1,2,4-Trichlorobenzene	30.3	101	30.3	202		U
Hexachlorobutadiene	30.3	101	30.3	202		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	97	60-140	
4-Bromofluorobenzene	104	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-39-42-240413 Lab Sample ID: M173505 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-39-42-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 10 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	28.2	94.0	28.2	188		U
Chloromethane	28.2	94.0	28.2	188		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	28.2	94.0	28.2	188		U
Vinyl chloride	28.2	94.0	28.2	188		U
Bromomethane	28.2	94.0	28.2	188		U
Chloroethane	28.2	94.0	28.2	188		U
Trichlorofluoromethane	28.2	94.0	28.2	188		U
Acetone	28.2	188	**147**	188		F
1,1-DCE	28.2	94.0	28.2	188		U
Methylene chloride	28.2	94.0	28.2	188		U
1,1,2-Trichloro-1,2,2-trifluoroethane	28.2	94.0	28.2	188		U
MTBE (Methyl tert-Butyl Ether)	28.2	188	28.2	188		U
1,1-DCA	28.2	94.0	28.2	188		U
MEK (2-Butanone)	28.2	188	28.2	188		U
cis-1,2-DCE	28.2	94.0	**7980**	188		
Chloroform	28.2	94.0	**39.2**	188		F
1,2-DCA	28.2	94.0	28.2	188		U
1,1,1-TCA	28.2	94.0	28.2	188		U
Carbon tetrachloride	28.2	94.0	28.2	188		U
Benzene	28.2	94.0	**292**	188		
1,2-Dichloropropane	28.2	94.0	28.2	188		U
TCE	28.2	94.0	**13900**	188		
cis-1,3-Dichloropropene	28.2	94.0	28.2	188		U
trans-1,3-Dichloropropene	28.2	94.0	28.2	188		U
1,1,2-TCA	28.2	94.0	28.2	188		U
Toluene	28.2	94.0	**94.7**	188		
1,2-EDB	28.2	94.0	28.2	188		U
Tetrachloroethylene	28.2	94.0	**3360**	188		
Chlorobenzene	28.2	94.0	28.2	188		U
Ethylbenzene	28.2	94.0	28.2	188		U
m,p-Xylene	56.4	188	**91.5**	188		F
Styrene	28.2	94.0	28.2	188		U
o-Xylene	28.2	94.0	28.2	188		U
1,1,2,2-Tetrachloroethane	28.2	94.0	28.2	188		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-39-42-240413 Lab Sample ID: M173505 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-39-42-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 10 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	28.2	94.0	**142**	188		
1,2,4-Trimethylbenzene	28.2	94.0	**119**	188		
1,3-DCB	28.2	94.0	28.2	188		U
1,4-DCB	28.2	94.0	28.2	188		U
1,2-DCB	28.2	94.0	28.2	188		U
1,2,4-Trichlorobenzene	28.2	94.0	28.2	188		U
Hexachlorobutadiene	28.2	94.0	28.2	188		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	100	60-140	
4-Bromofluorobenzene	92	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-41-240413 Lab Sample ID: M173506 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-41-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 6 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	1.25	4.2	1.25	8.3		U
Chloromethane	1.25	4.2	1.25	8.3		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.25	4.2	1.25	8.3		U
Vinyl chloride	1.25	4.2	1.25	8.3		U
Bromomethane	1.25	4.2	1.25	8.3		U
Chloroethane	1.25	4.2	1.25	8.3		U
Trichlorofluoromethane	1.25	4.2	**1.73**	8.3		F
Acetone	1.25	8.3	**10.7**	8.3		
1,1-DCE	1.25	4.2	1.25	8.3		U
Methylene chloride	1.25	4.2	1.25	8.3		U
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	4.2	1.25	8.3		U
MTBE (Methyl tert-Butyl Ether)	1.25	8.3	1.25	8.3		U
1,1-DCA	1.25	4.2	1.25	8.3		U
MEK (2-Butanone)	1.25	8.3	1.25	8.3		U
cis-1,2-DCE	1.25	4.2	**1.27**	8.3		F
Chloroform	1.25	4.2	1.25	8.3		U
1,2-DCA	1.25	4.2	1.25	8.3		U
1,1,1-TCA	1.25	4.2	1.25	8.3		U
Carbon tetrachloride	1.25	4.2	1.25	8.3		U
Benzene	1.25	4.2	1.25	8.3		U
1,2-Dichloropropane	1.25	4.2	1.25	8.3		U
TCE	1.25	4.2	**6.78**	8.3		
cis-1,3-Dichloropropene	1.25	4.2	1.25	8.3		U
trans-1,3-Dichloropropene	1.25	4.2	1.25	8.3		U
1,1,2-TCA	1.25	4.2	1.25	8.3		U
Toluene	1.25	4.2	1.25	8.3		U
1,2-EDB	1.25	4.2	1.25	8.3		U
Tetrachloroethylene	1.25	4.2	**15.1**	8.3		
Chlorobenzene	1.25	4.2	1.25	8.3		U
Ethylbenzene	1.25	4.2	1.25	8.3		U
m,p-Xylene	2.49	8.3	2.49	8.3		U
Styrene	1.25	4.2	1.25	8.3		U
o-Xylene	1.25	4.2	1.25	8.3		U
1,1,2,2-Tetrachloroethane	1.25	4.2	1.25	8.3		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-41-240413 Lab Sample ID: M173506 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-41-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 6 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	1.25	4.2	**5.96**	8.3		
1,2,4-Trimethylbenzene	1.25	4.2	**6.95**	8.3		
1,3-DCB	1.25	4.2	1.25	8.3		U
1,4-DCB	1.25	4.2	1.25	8.3		U
1,2-DCB	1.25	4.2	1.25	8.3		U
1,2,4-Trichlorobenzene	1.25	4.2	1.25	8.3		U
Hexachlorobutadiene	1.25	4.2	1.25	8.3		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	99	60-140	
4-Bromofluorobenzene	101	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-INLET-240413 Lab Sample ID: M173507 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-INLET-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	3.09	10.3	3.09	20.6		U
Chloromethane	3.09	10.3	3.09	20.6		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	3.09	10.3	3.09	20.6		U
Vinyl chloride	3.09	10.3	3.09	20.6		U
Bromomethane	3.09	10.3	3.09	20.6		U
Chloroethane	3.09	10.3	3.09	20.6		U
Trichlorofluoromethane	3.09	10.3	3.09	20.6		U
Acetone	3.09	20.6	**17.1**	20.6		F
1,1-DCE	3.09	10.3	**6.25**	20.6		F
Methylene chloride	3.09	10.3	3.09	20.6		U
1,1,2-Trichloro-1,2,2-trifluoroethane	3.09	10.3	3.09	20.6		U
MTBE (Methyl tert-Butyl Ether)	3.09	20.6	3.09	20.6		U
1,1-DCA	3.09	10.3	3.09	20.6		U
MEK (2-Butanone)	3.09	20.6	3.09	20.6		U
cis-1,2-DCE	3.09	10.3	**51.8**	20.6		
Chloroform	3.09	10.3	**5.65**	20.6		F
1,2-DCA	3.09	10.3	3.09	20.6		U
1,1,1-TCA	3.09	10.3	3.09	20.6		U
Carbon tetrachloride	3.09	10.3	**4.03**	20.6		F
Benzene	3.09	10.3	3.09	20.6		U
1,2-Dichloropropane	3.09	10.3	3.09	20.6		U
TCE	3.09	10.3	**234**	20.6		
cis-1,3-Dichloropropene	3.09	10.3	3.09	20.6		U
trans-1,3-Dichloropropene	3.09	10.3	3.09	20.6		U
1,1,2-TCA	3.09	10.3	3.09	20.6		U
Toluene	3.09	10.3	3.09	20.6		U
1,2-EDB	3.09	10.3	3.09	20.6		U
Tetrachloroethylene	3.09	10.3	**167**	20.6		
Chlorobenzene	3.09	10.3	3.09	20.6		U
Ethylbenzene	3.09	10.3	3.09	20.6		U
m,p-Xylene	6.18	20.6	**6.55**	20.6		F
Styrene	3.09	10.3	3.09	20.6		U
o-Xylene	3.09	10.3	3.09	20.6		U
1,1,2,2-Tetrachloroethane	3.09	10.3	3.09	20.6		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-INLET-240413 Lab Sample ID: M173507 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-INLET-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	3.09	10.3	**53.2**	20.6		
1,2,4-Trimethylbenzene	3.09	10.3	**34.9**	20.6		
1,3-DCB	3.09	10.3	3.09	20.6		U
1,4-DCB	3.09	10.3	3.09	20.6		U
1,2-DCB	3.09	10.3	3.09	20.6		U
1,2,4-Trichlorobenzene	3.09	10.3	3.09	20.6		U
Hexachlorobutadiene	3.09	10.3	3.09	20.6		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	97	60-140	
4-Bromofluorobenzene	102	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-Exhaust-240413 Lab Sample ID: M173508 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-Exhaust-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 6 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.26	0.9	**0.41**	1.72		F
Chloromethane	0.26	0.9	**1.19**	1.72		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.26	0.9	0.26	1.72		U
Vinyl chloride	0.26	0.9	0.26	1.72		U
Bromomethane	0.26	0.9	**0.36**	1.72		F
Chloroethane	0.26	0.9	0.26	1.72		U
Trichlorofluoromethane	0.26	0.9	0.26	1.72		U
Acetone	0.26	1.7	**8.50**	1.72		
1,1-DCE	0.26	0.9	0.26	1.72		U
Methylene chloride	0.26	0.9	**0.33**	1.72		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.26	0.9	0.26	1.72		U
MTBE (Methyl tert-Butyl Ether)	0.26	1.7	0.26	1.72		U
1,1-DCA	0.26	0.9	0.26	1.72		U
MEK (2-Butanone)	0.26	1.7	**1.02**	1.72		F
cis-1,2-DCE	0.26	0.9	0.26	1.72		U
Chloroform	0.26	0.9	0.26	1.72		U
1,2-DCA	0.26	0.9	0.26	1.72		U
1,1,1-TCA	0.26	0.9	0.26	1.72		U
Carbon tetrachloride	0.26	0.9	0.26	1.72		U
Benzene	0.26	0.9	0.26	1.72		U
1,2-Dichloropropane	0.26	0.9	0.26	1.72		U
TCE	0.26	0.9	**0.43**	1.72		F
cis-1,3-Dichloropropene	0.26	0.9	0.26	1.72		U
trans-1,3-Dichloropropene	0.26	0.9	0.26	1.72		U
1,1,2-TCA	0.26	0.9	0.26	1.72		U
Toluene	0.26	0.9	**0.44**	1.72		F
1,2-EDB	0.26	0.9	0.26	1.72		U
Tetrachloroethylene	0.26	0.9	0.26	1.72		U
Chlorobenzene	0.26	0.9	0.26	1.72		U
Ethylbenzene	0.26	0.9	0.26	1.72		U
m,p-Xylene	0.52	1.7	0.52	1.72		U
Styrene	0.26	0.9	0.26	1.72		U
o-Xylene	0.26	0.9	0.26	1.72		U
1,1,2,2-Tetrachloroethane	0.26	0.9	0.26	1.72		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-Exhaust-240413 Lab Sample ID: M173508 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-Exhaust-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 6 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.26	0.9	0.26	1.72		U
1,2,4-Trimethylbenzene	0.26	0.9	0.26	1.72		U
1,3-DCB	0.26	0.9	0.26	1.72		U
1,4-DCB	0.26	0.9	0.26	1.72		U
1,2-DCB	0.26	0.9	0.26	1.72		U
1,2,4-Trichlorobenzene	0.26	0.9	0.26	1.72		U
Hexachlorobutadiene	0.26	0.9	0.26	1.72		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	98	60-140	
4-Bromofluorobenzene	101	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-28H-240413 Lab Sample ID: M173509 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-28H-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	3.15	10.5	3.15	21		U
Chloromethane	3.15	10.5	3.15	21		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	3.15	10.5	3.15	21		U
Vinyl chloride	3.15	10.5	3.15	21		U
Bromomethane	3.15	10.5	3.15	21		U
Chloroethane	3.15	10.5	3.15	21		U
Trichlorofluoromethane	3.15	10.5	3.15	21		U
Acetone	3.15	21.0	**115**	21		
1,1-DCE	3.15	10.5	**7.56**	21		F
Methylene chloride	3.15	10.5	3.15	21		U
1,1,2-Trichloro-1,2,2-trifluoroethane	3.15	10.5	3.15	21		U
MTBE (Methyl tert-Butyl Ether)	3.15	21.0	3.15	21		U
1,1-DCA	3.15	10.5	3.15	21		U
MEK (2-Butanone)	3.15	21.0	3.15	21		U
cis-1,2-DCE	3.15	10.5	**82.4**	21		
Chloroform	3.15	10.5	**5.85**	21		F
1,2-DCA	3.15	10.5	3.15	21		U
1,1,1-TCA	3.15	10.5	3.15	21		U
Carbon tetrachloride	3.15	10.5	3.15	21		U
Benzene	3.15	10.5	3.15	21		U
1,2-Dichloropropane	3.15	10.5	3.15	21		U
TCE	3.15	10.5	**231**	21		
cis-1,3-Dichloropropene	3.15	10.5	3.15	21		U
trans-1,3-Dichloropropene	3.15	10.5	3.15	21		U
1,1,2-TCA	3.15	10.5	3.15	21		U
Toluene	3.15	10.5	3.15	21		U
1,2-EDB	3.15	10.5	3.15	21		U
Tetrachloroethylene	3.15	10.5	**223**	21		
Chlorobenzene	3.15	10.5	3.15	21		U
Ethylbenzene	3.15	10.5	3.15	21		U
m,p-Xylene	6.30	21.0	**8.15**	21		F
Styrene	3.15	10.5	3.15	21		U
o-Xylene	3.15	10.5	3.15	21		U
1,1,2,2-Tetrachloroethane	3.15	10.5	3.15	21		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-28H-240413 Lab Sample ID: M173509 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-28H-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	3.15	10.5	**70.8**	21		
1,2,4-Trimethylbenzene	3.15	10.5	**44.1**	21		
1,3-DCB	3.15	10.5	3.15	21		U
1,4-DCB	3.15	10.5	3.15	21		U
1,2-DCB	3.15	10.5	3.15	21		U
1,2,4-Trichlorobenzene	3.15	10.5	3.15	21		U
Hexachlorobutadiene	3.15	10.5	3.15	21		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	97	60-140	
4-Bromofluorobenzene	103	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7002-240413 Lab Sample ID: M173510 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7002-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	1.27	4.2	1.27	8.45		U
Chloromethane	1.27	4.2	1.27	8.45		U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.27	4.2	1.27	8.45		U
Vinyl chloride	1.27	4.2	1.27	8.45		U
Bromomethane	1.27	4.2	1.27	8.45		U
Chloroethane	1.27	4.2	1.27	8.45		U
Trichlorofluoromethane	1.27	4.2	1.27	8.45		U
Acetone	1.27	8.5	**19.6**	8.45		
1,1-DCE	1.27	4.2	1.27	8.45		U
Methylene chloride	1.27	4.2	1.27	8.45		U
1,1,2-Trichloro-1,2,2-trifluoroethane	1.27	4.2	1.27	8.45		U
MTBE (Methyl tert-Butyl Ether)	1.27	8.5	1.27	8.45		U
1,1-DCA	1.27	4.2	1.27	8.45		U
MEK (2-Butanone)	1.27	8.5	**5.71**	8.45		F
cis-1,2-DCE	1.27	4.2	**9.78**	8.45		
Chloroform	1.27	4.2	**7.30**	8.45		
1,2-DCA	1.27	4.2	1.27	8.45		U
1,1,1-TCA	1.27	4.2	1.27	8.45		U
Carbon tetrachloride	1.27	4.2	1.27	8.45		U
Benzene	1.27	4.2	1.27	8.45		U
1,2-Dichloropropane	1.27	4.2	1.27	8.45		U
TCE	1.27	4.2	**138**	8.45		
cis-1,3-Dichloropropene	1.27	4.2	1.27	8.45		U
trans-1,3-Dichloropropene	1.27	4.2	1.27	8.45		U
1,1,2-TCA	1.27	4.2	1.27	8.45		U
Toluene	1.27	4.2	1.27	8.45		U
1,2-EDB	1.27	4.2	1.27	8.45		U
Tetrachloroethylene	1.27	4.2	**15.1**	8.45		
Chlorobenzene	1.27	4.2	1.27	8.45		U
Ethylbenzene	1.27	4.2	1.27	8.45		U
m,p-Xylene	2.54	8.5	2.54	8.45		U
Styrene	1.27	4.2	1.27	8.45		U
o-Xylene	1.27	4.2	1.27	8.45		U
1,1,2,2-Tetrachloroethane	1.27	4.2	1.27	8.45		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7002-240413 Lab Sample ID: M173510 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7002-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	1.27	4.2	**4.17**	8.45		F
1,2,4-Trimethylbenzene	1.27	4.2	**4.18**	8.45		F
1,3-DCB	1.27	4.2	1.27	8.45		U
1,4-DCB	1.27	4.2	1.27	8.45		U
1,2-DCB	1.27	4.2	1.27	8.45		U
1,2,4-Trichlorobenzene	1.27	4.2	1.27	8.45		U
Hexachlorobutadiene	1.27	4.2	1.27	8.45		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	97	60-140	
4-Bromofluorobenzene	102	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7003-240413 Lab Sample ID: M173511 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7003-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.84	2.8	**0.89**	5.6		F
Chloromethane	0.84	2.8	**1.43**	5.6		F
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.84	2.8	0.84	5.6		U
Vinyl chloride	0.84	2.8	0.84	5.6		U
Bromomethane	0.84	2.8	**0.95**	5.6		F
Chloroethane	0.84	2.8	0.84	5.6		U
Trichlorofluoromethane	0.84	2.8	**2.33**	5.6		F
Acetone	0.84	5.6	**28.0**	5.6		
1,1-DCE	0.84	2.8	**3.69**	5.6		
Methylene chloride	0.84	2.8	**1.46**	5.6		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.84	2.8	**3.73**	5.6		
MTBE (Methyl tert-Butyl Ether)	0.84	5.6	0.84	5.6		U
1,1-DCA	0.84	2.8	0.84	5.6		U
MEK (2-Butanone)	0.84	5.6	**5.23**	5.6		F
cis-1,2-DCE	0.84	2.8	**5.93**	5.6		
Chloroform	0.84	2.8	**7.56**	5.6		
1,2-DCA	0.84	2.8	0.84	5.6		U
1,1,1-TCA	0.84	2.8	0.84	5.6		U
Carbon tetrachloride	0.84	2.8	**14.4**	5.6		
Benzene	0.84	2.8	**1.69**	5.6		F
1,2-Dichloropropane	0.84	2.8	0.84	5.6		U
TCE	0.84	2.8	**283**	5.6		
cis-1,3-Dichloropropene	0.84	2.8	0.84	5.6		U
trans-1,3-Dichloropropene	0.84	2.8	0.84	5.6		U
1,1,2-TCA	0.84	2.8	0.84	5.6		U
Toluene	0.84	2.8	**1.04**	5.6		F
1,2-EDB	0.84	2.8	0.84	5.6		U
Tetrachloroethylene	0.84	2.8	**10.7**	5.6		
Chlorobenzene	0.84	2.8	0.84	5.6		U
Ethylbenzene	0.84	2.8	0.84	5.6		U
m,p-Xylene	1.68	5.6	1.68	5.6		U
Styrene	0.84	2.8	0.84	5.6		U
o-Xylene	0.84	2.8	0.84	5.6		U
1,1,2,2-Tetrachloroethane	0.84	2.8	0.84	5.6		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7003-240413 Lab Sample ID: M173511 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7003-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.84	2.8	**3.40**	5.6		
1,2,4-Trimethylbenzene	0.84	2.8	**3.56**	5.6		
1,3-DCB	0.84	2.8	0.84	5.6		U
1,4-DCB	0.84	2.8	**1.48**	5.6		F
1,2-DCB	0.84	2.8	0.84	5.6		U
1,2,4-Trichlorobenzene	0.84	2.8	**4.84**	5.6		
Hexachlorobutadiene	0.84	2.8	0.84	5.6		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	95	60-140	
4-Bromofluorobenzene	104	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7001-240413 Lab Sample ID: M173512 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7001-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.25	0.8	**0.43**	1.68		F
Chloromethane	0.25	0.8	**0.48**	1.68		F
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.25	0.8	0.25	1.68		U
Vinyl chloride	0.25	0.8	0.25	1.68		U
Bromomethane	0.25	0.8	0.25	1.68		U
Chloroethane	0.25	0.8	0.25	1.68		U
Trichlorofluoromethane	0.25	0.8	0.25	1.68		U
Acetone	0.25	1.7	**12.3**	1.68		
1,1-DCE	0.25	0.8	0.25	1.68		U
Methylene chloride	0.25	0.8	**0.33**	1.68		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.25	0.8	0.25	1.68		U
MTBE (Methyl tert-Butyl Ether)	0.25	1.7	0.25	1.68		U
1,1-DCA	0.25	0.8	0.25	1.68		U
MEK (2-Butanone)	0.25	1.7	**2.98**	1.68		
cis-1,2-DCE	0.25	0.8	0.25	1.68		U
Chloroform	0.25	0.8	0.25	1.68		U
1,2-DCA	0.25	0.8	0.25	1.68		U
1,1,1-TCA	0.25	0.8	0.25	1.68		U
Carbon tetrachloride	0.25	0.8	0.25	1.68		U
Benzene	0.25	0.8	0.25	1.68		U
1,2-Dichloropropane	0.25	0.8	0.25	1.68		U
TCE	0.25	0.8	**0.31**	1.68		F
cis-1,3-Dichloropropene	0.25	0.8	0.25	1.68		U
trans-1,3-Dichloropropene	0.25	0.8	0.25	1.68		U
1,1,2-TCA	0.25	0.8	0.25	1.68		U
Toluene	0.25	0.8	**0.47**	1.68		F
1,2-EDB	0.25	0.8	0.25	1.68		U
Tetrachloroethylene	0.25	0.8	**1.68**	1.68		
Chlorobenzene	0.25	0.8	**0.32**	1.68		F
Ethylbenzene	0.25	0.8	**0.28**	1.68		F
m,p-Xylene	0.50	1.7	**0.68**	1.68		F
Styrene	0.25	0.8	0.25	1.68		U
o-Xylene	0.25	0.8	**0.30**	1.68		F
1,1,2,2-Tetrachloroethane	0.25	0.8	**1.85**	1.68		

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7001-240413 Lab Sample ID: M173512 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7001-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.25	0.8	0.56	1.68		F
1,2,4-Trimethylbenzene	0.25	0.8	0.63	1.68		F
1,3-DCB	0.25	0.8	0.25	1.68		U
1,4-DCB	0.25	0.8	0.25	1.68		U
1,2-DCB	0.25	0.8	0.25	1.68		U
1,2,4-Trichlorobenzene	0.25	0.8	0.25	1.68		U
Hexachlorobutadiene	0.25	0.8	0.25	1.68		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	98	60-140	
4-Bromofluorobenzene	103	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-MID-240413 Lab Sample ID: M173513 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-MID-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Dichlorodifluoromethane	0.25	0.8	**0.35**	1.67		F
Chloromethane	0.25	0.8	**1.05**	1.67		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.25	0.8	0.25	1.67		U
Vinyl chloride	0.25	0.8	**0.45**	1.67		F
Bromomethane	0.25	0.8	**0.39**	1.67		F
Chloroethane	0.25	0.8	0.25	1.67		U
Trichlorofluoromethane	0.25	0.8	0.25	1.67		U
Acetone	0.25	1.7	**31.1**	1.67		
1,1-DCE	0.25	0.8	0.25	1.67		U
Methylene chloride	0.25	0.8	**0.43**	1.67		F
1,1,2-Trichloro-1,2,2-trifluoroethane	0.25	0.8	0.25	1.67		U
MTBE (Methyl tert-Butyl Ether)	0.25	1.7	0.25	1.67		U
1,1-DCA	0.25	0.8	0.25	1.67		U
MEK (2-Butanone)	0.25	1.7	**7.30**	1.67		
cis-1,2-DCE	0.25	0.8	0.25	1.67		U
Chloroform	0.25	0.8	0.25	1.67		U
1,2-DCA	0.25	0.8	**18.3**	1.67		
1,1,1-TCA	0.25	0.8	0.25	1.67		U
Carbon tetrachloride	0.25	0.8	0.25	1.67		U
Benzene	0.25	0.8	**0.38**	1.67		F
1,2-Dichloropropane	0.25	0.8	0.25	1.67		U
TCE	0.25	0.8	**0.88**	1.67		
cis-1,3-Dichloropropene	0.25	0.8	0.25	1.67		U
trans-1,3-Dichloropropene	0.25	0.8	0.25	1.67		U
1,1,2-TCA	0.25	0.8	0.25	1.67		U
Toluene	0.25	0.8	**0.35**	1.67		F
1,2-EDB	0.25	0.8	0.25	1.67		U
Tetrachloroethylene	0.25	0.8	**2.50**	1.67		
Chlorobenzene	0.25	0.8	0.25	1.67		U
Ethylbenzene	0.25	0.8	0.25	1.67		U
m,p-Xylene	0.50	1.7	0.50	1.67		U
Styrene	0.25	0.8	0.25	1.67		U
o-Xylene	0.25	0.8	0.25	1.67		U
1,1,2,2-Tetrachloroethane	0.25	0.8	0.25	1.67		U

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: TO15 SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-MID-240413 Lab Sample ID: M173513 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-MID-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 7 May 13

Concentration Units: ppbv

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
1,3,5-Trimethylbenzene	0.25	0.8	**1.22**	1.67		
1,2,4-Trimethylbenzene	0.25	0.8	**1.33**	1.67		
1,3-DCB	0.25	0.8	0.25	1.67		U
1,4-DCB	0.25	0.8	0.25	1.67		U
1,2-DCB	0.25	0.8	0.25	1.67		U
1,2,4-Trichlorobenzene	0.25	0.8	0.25	1.67		U
Hexachlorobutadiene	0.25	0.8	0.25	1.67		U

Surrogate	Recovery	Control Limits	Qualifier
Toluene-d8	98	60-140	
4-Bromofluorobenzene	105	60-140	

Internal Standard	Qualifier
Bromochloromethane	
1,4-Difluorobenzene	
Chlorobenzene-d5	

Surrogate Recoveries are reported in Appendix O-A
Internal Standards are reported in Appendix O-C

Comments:

FIXED GASES ANALYSIS
BY SM 2720C

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Base/Command: KIRTLAND AFB (AIR) Prime Contractor: CH2M HILL

Project: BHATE/KAFB

Field Sample ID	Lab Sample ID
ST70-AR-40-20-240413	M173501
ST70-AR-29H-240413	M173502
ST70-AR-38-99-240413	M173503
ST70-AR-38-41-240413	M173504
ST70-AR-39-42-240413	M173505
ST70-AR-41-240413	M173506
ST70-AR-INLET-240413	M173507
ST70-AR-Exhaust-240413	M173508
ST70-AR-28H-240413	M173509
ST70-AR-7002-240413	M173510
ST70-AR-7003-240413	M173511
ST70-AR-7001-240413	M173512
ST70-AR-MID-240413	M173513

Comments:

See attached narrative

CASE NARRATIVE
GC VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: M1735

Project: BHATE/KAFB Project #: 458580.01.03.02

I. Method(s):

Analysis: SM2720C
Preparation: NONE

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Not applicable.

F. Surrogate Standard(s):

Not applicable.

G. Analytical Exception(s):

None.

H. Manual Integration(s):

None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Doug Malcolm Date: 5-1-13

Reviewed by: [signature] Date: 5/1/13

Sample ID	Client ID	Date Collected	Time Collected	Canister ID	Certification Date	Incoming pressure inHG	Incoming pressure torr	Primary Dilution Factor
M173501	ST70-AR-40-20-240413	4/24/2013	10:10	SG1779	4/16/2013	5.9	609	2.00
M173502	ST70-AR-29H-240413	4/24/2013	10:05	SG1336	4/16/2013	5.8	612	1.98
M173503	ST70-AR-38-99-240413	4/24/2013	10:20	SG1814	4/17/2013	6.0	608	1.97
M173504	ST70-AR-38-41-240413	4/24/2013	10:25	SG1763	4/17/2013	6.4	597	2.06
M173505	ST70-AR-39-42-240413	4/24/2013	10:30	SG1785	4/16/2013	5.9	611	2.08
M173506	ST70-AR-41-240413	4/24/2013	10:40	SG1887	4/16/2013	6.1	606	2.04
M173507	ST70-AR-INLET-240413	4/24/2013	11:35	SG1300	4/16/2013	6.0	607	2.02
M173508	ST70-AR-Exhaust-240413	4/24/2013	12:00	SG1756	4/16/2013	7.2	576	2.13
M173509	ST70-AR-28H-240413	4/24/2013	11:40	SG1992	4/16/2013	6.5	594	2.07
M173510	ST70-AR-7002-240413	4/24/2013	11:45	SG1786	4/16/2013	6.7	591	2.09
M173511	ST70-AR-7003-240413	4/24/2013	11:50	SG1991	4/17/2013	6.5	594	2.07
M173512	ST70-AR-7001-240413	4/24/2013	12:05	SG1362	4/17/2013	6.5	595	2.07
M173513	ST70-AR-MID-240413	4/24/2013	11:55	SG1995	4/17/2013	6.5	595	2.05

SAMPLE DATA SUMMARY

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-40-20-240413 Lab Sample ID: M173501 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-40-20-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.50	1.2	**7.36**	2		
Nitrogen	0.50	2.0	**79.1**	2		
Carbon Monoxide	0.14	1.0	0.14	2		U
Methane	0.14	1.0	0.14	2		U
Carbon Dioxide	0.14	1.0	**13.4**	2		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-29H-240413 Lab Sample ID: M173502 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-29H-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.50	1.2	**25.3**	1.98		
Nitrogen	0.50	2.0	**74.3**	1.98		
Carbon Monoxide	0.14	1.0	0.14	1.98		U
Methane	0.14	1.0	0.14	1.98		U
Carbon Dioxide	0.14	1.0	**0.32**	1.98		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-99-240413 Lab Sample ID: M173503 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-99-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.49	1.2	**11.8**	1.97		
Nitrogen	0.49	2.0	**76.0**	1.97		
Carbon Monoxide	0.14	1.0	0.14	1.97		U
Methane	0.14	1.0	0.14	1.97		U
Carbon Dioxide	0.14	1.0	**12.2**	1.97		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-41-240413 Lab Sample ID: M173504 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-41-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.52	1.2	**8.97**	2.06		
Nitrogen	0.52	2.1	**76.6**	2.06		
Carbon Monoxide	0.14	1.0	0.14	2.06		U
Methane	0.14	1.0	**0.77**	2.06		F
Carbon Dioxide	0.14	1.0	**13.7**	2.06		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-39-42-240413 Lab Sample ID: M173505 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-39-42-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.52	1.2	**7.99**	2.08		
Nitrogen	0.52	2.1	**77.3**	2.08		
Carbon Monoxide	0.15	1.0	0.15	2.08		U
Methane	0.15	1.0	0.15	2.08		U
Carbon Dioxide	0.15	1.0	**14.7**	2.08		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-41-240413 Lab Sample ID: M173506 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-41-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.51	1.2	**24.7**	2.04		
Nitrogen	0.51	2.0	**74.1**	2.04		
Carbon Monoxide	0.14	1.0	0.14	2.04		U
Methane	0.14	1.0	0.14	2.04		U
Carbon Dioxide	0.14	1.0	**1.13**	2.04		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-INLET-240413 Lab Sample ID: M173507 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-INLET-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.51	1.2	**23.7**	2.02		
Nitrogen	0.51	2.0	**74.6**	2.02		
Carbon Monoxide	0.14	1.0	0.14	2.02		U
Methane	0.14	1.0	0.14	2.02		U
Carbon Dioxide	0.14	1.0	**1.74**	2.02		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-Exhaust-240413 Lab Sample ID: M173508 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-Exhaust-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.53	1.3	**25.6**	2.13		
Nitrogen	0.53	2.1	**74.3**	2.13		
Carbon Monoxide	0.15	1.1	0.15	2.13		U
Methane	0.15	1.1	0.15	2.13		U
Carbon Dioxide	0.15	1.1	0.15	2.13		U

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-28H-240413 Lab Sample ID: M173509 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-28H-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.52	1.2	**22.9**	2.07		
Nitrogen	0.52	2.1	**74.5**	2.07		
Carbon Monoxide	0.15	1.0	0.15	2.07		U
Methane	0.15	1.0	0.15	2.07		U
Carbon Dioxide	0.15	1.0	**2.60**	2.07		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7002-240413 Lab Sample ID: M173510 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7002-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.52	1.3	**24.8**	2.09		
Nitrogen	0.52	2.1	**74.3**	2.09		
Carbon Monoxide	0.15	1.0	0.15	2.09		U
Methane	0.15	1.0	0.15	2.09		U
Carbon Dioxide	0.15	1.0	**0.90**	2.09		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7003-240413 Lab Sample ID: M173511 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7003-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.52	1.2	**24.6**	2.07		
Nitrogen	0.52	2.1	**75.1**	2.07		
Carbon Monoxide	0.15	1.0	0.15	2.07		U
Methane	0.15	1.0	0.15	2.07		U
Carbon Dioxide	0.15	1.0	**0.29**	2.07		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7001-240413 Lab Sample ID: M173512 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7001-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.52	1.2	**25.5**	2.07		
Nitrogen	0.52	2.1	**74.5**	2.07		
Carbon Monoxide	0.15	1.0	0.15	2.07		U
Methane	0.15	1.0	0.15	2.07		U
Carbon Dioxide	0.15	1.0	0.15	2.07		U

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM2720C SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-MID-240413 Lab Sample ID: M173513 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-MID-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 30 Apr 13

Concentration Units: Percent

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
Oxygen	0.51	1.2	**23.6**	2.05		
Nitrogen	0.51	2.1	**74.5**	2.05		
Carbon Monoxide	0.14	1.0	0.14	2.05		U
Methane	0.14	1.0	0.14	2.05		U
Carbon Dioxide	0.14	1.0	**1.84**	2.05		

Comments:

TPH-GAS IN AIR BY SW 8015M

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Base/Command: KIRTLAND AFB (AIR) Prime Contractor: CH2M HILL

Project: BHATE/KAFB

Field Sample ID	Lab Sample ID
ST70-AR-40-20-240413	M173501
ST70-AR-29H-240413	M173502
ST70-AR-38-99-240413	M173503
ST70-AR-38-41-240413	M173504
ST70-AR-39-42-240413	M173505
ST70-AR-41-240413	M173506
ST70-AR-INLET-240413	M173507
ST70-AR-Exhaust-240413	M173508
ST70-AR-28H-240413	M173509
ST70-AR-7002-240413	M173510
ST70-AR-7003-240413	M173511
ST70-AR-7001-240413	M173512
ST70-AR-MID-240413	M173513

Comments:

See attached narrative

CASE NARRATIVE
GC VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: M1735

Project: BHATE/KAFB Project #: 458580.01.03.02

I. Method(s):

Analysis: SW8015M
Preparation: NONE

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Not applicable.

F. Surrogate Standard(s):

Not applicable.

G. Analytical Exception(s):

None.

H. Manual Integration(s):

Level 1 of the initial calibration was manually integrated. Method blank XB2-0429 was manually integrated.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Doug Malcolm Date: 4-29-13

Reviewed by: Tiffany Hill Date: 4/30/13

Sample ID	Client ID	Date Collected	Time Collected	Canister ID	Certification Date	Incoming pressure inHG	Incoming pressure torr	Primary Dilution Factor
M173501	ST70-AR-40-20-240413	4/24/2013	10:10	SG1779	4/16/2013	5.9	609	2.00
M173502	ST70-AR-29H-240413	4/24/2013	10:05	SG1336	4/16/2013	5.8	612	1.98
M173503	ST70-AR-38-99-240413	4/24/2013	10:20	SG1814	4/17/2013	6.0	608	1.97
M173504	ST70-AR-38-41-240413	4/24/2013	10:25	SG1763	4/17/2013	6.4	597	2.06
M173505	ST70-AR-39-42-240413	4/24/2013	10:30	SG1785	4/16/2013	5.9	611	2.08
M173506	ST70-AR-41-240413	4/24/2013	10:40	SG1887	4/16/2013	6.1	606	2.04
M173507	ST70-AR-INLET-240413	4/24/2013	11:35	SG1300	4/16/2013	6.0	607	2.02
M173508	ST70-AR-Exhaust-240413	4/24/2013	12:00	SG1756	4/16/2013	7.2	576	2.13
M173509	ST70-AR-28H-240413	4/24/2013	11:40	SG1992	4/16/2013	6.5	594	2.07
M173510	ST70-AR-7002-240413	4/24/2013	11:45	SG1786	4/16/2013	6.7	591	2.09
M173511	ST70-AR-7003-240413	4/24/2013	11:50	SG1991	4/17/2013	6.5	594	2.07
M173512	ST70-AR-7001-240413	4/24/2013	12:05	SG1362	4/17/2013	6.5	595	2.07
M173513	ST70-AR-MID-240413	4/24/2013	11:55	SG1995	4/17/2013	6.5	595	2.05

SAMPLE DATA SUMMARY

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-40-20-240413 Lab Sample ID: M173501 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-40-20-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.00	50.0	**6080**	2		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-29H-240413 Lab Sample ID: M173502 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-29H-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.94	49.5	**17.8**	1.98		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-99-240413 Lab Sample ID: M173503 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-99-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	5.91	49.3	**1990**	1.97		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-38-41-240413 Lab Sample ID: M173504 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-38-41-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.18	51.5	**3910**	2.06		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-39-42-240413 Lab Sample ID: M173505 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-39-42-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.24	52.0	**1670**	2.08		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-41-240413 Lab Sample ID: M173506 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-41-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.12	51.0	36.8	2.04		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-INLET-240413 Lab Sample ID: M173507 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-INLET-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.06	50.5	666	2.02		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-Exhaust-240413 Lab Sample ID: M173508 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-Exhaust-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.39	53.3	**30.8**	2.13		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-28H-240413 Lab Sample ID: M173509 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-28H-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.21	51.8	**946**	2.07		

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7002-240413 Lab Sample ID: M173510 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7002-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.27	52.3	41.7	2.09		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7003-240413 Lab Sample ID: M173511 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7003-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.21	51.8	**41.9**	2.07		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-7001-240413 Lab Sample ID: M173512 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-7001-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.21	51.8	**11.4**	2.07		F

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8015M SDG #: M1735

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Field Sample ID: ST70-AR-MID-240413 Lab Sample ID: M173513 Matrix: AIR

% Solids: 0 Sample Description: ST70-AR-MID-240413

Date Received: 25 Apr 13 Date Prepared: Date Analyzed: 29 Apr 13

Concentration Units: ug/L

Analyte	DL	RL	Result	Dilution	Confirm	Qualifier
TPH-Gasoline	6.15	51.3	**20.8**	2.05		F

Comments:

CHAIN OF CUSTODY/SHIPPING DOCUMENTS

Project/Contact Information	
Project #	458580.01.03.02
Project Name	KAFB ST-70, TO-24/TO-49
Report Copy to	Molive@Bhate.com
Company Name/Contact	CH2M HILL- ABQ\ Ben Moayyad

Sampling		Type		Matrix			Client Sample ID	LAB QC	Total Number of Containers	Requested Analysis: VOC TO-15 (including acetone, MTBE, and MEK)	Requested Analysis: TPH-gasoline SW8015M	Requested Analysis: Fixed Gasses SM2320C		THIS AREA FOR LAB USE ONLY: Cooler Temperature / Alternate Description	Lab ID
Date	Time	Comp	Grab	Water	Soil	Air				Preservative: none	none	none			
4/24/13	10:10		X			X	ST70-AR- 40-20 -240413		1	X	X	X		Can #: SG 1779	1
4/24/13	10:05		X			X	ST70-AR- 29H -240413		1	X	X	X		Can #: SG 1336	2
4/24/13	10:20		X			X	ST70-AR- 38-99 -240413		1	X	X	X		Can #: SG 1814	3
4/24/13	10:25		X			X	ST70-AR- 38-41 -240413		1	X	X	X		Can #: SG 1763	4
4/24/13	10:30		X			X	ST70-AR- 39-42 -240413		1	X	X	X		Can #: SG 1785	5
4/24/13	10:40		X			X	ST70-AR- 41 -240413		1	X	X	X		Can #: SG 1887	6
4/24/13	11:35		X			X	ST70-AR- INLET -240413		1	X	X	X		Can #: SG 1300	7
4/24/13	12:00		X			X	ST70-AR- Exhaust -240413		1	X	X	X		Can #: SG 1756	8
4/24/13	11:40		X			X	ST70-AR- 28H -240413		1	X	X	X		Can #: SG 1992	9
4/24/13	11:45		X			X	ST70-AR- 7002 -240413		1	X	X	X		Can #: SG 1786	10
4/24/13	11:50		X			X	ST70-AR- 7003 -240413		1	X	X	X		Can #: SG 1991	11
4/24/13	12:05		X			X	ST70-AR- 7001 -240413		1	X	X	X		Can #: SG 1362	12
4/24/13	11:55		X			X	ST70-AR- MID -240413		1	X	X	X		Can #: SG 1995	13
														Note - 1 extra cannister not used	

Sampled By	4/24/13 1530 Ben Moayyad	Relinquished By	SHIPPED:
Received By	4/25/13 1630	Relinquished By	AIRBILL:
Received By		Date/Time	
Special Instructions			

THIS AREA FOR LAB USE ONLY: Lab # M1735 Pg 1 of 1; Lab PM; Custody Review; Log In; LIMS Verification; pH; Cust Seals Y N; Ice; QC Level 1 2 3

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: M1735
Client/Project: HNFP

Date received: 4/25/13
Checked by: GS
Checked by: _____

VERIFICATION OF SAMPLE CONDITIONS (verify all items), HD = Client Hand delivered Samples 4-25-13	NA	YES	NO
Radiological Screening for DoD 0% Rad	N	✓	
Were custody seals intact and on the outside of the cooler?		✓	
Type of packing material: Ice Blue Ice Bubble wrap			
Was a Chain of Custody (CoC) Provided?		✓	
Was the CoC correctly filled out (If No, document in the SRER)		✓	
Did the CoC list a correct bottle count and the preservative types (Y=OK, N=Corrected on CoC)		✓	
Were the sample containers in good condition (broken or leaking)?		✓	
Containers supplied by ASL?		✓	
Any sample with < 1/2 holding time remaining? If so contact LPM			✓
Samples have multi-phase? If yes, document on SRER			✓
Was there ice in the cooler? Enter temp. If >6°C contact client/SRER Air 21.1°C	✓	~~ANR~~ S	GS 4-25-13

All VOCs free of air bubbles? No, document on SRER	✓		
pH of all samples checked and met requirements? No, then document in SRER	✓		
Enough sample volume provided for analysis? No, document in SRER	✓		
Did sample labels agree with COC? No, document in SRER		✓	
Dissolved/Soluble metals filtered in the field?	✓		
Dissolved/Soluble metals have sediment in bottom of container? Document in SRER	✓		

Sample ID	Reagent	Reagent Lot Number	Volume Added	Initials

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: M1735
Client/Project: KAFB

Date received: 4/25/13
Checked by: BM
Checked by: _____

VERIFICATION OF SAMPLE CONDITIONS (verify all items), HD = Client Hand delivered Samples	NA	YES	NO
Radiological Screening for DoD		✓	
Were custody seals intact and on the outside of the cooler?		✓	
Type of packing material: Ice Blue Ice Bubble wrap		✓	
Was a Chain of Custody (CoC) Provided?		✓	
Was the CoC correctly filled out (If No, document in the SRER)		✓	
Did the CoC list a correct bottle count and the preservative types (Y=OK, N=Corrected on CoC)		✓	
Were the sample containers in good condition (broken or leaking)?		✓	
Containers supplied by ASL?		✓	
Any sample with < 1/2 holding time remaining? If so contact LPM			✓
Samples have multi-phase? If yes, document on SRER			✓
Was there ice in the cooler? Enter temp. If >6°C contact client/SRER 21 °C	✓		

All VOCs free of air bubbles? No, document on SRER	✓		
pH of all samples checked and met requirements? No, then document in SRER	✓		
Enough sample volume provided for analysis? No, document in SRER		✓	
Did sample labels agree with COC? No, document in SRER		✓	
Dissolved/Soluble metals filtered in the field?	✓		
Dissolved/Soluble metals have sediment in bottom of container? Document in SRER	✓		

Sample ID	Reagent	Reagent Lot Number	Volume Added	Initials

Data Validation Report

This report contains the results of the review and validation of the specified data package performed by Marcia Olive, Bhate Environmental Associates, Denver, Colorado.

Introduction

This data validation report covers samples taken from former Kirtland Air Force Base, New Mexico, on April 22, 2013. One aqueous sample and associated trip blank were collected from Solid Waste Management Unit ST-70. The analyses were performed by Test America Laboratory Denver, Colorado. The specific sample included in this validation was:

Sample ID	Matrix	Collection Date	Analyses
ST70-GW-7001-220413	Water	4/22/13	VOCs(SW8260B), Nitrate (EPA 300), RCRA 8 Metals (SW6010C/7470A), TPH-GRO (SW8015C)

This data was validated against the laboratory's QA/QC limits using the guidelines and practices published in the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, June 2008), the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, January 2010).

Sample Handling and Holding times

The sample was prepared and analyzed within method specific sample holding times.

Blanks

Acetone and ethyl ether were detected in the trip blank. These compounds were not detected in the sample and required no qualification.

No compounds were detected in the method blanks.

Laboratory control sample (LCS)/surrogates

The laboratory control sample (LCS) and surrogate recoveries were within QC control limits.

Project specific quality assurance/quality control

The matrix spike (MS) recoveries for 1,1,2-trichloroethane, ethylene dibromide and methyl tert-butyl ether were slightly below control limits. The sample used for the MS/MSD analyses was from another batch/lot thus precision and accuracy were cross reference with the LCS recoveries; which were in control. Therefore, using professional judgment, no qualification of the sample data was necessary.

Compound quantitation and reporting limits

No dilutions were required. All compounds were reported down to their respective reporting limits.

Overall assessment of data

Chromium exceeded the limit of detection in the interference check standard solution A (ICSA). The vendor confirmed that this element is a trace impurity of this solution. The detection of chromium in the sample was qualified estimated, "J".

All analyses were performed, and the data met the required QC criteria except where noted. The data is 100% complete.

Summary of Qualified Data

Sample ID	Parameter	*Qualifier
ST70-GW-7001-220413	Chromium	5.8 J

*in mg/l

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-41276-1
Client Project/Site: Bhate - Kirtland AFB, NM / ST70

For:
Bhate Environmental
445 Union Blvd Ste.129
Lakewood, Colorado 80226

Attn: Marcia Olive

Authorized for release by:
4/29/2013 11:08:06 AM

Lisa Uriell
Project Manager II
lisa.uriell@testamericainc.com

Table of Contents

Job ID: 280-41276-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Bhate Environmental

Project: Kirtland AFB, NM / ST70

Report Number: 280-41276-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Please note, all references to reporting limit and method detection limit in the case narrative are equivalent to the limit of quantitation (LOQ) and detection limit (DL).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Sample Receiving
One water sample and one trip blank were received under Chain of Custody on April 23, 2013 at a temperature of 2.4°C. The samples arrived in good condition, properly preserved and on ice.

The sample container designated for metals analysis for sample ST70-GW-7001-220413 (280-41276-1) indicated that 6010, 6020 and 7470 analyses were requested. However, the chain of custody listed 6010C and 7470A. The sample was logged for Dissolved 6010C and 7470A analyses per project set up. The client was notified on April 23, 2013.

No other anomalies were observed during sample receipt.

GCMS Volatiles, SW846 8260B
The MS/MSD analyses associated with batch 280-171169 were performed on a sample from another client and/or job. The MS/MSD exhibited the matrix spike (MS) percent recoveries outside the QC control limits for 1,1,2-Trichloroethane, Ethylene Dibromide and Methyl tert-butyl ether. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were observed.

GC Volatiles, SW846 8015C Gasoline Range Organics
No anomalies were observed.

Dissolved Metals, SW846 6010C/7470A
The interference check standard solution (ICSA) for the method 6010C analysis associated with analytical batch 280-171216 was greater than the Limit of Detection (LOD) for Chromium. The laboratory has confirmed with the vendor that this element is a trace impurity in the ICSA solution, and not due to matrix interference. Therefore, no corrective action was needed. The associated data have been flagged “Q” per the DoD QSM.

No other anomalies were observed.

Job ID: 280-41276-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

General Chemistry - 300.0 Nitrate
No anomalies were observed.

Definitions/Glossary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

GC VOA

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
Q	One or more quality control criteria failed.

General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Client Sample ID: ST70-GW-7001-220413 — Lab Sample ID: 280-41276-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Chlorodibromomethane	0.25	J	1.0	0.17	ug/L	1		8260B/DoD	Total/NA
Chloroform	0.17	J	1.0	0.16	ug/L	1		8260B/DoD	Total/NA
Dichlorobromomethane	0.18	J	1.0	0.17	ug/L	1		8260B/DoD	Total/NA
Trichloroethene	1.7		1.0	0.16	ug/L	1		8260B/DoD	Total/NA
Barium	39		10	0.58	ug/L	1		6010C	Dissolved
Cadmium	0.46	J	5.0	0.45	ug/L	1		6010C	Dissolved
Chromium	5.8	J Q	15	0.66	ug/L	1		6010C	Dissolved
Selenium	22		22	4.9	ug/L	1		6010C	Dissolved
Nitrate as N	6.7		0.50	0.042	mg/L	1		300.0	Total/NA

Client Sample ID: ST70-TB-7001-220413 — Lab Sample ID: 280-41276-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Acetone	12		10	1.9	ug/L	1		8260B/DoD	Total/NA
Ethyl ether	2.7		2.0	0.26	ug/L	1		8260B/DoD	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Method	Method Description	Protocol	Laboratory
8260B/DoD	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL DEN
6010C	Metals (ICP)	SW846	TAL DEN
7470A	Mercury (CVAA)	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-41276-1	ST70-GW-7001-220413	Water	04/22/13 14:35	04/23/13 10:30
280-41276-2	ST70-TB-7001-220413	Water	04/22/13 12:00	04/23/13 10:30

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Client Sample ID: ST70-GW-7001-220413
Date Collected: 04/22/13 14:35
Date Received: 04/23/13 10:30

Lab Sample ID: 280-41276-1
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.20	U	1.0	0.17	ug/L			04/25/13 04:59	1
1,1,1-Trichloroethane	0.20	U	1.0	0.16	ug/L			04/25/13 04:59	1
1,2,3-Trichloropropane	0.80	U	3.0	0.77	ug/L			04/25/13 04:59	1
1,2,3-Trichlorobenzene	0.40	U	1.0	0.18	ug/L			04/25/13 04:59	1
1,1-Dichloroethane	0.20	U	1.0	0.16	ug/L			04/25/13 04:59	1
1,2,4-Trichlorobenzene	0.80	U	1.0	0.32	ug/L			04/25/13 04:59	1
1,2-Dibromo-3-Chloropropane	1.6	U	5.0	0.81	ug/L			04/25/13 04:59	1
1,1-Dichloropropene	0.40	U	1.0	0.15	ug/L			04/25/13 04:59	1
1,1-Dichloroethene	0.20	U	1.0	0.14	ug/L			04/25/13 04:59	1
1,1,2-Trichloroethane	0.40	U	1.0	0.32	ug/L			04/25/13 04:59	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.20	ug/L			04/25/13 04:59	1
1,2,4-Trimethylbenzene	0.20	U	1.0	0.14	ug/L			04/25/13 04:59	1
1,2-Dichlorobenzene	0.20	U	1.0	0.13	ug/L			04/25/13 04:59	1
1,2-Dichloroethane	0.20	U	1.0	0.13	ug/L			04/25/13 04:59	1
1,3-Dichlorobenzene	0.20	U	1.0	0.16	ug/L			04/25/13 04:59	1
1,3-Dichloropropane	0.20	U	1.0	0.15	ug/L			04/25/13 04:59	1
1,3,5-Trimethylbenzene	0.40	U	1.0	0.14	ug/L			04/25/13 04:59	1
2-Butanone (MEK)	3.2	U	6.0	1.8	ug/L			04/25/13 04:59	1
1,4-Dichlorobenzene	0.40	U	1.0	0.16	ug/L			04/25/13 04:59	1
1,2-Dichloropropane	0.20	U	1.0	0.13	ug/L			04/25/13 04:59	1
2,2-Dichloropropane	0.40	U	1.0	0.20	ug/L			04/25/13 04:59	1
2-Hexanone	3.2	U	5.0	1.4	ug/L			04/25/13 04:59	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	1.0	ug/L			04/25/13 04:59	1
4-Isopropyltoluene	0.40	U	1.0	0.17	ug/L			04/25/13 04:59	1
Benzene	0.20	U	1.0	0.16	ug/L			04/25/13 04:59	1
Acetone	6.4	U	10	1.9	ug/L			04/25/13 04:59	1
Bromobenzene	0.20	U	1.0	0.17	ug/L			04/25/13 04:59	1
Bromoform	0.40	U	1.0	0.19	ug/L			04/25/13 04:59	1
Bromomethane	0.40	U	2.0	0.21	ug/L			04/25/13 04:59	1
Carbon tetrachloride	0.40	U	2.0	0.19	ug/L			04/25/13 04:59	1
Carbon disulfide	0.80	U	2.0	0.45	ug/L			04/25/13 04:59	1
2-Chlorotoluene	0.40	U	1.0	0.17	ug/L			04/25/13 04:59	1
4-Chlorotoluene	0.40	U	1.0	0.17	ug/L			04/25/13 04:59	1
Chlorobenzene	0.20	U	1.0	0.17	ug/L			04/25/13 04:59	1
Chlorobromomethane	0.20	U	1.0	0.10	ug/L			04/25/13 04:59	1
Chlorodibromomethane	**0.25**	**J**	1.0	0.17	ug/L			04/25/13 04:59	1
Chloroform	**0.17**	**J**	1.0	0.16	ug/L			04/25/13 04:59	1
Chloroethane	1.6	U	2.0	0.41	ug/L			04/25/13 04:59	1
Chloromethane	0.80	U	2.0	0.30	ug/L			04/25/13 04:59	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			04/25/13 04:59	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.16	ug/L			04/25/13 04:59	1
Dibromomethane	0.40	U	1.0	0.17	ug/L			04/25/13 04:59	1
Dichlorobromomethane	**0.18**	**J**	1.0	0.17	ug/L			04/25/13 04:59	1
Dichlorodifluoromethane	0.80	U	2.0	0.31	ug/L			04/25/13 04:59	1
Ethylbenzene	0.20	U	1.0	0.16	ug/L			04/25/13 04:59	1
Hexachlorobutadiene	0.40	U	1.0	0.36	ug/L			04/25/13 04:59	1
Isopropylbenzene	0.40	U	1.0	0.19	ug/L			04/25/13 04:59	1
Ethylene Dibromide	0.20	U	1.0	0.18	ug/L			04/25/13 04:59	1
Methylene Chloride	0.40	U	5.0	0.32	ug/L			04/25/13 04:59	1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: ST70-GW-7001-220413 — **Lab Sample ID: 280-41276-1**
Date Collected: 04/22/13 14:35 — **Matrix: Water**
Date Received: 04/23/13 10:30

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	0.40	U	5.0	0.25	ug/L			04/25/13 04:59	1
m-Xylene & p-Xylene	0.80	U	2.0	0.34	ug/L			04/25/13 04:59	1
Naphthalene	0.80	U	1.0	0.22	ug/L			04/25/13 04:59	1
n-Butylbenzene	0.40	U	1.0	0.32	ug/L			04/25/13 04:59	1
N-Propylbenzene	0.20	U	1.0	0.16	ug/L			04/25/13 04:59	1
o-Xylene	0.40	U	1.0	0.19	ug/L			04/25/13 04:59	1
Styrene	0.40	U	1.0	0.17	ug/L			04/25/13 04:59	1
sec-Butylbenzene	0.40	U	1.0	0.17	ug/L			04/25/13 04:59	1
tert-Butylbenzene	0.40	U	1.0	0.16	ug/L			04/25/13 04:59	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			04/25/13 04:59	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.19	ug/L			04/25/13 04:59	1
Tetrachloroethene	0.40	U	1.0	0.20	ug/L			04/25/13 04:59	1
1,2-Dichloroethene, Total	0.20	U	1.0	0.15	ug/L			04/25/13 04:59	1
Toluene	0.40	U	1.0	0.17	ug/L			04/25/13 04:59	1
Trichloroethene	**1.7**		1.0	0.16	ug/L			04/25/13 04:59	1
Trichlorofluoromethane	0.80	U	2.0	0.29	ug/L			04/25/13 04:59	1
Vinyl chloride	0.40	U	1.5	0.10	ug/L			04/25/13 04:59	1
2-Chloroethyl vinyl ether	0.40	U	3.0	0.69	ug/L			04/25/13 04:59	1
2-Nitropropane	3.2	U	5.0	1.6	ug/L			04/25/13 04:59	1
Ethyl acetate	3.2	U	5.0	1.2	ug/L			04/25/13 04:59	1
Ethyl ether	0.80	U	2.0	0.26	ug/L			04/25/13 04:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*85 - 120*		*04/25/13 04:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 120*		*04/25/13 04:59*	*1*
4-Bromofluorobenzene (Surr)	*115*		*75 - 120*		*04/25/13 04:59*	*1*
Dibromofluoromethane (Surr)	*100*		*85 - 115*		*04/25/13 04:59*	*1*

Client Sample ID: ST70-TB-7001-220413 — **Lab Sample ID: 280-41276-2**
Date Collected: 04/22/13 12:00 — **Matrix: Water**
Date Received: 04/23/13 10:30

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.20	U	1.0	0.17	ug/L			04/25/13 05:20	1
1,1,1-Trichloroethane	0.20	U	1.0	0.16	ug/L			04/25/13 05:20	1
1,2,3-Trichloropropane	0.80	U	3.0	0.77	ug/L			04/25/13 05:20	1
1,2,3-Trichlorobenzene	0.40	U	1.0	0.18	ug/L			04/25/13 05:20	1
1,1-Dichloroethane	0.20	U	1.0	0.16	ug/L			04/25/13 05:20	1
1,2,4-Trichlorobenzene	0.80	U	1.0	0.32	ug/L			04/25/13 05:20	1
1,2-Dibromo-3-Chloropropane	1.6	U	5.0	0.81	ug/L			04/25/13 05:20	1
1,1-Dichloropropene	0.40	U	1.0	0.15	ug/L			04/25/13 05:20	1
1,1-Dichloroethene	0.20	U	1.0	0.14	ug/L			04/25/13 05:20	1
1,1,2-Trichloroethane	0.40	U	1.0	0.32	ug/L			04/25/13 05:20	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.20	ug/L			04/25/13 05:20	1
1,2,4-Trimethylbenzene	0.20	U	1.0	0.14	ug/L			04/25/13 05:20	1
1,2-Dichlorobenzene	0.20	U	1.0	0.13	ug/L			04/25/13 05:20	1
1,2-Dichloroethane	0.20	U	1.0	0.13	ug/L			04/25/13 05:20	1
1,3-Dichlorobenzene	0.20	U	1.0	0.16	ug/L			04/25/13 05:20	1
1,3-Dichloropropane	0.20	U	1.0	0.15	ug/L			04/25/13 05:20	1
1,3,5-Trimethylbenzene	0.40	U	1.0	0.14	ug/L			04/25/13 05:20	1
2-Butanone (MEK)	3.2	U	6.0	1.8	ug/L			04/25/13 05:20	1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: ST70-TB-7001-220413
Date Collected: 04/22/13 12:00
Date Received: 04/23/13 10:30

Lab Sample ID: 280-41276-2
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.40	U	1.0	0.16	ug/L			04/25/13 05:20	1
1,2-Dichloropropane	0.20	U	1.0	0.13	ug/L			04/25/13 05:20	1
2,2-Dichloropropane	0.40	U	1.0	0.20	ug/L			04/25/13 05:20	1
2-Hexanone	3.2	U	5.0	1.4	ug/L			04/25/13 05:20	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	1.0	ug/L			04/25/13 05:20	1
4-Isopropyltoluene	0.40	U	1.0	0.17	ug/L			04/25/13 05:20	1
Benzene	0.20	U	1.0	0.16	ug/L			04/25/13 05:20	1
Acetone	**12**		10	1.9	ug/L			04/25/13 05:20	1
Bromobenzene	0.20	U	1.0	0.17	ug/L			04/25/13 05:20	1
Bromoform	0.40	U	1.0	0.19	ug/L			04/25/13 05:20	1
Bromomethane	0.40	U	2.0	0.21	ug/L			04/25/13 05:20	1
Carbon tetrachloride	0.40	U	2.0	0.19	ug/L			04/25/13 05:20	1
Carbon disulfide	0.80	U	2.0	0.45	ug/L			04/25/13 05:20	1
2-Chlorotoluene	0.40	U	1.0	0.17	ug/L			04/25/13 05:20	1
4-Chlorotoluene	0.40	U	1.0	0.17	ug/L			04/25/13 05:20	1
Chlorobenzene	0.20	U	1.0	0.17	ug/L			04/25/13 05:20	1
Chlorobromomethane	0.20	U	1.0	0.10	ug/L			04/25/13 05:20	1
Chlorodibromomethane	0.40	U	1.0	0.17	ug/L			04/25/13 05:20	1
Chloroform	0.20	U	1.0	0.16	ug/L			04/25/13 05:20	1
Chloroethane	1.6	U	2.0	0.41	ug/L			04/25/13 05:20	1
Chloromethane	0.80	U	2.0	0.30	ug/L			04/25/13 05:20	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			04/25/13 05:20	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.16	ug/L			04/25/13 05:20	1
Dibromomethane	0.40	U	1.0	0.17	ug/L			04/25/13 05:20	1
Dichlorobromomethane	0.20	U	1.0	0.17	ug/L			04/25/13 05:20	1
Dichlorodifluoromethane	0.80	U	2.0	0.31	ug/L			04/25/13 05:20	1
Ethylbenzene	0.20	U	1.0	0.16	ug/L			04/25/13 05:20	1
Hexachlorobutadiene	0.40	U	1.0	0.36	ug/L			04/25/13 05:20	1
Isopropylbenzene	0.40	U	1.0	0.19	ug/L			04/25/13 05:20	1
Ethylene Dibromide	0.20	U	1.0	0.18	ug/L			04/25/13 05:20	1
Methylene Chloride	0.40	U	5.0	0.32	ug/L			04/25/13 05:20	1
Methyl tert-butyl ether	0.40	U	5.0	0.25	ug/L			04/25/13 05:20	1
m-Xylene & p-Xylene	0.80	U	2.0	0.34	ug/L			04/25/13 05:20	1
Naphthalene	0.80	U	1.0	0.22	ug/L			04/25/13 05:20	1
n-Butylbenzene	0.40	U	1.0	0.32	ug/L			04/25/13 05:20	1
N-Propylbenzene	0.20	U	1.0	0.16	ug/L			04/25/13 05:20	1
o-Xylene	0.40	U	1.0	0.19	ug/L			04/25/13 05:20	1
Styrene	0.40	U	1.0	0.17	ug/L			04/25/13 05:20	1
sec-Butylbenzene	0.40	U	1.0	0.17	ug/L			04/25/13 05:20	1
tert-Butylbenzene	0.40	U	1.0	0.16	ug/L			04/25/13 05:20	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			04/25/13 05:20	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.19	ug/L			04/25/13 05:20	1
Tetrachloroethene	0.40	U	1.0	0.20	ug/L			04/25/13 05:20	1
1,2-Dichloroethene, Total	0.20	U	1.0	0.15	ug/L			04/25/13 05:20	1
Toluene	0.40	U	1.0	0.17	ug/L			04/25/13 05:20	1
Trichloroethene	0.20	U	1.0	0.16	ug/L			04/25/13 05:20	1
Trichlorofluoromethane	0.80	U	2.0	0.29	ug/L			04/25/13 05:20	1
Vinyl chloride	0.40	U	1.5	0.10	ug/L			04/25/13 05:20	1
2-Chloroethyl vinyl ether	0.40	U	3.0	0.69	ug/L			04/25/13 05:20	1

Client Sample Results

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: ST70-TB-7001-220413
Date Collected: 04/22/13 12:00
Date Received: 04/23/13 10:30

Lab Sample ID: 280-41276-2
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitropropane	3.2	U	5.0	1.6	ug/L			04/25/13 05:20	1
Ethyl acetate	3.2	U	5.0	1.2	ug/L			04/25/13 05:20	1
Ethyl ether	**2.7**		2.0	0.26	ug/L			04/25/13 05:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*85 - 120*		*04/25/13 05:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 120*		*04/25/13 05:20*	*1*
4-Bromofluorobenzene (Surr)	*109*		*75 - 120*		*04/25/13 05:20*	*1*
Dibromofluoromethane (Surr)	*98*		*85 - 115*		*04/25/13 05:20*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Client Sample ID: ST70-GW-7001-220413
Date Collected: 04/22/13 14:35
Date Received: 04/23/13 10:30

Lab Sample ID: 280-41276-1
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	20	U M	25	10	ug/L			04/25/13 19:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*99*		*82 - 110*		*04/25/13 19:06*	*1*

Client Sample Results

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: ST70-GW-7001-220413
Date Collected: 04/22/13 14:35
Date Received: 04/23/13 10:30

Lab Sample ID: 280-41276-1
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12	U	25	4.4	ug/L		04/24/13 08:00	04/24/13 16:33	1
Barium	**39**		10	0.58	ug/L		04/24/13 08:00	04/24/13 16:33	1
Cadmium	**0.46**	**J**	5.0	0.45	ug/L		04/24/13 08:00	04/24/13 16:33	1
Chromium	**5.8**	**J Q**	15	0.66	ug/L		04/24/13 08:00	04/24/13 16:33	1
Lead	5.0	U	15	2.6	ug/L		04/24/13 08:00	04/24/13 16:33	1
Selenium	**22**		22	4.9	ug/L		04/24/13 08:00	04/24/13 16:33	1
Silver	2.0	U	15	0.93	ug/L		04/24/13 08:00	04/24/13 16:33	1

Client Sample Results

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Method: 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: ST70-GW-7001-220413
Date Collected: 04/22/13 14:35
Date Received: 04/23/13 10:30

Lab Sample ID: 280-41276-1
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.027	ug/L		04/25/13 12:30	04/25/13 19:23	1

Client Sample Results

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

General Chemistry

Client Sample ID: ST70-GW-7001-220413
Date Collected: 04/22/13 14:35
Date Received: 04/23/13 10:30

Lab Sample ID: 280-41276-1
Matrix: Water

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.7		0.50	0.042	mg/L			04/23/13 15:01	1

Surrogate Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	BFB	DBFM
Lab Sample ID	Client Sample ID	(85-120)	(70-120)	(75-120)	(85-115)
280-41188-A-9 MS	Matrix Spike	105	76	108	89
280-41188-A-9 MSD	Matrix Spike Duplicate	107	82	109	95
280-41276-1	ST70-GW-7001-220413	103	96	115	100
280-41276-2	ST70-TB-7001-220413	100	91	109	98
LCS 280-171169/30	Lab Control Sample	107	87	108	95
MB 280-171169/31	Method Blank	103	88	119	96

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		TFT1
Lab Sample ID	Client Sample ID	(82-110)
280-41276-1	ST70-GW-7001-220413	99
280-41276-1 MS	ST70-GW-7001-220413	99
280-41276-1 MSD	ST70-GW-7001-220413	98
LCS 280-171294/4	Lab Control Sample	102
LCSD 280-171294/5	Lab Control Sample Dup	100
MB 280-171294/6	Method Blank	101

Surrogate Legend

TFT = a,a,a-Trifluorotoluene

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-171169/31
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.20	U	1.0	0.17	ug/L			04/24/13 20:43	1
1,1,1-Trichloroethane	0.20	U	1.0	0.16	ug/L			04/24/13 20:43	1
1,2,3-Trichloropropane	0.80	U	3.0	0.77	ug/L			04/24/13 20:43	1
1,2,3-Trichlorobenzene	0.40	U	1.0	0.18	ug/L			04/24/13 20:43	1
1,1-Dichloroethane	0.20	U	1.0	0.16	ug/L			04/24/13 20:43	1
1,2,4-Trichlorobenzene	0.80	U	1.0	0.32	ug/L			04/24/13 20:43	1
1,2-Dibromo-3-Chloropropane	1.6	U	5.0	0.81	ug/L			04/24/13 20:43	1
1,1-Dichloropropene	0.40	U	1.0	0.15	ug/L			04/24/13 20:43	1
1,1-Dichloroethene	0.20	U	1.0	0.14	ug/L			04/24/13 20:43	1
1,1,2-Trichloroethane	0.40	U	1.0	0.32	ug/L			04/24/13 20:43	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.20	ug/L			04/24/13 20:43	1
1,2,4-Trimethylbenzene	0.20	U	1.0	0.14	ug/L			04/24/13 20:43	1
1,2-Dichlorobenzene	0.20	U	1.0	0.13	ug/L			04/24/13 20:43	1
1,2-Dichloroethane	0.20	U	1.0	0.13	ug/L			04/24/13 20:43	1
1,3-Dichlorobenzene	0.20	U	1.0	0.16	ug/L			04/24/13 20:43	1
1,3-Dichloropropane	0.20	U	1.0	0.15	ug/L			04/24/13 20:43	1
1,3,5-Trimethylbenzene	0.40	U	1.0	0.14	ug/L			04/24/13 20:43	1
2-Butanone (MEK)	3.2	U	6.0	1.8	ug/L			04/24/13 20:43	1
1,4-Dichlorobenzene	0.40	U	1.0	0.16	ug/L			04/24/13 20:43	1
1,2-Dichloropropane	0.20	U	1.0	0.13	ug/L			04/24/13 20:43	1
2,2-Dichloropropane	0.40	U	1.0	0.20	ug/L			04/24/13 20:43	1
2-Hexanone	3.2	U	5.0	1.4	ug/L			04/24/13 20:43	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	1.0	ug/L			04/24/13 20:43	1
4-Isopropyltoluene	0.40	U	1.0	0.17	ug/L			04/24/13 20:43	1
Benzene	0.20	U	1.0	0.16	ug/L			04/24/13 20:43	1
Acetone	6.4	U	10	1.9	ug/L			04/24/13 20:43	1
Bromobenzene	0.20	U	1.0	0.17	ug/L			04/24/13 20:43	1
Bromoform	0.40	U	1.0	0.19	ug/L			04/24/13 20:43	1
Bromomethane	0.40	U	2.0	0.21	ug/L			04/24/13 20:43	1
Carbon tetrachloride	0.40	U	2.0	0.19	ug/L			04/24/13 20:43	1
Carbon disulfide	0.80	U	2.0	0.45	ug/L			04/24/13 20:43	1
2-Chlorotoluene	0.40	U	1.0	0.17	ug/L			04/24/13 20:43	1
4-Chlorotoluene	0.40	U	1.0	0.17	ug/L			04/24/13 20:43	1
Chlorobenzene	0.20	U	1.0	0.17	ug/L			04/24/13 20:43	1
Chlorobromomethane	0.20	U	1.0	0.10	ug/L			04/24/13 20:43	1
Chlorodibromomethane	0.40	U	1.0	0.17	ug/L			04/24/13 20:43	1
Chloroform	0.20	U	1.0	0.16	ug/L			04/24/13 20:43	1
Chloroethane	1.6	U	2.0	0.41	ug/L			04/24/13 20:43	1
Chloromethane	0.80	U	2.0	0.30	ug/L			04/24/13 20:43	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			04/24/13 20:43	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.16	ug/L			04/24/13 20:43	1
Dibromomethane	0.40	U	1.0	0.17	ug/L			04/24/13 20:43	1
Dichlorobromomethane	0.20	U	1.0	0.17	ug/L			04/24/13 20:43	1
Dichlorodifluoromethane	0.80	U	2.0	0.31	ug/L			04/24/13 20:43	1
Ethylbenzene	0.20	U	1.0	0.16	ug/L			04/24/13 20:43	1
Hexachlorobutadiene	0.40	U	1.0	0.36	ug/L			04/24/13 20:43	1
Isopropylbenzene	0.40	U	1.0	0.19	ug/L			04/24/13 20:43	1
Ethylene Dibromide	0.20	U	1.0	0.18	ug/L			04/24/13 20:43	1

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-171169/31
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	0.40	U	5.0	0.32	ug/L			04/24/13 20:43	1
Methyl tert-butyl ether	0.40	U	5.0	0.25	ug/L			04/24/13 20:43	1
m-Xylene & p-Xylene	0.80	U	2.0	0.34	ug/L			04/24/13 20:43	1
Naphthalene	0.80	U	1.0	0.22	ug/L			04/24/13 20:43	1
n-Butylbenzene	0.40	U	1.0	0.32	ug/L			04/24/13 20:43	1
N-Propylbenzene	0.20	U	1.0	0.16	ug/L			04/24/13 20:43	1
o-Xylene	0.40	U	1.0	0.19	ug/L			04/24/13 20:43	1
Styrene	0.40	U	1.0	0.17	ug/L			04/24/13 20:43	1
sec-Butylbenzene	0.40	U	1.0	0.17	ug/L			04/24/13 20:43	1
tert-Butylbenzene	0.40	U	1.0	0.16	ug/L			04/24/13 20:43	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.15	ug/L			04/24/13 20:43	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.19	ug/L			04/24/13 20:43	1
Tetrachloroethene	0.40	U	1.0	0.20	ug/L			04/24/13 20:43	1
1,2-Dichloroethene, Total	0.20	U	1.0	0.15	ug/L			04/24/13 20:43	1
Toluene	0.40	U	1.0	0.17	ug/L			04/24/13 20:43	1
Trichloroethene	0.20	U	1.0	0.16	ug/L			04/24/13 20:43	1
Trichlorofluoromethane	0.80	U	2.0	0.29	ug/L			04/24/13 20:43	1
Vinyl chloride	0.40	U	1.5	0.10	ug/L			04/24/13 20:43	1
2-Chloroethyl vinyl ether	0.40	U	3.0	0.69	ug/L			04/24/13 20:43	1
2-Nitropropane	3.2	U	5.0	1.6	ug/L			04/24/13 20:43	1
Ethyl acetate	3.2	U	5.0	1.2	ug/L			04/24/13 20:43	1
Ethyl ether	0.80	U	2.0	0.26	ug/L			04/24/13 20:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*85 - 120*		*04/24/13 20:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 120*		*04/24/13 20:43*	*1*
4-Bromofluorobenzene (Surr)	*119*		*75 - 120*		*04/24/13 20:43*	*1*
Dibromofluoromethane (Surr)	*96*		*85 - 115*		*04/24/13 20:43*	*1*

Lab Sample ID: LCS 280-171169/30
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	5.00	4.46		ug/L		89	80 - 130
1,1,1-Trichloroethane	5.00	4.68		ug/L		94	65 - 130
1,2,3-Trichloropropane	5.00	4.29		ug/L		86	75 - 125
1,2,3-Trichlorobenzene	5.00	4.05		ug/L		81	55 - 140
1,1-Dichloroethane	5.00	4.26		ug/L		85	70 - 135
1,2,4-Trichlorobenzene	5.00	4.03		ug/L		81	65 - 135
1,2-Dibromo-3-Chloropropane	5.00	4.35	J	ug/L		87	50 - 130
1,1-Dichloropropene	5.00	4.01		ug/L		80	75 - 130
1,1-Dichloroethene	5.00	4.79		ug/L		96	70 - 130
1,1,2-Trichloroethane	5.00	4.14		ug/L		83	75 - 125
1,1,2,2-Tetrachloroethane	5.00	4.21		ug/L		84	65 - 130
1,2,4-Trimethylbenzene	5.00	4.37		ug/L		87	75 - 130
1,2-Dichlorobenzene	5.00	4.19		ug/L		84	70 - 120
1,2-Dichloroethane	5.00	4.33		ug/L		87	70 - 130

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-171169/30
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	5.00	4.24		ug/L		85	75 - 125
1,3-Dichloropropane	5.00	4.28		ug/L		86	75 - 125
1,3,5-Trimethylbenzene	5.00	4.48		ug/L		90	75 - 130
2-Butanone (MEK)	20.0	22.8		ug/L		114	30 - 150
1,4-Dichlorobenzene	5.00	4.15		ug/L		83	75 - 125
1,2-Dichloropropane	5.00	4.21		ug/L		84	75 - 125
2,2-Dichloropropane	5.00	4.95		ug/L		99	70 - 135
2-Hexanone	20.0	17.2		ug/L		86	55 - 130
4-Methyl-2-pentanone (MIBK)	20.0	17.0		ug/L		85	60 - 135
4-Isopropyltoluene	5.00	4.53		ug/L		91	75 - 130
Benzene	5.00	4.28		ug/L		86	80 - 120
Acetone	20.0	21.9		ug/L		109	40 - 140
Bromobenzene	5.00	4.16		ug/L		83	75 - 125
Bromoform	5.00	4.13		ug/L		83	70 - 130
Bromomethane	5.00	4.89		ug/L		98	30 - 145
Carbon tetrachloride	5.00	4.94		ug/L		99	65 - 140
Carbon disulfide	5.00	4.69		ug/L		94	35 - 160
2-Chlorotoluene	5.00	4.28		ug/L		86	75 - 125
4-Chlorotoluene	5.00	4.33		ug/L		87	75 - 130
Chlorobenzene	5.00	4.25		ug/L		85	80 - 120
Chlorobromomethane	5.00	4.19		ug/L		84	65 - 130
Chlorodibromomethane	5.00	4.50		ug/L		90	60 - 135
Chloroform	5.00	4.31		ug/L		86	65 - 135
Chloroethane	5.00	5.24		ug/L		105	60 - 135
Chloromethane	5.00	4.16		ug/L		83	40 - 125
cis-1,2-Dichloroethene	5.00	4.32		ug/L		86	70 - 125
cis-1,3-Dichloropropene	5.00	4.41		ug/L		88	70 - 130
Dibromomethane	5.00	4.24		ug/L		85	75 - 125
Dichlorobromomethane	5.00	4.44		ug/L		89	75 - 120
Dichlorodifluoromethane	5.00	4.46		ug/L		89	30 - 155
Ethylbenzene	5.00	4.31		ug/L		86	75 - 125
Hexachlorobutadiene	5.00	4.45		ug/L		89	50 - 140
Isopropylbenzene	5.00	4.31		ug/L		86	75 - 125
Ethylene Dibromide	5.00	4.21		ug/L		84	80 - 120
Methylene Chloride	5.00	4.78	J	ug/L		96	55 - 140
Methyl tert-butyl ether	5.00	3.77	J	ug/L		75	65 - 125
m-Xylene & p-Xylene	10.0	8.88		ug/L		89	75 - 130
Naphthalene	5.00	3.87		ug/L		77	55 - 140
n-Butylbenzene	5.00	4.49		ug/L		90	70 - 135
N-Propylbenzene	5.00	4.42		ug/L		88	70 - 130
o-Xylene	5.00	4.33		ug/L		87	80 - 120
Styrene	5.00	4.25		ug/L		85	65 - 135
sec-Butylbenzene	5.00	4.47		ug/L		89	70 - 125
tert-Butylbenzene	5.00	4.49		ug/L		90	70 - 130
trans-1,2-Dichloroethene	5.00	4.35		ug/L		87	60 - 140
trans-1,3-Dichloropropene	5.00	4.27		ug/L		85	55 - 140
Tetrachloroethene	5.00	4.48		ug/L		90	45 - 150
Toluene	5.00	4.57		ug/L		91	75 - 120

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-171169/30
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	5.00	4.18		ug/L		84	70 - 125
Trichlorofluoromethane	5.00	5.52		ug/L		110	60 - 145
Vinyl chloride	5.00	5.30		ug/L		106	50 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*107*		*85 - 120*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 120*
4-Bromofluorobenzene (Surr)	*108*		*75 - 120*
Dibromofluoromethane (Surr)	*95*		*85 - 115*

Lab Sample ID: 280-41188-A-9 MS
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.20	U	5.00	4.31		ug/L		86	80 - 130
1,1,1-Trichloroethane	0.20	U	5.00	5.02		ug/L		100	65 - 130
1,2,3-Trichloropropane	0.80	U	5.00	4.17		ug/L		83	75 - 125
1,2,3-Trichlorobenzene	0.40	U	5.00	3.80		ug/L		76	55 - 140
1,1-Dichloroethane	0.20	U	5.00	4.50		ug/L		90	70 - 135
1,2,4-Trichlorobenzene	0.80	U	5.00	4.04		ug/L		81	65 - 135
1,2-Dibromo-3-Chloropropane	1.6	U	5.00	3.77	J	ug/L		75	50 - 130
1,1-Dichloropropene	0.40	U	5.00	4.21		ug/L		84	75 - 130
1,1-Dichloroethene	0.20	U	5.00	5.06		ug/L		101	70 - 130
1,1,2-Trichloroethane	0.40	U J	5.00	3.71	J	ug/L		74	75 - 125
1,1,2,2-Tetrachloroethane	0.40	U	5.00	3.87		ug/L		77	65 - 130
1,2,4-Trimethylbenzene	0.20	U	5.00	4.86		ug/L		97	75 - 130
1,2-Dichlorobenzene	0.20	U	5.00	4.38		ug/L		88	70 - 120
1,2-Dichloroethane	0.20	U	5.00	4.09		ug/L		82	70 - 130
1,3-Dichlorobenzene	0.20	U	5.00	4.40		ug/L		88	75 - 125
1,3-Dichloropropane	0.20	U	5.00	3.95		ug/L		79	75 - 125
1,3,5-Trimethylbenzene	0.40	U	5.00	4.99		ug/L		100	75 - 130
2-Butanone (MEK)	3.2	U	20.0	17.0		ug/L		85	30 - 150
1,4-Dichlorobenzene	0.40	U	5.00	4.45		ug/L		89	75 - 125
1,2-Dichloropropane	0.20	U	5.00	4.12		ug/L		82	75 - 125
2,2-Dichloropropane	0.40	U	5.00	5.26		ug/L		105	70 - 135
2-Hexanone	3.2	U	20.0	12.1		ug/L		61	55 - 130
4-Methyl-2-pentanone (MIBK)	3.2	U	20.0	12.5		ug/L		62	60 - 135
4-Isopropyltoluene	0.40	U	5.00	5.01		ug/L		100	75 - 130
Benzene	0.20	U	5.00	4.43		ug/L		89	80 - 120
Acetone	6.4	U	20.0	15.6		ug/L		78	40 - 140
Bromobenzene	0.20	U	5.00	4.49		ug/L		90	75 - 125
Bromoform	0.40	U	5.00	3.79		ug/L		76	70 - 130
Bromomethane	0.40	U	5.00	4.65		ug/L		93	30 - 145
Carbon tetrachloride	0.40	U	5.00	5.26		ug/L		105	65 - 140
Carbon disulfide	0.80	U	5.00	4.86		ug/L		97	35 - 160
2-Chlorotoluene	0.40	U	5.00	4.74		ug/L		95	75 - 125
4-Chlorotoluene	0.40	U	5.00	4.75		ug/L		95	75 - 130

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-41188-A-9 MS
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	0.20	U	5.00	4.30		ug/L		86	80 - 120
Chlorobromomethane	0.20	U	5.00	3.88		ug/L		78	65 - 130
Chlorodibromomethane	0.40	U	5.00	4.09		ug/L		82	60 - 135
Chloroform	0.20	U	5.00	4.41		ug/L		88	65 - 135
Chloroethane	1.6	U	5.00	5.24		ug/L		105	60 - 135
Chloromethane	0.80	U	5.00	3.86		ug/L		77	40 - 125
cis-1,2-Dichloroethene	0.20	U	5.00	4.34		ug/L		87	70 - 125
cis-1,3-Dichloropropene	0.20	U	5.00	4.15		ug/L		83	70 - 130
Dibromomethane	0.40	U	5.00	3.95		ug/L		79	75 - 125
Dichlorobromomethane	0.20	U	5.00	4.32		ug/L		86	75 - 120
Dichlorodifluoromethane	0.80	U	5.00	4.38		ug/L		88	30 - 155
Ethylbenzene	0.20	U	5.00	4.56		ug/L		91	75 - 125
Hexachlorobutadiene	0.40	U	5.00	4.80		ug/L		96	50 - 140
Isopropylbenzene	0.40	U	5.00	4.93		ug/L		99	75 - 125
Ethylene Dibromide	0.20	U J	5.00	3.82	J	ug/L		76	80 - 120
Methylene Chloride	0.40	U	5.00	4.30	J	ug/L		86	55 - 140
Methyl tert-butyl ether	0.40	U J	5.00	3.18	J	ug/L		64	65 - 125
m-Xylene & p-Xylene	0.80	U	10.0	9.13		ug/L		91	75 - 130
Naphthalene	0.80	U	5.00	3.66		ug/L		73	55 - 140
n-Butylbenzene	0.40	U	5.00	5.02		ug/L		100	70 - 135
N-Propylbenzene	0.20	U	5.00	4.99		ug/L		100	70 - 130
o-Xylene	0.40	U	5.00	4.47		ug/L		89	80 - 120
Styrene	0.40	U	5.00	4.18		ug/L		84	65 - 135
sec-Butylbenzene	0.40	U	5.00	4.98		ug/L		100	70 - 125
tert-Butylbenzene	0.40	U	5.00	4.94		ug/L		99	70 - 130
trans-1,2-Dichloroethene	0.20	U	5.00	4.60		ug/L		92	60 - 140
trans-1,3-Dichloropropene	0.40	U	5.00	3.79		ug/L		76	55 - 140
Tetrachloroethene	0.40	U	5.00	4.67		ug/L		93	45 - 150
Toluene	0.40	U	5.00	4.73		ug/L		95	75 - 120
Trichloroethene	0.20	U	5.00	4.45		ug/L		89	70 - 125
Trichlorofluoromethane	0.80	U	5.00	5.67		ug/L		113	60 - 145
Vinyl chloride	0.40	U	5.00	5.14		ug/L		103	50 - 145

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*105*		*85 - 120*
1,2-Dichloroethane-d4 (Surr)	*76*		*70 - 120*
4-Bromofluorobenzene (Surr)	*108*		*75 - 120*
Dibromofluoromethane (Surr)	*89*		*85 - 115*

Lab Sample ID: 280-41188-A-9 MSD
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.20	U	5.00	4.48		ug/L		90	80 - 130	4	30
1,1,1-Trichloroethane	0.20	U	5.00	5.01		ug/L		100	65 - 130	0	30
1,2,3-Trichloropropane	0.80	U	5.00	4.35		ug/L		87	75 - 125	4	30
1,2,3-Trichlorobenzene	0.40	U	5.00	3.92		ug/L		78	55 - 140	3	30

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-41188-A-9 MSD
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethane	0.20	U	5.00	4.48		ug/L		90	70 - 135	1	30
1,2,4-Trichlorobenzene	0.80	U	5.00	4.13		ug/L		83	65 - 135	2	30
1,2-Dibromo-3-Chloropropane	1.6	U	5.00	3.74	J	ug/L		75	50 - 130	1	30
1,1-Dichloropropene	0.40	U	5.00	4.28		ug/L		86	75 - 130	2	30
1,1-Dichloroethene	0.20	U	5.00	4.95		ug/L		99	70 - 130	2	30
1,1,2-Trichloroethane	0.40	U J	5.00	3.94		ug/L		79	75 - 125	6	30
1,1,2,2-Tetrachloroethane	0.40	U	5.00	4.12		ug/L		82	65 - 130	6	30
1,2,4-Trimethylbenzene	0.20	U	5.00	4.73		ug/L		95	75 - 130	3	30
1,2-Dichlorobenzene	0.20	U	5.00	4.33		ug/L		87	70 - 120	1	30
1,2-Dichloroethane	0.20	U	5.00	4.34		ug/L		87	70 - 130	6	30
1,3-Dichlorobenzene	0.20	U	5.00	4.43		ug/L		89	75 - 125	1	30
1,3-Dichloropropane	0.20	U	5.00	4.15		ug/L		83	75 - 125	5	30
1,3,5-Trimethylbenzene	0.40	U	5.00	4.77		ug/L		95	75 - 130	5	30
2-Butanone (MEK)	3.2	U	20.0	19.4		ug/L		97	30 - 150	13	30
1,4-Dichlorobenzene	0.40	U	5.00	4.36		ug/L		87	75 - 125	2	30
1,2-Dichloropropane	0.20	U	5.00	4.28		ug/L		86	75 - 125	4	30
2,2-Dichloropropane	0.40	U	5.00	5.25		ug/L		105	70 - 135	0	30
2-Hexanone	3.2	U	20.0	13.7		ug/L		68	55 - 130	12	30
4-Methyl-2-pentanone (MIBK)	3.2	U	20.0	14.4		ug/L		72	60 - 135	14	30
4-Isopropyltoluene	0.40	U	5.00	4.73		ug/L		95	75 - 130	6	30
Benzene	0.20	U	5.00	4.50		ug/L		90	80 - 120	2	30
Acetone	6.4	U	20.0	17.2		ug/L		86	40 - 140	10	30
Bromobenzene	0.20	U	5.00	4.42		ug/L		88	75 - 125	2	30
Bromoform	0.40	U	5.00	3.89		ug/L		78	70 - 130	3	30
Bromomethane	0.40	U	5.00	4.76		ug/L		95	30 - 145	2	30
Carbon tetrachloride	0.40	U	5.00	5.14		ug/L		103	65 - 140	2	30
Carbon disulfide	0.80	U	5.00	4.85		ug/L		97	35 - 160	0	30
2-Chlorotoluene	0.40	U	5.00	4.55		ug/L		91	75 - 125	4	30
4-Chlorotoluene	0.40	U	5.00	4.65		ug/L		93	75 - 130	2	30
Chlorobenzene	0.20	U	5.00	4.36		ug/L		87	80 - 120	1	30
Chlorobromomethane	0.20	U	5.00	4.05		ug/L		81	65 - 130	4	30
Chlorodibromomethane	0.40	U	5.00	4.52		ug/L		90	60 - 135	10	30
Chloroform	0.20	U	5.00	4.48		ug/L		90	65 - 135	2	30
Chloroethane	1.6	U	5.00	5.20		ug/L		104	60 - 135	1	30
Chloromethane	0.80	U	5.00	4.01		ug/L		80	40 - 125	4	30
cis-1,2-Dichloroethene	0.20	U	5.00	4.60		ug/L		92	70 - 125	6	30
cis-1,3-Dichloropropene	0.20	U	5.00	4.29		ug/L		86	70 - 130	3	30
Dibromomethane	0.40	U	5.00	4.18		ug/L		84	75 - 125	6	30
Dichlorobromomethane	0.20	U	5.00	4.49		ug/L		90	75 - 120	4	30
Dichlorodifluoromethane	0.80	U	5.00	4.46		ug/L		89	30 - 155	2	30
Ethylbenzene	0.20	U	5.00	4.56		ug/L		91	75 - 125	0	30
Hexachlorobutadiene	0.40	U	5.00	4.54		ug/L		91	50 - 140	5	30
Isopropylbenzene	0.40	U	5.00	4.65		ug/L		93	75 - 125	6	30
Ethylene Dibromide	0.20	U J	5.00	4.01		ug/L		80	80 - 120	5	30
Methylene Chloride	0.40	U	5.00	4.55	J	ug/L		91	55 - 140	6	30
Methyl tert-butyl ether	0.40	U J	5.00	3.65	J	ug/L		73	65 - 125	14	30
m-Xylene & p-Xylene	0.80	U	10.0	9.10		ug/L		91	75 - 130	0	30
Naphthalene	0.80	U	5.00	3.27		ug/L		65	55 - 140	11	30

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-41188-A-9 MSD
Matrix: Water
Analysis Batch: 171169

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
n-Butylbenzene	0.40	U	5.00	4.75		ug/L		95	70 - 135	6	30
N-Propylbenzene	0.20	U	5.00	4.77		ug/L		95	70 - 130	5	30
o-Xylene	0.40	U	5.00	4.51		ug/L		90	80 - 120	1	30
Styrene	0.40	U	5.00	4.32		ug/L		86	65 - 135	3	30
sec-Butylbenzene	0.40	U	5.00	4.83		ug/L		97	70 - 125	3	30
tert-Butylbenzene	0.40	U	5.00	4.77		ug/L		95	70 - 130	4	30
trans-1,2-Dichloroethene	0.20	U	5.00	4.57		ug/L		91	60 - 140	1	30
trans-1,3-Dichloropropene	0.40	U	5.00	4.14		ug/L		83	55 - 140	9	30
Tetrachloroethene	0.40	U	5.00	4.65		ug/L		93	45 - 150	0	30
Toluene	0.40	U	5.00	4.76		ug/L		95	75 - 120	1	30
Trichloroethene	0.20	U	5.00	4.60		ug/L		92	70 - 125	3	30
Trichlorofluoromethane	0.80	U	5.00	5.53		ug/L		111	60 - 145	2	30
Vinyl chloride	0.40	U	5.00	5.10		ug/L		102	50 - 145	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*107*		*85 - 120*
1,2-Dichloroethane-d4 (Surr)	*82*		*70 - 120*
4-Bromofluorobenzene (Surr)	*109*		*75 - 120*
Dibromofluoromethane (Surr)	*95*		*85 - 115*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Lab Sample ID: MB 280-171294/6
Matrix: Water
Analysis Batch: 171294

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	20	U	25	10	ug/L			04/25/13 13:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*101*		*82 - 110*		*04/25/13 13:55*	*1*

Lab Sample ID: LCS 280-171294/4
Matrix: Water
Analysis Batch: 171294

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			101	113	M	ug/L		112	79 - 149		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*102*		*82 - 110*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCSD 280-171294/5
Matrix: Water
Analysis Batch: 171294

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			101	111	M	ug/L		110	79 - 149	2	27

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*100*		*82 - 110*

Lab Sample ID: 280-41276-1 MS
Matrix: Water
Analysis Batch: 171294

Client Sample ID: ST70-GW-7001-220413
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10	20	U M	101	123	M	ug/L		122	79 - 149		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*99*		*82 - 110*

Lab Sample ID: 280-41276-1 MSD
Matrix: Water
Analysis Batch: 171294

Client Sample ID: ST70-GW-7001-220413
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	20	U M	101	115	M	ug/L		114	79 - 149	7	27

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*98*		*82 - 110*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-170919/1-A
Matrix: Water
Analysis Batch: 171216

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 170919

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12	U	25	4.4	ug/L		04/24/13 08:00	04/24/13 16:28	1
Barium	1.5	U	10	0.58	ug/L		04/24/13 08:00	04/24/13 16:28	1
Cadmium	0.80	U	5.0	0.45	ug/L		04/24/13 08:00	04/24/13 16:28	1
Chromium	1.5	U Q	15	0.66	ug/L		04/24/13 08:00	04/24/13 16:28	1
Lead	5.0	U	15	2.6	ug/L		04/24/13 08:00	04/24/13 16:28	1
Selenium	12	U	22	4.9	ug/L		04/24/13 08:00	04/24/13 16:28	1
Silver	2.0	U	15	0.93	ug/L		04/24/13 08:00	04/24/13 16:28	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 280-170919/2-A
Matrix: Water
Analysis Batch: 171216

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 170919

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	1050		ug/L		105	80 - 120
Barium	2000	2100		ug/L		105	80 - 120
Cadmium	100	103		ug/L		103	80 - 120
Chromium	200	200	Q	ug/L		100	80 - 120
Lead	500	499		ug/L		100	80 - 120
Selenium	2000	2020		ug/L		101	80 - 120
Silver	50.0	51.7		ug/L		103	80 - 120

Lab Sample ID: 280-41276-1 MS
Matrix: Water
Analysis Batch: 171216

Client Sample ID: ST70-GW-7001-220413
Prep Type: Dissolved
Prep Batch: 170919

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	12	U	1000	1060		ug/L		106	80 - 120
Barium	39		2000	2100		ug/L		103	80 - 120
Cadmium	0.46	J	100	104		ug/L		103	80 - 120
Chromium	5.8	J Q	200	203	Q	ug/L		98	80 - 120
Lead	5.0	U	500	484		ug/L		97	80 - 120
Selenium	22		2000	2050		ug/L		101	80 - 120
Silver	2.0	U	50.0	52.4		ug/L		105	80 - 120

Lab Sample ID: 280-41276-1 MSD
Matrix: Water
Analysis Batch: 171216

Client Sample ID: ST70-GW-7001-220413
Prep Type: Dissolved
Prep Batch: 170919

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	12	U	1000	974		ug/L		97	80 - 120	9	20
Barium	39		2000	1920		ug/L		94	80 - 120	9	20
Cadmium	0.46	J	100	95.0		ug/L		95	80 - 120	9	20
Chromium	5.8	J Q	200	187	Q	ug/L		90	80 - 120	8	20
Lead	5.0	U	500	446		ug/L		89	80 - 120	8	20
Selenium	22		2000	1890		ug/L		93	80 - 120	8	20
Silver	2.0	U	50.0	47.1		ug/L		94	80 - 120	11	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-171262/1-A
Matrix: Water
Analysis Batch: 171513

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 171262

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.027	ug/L		04/25/13 12:30	04/25/13 19:18	1

Lab Sample ID: LCS 280-171262/2-A
Matrix: Water
Analysis Batch: 171513

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 171262

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.88		ug/L		98	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 280-41276-1 MS — **Client Sample ID: ST70-GW-7001-220413**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 171513 — **Prep Batch: 171262**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.080	U	5.00	4.80		ug/L		96	80 - 120

Lab Sample ID: 280-41276-1 MSD — **Client Sample ID: ST70-GW-7001-220413**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 171513 — **Prep Batch: 171262**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.080	U	5.00	4.86		ug/L		97	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-171151/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 171151

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.10	U	0.50	0.042	mg/L			04/23/13 10:50	1

Lab Sample ID: LCS 280-171151/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 171151

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	4.95		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-171151/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 171151

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	4.91		mg/L		98	90 - 110	1	10

Lab Sample ID: MRL 280-171151/3 MRL — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 171151

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	0.214	J	mg/L		107	50 - 150

Lab Sample ID: 280-41271-A-1 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 171151

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.20	U	10.0	9.81		mg/L		98	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 280-41271-A-1 MSD
Matrix: Water
Analysis Batch: 171151

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.20	U	10.0	9.86		mg/L		99	80 - 120	0	20

Lab Sample ID: 280-41271-A-1 DU
Matrix: Water
Analysis Batch: 171151

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrate as N	0.20	U		0.20	U	mg/L				NC	15

QC Association Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

GC/MS VOA

Analysis Batch: 171169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-41188-A-9 MS	Matrix Spike	Total/NA	Water	8260B/DoD	
280-41188-A-9 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/DoD	
280-41276-1	ST70-GW-7001-220413	Total/NA	Water	8260B/DoD	
280-41276-2	ST70-TB-7001-220413	Total/NA	Water	8260B/DoD	
LCS 280-171169/30	Lab Control Sample	Total/NA	Water	8260B/DoD	
MB 280-171169/31	Method Blank	Total/NA	Water	8260B/DoD	

GC VOA

Analysis Batch: 171294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-41276-1	ST70-GW-7001-220413	Total/NA	Water	8015C	
280-41276-1 MS	ST70-GW-7001-220413	Total/NA	Water	8015C	
280-41276-1 MSD	ST70-GW-7001-220413	Total/NA	Water	8015C	
LCS 280-171294/4	Lab Control Sample	Total/NA	Water	8015C	
LCSD 280-171294/5	Lab Control Sample Dup	Total/NA	Water	8015C	
MB 280-171294/6	Method Blank	Total/NA	Water	8015C	

Metals

Prep Batch: 170919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-41276-1	ST70-GW-7001-220413	Dissolved	Water	3005A	
280-41276-1 MS	ST70-GW-7001-220413	Dissolved	Water	3005A	
280-41276-1 MSD	ST70-GW-7001-220413	Dissolved	Water	3005A	
LCS 280-170919/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 280-170919/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 171216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-41276-1	ST70-GW-7001-220413	Dissolved	Water	6010C	170919
280-41276-1 MS	ST70-GW-7001-220413	Dissolved	Water	6010C	170919
280-41276-1 MSD	ST70-GW-7001-220413	Dissolved	Water	6010C	170919
LCS 280-170919/2-A	Lab Control Sample	Total Recoverable	Water	6010C	170919
MB 280-170919/1-A	Method Blank	Total Recoverable	Water	6010C	170919

Prep Batch: 171262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-41276-1	ST70-GW-7001-220413	Dissolved	Water	7470A	
280-41276-1 MS	ST70-GW-7001-220413	Dissolved	Water	7470A	
280-41276-1 MSD	ST70-GW-7001-220413	Dissolved	Water	7470A	
LCS 280-171262/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 280-171262/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 171513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-41276-1	ST70-GW-7001-220413	Dissolved	Water	7470A	171262
280-41276-1 MS	ST70-GW-7001-220413	Dissolved	Water	7470A	171262
280-41276-1 MSD	ST70-GW-7001-220413	Dissolved	Water	7470A	171262
LCS 280-171262/2-A	Lab Control Sample	Total/NA	Water	7470A	171262

QC Association Summary

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Metals (Continued)

Analysis Batch: 171513 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-171262/1-A	Method Blank	Total/NA	Water	7470A	171262

General Chemistry

Analysis Batch: 171151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-41271-A-1 DU	Duplicate	Total/NA	Water	300.0	
280-41271-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-41271-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-41276-1	ST70-GW-7001-220413	Total/NA	Water	300.0	
LCS 280-171151/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-171151/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 280-171151/6	Method Blank	Total/NA	Water	300.0	
MRL 280-171151/3 MRL	Lab Control Sample	Total/NA	Water	300.0	

Lab Chronicle

Client: Bhate Environmental
Project/Site: Bhate - Kirtland AFB, NM / ST70

TestAmerica Job ID: 280-41276-1

Client Sample ID: ST70-GW-7001-220413

Lab Sample ID: 280-41276-1

Date Collected: 04/22/13 14:35

Matrix: Water

Date Received: 04/23/13 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/DoD		1	20 mL	20 mL	171169	04/25/13 04:59	BB	TAL DEN
Total/NA	Analysis	8015C		1	5 mL	5 mL	171294	04/25/13 19:06	BMG	TAL DEN
Dissolved	Prep	3005A			50 mL	50 mL	170919	04/24/13 08:00	RC	TAL DEN
Dissolved	Analysis	6010C		1			171216	04/24/13 16:33	JKH	TAL DEN
Dissolved	Prep	7470A			30 mL	30 mL	171262	04/25/13 12:30	JM	TAL DEN
Dissolved	Analysis	7470A		1			171513	04/25/13 19:23	JM	TAL DEN
Total/NA	Analysis	300.0		1			171151	04/23/13 15:01	TLP	TAL DEN

Client Sample ID: ST70-TB-7001-220413

Lab Sample ID: 280-41276-2

Date Collected: 04/22/13 12:00

Matrix: Water

Date Received: 04/23/13 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/DoD		1	20 mL	20 mL	171169	04/25/13 05:20	BB	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

○ ~~TestAmerica Savannah~~
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Colorado
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
9120116		NM
TAL (LAB) PROJECT MANAGER: Lisa Uriell	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Marcia Olive – 303-597-2450	CLIENT PHONE	CLIENT FAX
CLIENT NAME: Shaw & Associates	CLIENT E-MAIL: Field # 505-504-2214 Ben Mearyad	
CLIENT ADDRESS		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ●
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: 8015-GRO	8260-BTEX	7421A-Pb	Cations Metals	E300-Nitrate	NUMBER OF CONTAINERS SUBMITTED	REMARKS
		PRESERVATIVE						HCl	HCl	HNO3	HNO3			
4/22/13	1435	ST70-GW-7001-220413	G	✓				✓	✓	✓	✓	✓		
4/22/13	1200	ST70-TB-7001-220413	G	✓					✓					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben Mearyad	4/23/13	1530						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Laura Brooder	4/23/13	1030						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES ○ NO ○	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
						2.4 wlei 4/23/13

TAL-8240-680 (1008)

Login Sample Receipt Checklist

Client: Bhate Environmental

Job Number: 280-41276-1

Login Number: 41276

List Source: TestAmerica Denver

List Number: 1

Creator: Laspe, Laura

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	