DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (ACC)
HOLLOMAN AIR FORCE BASE NEW MEXICO

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NMED
Hazardous Waste
Bureau

26 May 2016

ADAM M. KUSMAK, GS-13, USAF
Chief, Installation Management Flight (49 CES/CEI)
49th Civil Engineering Squadron (49 CES)
550 Tabosa Avenue
Holloman AFB, NM 88330-8458

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

Dear Mr. Kieling,

This letter responds to the New Mexico Environment Department (NMED) letter dated May 29, 2015, "Disapproval, RCRA Facility Investigation Reports, Group 1, Buildings 308 (OT-C530), 920, 921, 922 (OT-C531), 924 (OT-C532), 1190 (OT-C533), 1196 (OT-C535), 1199 (OT-C536), 1200 (OT-C537), 1201, (OT-C538), 1221 (OT-C539), 1251 (OT-C540), 1166 (OT-C542), 1175 (OT-C543), and 1176 (OT-C544), December 2013, Holloman Air Force Base." The NMED letter will be referred to as the "NMED disapproval letter." All sites listed in the NMED disapproval letter requesting additional sampling are presented in this letter.

Although soil and groundwater samples collected from the septic system sites during the investigations did not exhibit any constituents of concern (COCs) above applicable cleanup standards, the NMED disapproval letter requested that additional groundwater samples be collected from monitoring wells installed at the septic system sites and analyzed for nitrate. In response to the NMED disapproval letter, the *Amended Voluntary Corrective Measures Work Plan, Group 1 Septic System Sites, New Mexico, August 2015* was prepared and was approved by the NMED in a letter dated October 21, 2015. In November 2015, groundwater samples were collected from the existing monitoring wells at the following septic system sites:

- Building 308 (OT-C530),
- Buildings 920, 921, 922 (OT-C531),
- Building 1190 (OT-C533),
- Building 1199 (OT-C536),
- Building 1166 (OT-C542),
- Building 1175 (OT-C543), and
- Building 1176 (OT-C544).

These locations are shown in the figures provided in Attachment 1. It should be noted that the septic tanks included in this investigation were of small capacity (350-1,680 gallons) and serviced buildings that saw only intermittent usage by base personnel. During the 2008 tank abandonment process, the septic tanks were inspected, cleaned, and evacuated, thereby removing any remaining biological source of nitrates. Geochemically, nitrates are highly soluble, are very mobile, and do not adsorb to surrounding soils. Therefore, the nitrate concentrations detected are unlikely to represent a historical release from the abandoned septic tanks. There is no potential for ongoing releases from the sites due to the abandonment of the septic systems.

Prior to sample collection, water quality indicator parameters were measured and recorded during purging of monitoring wells using a field-calibrated water quality meter. The groundwater monitoring wells include the following:

- OTC530-MW01 at Building 308
- OTC531A-MW01 at Building 920
- OTC531B-MW01 at Building 921
- OTC531C-MW01 at Building 922
- OTC533-MW01 at Building 1190
- OTC-536-MW01 at Building 1199
- OTC542-MW01 at Building 1166
- OTC543-MW01 at Building 1175
- OTC544-MW01at Building 1176

Table 1 (Attachment 2) contains final water quality readings from the sampling event. Groundwater samples were collected once indicator parameters had stabilized, and analyzed by Empirical Laboratories, Inc. for nitrate, chloride, and total dissolved solids (TDS). Analytical results for the groundwater samples collected from the monitoring wells collected in November 2015 are presented in Table 2 (Attachment 2). Field sampling forms, data validation reports, and analytical data packages are contained in Attachment 3, which is provided on compact disc.

Buildings 900, 921, 922, 1190, 1199, and 1175

The analytical results for nitrate were below the U.S. Environmental Protection Agency (EPA) Maximum Contaminant Level (MCL) and New Mexico Water Quality Control Commission (NMWQCC) groundwater protection standard of 10 mg/L for samples collected from the following monitoring wells:

- OTC531A-MW01 at Building 920
- OTC531B-MW01 at Building 921
- OTC531C-MW01 at Building 922
- OTC533-MW01 at Building 1190
- OTC-536-MW01 at Building 1199
- OTC543-MW01 at Building 1175

Nitrate concentrations exceeded the EPA MCL at 3 monitoring well locations. The locations and measured concentrations are as follows:

- OTC530-MW01at Building 308 –16.7 mg/L
- OTC542-MW01at Building 1166 – 38.9 mg/L
- OTC544-MW01at Building 1176 – 15.3 mg/L

Although these concentrations exceed the EPA MCL, they are well within the range of nitrate concentrations detected in groundwater throughout Holloman AFB as presented in the *Nitrate Characterization Study Report* (NationView, 2014), currently in NMED review. The septic tank systems associated with Buildings 1166 and 1176 are located within existing permitted sites ERP Site OT-38 and ERP Site SS-39 (Figures 1 and 2, Attachment 1), respectively.

Chloride was detected at concentrations exceeding the NMWQCC groundwater protection standard of 250 milligrams per liter (mg/L) at 6 wells (OTC530-MW01, OTC531A-MW01, OTC-531B-MW01, OTC531C-MW01, OTC542-MW01, and OTC544-MW01), but within range of naturally occurring concentrations of dissolved chloride in groundwater observed throughout Holloman AFB.

Buildings 1200 and 1201

The NMED disapproval letter also requested that one monitoring well be installed at Building 1200 (OT-C537) and one monitoring well be installed at Building 1201 (OT-C538) and groundwater samples be collected for analysis, if groundwater is encountered. If a sample is collected, the analytical suite was to include all the constituents required by the approved work plan. Monitoring wells were installed and groundwater samples were subsequently collected in December 2015. Monitoring well construction details are presented in Table 3 (Attachment 2). Boring logs and well construction diagrams are included in Attachment 3.

Water quality indicator parameters were measured and recorded during monitoring well development and purging of OTC537-MW01 and OTC538-MW02 using a field-calibrated water quality meter. Table 1 (Attachment 2) contains final water quality readings from the sampling event. Groundwater samples were collected once indicator parameters had stabilized, and analyzed by Empirical Laboratories, Inc. for nitrate, chloride, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH)-gasoline-range organics (GRO), TPH-diesel-range organics (DRO), TPH-oil range organics (ORO), target analyte list (TAL) metals, polychlorinated biphenyl (PCBs), explosives, total cyanide, TDS, and tritium. Analytical results for the groundwater samples collected from the monitoring wells are presented in Table 2 (Attachment 2). Field sampling forms, data validation reports, and analytical data packages are contained on compact disc, (Attachment 3).

The analytical results from the December 2015 sampling event are presented in Table 4 (Attachment2). Nitrate was detected at an estimated concentration of 16.9 mg/L exceeding the MCL, although within the range of nitrate concentrations observed in groundwater throughout Holloman AFB. Manganese was detected at Building 1200 monitoring well OTC537-MW01 at a concentration of 562 micrograms per liter (µg/L) exceeding the NMWQCC groundwater protection standard of 200 µg/L. Chloride was detected at a concentration of 2,010 mg/L exceeding the NMWQCC groundwater protection standard of 250 mg/L.

The analytical results for Building 1201 monitoring well OTC538-MW02 included detections of antimony at an estimated concentration of 6.57 µg/L, arsenic at an estimated concentration of 12.4 µg/L, and lead at 27.3 µg/L exceeding their respective MCLs. Chloride was detected at a concentration of 2,860 mg/L exceeding the MCL. Nitrate was also detected at an estimated concentration of 26.6 mg/L exceeding the MCL, although within the range of nitrate concentrations observed in groundwater throughout Holloman AFB. Manganese was detected at a concentration of 1,730 µg/L exceeding the NMWQCC groundwater protection standard.

The elevated metals and chloride concentrations observed in the groundwater analytical results for OTC537-MW01 and OTC538-MW02 are likely due to the samples containing a relatively high load of suspended clay particulates (e.g., elevated aluminum, iron, lead, and zinc) and elevated TDS and turbidity.

Due to the anomalous detections of arsenic, antimony, lead, and manganese in the first round, a second round of groundwater monitoring was performed in April 2016. Water quality indicator parameters were measured and recorded during monitoring well purging of OTC537-MW01, OTC538-MW01 (after it was determined that this monitoring well had measurable groundwater present), and OTC538-MW02 and are presented in Table 1 (Attachment 2). Groundwater elevation data is presented in Table 3 (Attachment 2). The groundwater potentiometric surface in the immediate vicinity of Buildings 1200 and 1201 is presented in Figure 2 (Attachment 1) and groundwater flow is to the south at a gradient of 0.0033 ft/ft. Field sampling forms, data validation reports, and analytical data packages are contained on compact disc, (Attachment 3).

Groundwater samples were collected once indicator parameters had stabilized, and analyzed by Empirical Laboratories, Inc. for nitrate, VOCs, TAL metals (field-filtered using 45-micron filter), TDS, and total suspended solids (TSS). Groundwater collected from OTC 538-MW01 was to be analyzed for all the constituents required by the approved work plan. However, after purging and allowing for recharge the monitoring well only produced enough sample to allow for nitrate, TDS, TSS, and TAL metals analysis. The analytical results are presented in Table 4 (Attachment 2).

The analytical results for Building 1200 monitoring well OTC537-MW01 indicated TDS greater than 10,000 mg/L and manganese at an estimated concentration of 335 µg/L, exceeding the NMWQCC groundwater protection standard, although within the range of background concentration for manganese observed at Holloman AFB (NationView Bhate, 2009).

The TDS concentrations during this sampling event for OTC538-MW01, and OTC538-MW02 exceeded the 10,000 mg/L potable water threshold for New Mexico. The analytical results for Building 1201 monitoring well OTC-538-MW01 detected nitrate at an estimated concentration of 38 µg/L, exceeding the MCL. The analytical results for monitoring well OTC538-MW02 detected nitrate at an estimated concentration of 30.1 µg/L, exceeding the MCL, and manganese at 306 µg/L, exceeding the NMWQCC groundwater protection standard. These concentrations are within the range of nitrate and manganese concentrations observed during the April 2016 sampling event and within the ranges observed in the background study. Antimony, arsenic, and lead were not detected during this sampling event.

Conclusion

Analytical results from the groundwater samples collected during the November 2015, December 2015, and April 2016 monitoring events indicate some variability in nitrate concentrations with the majority of the results below or slightly above the MCL. Metals were detected in unfiltered samples at concentrations exceeding the applicable screening levels for antimony, arsenic, lead, and manganese although these exceedances are likely associated with the samples containing a relatively high load of suspended clay particulates and high TDS. This is further indicated in the results from the field-filtered groundwater samples collected in April 2016, where the aforementioned metals were not detected.

The risks identified for nitrate and manganese in groundwater would be based on an unlikely scenario (i.e., future tap water exposure). Holloman AFB obtains its water supply from the city of Alamogordo, New Mexico and from the Holloman AFB wells located in the Boles, San Andres, and Douglas well fields at the base of the Sacramento Mountains. The current water-use scenario is likely to remain as such, since no shallow water table supply wells are located at the base because of poor groundwater quality (i.e., TDS concentrations often greater than 10,000 mg/L). Furthermore, the shallow water table level at these sites varied from 12 to 20 feet bgs and is not a consistent producer of water. Therefore, the shallow groundwater at the site is not currently useable as a potable water supply due to the high TDS concentrations and low/inconsistent yield. Based on this information, no further corrective action for these sites is recommended at this time.

References

NationView, 2014, *Nitrate Characterization Study Report, Holloman Air Force Base, New Mexico*, Final, January.

NationView Bhate, 2009, *Basewide Background Study for Holloman AFB*, Revised Final, December.

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

If you have any questions, please contact me at (575) 572-3931 or by email at adam.kusmak@us.af.mil.

Sincerely

KUSMAK.ADAM.M.1263331806

Digitally signed by KUSMAK.ADAM.M.1263331806
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=KUSMAK.ADAM.M.1263331806
Date: 2016.06.07 12:42:21 -06'00'

ADAM KUSMAK, GS-13, USAF

Attachments:
Attachment 1 –Figures
Attachment 2 – Tables
Attachment 3 – Field Forms, Data Validation Reports, and Laboratory Analytical Data Packages

cc:

(w/ Atch)
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(w/o Atch)
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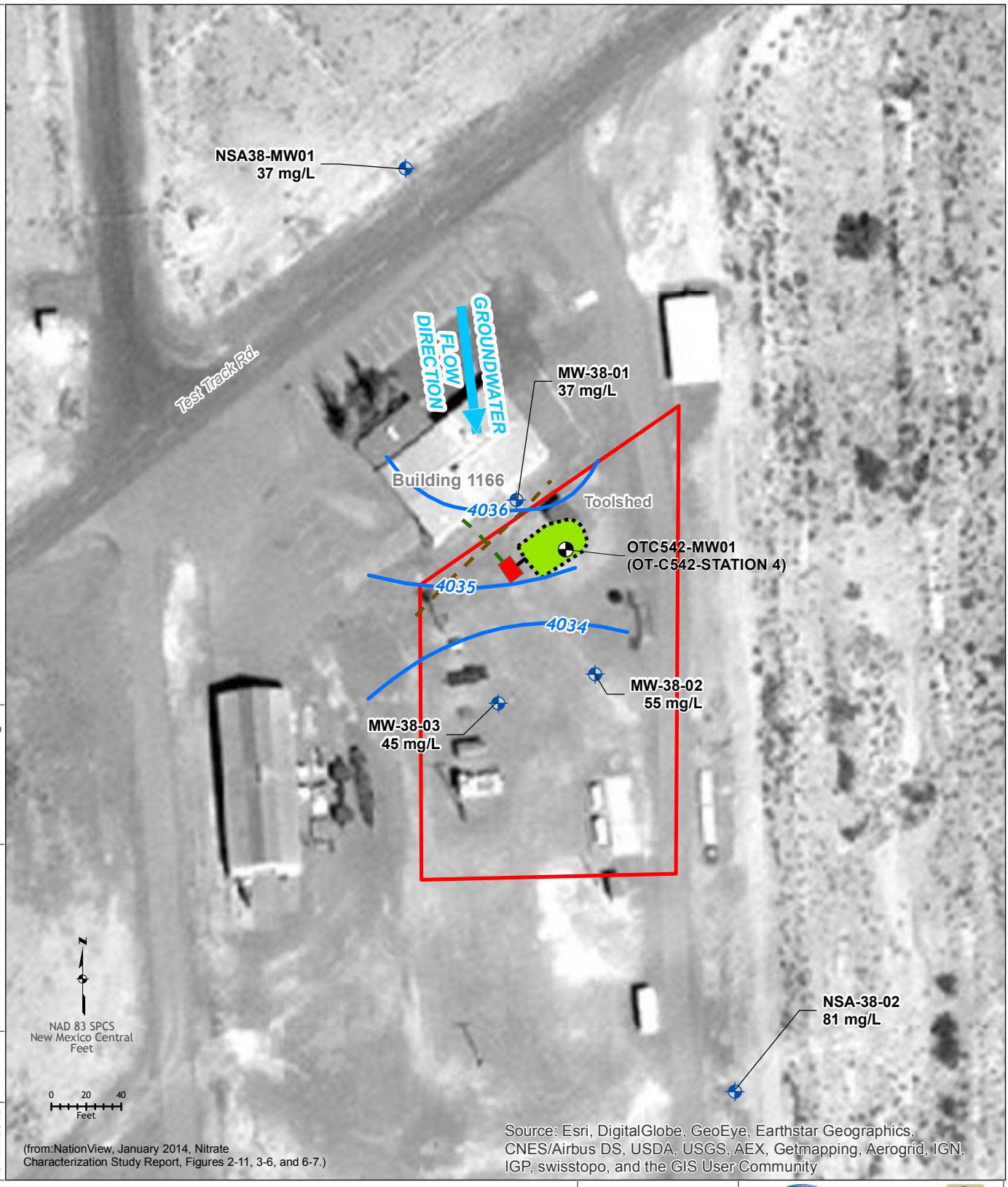
Attachment 1
Figures



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Reviewer: CLong

Author: matthew.mikulin

Office: HOU

5/17/2016

Legend

- New Monitoring Well
- Nitrate Source Area Monitoring Well
- Potentiometric Contour Lines (1' Interval)
- Leach Field
- Septic Tank
- Influent Line
- GW Flow
- Drainfield Leach Pipe
- **81 mg/L** - Nitrate Concentration

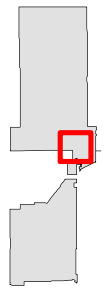
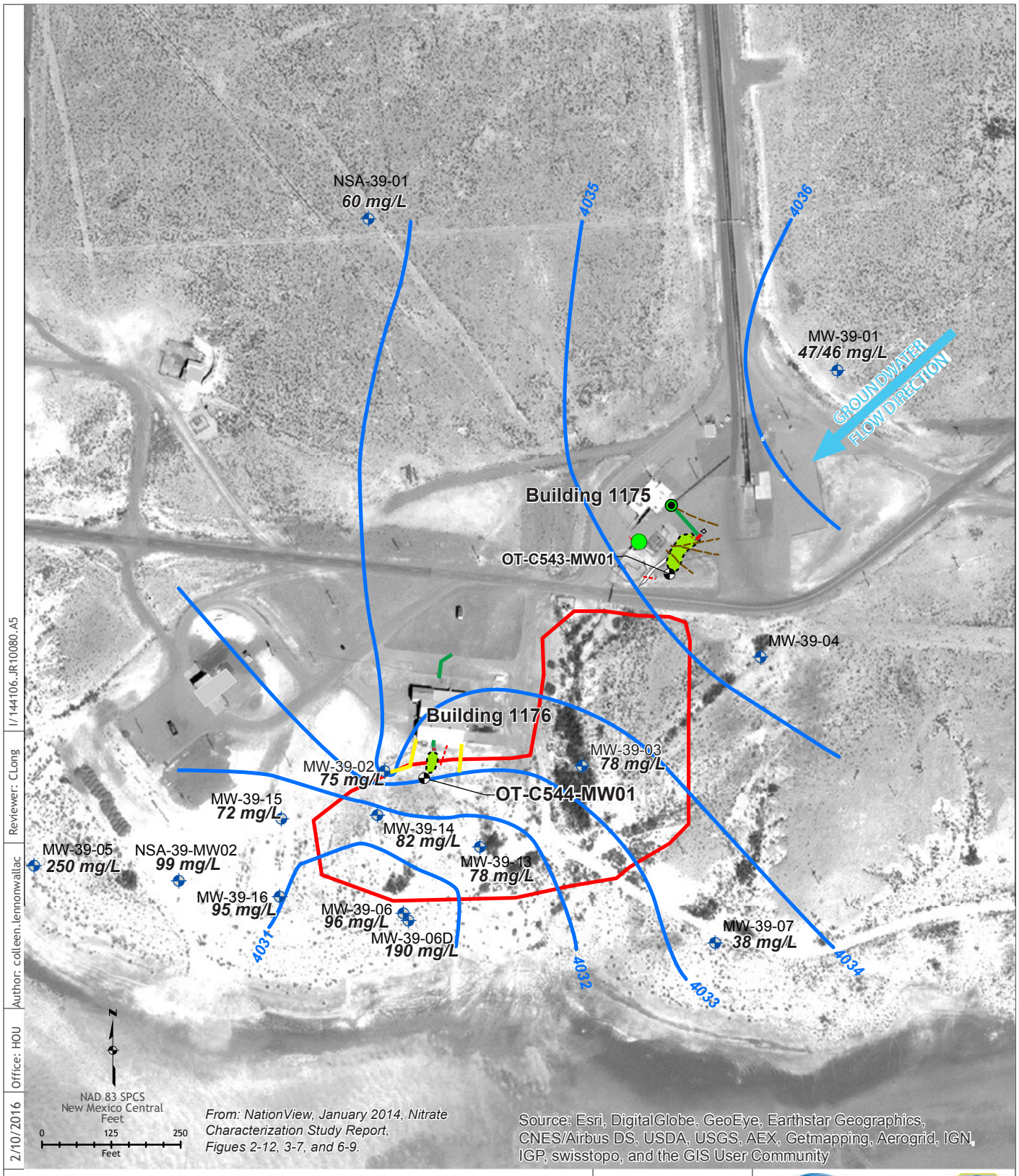


Figure 1

Locations of the Building 1166 Septic Tank System (OT-C542) and OT-38 Test Sled Maintenance Area

Holloman AFB, New Mexico



2/10/2016 | Office: HOU | Author: colleen.lennonwallac | Reviewer: CLong | I/144106.JR10080.A5

Legend

- Nitrate Source Area Monitoring Well
- Monitoring Well
- Sewer Cleanout
- Sewer Manhole
- SS-39 Site Boundary
- Influent Line
- Effluent Line
- Unknown Utility
- Electric Utility
- Drainage Sump
- Septic Tank
- Leach Field
- Groundwater Flow Direction
- **38 mg/L** - Nitrate Concentration

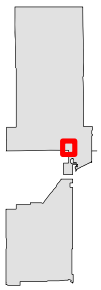


Figure 2
Locations of the Buildings 1175 and 1176 Septic Tank Systems (OT-C543 and OT-C544) and SS-39 Missile Fuel Spill Area

Holloman AFB, New Mexico

5/27/2016 | Office: HOU | Author: zeke.carpio | Reviewer: CLong | Widwest_PBC\Holloman_AFB\GIS_Documents\Project_Maps\RfiRpt\OTC537\OTC537_STS-1200_SiteLayout_SurveyedWells.mxd

Legend

- Monitoring Well (installed 2012)
- Monitoring Well (installed December 2015)
- Septic Tank
- Leach Field
- Communication Utility
- Influent Line
- Fence

N

NAD 83 SPCS
New Mexico Central
Feet

0 30 60
Feet

Figure 3

Site Layout and Sampling Locations
Buildings 1200 & 1201
Septic Tank Systems
OT-C537 & OT-C538

Holloman AFB, New Mexico

5/27/2016 | Office: HOU | Author: zeke.carpio | Reviewer: Cory Wolfe | Project_Maps\RfiRpt\OTC537\OTC537_STS-1200_GroundwaterSurface_April2016.mxd

Legend

- Monitoring Well (installed 2012)
- Monitoring Well (installed December 2015)
- Groundwater Flow Arrow
- Groundwater Contour
- Septic Tank
- Leach Field
- Communication Utility
- Influent Line
- Fence

N

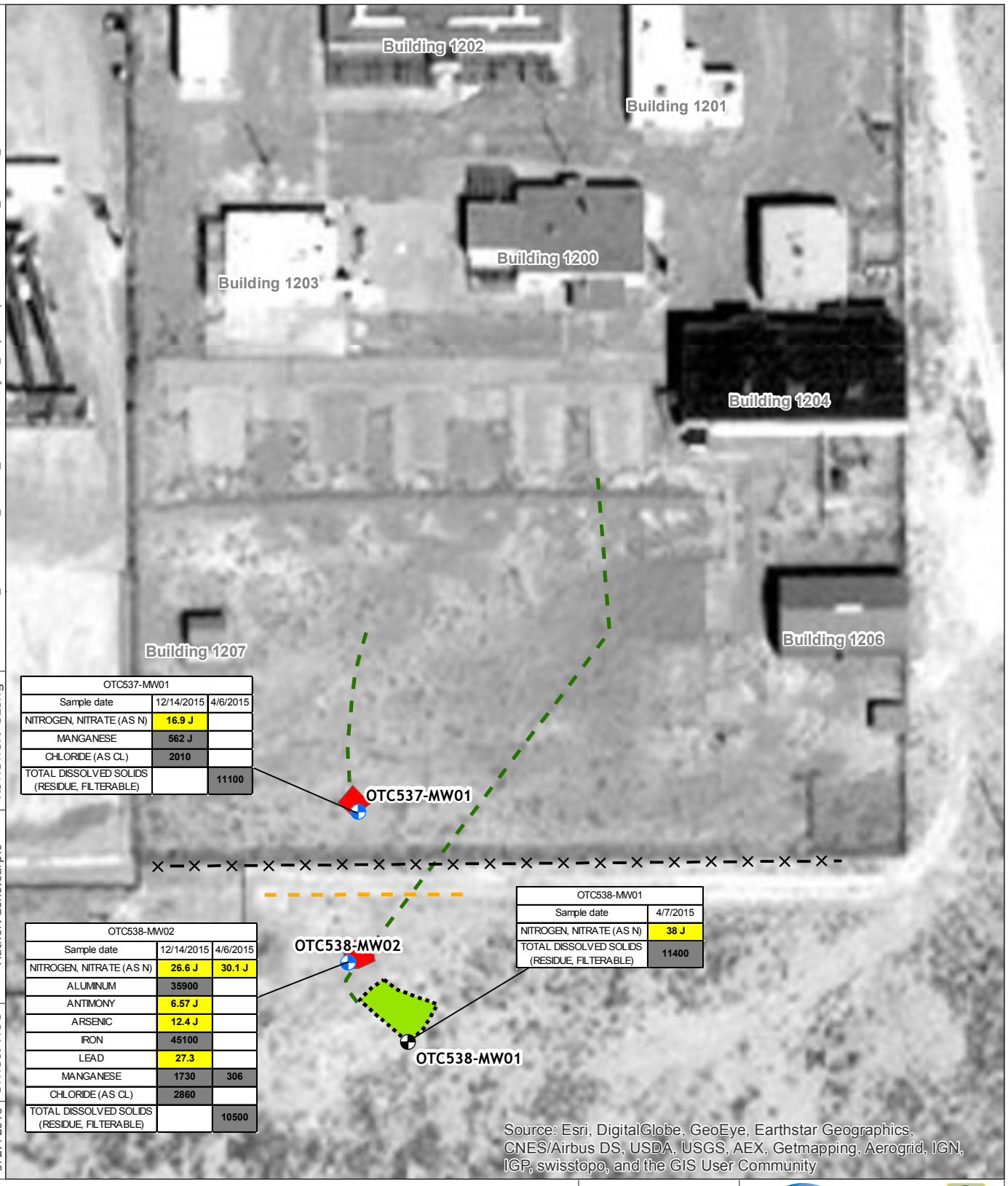
NAD 83 SPCS
New Mexico Central
Feet

0 30 60
Feet

Figure 4

Potentiometric Surface
April 2016
Buildings 1200 & 1201
Septic Tank Systems
OT-C537 & OT-C538

Holloman AFB, New Mexico



OTC537-MW01		
Sample date	12/14/2015	4/6/2015
NITROGEN, NITRATE (AS N)	16.9 J	
MANGANESE	562 J	
CHLORIDE (AS CL)	2010	
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)		11100

OTC538-MW02		
Sample date	12/14/2015	4/6/2015
NITROGEN, NITRATE (AS N)	26.6 J	30.1 J
ALUMINUM	35900	
ANTIMONY	6.57 J	
ARSENIC	12.4 J	
IRON	45100	
LEAD	27.3	
MANGANESE	1730	306
CHLORIDE (AS CL)	2860	
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)		10500

OTC538-MW01	
Sample date	4/7/2015
NITROGEN, NITRATE (AS N)	38 J
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	11400

Legend

- Monitoring Well (installed 2012)
- Monitoring Well (installed December 2015)
- Septic Tank
- 26.6 J — Above EPA Primary GWCL
- Leach Field
- Communication Utility
- Influent Line
- Fence
- 35900 — Above NMWQCC GWCL

N

NAD 83 SPCS
New Mexico Central
Feet

0 30 60
Feet

Figure 5

Groundwater Results
Buildings 1200 & 1201
Septic Tank Systems
OT-C537 & OT-C538

Holloman AFB, New Mexico

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Reviewer: CLong
Author: zeke.carpio
Office: HOU
5/27/2016

Attachment 2
Tables

Table 1
Field Parameters, Holloman Air Force Base, New Mexico

Well ID	Sample ID	Date & Time	Parameters	Results	Units
OTC530-MW01	OTC530MW01-151123	11/23/2015 06:41	Depth to Water	6.25	ft
			Dissolved Oxygen	1.40	Mg/L
			Oxygen Reduction Potential	191.7	Millivolts
			pH	7.01	s.u.
			Purge Volume	3000	ML
			Specific Conductance	5.651	Ms/cm
			Temperature	17.99	Deg °C
			Turbidity	0.0	NTU
OTC531A-MW01	OTC531AMW01-151123	11/23/2015 07:40	Depth to Water	3.51	ft
			Dissolved Oxygen	1.97	Mg/L
			Oxygen Reduction Potential	6.6	Millivolts
			pH	7.05	s.u.
			Purge Volume	2500	ML
			Specific Conductance	4.599	Ms/cm
			Temperature	17.01	Deg °C
			Turbidity	4.6	NTU
OTC531B-MW01	OTC531BMW01-151123	11/23/2015 08:24	Depth to Water	12.78	ft
			Dissolved Oxygen	2.66	Mg/L
			Oxygen Reduction Potential	19.1	Millivolts
			pH	7.09	s.u.
			Purge Volume	4000	ML
			Specific Conductance	28.550	Ms/cm
			Temperature	15.51	Deg °C
			Turbidity	0.0	NTU
OTC531C-MW01	OTC531CMW01-151123	11/23/2015 09:16	Depth to Water	13.04	ft
			Dissolved Oxygen	1.16	Mg/L
			Oxygen Reduction Potential	134.4	Millivolts
			pH	7.11	s.u.
			Purge Volume	3000	ML
			Specific Conductance	17.390	Ms/cm
			Temperature	16.90	Deg °C
			Turbidity	0.0	NTU

Table 1 (continued)
Field Parameters, Holloman Air Force Base, New Mexico

Well ID	Sample ID	Date & Time	Parameters	Results	Units
OTC533-MW01	OTC533MW01-151119	11/19/2015 07:10	Depth to Water	23.55	ft
			Dissolved Oxygen	0.91	Mg/L
			Oxygen Reduction Potential	242.7	Millivolts
			pH	7.01	s.u.
			Purge Volume	3000	ML
			Specific Conductance	4.237	Ms/cm
			Temperature	15.19	Deg °C
			Turbidity	7.8	NTU
OTC536-MW01	OTC536MW01-151119	11/19/2015 08:00	Depth to Water	23.25	ft
			Dissolved Oxygen	2.93	Mg/L
			Oxygen Reduction Potential	219	Millivolts
			pH	7.12	s.u.
			Purge Volume	4000	ML
			Specific Conductance	3.568	Ms/cm
			Temperature	15.44	Deg °C
			Turbidity	0.0	NTU
OTC542-MW01	OTC542MW01-151119	11/19/2015 09:07	Depth to Water	24.86	ft
			Dissolved Oxygen	5.74	Mg/L
			Oxygen Reduction Potential	206.1	Millivolts
			pH	7.54	s.u.
			Purge Volume	4000	ML
			Specific Conductance	10.500	Ms/cm
			Temperature	14.19	Deg °C
			Turbidity	1.7	NTU
OTC543-MW01	OTC543MW01-151119	11/19/2015 09:54	Depth to Water	23.6	ft
			Dissolved Oxygen	3.90	Mg/L
			Oxygen Reduction Potential	213.9	Millivolts
			pH	7.60	s.u.
			Purge Volume	3000	ML
			Specific Conductance	3.277	Ms/cm
			Temperature	17.43	Deg °C
			Turbidity	0.0	NTU

Table 1 (continued)
Field Parameters, Holloman Air Force Base, New Mexico

Well ID	Sample ID	Date & Time	Parameters	Results	Units
OTC544-MW01	OTC544MW01-151119	11/19/2015 10:38	Depth to Water	16.55	ft
			Dissolved Oxygen	1.58	Mg/L
			Oxygen Reduction Potential	210.9	Millivolts
			pH	7.20	s.u.
			Purge Volume	5000	ML
			Specific Conductance	7.176	Ms/cm
			Temperature	20.10	Deg °C
			Turbidity	0.0	NTU
OTC537-MW01	OTC537MW01-151214	12/14/2015 10:01	Depth to Water	28.5	ft
			Dissolved Oxygen	1.79	Mg/L
			Oxygen Reduction Potential	96.6	Millivolts
			pH	6.96	s.u.
			Purge Volume	8500	ML
			Specific Conductance	10.551	Ms/cm
			Temperature	15.70	Deg °C
			Turbidity	22.3	NTU
OTC537-MW01	OTC537MW01-160406	04/06/2016 12:46	Depth to Water	28.60	ft
			Dissolved Oxygen	5.77	Mg/L
			Oxygen Reduction Potential	71.1	Millivolts
			pH	7.41	s.u.
			Purge Volume	1000	ML
			Specific Conductance	13.880	Ms/cm
			Temperature	22.59	Deg °C
			Turbidity	87.6	NTU
OTC538-MW01	OTC538MW01-160405	04/05/2016 10:05	Depth to Water	28.3	ft
			Dissolved Oxygen	6.50	Mg/L
			Oxygen Reduction Potential	84.8	Millivolts
			pH	7.19	s.u.
			Purge Volume	1000	ML
			Specific Conductance	15.650	Ms/cm
			Temperature	21.49	Deg °C
			Turbidity	487.5	NTU

Table 1 (continued)
Field Parameters, Holloman Air Force Base, New Mexico

Well ID	Sample ID	Date & Time	Parameters	Results	Units
OTC538-MW02	OTC538MW02-151214	12/14/2015 06:46	Depth to Water	29.24	ft
			Dissolved Oxygen	1.63	Mg/L
			Oxygen Reduction Potential	50.8	Millivolts
			pH	7.62	s.u.
			Purge Volume	9000	ML
			Specific Conductance	13.090	Ms/cm
			Temperature	14.20	Deg °C
			Turbidity	308.8	NTU
OTC538-MW02	OTC538MW02-1606xx	4/16/1016	Depth to Water	29.04	ft
			Dissolved Oxygen	5.13	Mg/L
			Oxygen Reduction Potential	95.4	Millivolts
			pH	7.18	s.u.
			Purge Volume	1000	ML
			Specific Conductance	13.590	Ms/cm
			Temperature	20.60	Deg °C
			Turbidity	13.0	NTU

Deg °C = degrees Celsius
Ft = feet
ID = Identification
Mg/L = milligrams
s.u. = standard unit
ML = milliliter
NTU = Nephelometric Turbidity Unit.
Ms/cm = millisiemens per centimeter

Table 2
Groundwater Analytical Results – November 2015 for Multiple Septic System Sites
Holloman Air Force Base, New Mexico

Station Name	Reporting Units	EPA Primary GWCL	NMWQCC GWCL	OTC530-MW01				OTC531A-MW01				OTC531B-MW01				OTC531C-MW01				OTC533-MW01			
Sample Date _D				11/23/2015 6:41				11/23/2015 7:40				11/23/2015 8:24				11/23/2015 9:16				11/19/2015 7:10			
Field Sample ID				OTC530MW01-151123				OTC531AMW01-151123				OTC531BMW01-151123				OTC531CMW01-151123				OTC533MW01-151119			
QC Sample Code				Normal Sample				Normal Sample				Normal Sample				Normal Sample				Normal Sample			
				Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD
A2540C																							
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	MG/L	Not Est.	10000	4270		20	20	4050		20	20	**21500**		20	20	**12300**		20	20	3860		20	20
E300																							
NITROGEN, NITRATE (AS N)	MG/L	10	10	**16.7**	J	0.25	0.1	0.121	J	0.25	0.1	0.1	U	0.25	0.1	5.14	J	0.25	0.1	1.37		0.25	0.1
SW9056A																							
CHLORIDE (AS CL)	MG/L	Not Est.	250	**919**		5	3.3	**467**		2.5	1.65	**4140**		25	16.5	**2290**		25	16.5	242		0.5	0.33

Table 2
Groundwater Analytical Results – November 2015 for Multiple Septic System Sites
Holloman Air Force Base, New Mexico

Station Name	Reporting Units	EPA Primary GWCL	NMWQCC GWCL	OTC536-MW01				OTC542-MW01				OTC543-MW01				OTC544-MW01			
Sample Date _D				11/19/2015 8:00				11/19/2015 9:07				11/19/2015 9:54				11/19/2015 10:38			
Field Sample ID				OTC536MW01-151119				OTC542MW01-151119				OTC543MW01-151119				OTC544MW01-151119			
QC Sample Code				Normal Sample				Normal Sample				Normal Sample				Normal Sample			
				Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD
A2540C																			
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	MG/L	Not Est.	10000	3360		20	20	4440		20	20	3080		20	20	3610		20	20
E300																			
NITROGEN, NITRATE (AS N)	MG/L	10	10	0.154	J	0.25	0.1	**38.9**	J	0.25	0.1	3.08		0.25	0.1	**15.3**		0.25	0.1
SW9056A																			
CHLORIDE (AS CL)	MG/L	Not Est.	250	91.6		0.5	0.33	**1750**		10	6.6	64		0.5	0.33	**895**		5	3.3

Analyte concentration exceeds the standard for:

	EPA Primary GWCL
	NMWQCC GWCL

EPA = Environmental Protection Agency.
ID = identification.
J = valve was less than LOQ but greater than the DL.
LOD = limit of detection
LOQ = limit of quantitation.
MCL = EPA Maximum Contaminant Level
mg/L = milligrams per liter.
MW = monitoring well.
NMWQCC = New Mexico Water Quality Control Commission.
Not Est. = not established.
RSL = EPA Region 6 Regional Screening Level
s.u. = standard unit.
U = analyzed but not detected.
VQ = validation qualifier.

Table 3
Monitoring Well Construction Details
Holloman Air Force Base, New Mexico

Well ID	Monitoring Well Construction Details						Groundwater Elevation Data: April 2016		
	Location Coordinates		Installation Date	Well Diameter (in)	Well Depth at Construction (ft bgs)	Screened Interval (ft bgs)	Top of PVC Riser Pipe Elevation (ft amsl)	Depth to Water (ft below top of PVC riser pipe)	Potentiometric Surface Elevation (ft amsl)
	Grid Northing	Grid Easting							
OTC537-MW01	681041.02	1690021.5	12/9/2015	**2**	40	25	4110.75	28.60	4082.15
OTC538-MW01	680940.81	1690045.5	6/29/2012	**2**	31.1	26	4109.90	28.30	4081.60
OTC538-MW02	680976.37	1690017.1	12/10/2015	**2**	40	30	4111.05	29.04	4082.01

in = *inches*
ft bgs = *feet below ground surface.*
ft amsl = *feet above mean sea level.*

Table 4
2015 – 2016 Combined Hits
Holloman Air Force Base, New Mexico

Station Name	Units	EPA Primary GWCL	NMWQCC GWCL	OTC537-MW01				OTC537-MW01				OTC538-MW01				OTC538-MW02				OTC538-MW02			
Sample Date				12/14/2015 10:01				4/6/2016 12:46				4/7/2016 10:05				12/14/2015 6:46				4/6/2016 10:22			
Field Sample ID				OTC537MW01-151214				OTC537MW01-20160406				OTC538MW01-20160407				OTC538MW02-151214				OTC538MW02-20160406			
QC Sample Code				Normal Sample				Normal Sample				Normal Sample				Normal Sample				Normal Sample			
				Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD
A2540C																							
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	MG/L	Not Est.	10000	8060		20	20	**11100**		20	20	**11400**		20	20	9460		20	20	**10500**		20	20
A708																							
TRITIUM (HYDROGEN-3)	PCI/L	Not Est.	Not Est.	130	U	350										360		350					
A2540D																							
TOTAL SOLIDS	MG/L	Not Est.	Not Est.					36.4		4	4	14.4		4	4					36		4	4
E300																							
NITROGEN, NITRATE (AS N)	MG/L	10	10	**16.9**	J	0.25	0.1	0.1	UJ	0.25	0.1	**38**	J	0.25	0.1	**26.6**	J	0.5	0.2	**30.1**	J	0.25	0.1
SW6010C																							
ALUMINUM	UG/L	Not Est.	5000	400	J	500	250	1690	J	1250	625	1500		500	250	**35900**		500	250	543		250	125
ANTIMONY	UG/L	6	Not Est.	20	U	25	20	2	U	2.5	2	4	U	5	4	**6.57**	J	12.5	10	2	U	2.5	2
ARSENIC	UG/L	10	100	**15**	U	25	15	1.5	U	2.5	1.5	2.16	J	5	3	**12.4**	J	12.5	7.5	9.3		2.5	1.5
BARIUM	UG/L	2000	1000	36.3	J	100	25	31.9		10	2.5	17	J	20	5	125		50	12.5	14		10	2.5
BERYLLIUM	UG/L	4	Not Est.	5	U	12.5	5	0.5	U	1.25	0.5	1	U	2.5	1	3	J	6.25	2.5	0.5	U	1.25	0.5
CALCIUM	UG/L	Not Est.	Not Est.	490000	J	12500	5000	666000		31200	12500	698000		12500	5000	728000		12500	5000	602000		6250	2500
CHROMIUM, TOTAL	UG/L	100	Not Est.	10	U	25	10	5	U	12.5	5	2.65	J	12.5	5	68.8		12.5	5	5	U	12.5	5
COBALT	UG/L	Not Est.	Not Est.	25	U	31.2	25	1.61	J	3.12	2.5	4.26	J	6.25	5	27.5		15.6	12.5	1.8	J	3.12	2.5
COPPER	UG/L	1300	1000	20	U	25	20	10	U	12.5	10	10	U	12.5	10	46.5		12.5	10	10	U	12.5	10
IRON	UG/L	Not Est.	1000	150	U	250	150	22.2	J	25	15	300		50	30	**45100**		125	75	101		25	15
LEAD	UG/L	15	50	7.5	U	12.5	7.5	0.378	J	1.25	0.75	1.5	U	2.5	1.5	**27.3**		6.25	3.75	0.75	U	1.25	0.75
MAGNESIUM	UG/L	Not Est.	Not Est.	286000	J	12500	7500	382000		6250	3750	384000		6250	3750	377000		6250	3750	388000		6250	3750
MANGANESE	UG/L	Not Est.	200	562	J	37.5	15	**335**	J	3.75	1.5	126		7.5	3	**1730**		18.8	7.5	**306**		3.75	1.5
NICKEL	UG/L	Not Est.	Not Est.	15	U	25	15	7.5	U	12.5	7.5	232		12.5	7.5	64.6		12.5	7.5	7.5	U	12.5	7.5
POTASSIUM	UG/L	Not Est.	Not Est.	14400		1250	750	23300	J	1250	750	10400		2500	1500	15400		6250	3750	10800		1250	750
SELENIUM	UG/L	50	50	12.5	U	25	12.5	31.2	U	62.5	31.2	8.37	J	25	12.5	12.5	U	25	12.5	9.66	J	12.5	6.25
SODIUM	UG/L	Not Est.	Not Est.	1160000	J	12500	7500	1720000		31200	18800	1220000		12500	7500	1780000		31200	18800	1650000		31200	18800
VANADIUM	UG/L	Not Est.	Not Est.	25	U	31.2	25	1.51	J	3.12	2.5	13.2		6.25	5	124		15.6	12.5	32.8		3.12	2.5
ZINC	UG/L	Not Est.	10000	25	U	50	25	62.5	U	125	62.5	25	U	50	25	117		50	25	12.5	U	25	12.5
SW8015C																							
PETROLEUM HYDROCARBONS >C6-C10	UG/L	Not Est.	Not Est.	64	J	150	100									72	J	150	100				
SW8260B																							
ACETONE	UG/L	Not Est.	Not Est.	33.1		20	10	36.8	J	20	10					27.1		20	10	9.4	J	20	10
CHLOROFORM	UG/L	80	100	2.57		2	1	1	U	2	1					2.13		2	1	2.98		2	1
TOLUENE	UG/L	1000	750	1	U	2	1	1	U	2	1					0.707	J	2	1	1	U	2	1

Table 4
2015 – 2016 Combined Hits
Holloman Air Force Base, New Mexico

Station Name	Units	EPA Primary GWCL	NMWQCC GWCL	OTC537-MW01				OTC537-MW01				OTC538-MW01				OTC538-MW02				OTC538-MW02			
Sample Date				12/14/2015 10:01				4/6/2016 12:46				4/7/2016 10:05				12/14/2015 6:46				4/6/2016 10:22			
Field Sample ID				OTC537MW01-151214				OTC537MW01-20160406				OTC538MW01-20160407				OTC538MW02-151214				OTC538MW02-20160406			
QC Sample Code				Normal Sample				Normal Sample				Normal Sample				Normal Sample				Normal Sample			
				Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD	Value	VQ	LOQ	LOD
TRICHLOROETHYLENE (TCE)	UG/L	5	100	1	U	2	1	1	U	2	1					0.569	J	2	1	0.508	J	2	1
SW8330A																							
2-AMINO-4,6-DINITROTOLUENE	UG/L	Not Est.	Not Est.	0.154	U	0.308	0.154									0.148	J	0.299	0.15				
2-NITROTOLUENE	UG/L	Not Est.	Not Est.	0.474	J	0.308	0.154									0.15	U	0.299	0.15				
SW9056A																							
CHLORIDE (AS CL)	MG/L	Not Est.	250	**2010**		10	6.6									**2860**		10	6.6				

Analyte concentration exceeds the standard for:

	EPA Primary GWCL
	NMWQCC GWCL

EPA = U.S. Environmental Protection Agency.
J = Validation qualifier indicating an estimated quantity.
LOD = Level of Detection
LOQ = Level of Quantitation
mg/L = Milligrams per liter.
NMWQCC = New Mexico Water Quality Control Commission.
Not Est. = Not Established
UG/L = Microgram per liter.
U = Not Detected

Attachment 3
Field Forms, Boring Logs, Well Construction Diagrams, Data Validation Reports, and Laboratory Analytical Data Packages
(compact disc)

ANALYTICAL DATA PACKAGE
SDG # 1511224

PROJECT NAME: HOLLOMAN AFB
PROJECT LOCATION: HOLLOMAN AFB, NM
CONTRACT #: FA8903-D-09-D-8580

SUBMITTAL TO:
Mark Lyon
CB&I Federal Services
2440 Louisiana Blvd NE, Suite 300
Albuquerque, New Mexico 87110

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Sonya Gordon
Tel (615)345-1115
Fax (866)417-0548
Email: sgordon@empirlabs.com

Original Report Date: December 15, 2015
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 171

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

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Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

Wet Chemistry:
The following were analyzed outside of the method recommended holding time of 48 hours:
1511224-04RE1 for Nitrate as N
Note – The original analysis of the sample was over linear range and 1511224-04RE1 was re-analyzed at a 20x dilution but not until 124 hours and 23 minutes after the time sample. Both analyses are included in the report.

The following continuing calibration verifications exceeded criteria:
5L33615-CCV2 with a positive bias for Nitrate as N; note – the sample was not re-analyzed since it was already out of the method recommended holding time

The following matrix spikes exceeded criteria:
5K20011-MS1/MSD1 (1511224-03) with a negative bias for Nitrate as N; note – the associated batch spike is within criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

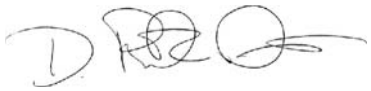
BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.



Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 11/06/2015)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 01/30/2016

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2016

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 11/30/2015

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2015

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of New Jersey, Department of Environmental Protection – NELAP Primary, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 11/30/2015

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-15-11
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Utah, Department of Health – NELAP, Certificate Number: TN0042015-7
- Aqueous
- Non-aqueous
- Expires: 07/31/2016

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 7700, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2015

State of Washington, Department of Ecology – NELAP, Lab ID: C934-15
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2016

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

1511224-01 A

Septic Sites

CHAIN OF CUSTODY

Ref. Document # 144106-H2015-151119 1 OF 1

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: Empirical
Lab Contact: Sonya Gordon
Lab Phone #: 615-345-1115

SAMPLER: P. MIDDLETON (210) 428-7274

Lab Sample Number	Sample Identification	Collection Information Date	Time	G/C	Matrix	# of Bottles	PRESERVATION HCL	NaOH	HNO_3	H2SO4	Ice		Requesting Testing Program: Nitrate by 300	Chloride by 9056A	Total Dissolved Soilds by 2540C				Turn Around Time Required
01	OTC533-GW-5331-MW01-151119	11/19/15	07:10	G	GW	1					X		X	X	X				ST
02	OTC533-GW-5331-MW01-151119-FD	11/19/15	07:10	G	GW	1					X		X	X	X				ST
03	OTC536-GW-5361-MW01-151119+MS/MSD	11/19/15	08:00	G	GW	3					X		X	X	X				ST
04	OTC542-GW-5421-MW01-151119	11/19/15	09:07	G	GW	1					X		X	X	X				ST
05	OTC543-GW-5431-MW01-151119	11/19/15	09:54	G	GW	1					X		X	X	X				ST
06	OTC544-GW-5441-MW01-151119	11/19/15	10:38	G	GW	1					X		X	X	X				ST

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s):

Relinquished By	Date	Time	Received By	Date	Time
Patrick J. Middleton	11/19/15	13:00	[signature]	11/20/15	920 ~~845~~
				TH 11/20/15	

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid
SOL = Other Solid GS = Air Sample

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1511224

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 11/20/15 @ 920 Work order# 1511224

1. Tracking # 1ZC6V7250198487666 (last 4 digits, FedEx)

   Courier: UPS

2. Temperature of rep. sample or temp blank when opened: -0.3 °C + correction factor(+0.4) = 0.1 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES ..NO..NA

4. Were custody seals on outside of cooler? YES..NO...NA

   If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES..NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) TH 11/20/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubble wrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES..NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES..NO..NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO..NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO..NA..Comments_____
    If multiple coolers, sequence #_____

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) TH 11/20/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO..NA

16. Was residual chlorine present? YES...NO..NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) TH 11/20/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES..NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) TH 11/20/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) TH 11/20/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) TH 11/20/15

C \Users\thutchings\Desktop\Cooler Receipt Updated 2014.doc

III. EMPIRICAL LABORATORIES, LLC
DATA ENTRY VERIFICATION FORM – PROJECT MANAGEMENT

Workorder#: 1511224

	Verification Item	Yes	No	NA
1.	**Cooler Receipt Form Issues reviewed and communicated to client**			X
2.	**Element/ Project Screen/items verified to match the COC/CRF:**			
a.	**Client/Project**	X		
b.	Comments requiring laboratory reminder?			X
c.	Client and/or Project Memo requiring laboratory reminder?			X
3.	**Receipt Screen items verified to match the COC/CRF:**			
a.	Received Date/Received By	X		
b.	Workorder Due Date	X		
c.	Package Due Date	X		
d.	TAT	X		
e.	SDG Identifier Populated	X		
4.	**Sample Information verified against COC for each sample:**			
a.	Name	X		
b.	QC Source	X		
c.	Matrix	X		
d.	Sample Type	X		
e.	Sampled Date/Time (Correct Time Zone)	X		
f.	Work Analyses/Versions	X		
g.	Sample Issues included in comments			X
h.	Unpreserved VOA holding time set to 7 days			X
5.	**Containers consistent with tests requested**	X		
6.	**Field data entered and matching COC, if applicable**			X
	I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial/date):	SMG 11/23/2015		

C:\Users\sgordon\Desktop\QS10_R21_20140729_CoolerReceiptForm.doc

WORK ORDER

Printed: 11/23/2015 6:05:14PM

1511224

Empirical Laboratories, LLC

Client: CB&I
Project: Holloman AFB

Project Manager: Sonya Gordon
Project Number: Holloman AFB

Report To:
CB&I
Mark Lyon
P.O. Box 98519
Baton Rouge, LA 70884
Phone: (225) 932-2500
Fax: (225) 932-2661

Invoice To:
CB&I
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Date Due: 12/08/2015 16:00 (10 day TAT)

Received By: Tiana L. Hutchings
Date Received: 11/20/2015 09:20

Logged In By: Tiana L. Hutchings
Date Logged In: 11/20/2015 09:46

Samples Received at: **0.1°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	No		

Analysis	Due	TAT	Expires	Comments
1511224-01 OTC533-GW-5331-MW01-151119 [Water] Sampled 11/19/2015 07:10 (GMT-07:00) Mountain Time (US				
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 08:10	Chloride
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 08:10	
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 08:10	
1511224-02 OTC533-GW-5331-MW01-151119-FD [Water] Sampled 11/19/2015 07:10 (GMT-07:00) Mountain Time (US				
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 08:10	
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 08:10	Chloride
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 08:10	
1511224-03 OTC536-GW-5361-MW01-151119 [Water] Sampled 11/19/2015 08:00 (GMT-07:00) Mountain Time (US				**MS/MSD**
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 09:00	
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 09:00	
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 09:00	Chloride
1511224-04 OTC542-GW-5421-MW01-151119 [Water] Sampled 11/19/2015 09:07 (GMT-07:00) Mountain Time (US				
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 10:07	Chloride
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 10:07	
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 10:07	

1511224

Empirical Laboratories, LLC

Client:	**CB&I**	**Project Manager:**	**Sonya Gordon**
Project:	**Holloman AFB**	**Project Number:**	**Holloman AFB**

Analysis	Due	TAT	Expires	Comments
1511224-05 OTC543-GW-5431-MW01-151119 [Water] Sampled 11/19/2015 09:54 (GMT-07:00) Mountain Time (US				
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 10:54	
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 10:54	Chloride
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 10:54	
1511224-06 OTC544-GW-5441-MW01-151119 [Water] Sampled 11/19/2015 10:38 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 11:38	
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 11:38	
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 11:38	Chloride

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Holloman AFB
SDG #: 1511224

QC LEVEL: Level IV
Report Due: 12/8/2015
Client Sample Count: 5

Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	E300.0	SM2540C	SW9056A
Client Sample	11/19/2015	11/20/2015	1511224-01	OTC533-GW-5331-MW01-151119	Water	X	X	X
Field Duplicate	11/19/2015	11/20/2015	1511224-02	OTC533-GW-5331-MW01-151119-FD	Water	X	X	X
Client Sample	11/19/2015	11/20/2015	1511224-03	OTC536-GW-5361-MW01-151119	Water	MS/MSD	MS/MSD	MS/MSD
Client Sample	11/19/2015	11/20/2015	1511224-04	OTC542-GW-5421-MW01-151119	Water	X	X	X
Client Sample	11/19/2015	11/20/2015	1511224-05	OTC543-GW-5431-MW01-151119	Water	X	X	X
Client Sample	11/19/2015	11/20/2015	1511224-06	OTC544-GW-5441-MW01-151119	Water	X	X	X

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-01 [OTC533-GW-5331-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-02 [OTC533-GW-5331-MW01-151119-FD]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-03 [OTC536-GW-5361-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-04 [OTC542-GW-5421-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-05 [OTC543-GW-5431-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-06 [OTC544-GW-5441-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-01 [OTC533-GW-5331-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-02 [OTC533-GW-5331-MW01-151119-FD]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-03 [OTC536-GW-5361-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-05 [OTC543-GW-5431-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-01 [OTC533-GW-5331-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-02 [OTC533-GW-5331-MW01-151119-FD]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-03 [OTC536-GW-5361-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-04 [OTC542-GW-5421-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-05 [OTC543-GW-5431-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-06 [OTC544-GW-5441-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-04RE1 [OTC542-GW-5421-MW01-151119]	5K24008	5.00/5.00	5.00	5.00	20.00			11/24/15

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-04RE1 [OTC542-GW-5421-MW01-151119]	5K24008	5.00/5.00	5.00	5.00	20.00			11/24/15

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-06RE1 [OTC544-GW-5441-MW01-151119]	5L06002	5.00/5.00	5.00	5.00	10.00			12/10/15

ANALYSIS DATA SHEET

OTC533-GW-5331-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-01
Sampled:	11/19/15 07:10	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3860**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**242**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 17:25
14797-55-8	Nitrate as N	**1.37**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 17:25

ANALYSIS DATA SHEET

OTC533-GW-5331-MW01-151119-FD

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-02
Sampled:	11/19/15 07:10	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3340**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**242**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 17:42
14797-55-8	Nitrate as N	**1.30**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 17:42

ANALYSIS DATA SHEET

OTC536-GW-5361-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-03
Sampled:	11/19/15 08:00	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3360**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**91.6**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 18:00
14797-55-8	Nitrate as N	**0.154**	**0.0330**	0.100	0.250	1	JN	E300.0	5K20011	11/20/15 18:00

ANALYSIS DATA SHEET

OTC542-GW-5421-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-04
Sampled:	11/19/15 09:07	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**4440**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**1750**	**3.40**	6.60	10.0	20	D	SW9056A	5K24008	11/24/15 13:30
14797-55-8	Nitrate as N	**38.9**	**0.0330**	0.100	0.250	1	E	E300.0	5K20011	11/20/15 19:12
14797-55-8	Nitrate as N	**52.1**	**0.660**	2.00	5.00	20	DH1X	E300.0	5K24008	11/24/15 13:30

ANALYSIS DATA SHEET

OTC543-GW-5431-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-05
Sampled:	11/19/15 09:54	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3080**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**64.0**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 19:29
14797-55-8	Nitrate as N	**3.08**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 19:29

ANALYSIS DATA SHEET

OTC544-GW-5441-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-06
Sampled:	11/19/15 10:38	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3610**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**895**	**1.70**	3.30	5.00	10	D	SW9056A	5L06002	12/10/15 18:53
14797-55-8	Nitrate as N	**15.3**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 19:47

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K20011-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5K20011	11/20/15 16:49
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	U	E300.0	5K20011	11/20/15 16:49

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511224

Project: Holloman AFB

Laboratory ID: 5K20011-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.57**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 17:07
14797-55-8	Nitrate as N	**2.704**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 17:07

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K20011-DUP1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**91.18**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 18:54
14797-55-8	Nitrate as N	**0.1502**	**0.0330**	0.100	0.250	1	J	E300.0	5K20011	11/20/15 18:54

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K20011-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**119.5**	**0.189**	0.367	0.556	1		SW9056A	5K20011	11/20/15 18:18
14797-55-8	Nitrate as N	**1.947**	**0.0367**	0.111	0.278	1		E300.0	5K20011	11/20/15 18:18

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K20011-MSD1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**119.4**	**0.189**	0.367	0.556	1		SW9056A	5K20011	11/20/15 18:36
14797-55-8	Nitrate as N	**1.962**	**0.0367**	0.111	0.278	1		E300.0	5K20011	11/20/15 18:36

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K23005-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	5K23005	11/23/15 17:40

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511224

Project: Holloman AFB

Laboratory ID: 5K23005-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1095**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K23005-DUP1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3323**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K24008-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5K24008	11/24/15 12:18
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	UX	E300.0	5K24008	11/24/15 12:18

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511224

Project: Holloman AFB

Laboratory ID: 5K24008-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.55**	**0.170**	0.330	0.500	1		SW9056A	5K24008	11/24/15 12:36
14797-55-8	Nitrate as N	**2.342**	**0.0330**	0.100	0.250	1	X	E300.0	5K24008	11/24/15 12:36

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L06002-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5L06002	12/10/15 21:34

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511224

Project: Holloman AFB

Laboratory ID: 5L06002-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.35**	**0.170**	0.330	0.500	1		SW9056A	5L06002	12/10/15 21:52

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Nitrate as N	3.164	2.881	91.1	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Chloride	4.200	4.093	97.5	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33615-CCV1	Nitrate as N	2.500	2.337	93.5	mg/L	+/- 10.00%
5L33615-CCV2	**Nitrate as N**	**2.500**	**3.080**	**123**	**mg/L**	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33615-CCV1	Chloride	25.00	25.31	101	mg/L	+/- 10.00%
5L33615-CCV2	Chloride	25.00	25.66	103	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33619

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33619-CCV1	Nitrate as N	2.500	2.702	108	mg/L	+/- 10.00%
5L33619-CCV2	Nitrate as N	2.500	2.721	109	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33619

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33619-CCV1	Chloride	25.00	25.32	101	mg/L	+/- 10.00%
5L33619-CCV2	Chloride	25.00	25.27	101	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L34802

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L34802-CCV1	Chloride	25.00	25.33	101	mg/L	+/- 10.00%
5L34802-CCV2	Chloride	25.00	25.34	101	mg/L	+/- 10.00%
5L34802-CCV3	Chloride	25.00	25.37	101	mg/L	+/- 10.00%
5L34802-CCV4	Chloride	25.00	25.32	101	mg/L	+/- 10.00%

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33615-CRL2	Nitrate as N	0.1000	0.07290	72.9	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33615-CRL1	Chloride	0.5000	0.4526	90.5	mg/L	50 - 150

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33619

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33619-CRL2	Nitrate as N	0.1000	0.1028	103	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33619

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33619-CRL1	Chloride	0.5000	0.4671	93.4	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L34802

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L34802-CRL1	Chloride	0.5000	0.4473	89.5	mg/L	50 - 150

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K20011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K20011-BLK1	Nitrate as N	0.000800	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K20011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K20011-BLK1	Chloride	0.00900	0.170	0.500	mg/L	U	SW9056A

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K23005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K23005-BLK1	Total Dissolved Solids	9.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K24008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K24008-BLK1	Nitrate as N	0.000400	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K24008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K24008-BLK1	Chloride	0.00540	0.170	0.500	mg/L	U	SW9056A

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5L06002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L06002-BLK1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Nitrate as N	0.001700	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Chloride	0.03020	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L33615
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33615-CCB1	Nitrate as N	0.00120	0.0330	0.250	mg/L	U	E300.0
5L33615-CCB2	Nitrate as N	0.00640	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L33615
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33615-CCB1	Chloride	0.00280	0.170	0.500	mg/L	U	SW9056A
5L33615-CCB2	Chloride	0.00650	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L33619
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33619-CCB1	Nitrate as N	0.000800	0.0330	0.250	mg/L	U	E300.0
5L33619-CCB2	Nitrate as N	0.00180	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L33619
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33619-CCB1	Chloride	0.00160	0.170	0.500	mg/L	U	SW9056A
5L33619-CCB2	Chloride	0.00200	0.170	0.500	mg/L	U	SW9056A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L34802
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L34802-CCB1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB2	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB3	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB4	Chloride	0.00170	0.170	0.500	mg/L	U	SW9056A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E300.0

OTC536-GW-5361-MW01-151119

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5K20011

% Solids:

Source Sample Name: **1511224-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate as N	2.778	0.1544	1.947	64.5	N	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Nitrate as N	2.778	1.962	65.1	0.796	N	15	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9056A

OTC536-GW-5361-MW01-151119

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5K20011

% Solids:

Source Sample Name: **1511224-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Chloride	27.78	91.56	119.5	101		80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Chloride	27.78	119.4	100	0.127		15	80 - 120

536-GW-5361-MW01-15

DUPLICATES

SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K20011-DUP1
Batch: 5K20011
Lab Source ID: 1511224-03
Preparation: WC_PREP_ANIONS_W
Initial/Final: 5 mL / 5 mL
Source Sample Name: OTC536-GW-5361-MW01-151119
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Chloride	10	91.6	91.18	0.406		SW9056A
Nitrate as N	10	0.154 J	0.1502 J	2.76		E300.0

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Batch: 5K23005
Preparation: pNone
Source Sample Name: OTC536-GW-5361-MW01-151119

SDG: 1511224
Project: Holloman AFB
Laboratory ID: 5K23005-DUP1
Lab Source ID: 1511224-03
Initial/Final: 100 mL / 100 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	3360	3323	1.05		SM2540C

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K20011	Laboratory ID:	5K20011-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.704	108	90 - 110

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K20011	Laboratory ID:	5K20011-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.57	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K23005	Laboratory ID:	5K23005-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	988.0	1095	111	80 - 120

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K24008	Laboratory ID:	5K24008-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.342	93.7	90 - 110

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K24008	Laboratory ID:	5K24008-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.55	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L06002	Laboratory ID:	5L06002-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.35	101	80 - 120

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K20011 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC533-GW-5331-MW01-151119	1511224-01	11/20/15 14:49	5.00	5.00
OTC533-GW-5331-MW01-151119-FD	1511224-02	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	1511224-03	11/20/15 14:49	5.00	5.00
OTC542-GW-5421-MW01-151119	1511224-04	11/20/15 14:49	5.00	5.00
OTC543-GW-5431-MW01-151119	1511224-05	11/20/15 14:49	5.00	5.00
OTC544-GW-5441-MW01-151119	1511224-06	11/20/15 14:49	5.00	5.00
Blank	5K20011-BLK1	11/20/15 14:49	5.00	5.00
LCS	5K20011-BS1	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	5K20011-DUP1	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	5K20011-MS1	11/20/15 14:49	22.50	25.00
OTC536-GW-5361-MW01-151119	5K20011-MSD1	11/20/15 14:49	22.50	25.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K20011 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC533-GW-5331-MW01-151119	1511224-01	11/20/15 14:49	5.00	5.00
OTC533-GW-5331-MW01-151119-FD	1511224-02	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	1511224-03	11/20/15 14:49	5.00	5.00
OTC543-GW-5431-MW01-151119	1511224-05	11/20/15 14:49	5.00	5.00
Blank	5K20011-BLK1	11/20/15 14:49	5.00	5.00
LCS	5K20011-BS1	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	5K20011-DUP1	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	5K20011-MS1	11/20/15 14:49	22.50	25.00
OTC536-GW-5361-MW01-151119	5K20011-MSD1	11/20/15 14:49	22.50	25.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K23005 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC533-GW-5331-MW01-151119	1511224-01	11/23/15 06:48	100.00	100.00
OTC533-GW-5331-MW01-151119-FD	1511224-02	11/23/15 06:48	100.00	100.00
OTC536-GW-5361-MW01-151119	1511224-03	11/23/15 06:48	100.00	100.00
OTC542-GW-5421-MW01-151119	1511224-04	11/23/15 06:48	100.00	100.00
OTC543-GW-5431-MW01-151119	1511224-05	11/23/15 06:48	100.00	100.00
OTC544-GW-5441-MW01-151119	1511224-06	11/23/15 06:48	100.00	100.00
Blank	5K23005-BLK1	11/23/15 06:48	100.00	100.00
LCS	5K23005-BS1	11/23/15 06:48	20.00	20.00
OTC536-GW-5361-MW01-151119	5K23005-DUP1	11/23/15 06:48	100.00	100.00

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K24008 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC542-GW-5421-MW01-151119	1511224-04RE1	11/24/15 09:48	5.00	5.00
Blank	5K24008-BLK1	11/24/15 09:48	5.00	5.00
LCS	5K24008-BS1	11/24/15 09:48	5.00	5.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K24008 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC542-GW-5421-MW01-151119	1511224-04RE1	11/24/15 09:48	5.00	5.00
Blank	5K24008-BLK1	11/24/15 09:48	5.00	5.00
LCS	5K24008-BS1	11/24/15 09:48	5.00	5.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5L06002 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC544-GW-5441-MW01-151119	1511224-06RE1	12/10/15 14:40	5.00	5.00
Blank	5L06002-BLK1	12/10/15 14:40	5.00	5.00
LCS	5L06002-BS1	12/10/15 14:40	5.00	5.00

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	5K23005-BS1	112315-002	11/23/15 17:40
OTC536-GW-5361-MW01-151119	5K23005-DUP1	112315-003	11/23/15 17:40
Blank	5K23005-BLK1	112315-001	11/23/15 17:40

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33615	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33615-CCV1	SEQ-CCV1_Integration	11/24/15 10:49
Calibration Blank	5L33615-CCB1	SEQ-CCB1_Integration	11/24/15 11:07
Instrument RL Check	5L33615-CRL2	SEQ-CRL2_Integration	11/24/15 11:42
Blank	5K24008-BLK1	5K24008-BLK1_Integration	11/24/15 12:18
LCS	5K24008-BS1	5K24008-BS1_Integration	11/24/15 12:36
OTC542-GW-5421-MW01-151119	1511224-04RE1	11224-04RE1@20X_Integratio	11/24/15 13:30
Calibration Check	5L33615-CCV2	SEQ-CCV2_Integration	11/24/15 16:10
Calibration Blank	5L33615-CCB2	SEQ-CCB2_Integration	11/24/15 16:28

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33615	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33615-CCV1	SEQ-CCV1_Integration	11/24/15 10:49
Calibration Blank	5L33615-CCB1	SEQ-CCB1_Integration	11/24/15 11:07
Instrument RL Check	5L33615-CRL1	SEQ-CRL1_Integration	11/24/15 11:25
Blank	5K24008-BLK1	5K24008-BLK1_Integration	11/24/15 12:18
LCS	5K24008-BS1	5K24008-BS1_Integration	11/24/15 12:36
OTC542-GW-5421-MW01-151119	1511224-04RE1	11224-04RE1@20X_Integratio	11/24/15 13:30
Calibration Check	5L33615-CCV2	SEQ-CCV2_Integration	11/24/15 16:10
Calibration Blank	5L33615-CCB2	SEQ-CCB2_Integration	11/24/15 16:28

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33619	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33619-CCV1	SEQ-CCV1_Integration	11/20/15 14:44
Calibration Blank	5L33619-CCB1	SEQ-CCB1_Integration	11/20/15 15:02
Instrument RL Check	5L33619-CRL2	SEQ-CRL2_Integration	11/20/15 16:13
Blank	5K20011-BLK1	5K20011-BLK1_Integration	11/20/15 16:49
LCS	5K20011-BS1	5K20011-BS1_Integration	11/20/15 17:07
OTC533-GW-5331-MW01-151119	1511224-01	1511224-01_Integration	11/20/15 17:25
OTC533-GW-5331-MW01-151119-F	1511224-02	1511224-02_Integration	11/20/15 17:42
OTC536-GW-5361-MW01-151119	1511224-03	1511224-03_Integration	11/20/15 18:00
OTC536-GW-5361-MW01-151119	5K20011-MS1	5K20011-MS1_Integration	11/20/15 18:18
OTC536-GW-5361-MW01-151119	5K20011-MSD1	5K20011-MSD1_Integration	11/20/15 18:36
OTC536-GW-5361-MW01-151119	5K20011-DUP1	5K20011-DUP1_Integration	11/20/15 18:54
OTC542-GW-5421-MW01-151119	1511224-04	1511224-04_Integration	11/20/15 19:12
OTC543-GW-5431-MW01-151119	1511224-05	1511224-05_Integration	11/20/15 19:29
OTC544-GW-5441-MW01-151119	1511224-06	1511224-06_Integration	11/20/15 19:47
Calibration Check	5L33619-CCV2	SEQ-CCV2_Integration	11/20/15 20:41
Calibration Blank	5L33619-CCB2	SEQ-CCB2_Integration	11/20/15 20:59

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33619	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33619-CCV1	SEQ-CCV1_Integration	11/20/15 14:44
Calibration Blank	5L33619-CCB1	SEQ-CCB1_Integration	11/20/15 15:02
Instrument RL Check	5L33619-CRL1	SEQ-CRL1_Integration	11/20/15 15:55
Blank	5K20011-BLK1	5K20011-BLK1_Integration	11/20/15 16:49
LCS	5K20011-BS1	5K20011-BS1_Integration	11/20/15 17:07
OTC533-GW-5331-MW01-151119	1511224-01	1511224-01_Integration	11/20/15 17:25
OTC533-GW-5331-MW01-151119-F	1511224-02	1511224-02_Integration	11/20/15 17:42
OTC536-GW-5361-MW01-151119	1511224-03	1511224-03_Integration	11/20/15 18:00
OTC536-GW-5361-MW01-151119	5K20011-MS1	5K20011-MS1_Integration	11/20/15 18:18
OTC536-GW-5361-MW01-151119	5K20011-MSD1	5K20011-MSD1_Integration	11/20/15 18:36
OTC536-GW-5361-MW01-151119	5K20011-DUP1	5K20011-DUP1_Integration	11/20/15 18:54
OTC543-GW-5431-MW01-151119	1511224-05	1511224-05_Integration	11/20/15 19:29
Calibration Check	5L33619-CCV2	SEQ-CCV2_Integration	11/20/15 20:41
Calibration Blank	5L33619-CCB2	SEQ-CCB2_Integration	11/20/15 20:59

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L34802	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L34802-CCV1	SEQ-CCV1_Integration	12/10/15 10:33
Calibration Blank	5L34802-CCB1	SEQ-CCB1_Integration	12/10/15 10:51
Instrument RL Check	5L34802-CRL1	SEQ-CRL1_Integration	12/10/15 11:09
Calibration Check	5L34802-CCV2	SEQ-CCV2_Integration	12/10/15 17:24
Calibration Blank	5L34802-CCB2	SEQ-CCB2_Integration	12/10/15 17:42
OTC544-GW-5441-MW01-151119	1511224-06RE1	511224-06RE1@10_Integratio	12/10/15 18:53
Calibration Check	5L34802-CCV3	SEQ-CCV3_Integration	12/10/15 20:58
Calibration Blank	5L34802-CCB3	SEQ-CCB3_Integration	12/10/15 21:16
Blank	5L06002-BLK1	5L06002-BLK1_Integration	12/10/15 21:34
LCS	5L06002-BS1	5L06002-BS1_Integration	12/10/15 21:52
Calibration Check	5L34802-CCV4	SEQ-CCV4_Integration	12/11/15 02:01
Calibration Blank	5L34802-CCB4	SEQ-CCB4_Integration	12/11/15 02:19

INITIAL CALIBRATION DATA

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC		SDG:	1511224	
Client:	CB&I		Project:	Holloman AFB	
Calibration:	5323007		Instrument:	WC-IC2	
Matrix:	Water		Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	0.126	0.1032627	0.252	0.1055079	0.63	0.1077229	1.26	0.114327	6.3	0.1233052	12.6	0.12778
Chloride	0.5	0.2720276	1	0.287169	2.5	0.294335	5	0.3032684	25	0.3014536	50	0.3060892
Fluoride	0.05	0.44033	0.1	0.461829	0.25	0.4932644	0.5	0.50716	2.5	0.5010368	5	0.4944214
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552
Sulfate as SO4	0.5	0.2256678	1	0.2202215	2.5	0.2180314	5	0.2202646	25	0.2174918	50	0.2208332

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	31.5	0.1254725	50.4	0.1305396	63	~~0.1261554~~						
Chloride	125	0.3061993	200	0.3057162	250	0.3029497						
Fluoride	12.5	~~0.4610045~~	20	~~0.4356024~~	25	~~0.4186656~~						
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						
Sulfate as SO4	125	0.2174702	200	0.2259882	250	0.22377						

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Bromide	0.1172397	9.257594	8.14375	0.8992098	0.9994942		0.995	
Chloride	0.2976898	3.86824	4.845667	0.2683757	0.9999608		0.995	
Fluoride	0.4830069	5.409777	3.326	0.1833613	0.9999443		0.995	
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	
Sulfate as SO4	0.2210821	1.508986	8.729111	3.18872	0.9997657		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC533-GW-5331-MW01-151119	11/19/15 07:10	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 17:25	1.39	2.00	
OTC533-GW-5331-MW01-151119-F	11/19/15 07:10	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 17:42	1.40	2.00	
OTC536-GW-5361-MW01-151119	11/19/15 08:00	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 18:00	1.38	2.00	
OTC542-GW-5421-MW01-151119	11/19/15 09:07	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 19:12	1.38	2.00	
OTC542-GW-5421-MW01-151119	11/19/15 09:07	11/20/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 13:30	5.14	2.00	*
OTC543-GW-5431-MW01-151119	11/19/15 09:54	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 19:29	1.36	2.00	
OTC544-GW-5441-MW01-151119	11/19/15 10:38	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 19:47	1.34	2.00	

HOLDING TIME SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC533-GW-5331-MW01-151119	11/19/15 07:10	11/20/15 09:20	11/23/15 06:48	3.94	7.00	11/23/15 17:40	0.45	7.00	
OTC533-GW-5331-MW01-151119-F	11/19/15 07:10	11/20/15 09:20	11/23/15 06:48	3.94	7.00	11/23/15 17:40	0.45	7.00	
OTC536-GW-5361-MW01-151119	11/19/15 08:00	11/20/15 09:20	11/23/15 06:48	3.91	7.00	11/23/15 17:40	0.45	7.00	
OTC542-GW-5421-MW01-151119	11/19/15 09:07	11/20/15 09:20	11/23/15 06:48	3.86	7.00	11/23/15 17:40	0.45	7.00	
OTC543-GW-5431-MW01-151119	11/19/15 09:54	11/20/15 09:20	11/23/15 06:48	3.83	7.00	11/23/15 17:40	0.45	7.00	
OTC544-GW-5441-MW01-151119	11/19/15 10:38	11/20/15 09:20	11/23/15 06:48	3.80	7.00	11/23/15 17:40	0.45	7.00	

HOLDING TIME SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC533-GW-5331-MW01-151119	11/19/15 07:10	11/20/15 09:20	11/20/15 14:49	N/A	28.00	11/20/15 17:25	1.39	28.00	
OTC533-GW-5331-MW01-151119-F	11/19/15 07:10	11/20/15 09:20	11/20/15 14:49	N/A	28.00	11/20/15 17:42	1.40	28.00	
OTC536-GW-5361-MW01-151119	11/19/15 08:00	11/20/15 09:20	11/20/15 14:49	N/A	28.00	11/20/15 18:00	1.38	28.00	
OTC542-GW-5421-MW01-151119	11/19/15 09:07	11/20/15 09:20	11/24/15 09:48	N/A	28.00	11/24/15 13:30	5.14	28.00	
OTC543-GW-5431-MW01-151119	11/19/15 09:54	11/20/15 09:20	11/20/15 14:49	N/A	28.00	11/20/15 19:29	1.36	28.00	
OTC544-GW-5441-MW01-151119	11/19/15 10:38	11/20/15 09:20	12/10/15 14:40	N/A	28.00	12/10/15 18:53	21.30	28.00	

Data for Wet Chemistry
Supporting Raw Data / Logs

Solids, Total Dissolved
TDS

Empirical Laboratories

Client(s): CB&I

Date on: 11/23/2015
Time on: 17:40
Temp on: 104

Date off: 11/24/2015
Time off: 17:30
Temp off: 109

MDL = 2 mg/L
MDL of 2 mg/L assumes a volume of 1L. Adjust the MDL to be proportional to the volume used.

QC Criteria
Method Blank < MDL
LCS = ±20% of True Value

Analyst(s): TSF
Historical Data Checked: Y
Analyst Authorization:
Method Reference: SM2540C/160.1
Method Type: Gravimetric
Oven Temp. 180 C +/- 2 C?(Y/N): Y
Balance calibration verified?(Y/N): Y
Batch: 5K23005

Crucible ID	Sample Type	Lab ID	Client	Field ID	True Value (mg/L)	Sample Volume (ml)	Crucible Tare Weight (g)	Crucible Dried Weight #1 (g)	Crucible Dried Weight #2 (g)	Crucible Dried Weight #3 (g)	Crucible Dried Weight #4 (g)	Crucible Dried Weight #5 (g)	*TDS (mg/L)*	*Recovery or RPD (%)*	Control Limit, Lower (%)	Control Limit, Upper (%)	Comments
you	QC	5K23005-BLK1	QC	DIWater	0	100	68.2564	68.2568	68.2573				9		-20 mg/L	+20 mg/L	
kiss	QC	5K23005-BS1	QC	13L0491	988	20	67.3187	67.3397	67.6401	67.3407	67.3406		1095	110.8	80	120	
word	QC	5K23005-DUP1	1511224-03			100	67.2635	67.6071	67.5919	67.5961	67.5958		3323				
w		1511199-10				100	76.7618	76.7701	76.7675	76.7707	76.7712		94				
107		1511199-11				100	77.3380	77.4007	77.3963	77.3985	77.3985		605				
Ant		1511199-12				100	67.9340	68.0009	67.9502	67.9528	67.9524		184				
H		1511199-14				100	67.9223	67.9287	67.9287				64				
YO		1511224-01				100	67.6090	68.0190	67.9906	67.9930	67.9946	67.9945	3855				
RJD		1511224-02				100	78.2838	78.6875	78.6148	78.6172	78.6177		3339				
LA		1511224-03				100	67.2341	67.5848	67.5655	67.5685	67.5695	67.5699	3358				
G		1511224-04				100	67.2526	68.7946	67.6908	67.6960	67.6963		4437				
US		1511224-05				100	67.0120	68.5497	67.3181	67.3207	67.3202		3082				
NYE		1511224-06				100	68.9931	70.1605	69.3502	69.3525	69.3538	69.3541	3610				

Comments:

Temp on (°C):	104	180	180	185		
Temp off (°C):	109	185	185	180		
Date/Time on:	11/23/2015 17:40	11/24/2015 20:00	11/25/2015 15:10	11/29/2015 15:15		
Date/Time off :	11/24/2015 17:30	11/25/2015 14:00	11/29/2015 13:45	11/29/2015 17:40		

2nd BLQ 12/11/15

SOP186_R09_20140730_TDS_Blank.xls

Sequence Overview

Sequence Details

Name:	**111715**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**17/Nov/15 12:51:49**
No. of Injections:	**14**	*Updated By:*	**NSH-IONC2**

Injection Details

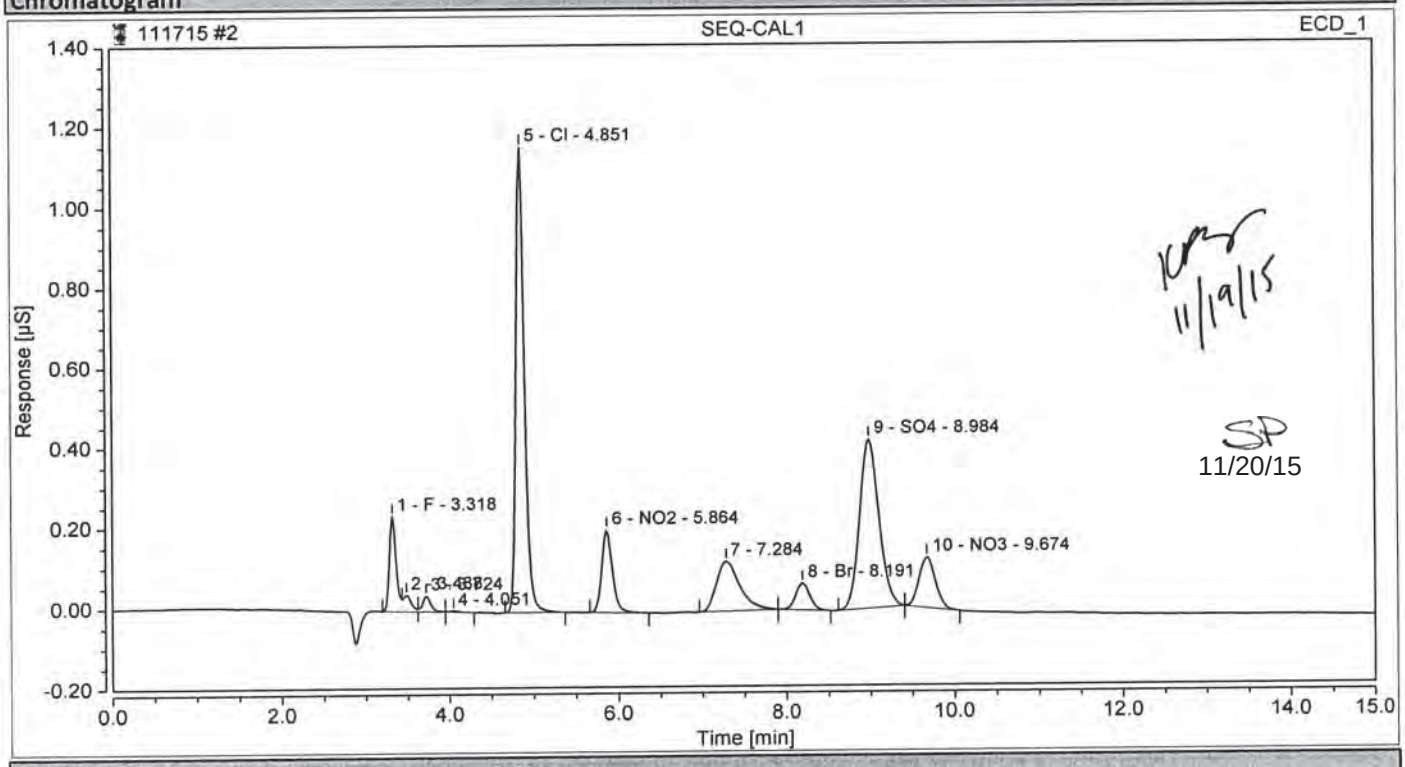
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		17/Nov/15 07:37:12	Finished
2	SEQ-CAL1	2	Calibration Standard	01	17/Nov/15 07:54:59	Finished
3	SEQ-CAL2	3	Calibration Standard	02	17/Nov/15 08:12:50	Finished
4	SEQ-CAL3	4	Calibration Standard	03	17/Nov/15 08:30:40	Finished
5	SEQ-CAL4	5	Calibration Standard	04	17/Nov/15 08:48:31	Finished
6	SEQ-CAL5	6	Calibration Standard	05	17/Nov/15 09:06:21	Finished
7	SEQ-CAL6	7	Calibration Standard	06	17/Nov/15 09:24:11	Finished
8	SEQ-CAL7	8	Calibration Standard	07	17/Nov/15 09:42:01	Finished
9	SEQ-CAL8	9	Calibration Standard	08	17/Nov/15 09:59:51	Finished
10	SEQ-CAL9	10	Calibration Standard	09	17/Nov/15 10:17:41	Finished
11	SEQ-ICV1	11	Unknown		17/Nov/15 10:35:31	Finished
12	SEQ-ICB1	12	Unknown		17/Nov/15 10:53:21	Finished
13	CCV TEST	13	Unknown		17/Nov/15 11:11:11	Finished
14	BLANK	14	Unknown		17/Nov/15 11:29:01	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**01**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 07:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

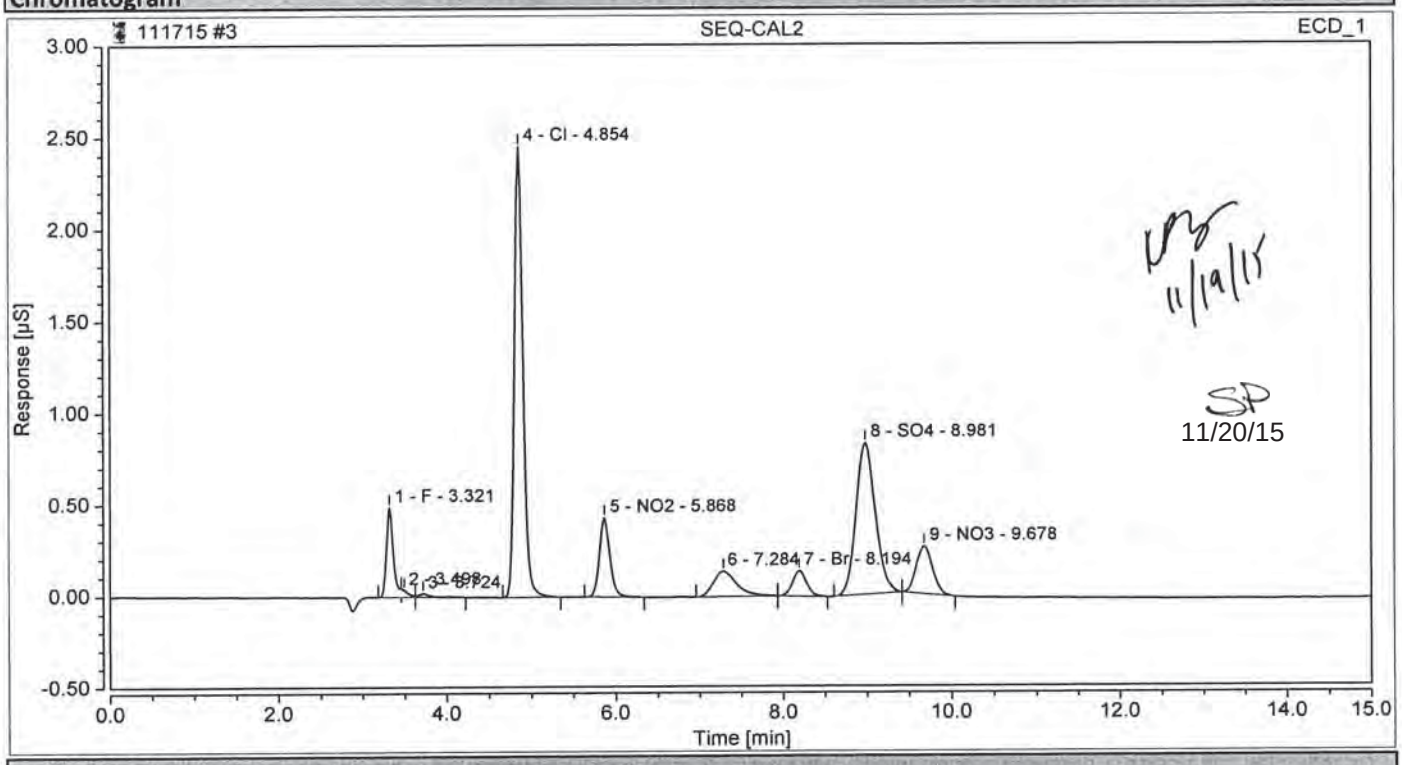
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0220165	0.236	5.61	9.74	0.0444
2		3.488	0.0046279	0.041	1.18	1.69	n.a.
3		3.724	0.0045613	0.040	1.16	1.64	n.a.
4		4.051	0.0004082	0.003	0.10	0.12	n.a.
5	Cl	4.851	0.1360138	1.160	34.67	47.89	0.4469
6	NO2	5.864	0.0301038	0.206	7.67	8.48	0.0529
7		7.284	0.0402353	0.124	10.26	5.12	n.a.
8	Br	8.191	0.0130111	0.067	3.32	2.75	0.1009
9	SO4	8.984	0.1128339	0.421	28.76	17.37	0.5046
10	NO3	9.674	0.0284874	0.126	7.26	5.21	0.0369
Total:			**0.392**	**2.423**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL2**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**02**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

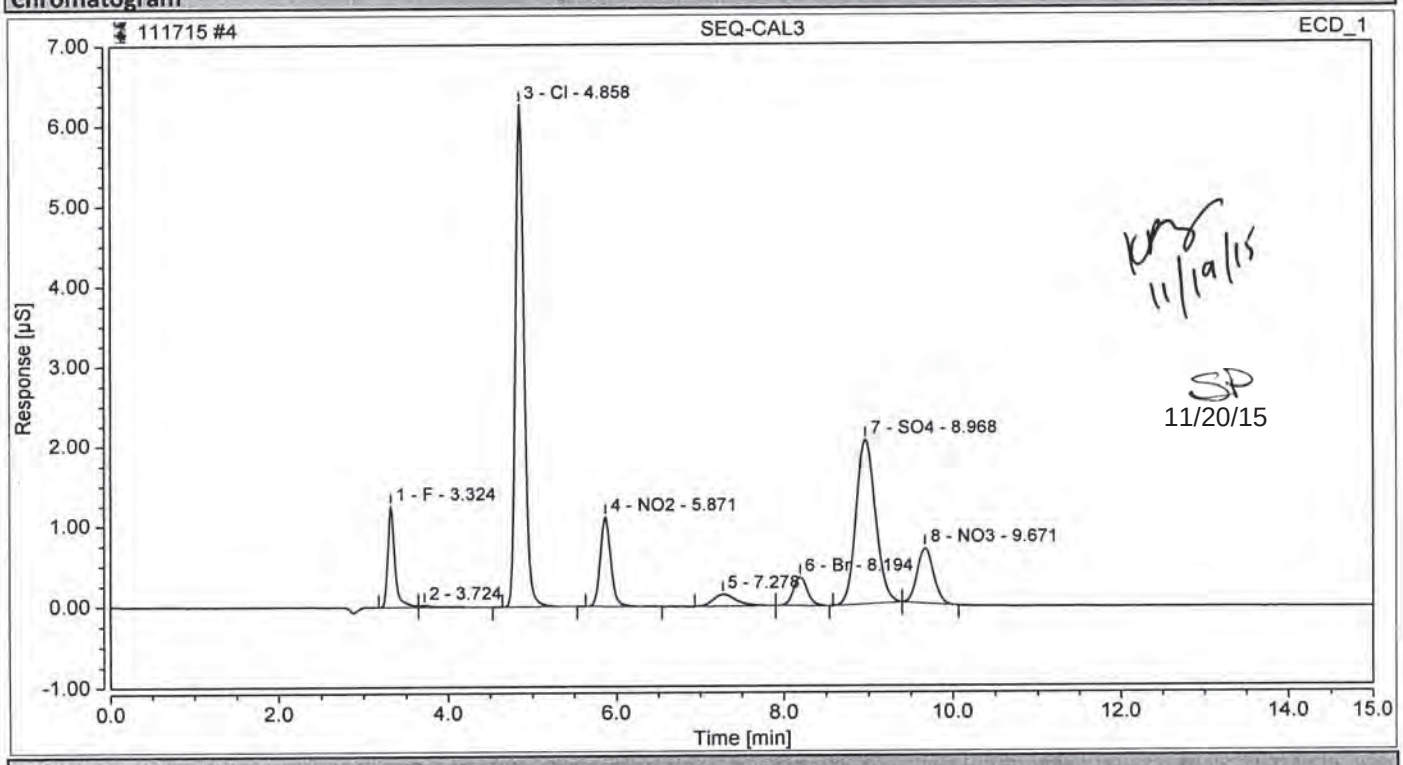
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0461829	0.490	6.14	10.21	0.0931
2		3.498	0.0038392	0.037	0.51	0.78	n.a.
3		3.724	0.0031064	0.019	0.41	0.40	n.a.
4	Cl	4.854	0.2871690	2.458	38.17	51.18	0.9436
5	NO2	5.868	0.0623479	0.433	8.29	9.01	0.1096
6		7.284	0.0446872	0.139	5.94	2.89	n.a.
7	Br	8.194	0.0265880	0.137	3.53	2.86	0.2061
8	SO4	8.981	0.2202215	0.829	29.27	17.25	0.9849
9	NO3	9.678	0.0581981	0.260	7.74	5.42	0.0754
Total:			**0.752**	**4.803**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL3**	*Run Time (min):*	**15.00**
Vial Number:	**4**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**03**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

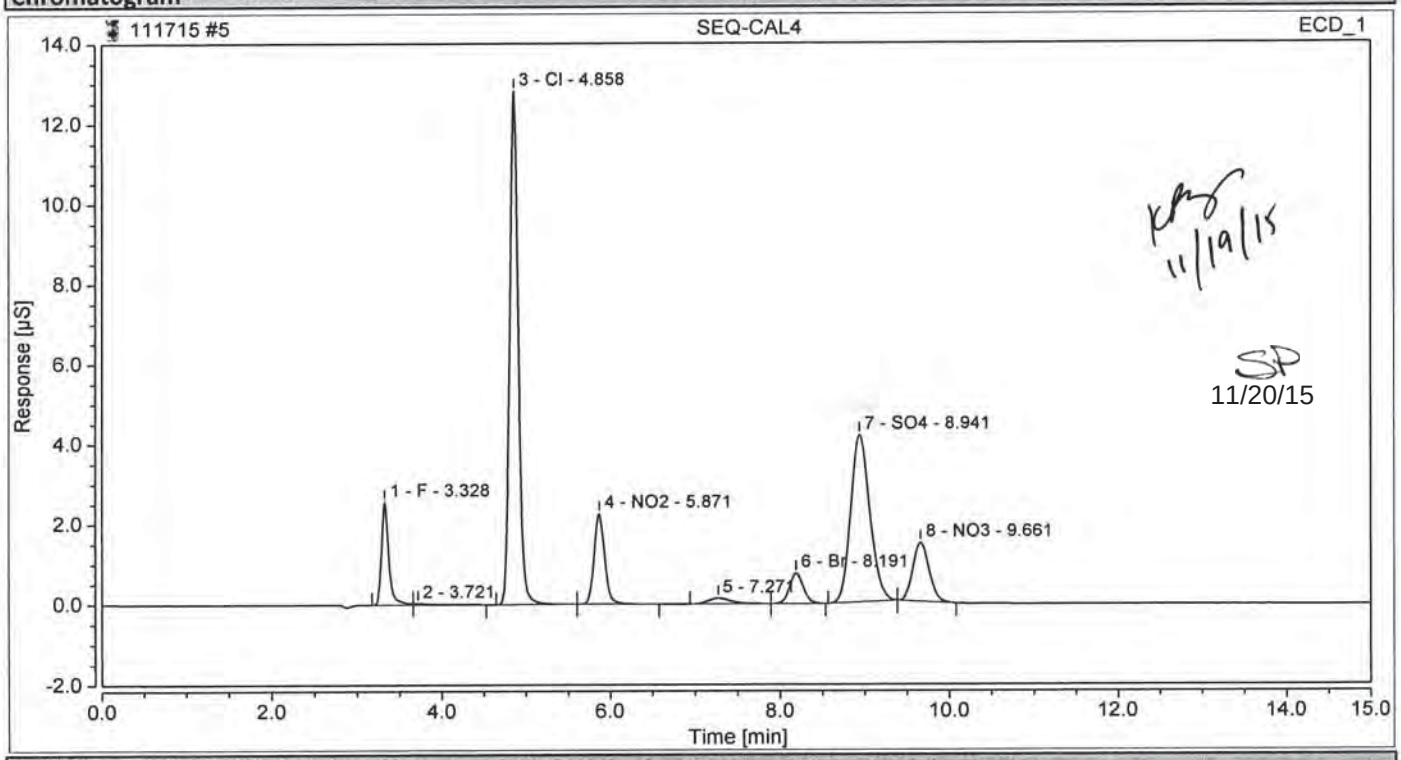
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.1233161	1.257	6.71	10.57	0.2487
2		3.724	0.0046231	0.023	0.25	0.19	n.a.
3	Cl	4.858	0.7358376	6.264	40.05	52.66	2.4178
4	NO2	5.871	0.1596659	1.114	8.69	9.36	0.2806
5		7.278	0.0473937	0.148	2.58	1.25	n.a.
6	Br	8.194	0.0678654	0.355	3.69	2.99	0.5261
7	SO4	8.968	0.5450785	2.048	29.67	17.21	2.4378
8	NO3	9.671	0.1536592	0.687	8.36	5.77	0.1989
Total:			**1.837**	**11.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL4**	*Run Time (min):*	**15.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**04**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

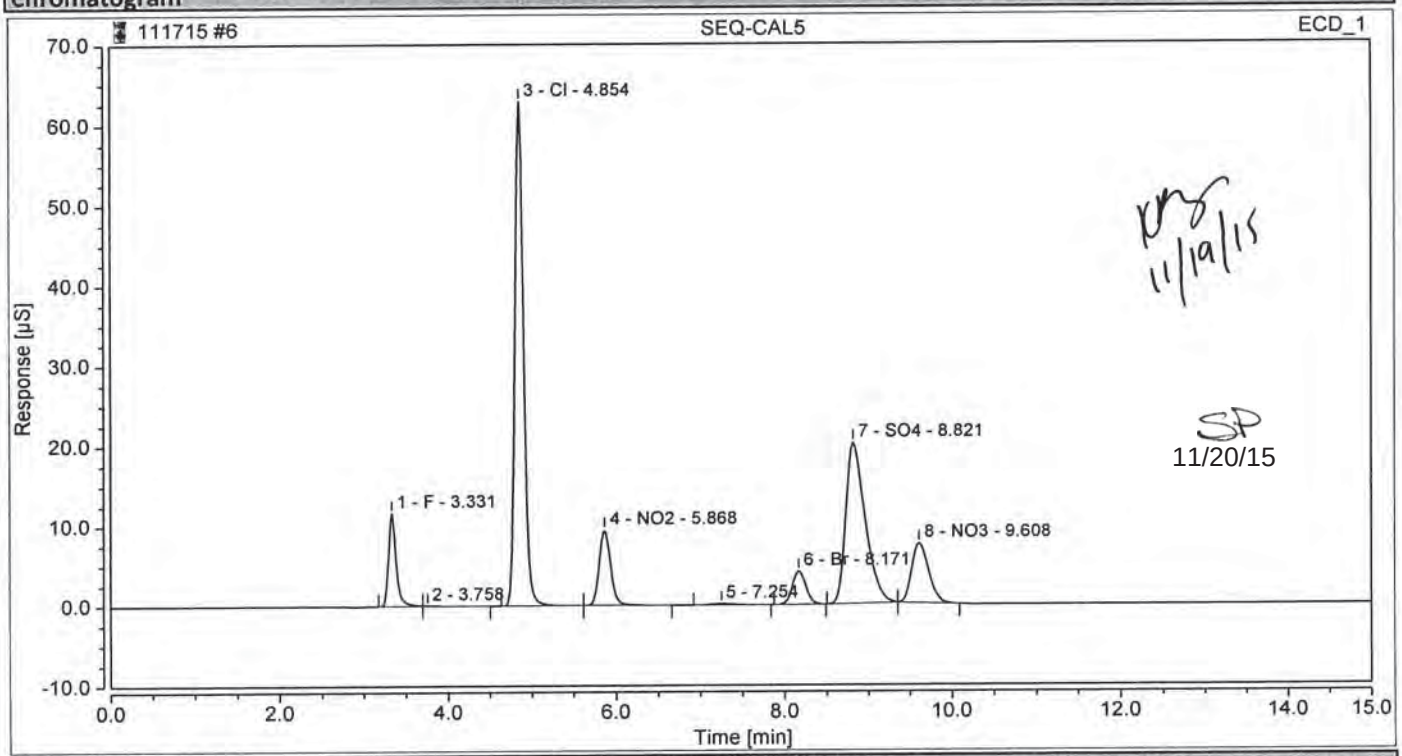
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	0.2535800	2.569	6.80	10.60	0.5114
2		3.721	0.0075683	0.032	0.20	0.13	n.a.
3	Cl	4.858	1.5163418	12.815	40.69	52.90	4.9824
4	NO2	5.871	0.3282896	2.259	8.81	9.33	0.5769
5		7.271	0.0453793	0.144	1.22	0.59	n.a.
6	Br	8.191	0.1440520	0.762	3.87	3.15	1.1168
7	SO4	8.941	1.1013233	4.174	29.55	17.23	4.9255
8	NO3	9.661	0.3300388	1.472	8.86	6.07	0.4273
Total:			**3.727**	**24.227**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL5**	*Run Time (min):*	**15.00**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**05**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

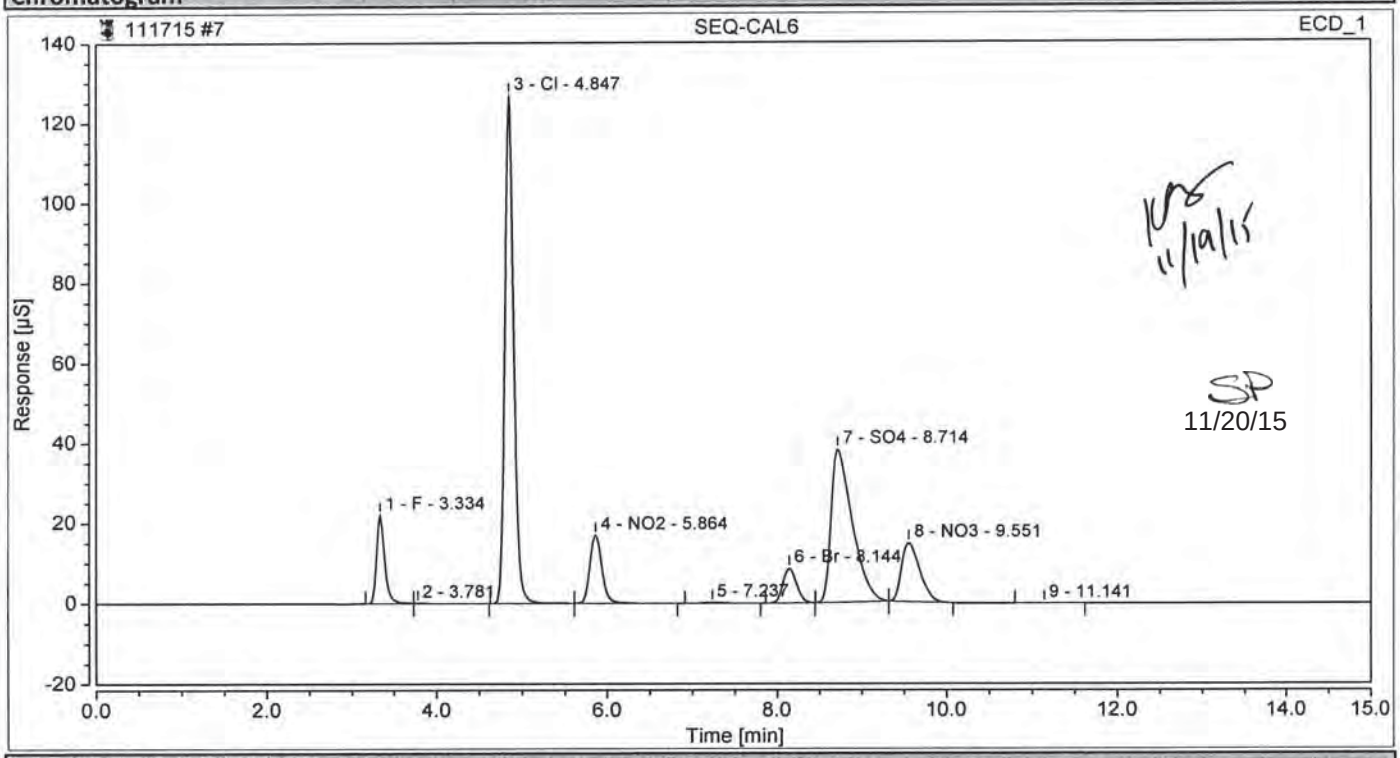
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.2525921	11.699	6.84	10.08	2.5263
2		3.758	0.0190090	0.072	0.10	0.06	n.a.
3	Cl	4.854	7.5363404	62.882	41.14	54.21	24.7631
4	NO2	5.868	1.4836250	9.448	8.10	8.14	2.6073
5		7.254	0.0485316	0.160	0.26	0.14	n.a.
6	Br	8.171	0.7768228	4.164	4.24	3.59	6.0224
7	SO4	8.821	5.4372952	20.102	29.68	17.33	24.3175
8	NO3	9.608	1.7660024	7.478	9.64	6.45	2.2865
Total:			**18.320**	**116.005**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL6**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	% R
1	F	3.334	2.4721069	22.141	6.69	9.72	4.9859	99.718
2		3.781	0.0322715	0.113	0.09	0.05	n.a.	
3	Cl	4.847	15.3044626	126.800	41.40	55.68	50.2878	
4	NO2	5.864	2.8092761	16.969	7.60	7.45	4.9369	98.738
5		7.237	0.0504916	0.173	0.14	0.08	n.a.	
6	Br	8.144	1.6100283	8.683	4.36	3.81	12.4819	
7	SO4	8.714	11.0416639	38.155	29.87	16.76	49.3822	
8	NO3	9.551	3.6425462	14.675	9.85	6.44	4.7162	
9		11.141	0.0027315	0.007	0.01	0.00	n.a.	
Total:			**36.966**	**227.715**	**100.00**	**100.00**		

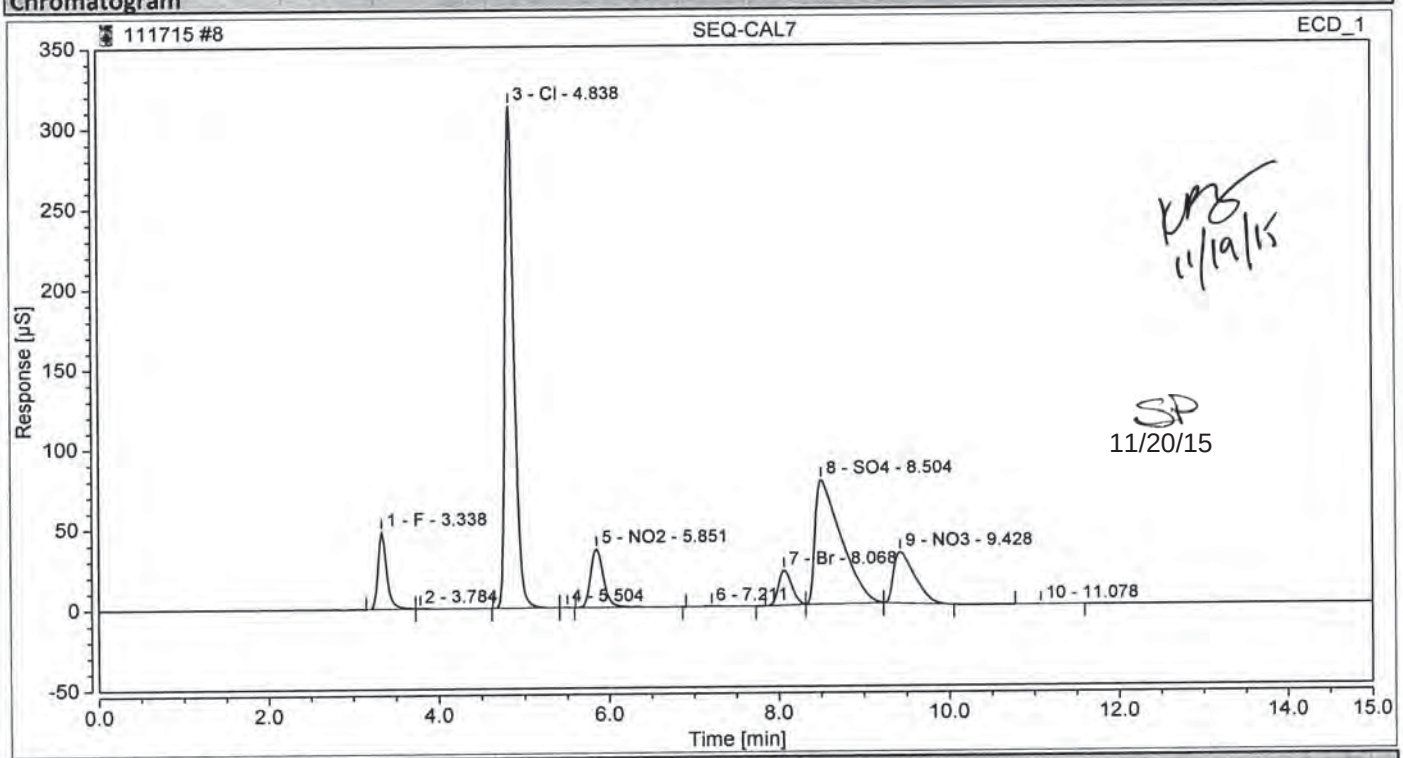
12/8/2015

Chromatogram and Results

Injection Details

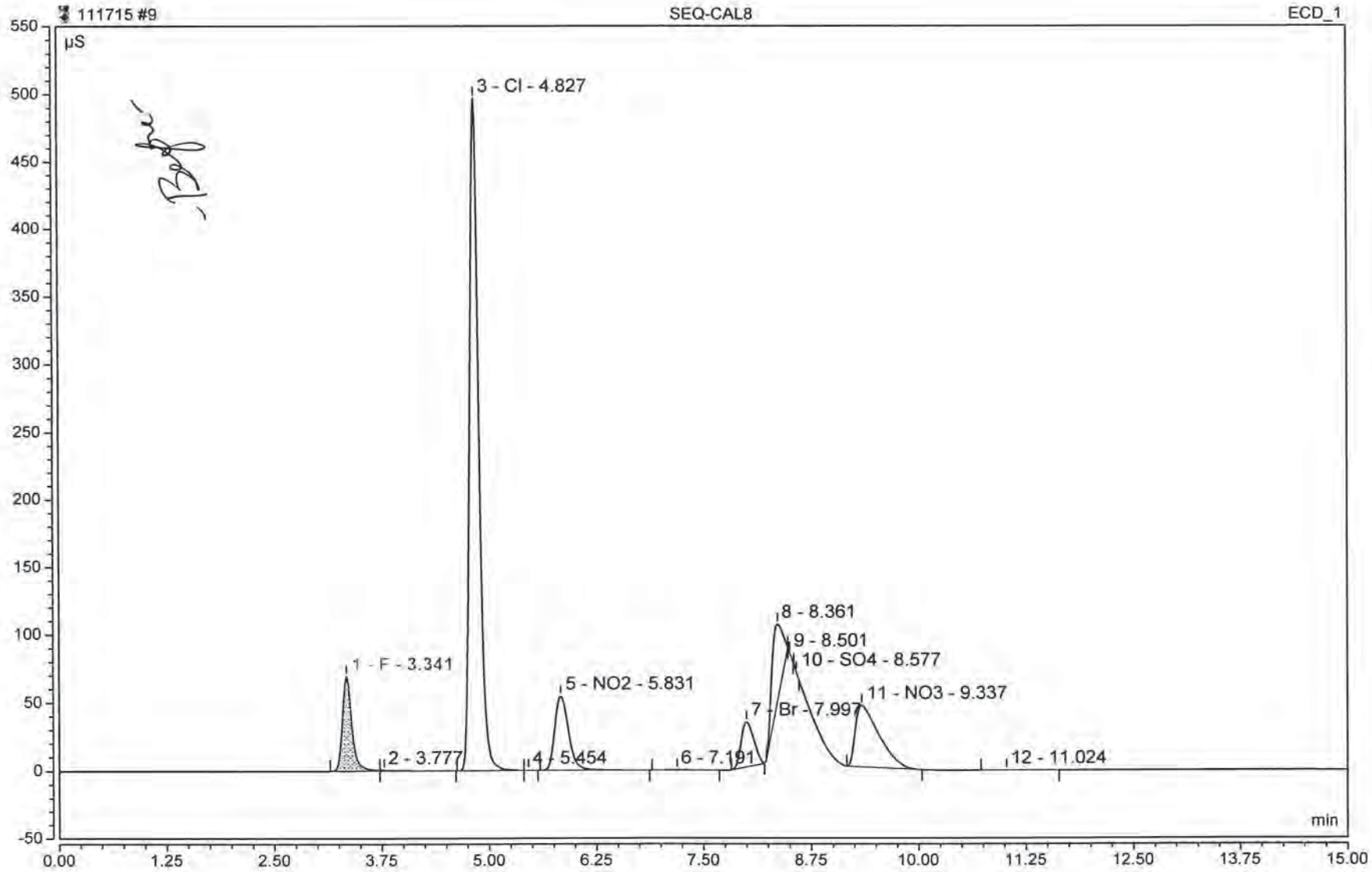
Injection Name:	**SEQ-CAL7**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**07**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.338	5.7625559	48.349	6.34	9.12	11.6224
2		3.784	0.0854296	0.296	0.09	0.06	n.a.
3	Cl	4.838	38.2749054	313.315	42.10	59.13	125.7648
4		5.504	0.0002744	0.002	0.00	0.00	n.a.
5	NO2	5.851	6.4639480	36.442	7.11	6.88	11.3595
6		7.211	0.0579694	0.208	0.06	0.04	n.a.
7	Br	8.068	3.9523854	21.796	4.35	4.11	30.6414
8	SO4	8.504	27.1837844	77.489	29.90	14.62	121.5754
9	NO3	9.428	9.1270172	31.979	10.04	6.04	11.8171
10		11.078	0.0042754	0.011	0.00	0.00	n.a.
Total:			**90.913**	**529.888**	**100.00**	**100.00**	


111715 #9
SEQ-CAL8
ECD_1
µS
3 - Cl - 4.827
1 - F - 3.341
2 - 3.777
5 - NO2 - 5.831
4 - 5.454
6 - 7.191
7 - Br - 7.997
8 - 8.361
9 - 8.501
10 - SO4 - 8.577
11 - NO3 - 9.337
12 - 11.024
min
550
500
450
400
350
300
250
200
150
100
50
0
-50
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

106

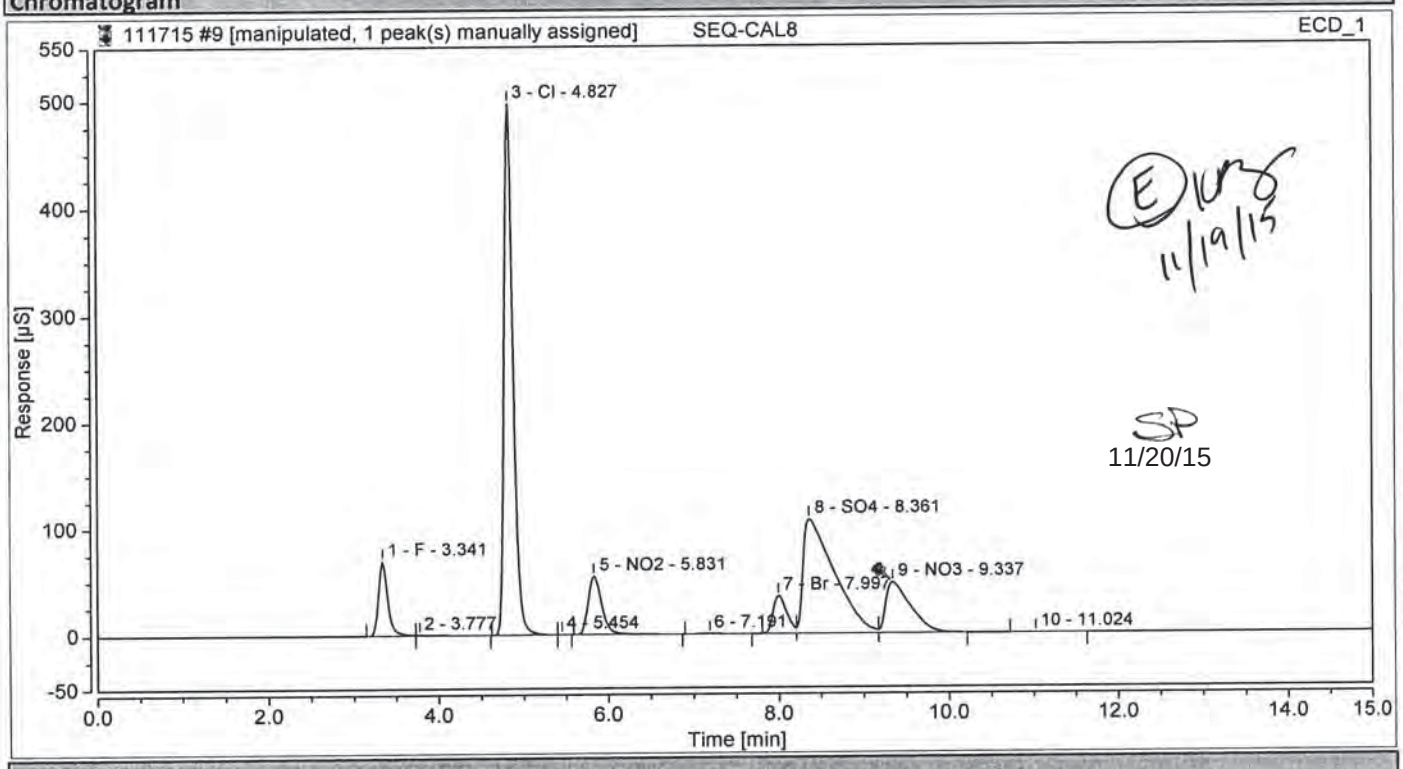
1511224

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL8**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**08**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:59**	*Sample Weight:*	**1.0000**

Chromatogram

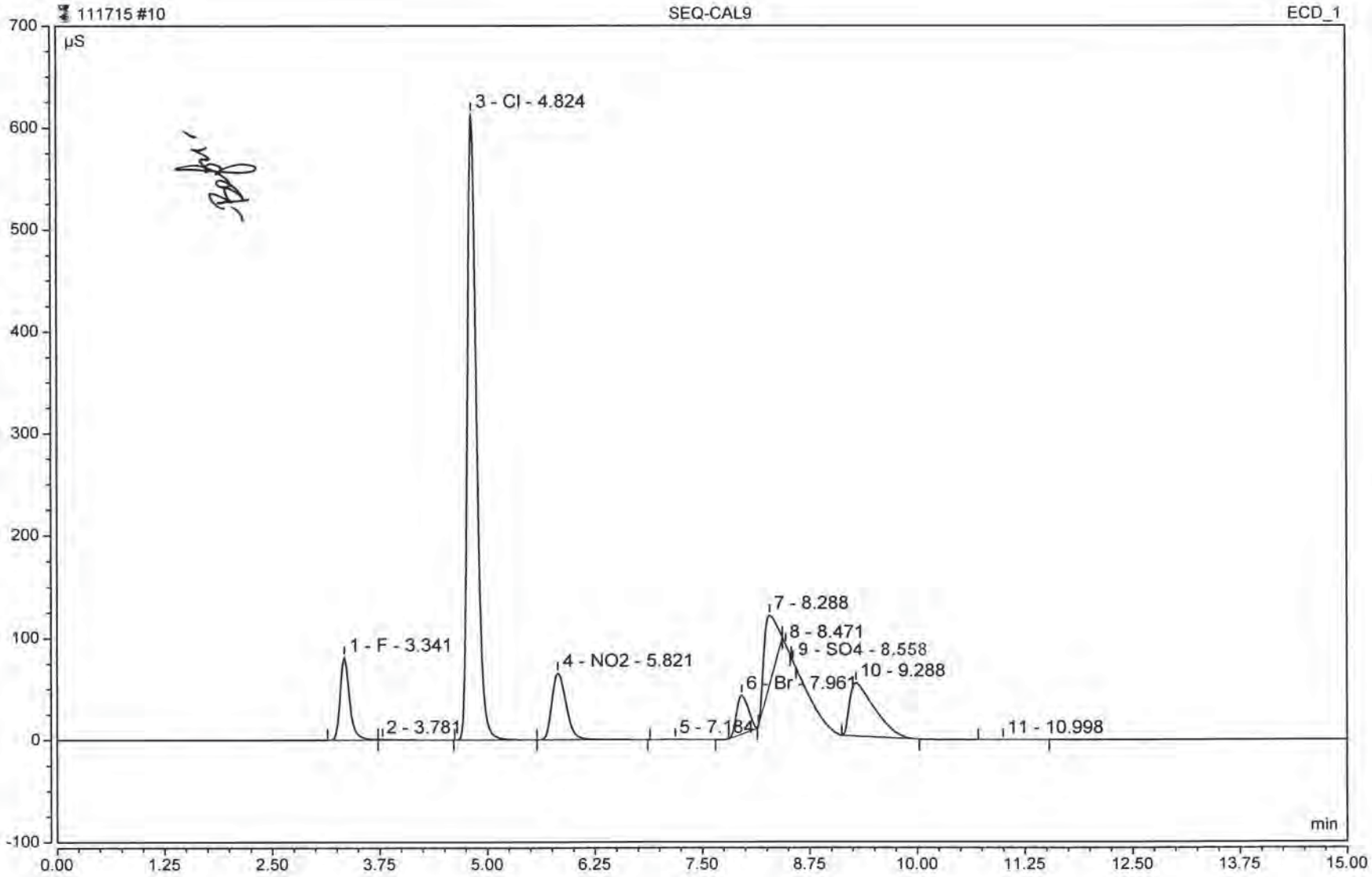


Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.341	8.7120474	69.634	5.90	8.58	17.5712
2		3.777	0.1512737	0.528	0.10	0.07	n.a.
3	Cl	4.827	61.1432401	496.862	41.39	61.23	200.9062
4		5.454	0.0003503	0.004	0.00	0.00	n.a.
5	NO2	5.831	10.1145387	54.420	6.85	6.71	17.7749
6		7.191	0.0645880	0.237	0.04	0.03	n.a.
7	Br	7.997	6.5791969	35.218	4.45	4.34	51.0060
8	SO4	8.361	45.1976399	107.066	30.60	13.19	202.1397
9	NO3	9.337	15.7421504	47.503	10.66	5.85	20.3820
10		11.024	0.0056704	0.014	0.00	0.00	n.a.
Total:			**147.711**	**811.485**	**100.00**	**100.00**	

101.202%

12/8/2015

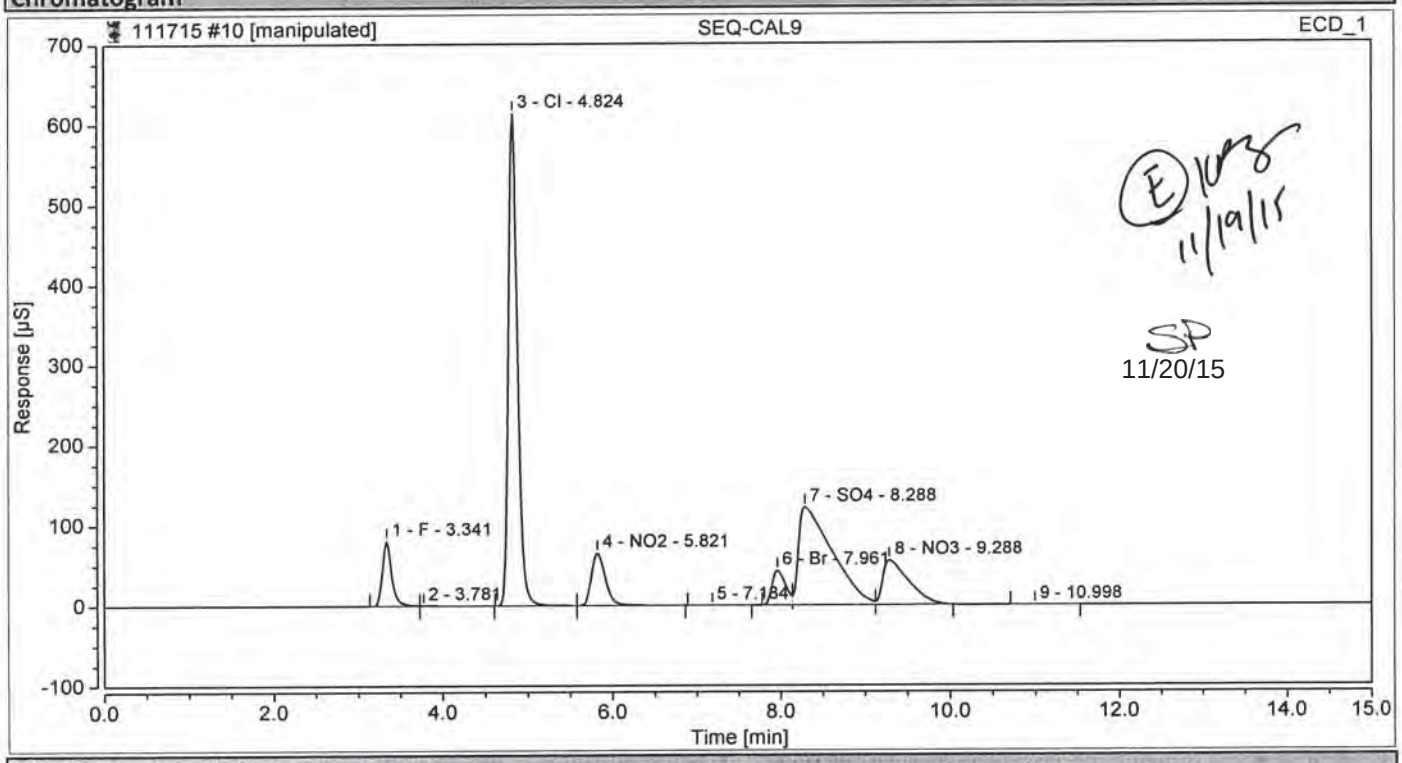

111715 #10
SEQ-CAL9
ECD_1
µS
700
600
500
400
300
200
100
0
-100
1 - F - 3.341
2 - 3.781
3 - Cl - 4.824
4 - NO2 - 5.821
5 - 7.184
6 - Br - 7.961
7 - 8.288
8 - 8.471
9 - SO4 - 8.558
10 - 9.288
11 - 10.998
min
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL9**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**09**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	
1	F	3.341	10.4666430	81.281	5.74	8.28	21.1100	
2		3.781	0.1907167	0.659	0.10	0.07	n.a.	
3	Cl	4.824	75.7374228	613.482	41.56	62.51	248.8602	99.54%
4	NO2	5.821	12.4914856	65.434	6.85	6.67	21.9521	
5		7.184	0.0690776	0.255	0.04	0.03	n.a.	
6	Br	7.961	7.9477879	43.168	4.36	4.40	61.6162	
7	SO4	8.288	55.9424901	121.640	30.70	12.39	250.1945	100.08%
8	NO3	9.288	19.3985090	55.441	10.64	5.65	25.1160	100.46%
9		10.998	0.0065839	0.016	0.00	0.00	n.a.	
Total:			**182.251**	**981.376**	**100.00**	**100.00**		

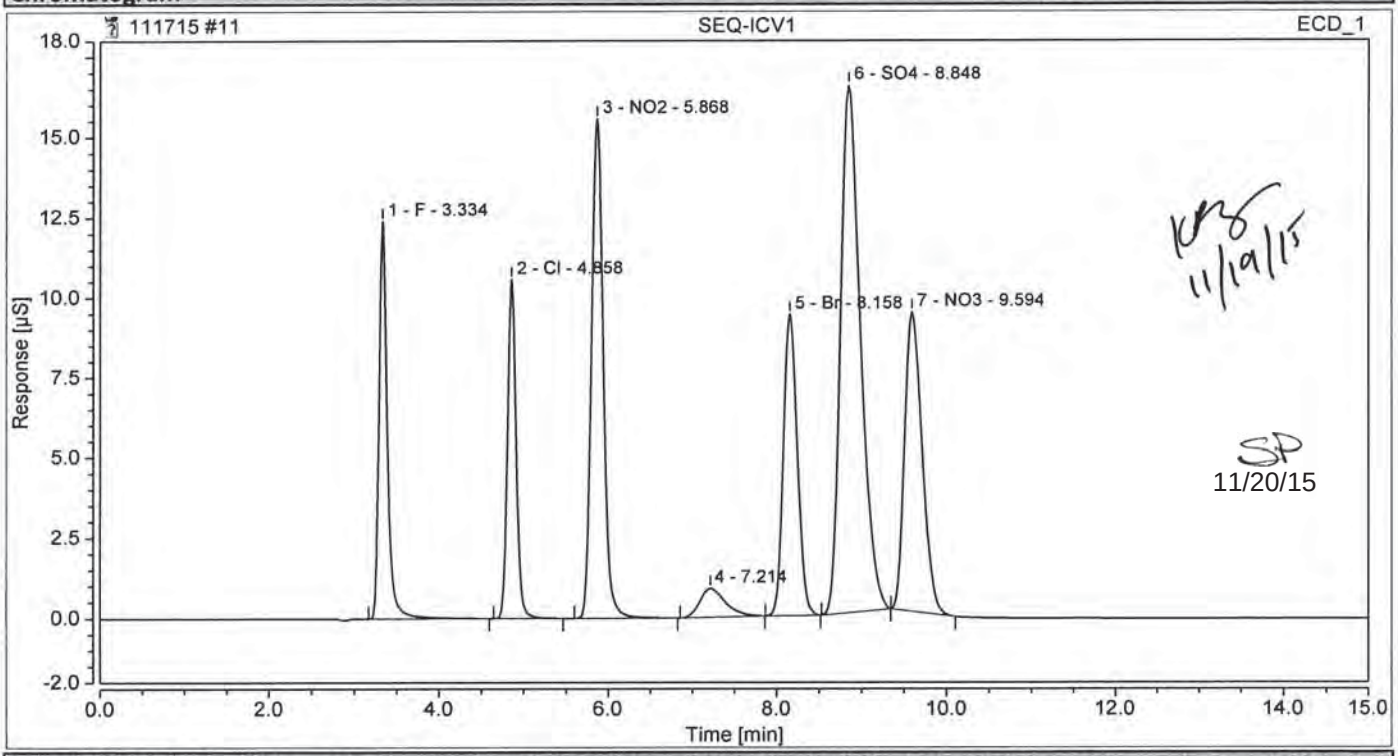
12/8/2015

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICV1**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

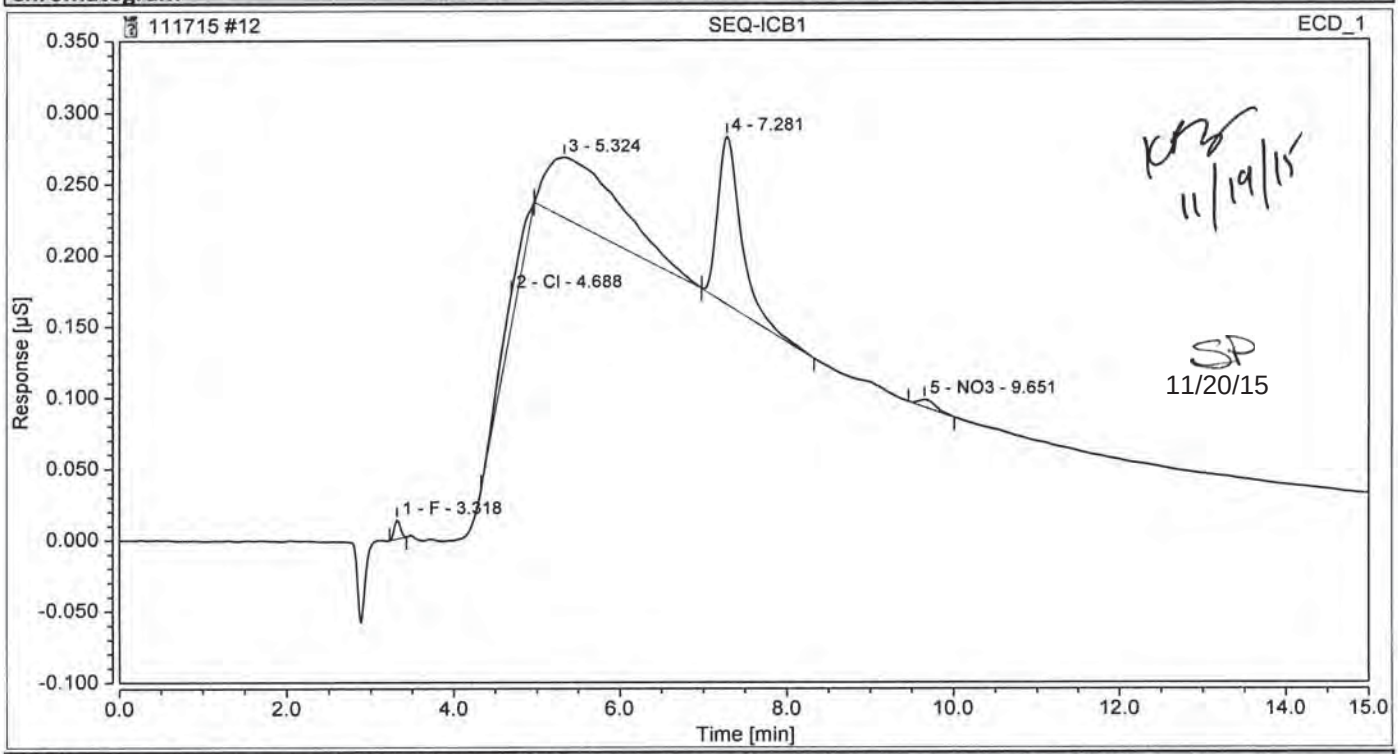
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.334	1.3903067	12.395	9.97	16.62	2.8041
2	Cl	4.858	1.2457670	10.572	8.93	14.18	4.0934
3	NO2	5.868	2.5129040	15.562	18.02	20.87	4.4161
4		7.214	0.3185593	0.899	2.28	1.20	n.a.
5	Br	8.158	1.7875226	9.386	12.82	12.58	13.8580
6	SO4	8.848	4.4654223	16.435	32.02	22.04	19.9709
7	NO3	9.594	2.2250539	9.334	15.96	12.51	2.8809
Total:			**13.946**	**74.583**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICB1**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0011415	0.014	1.17	6.70	0.0023
2	Cl	4.688	0.0091828	0.023	9.40	11.50	0.0302
3		5.324	0.0478564	0.042	49.00	20.91	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.281	0.0381807	0.118	39.09	58.31	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NO3	9.651	0.0013022	0.005	1.33	2.58	0.0017
Total:			**0.098**	**0.202**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**112415**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Nov/15 08:06:59**
No. of Injections:	**28**	*Updated By:*	**NSH-IONC2**

Injection Details

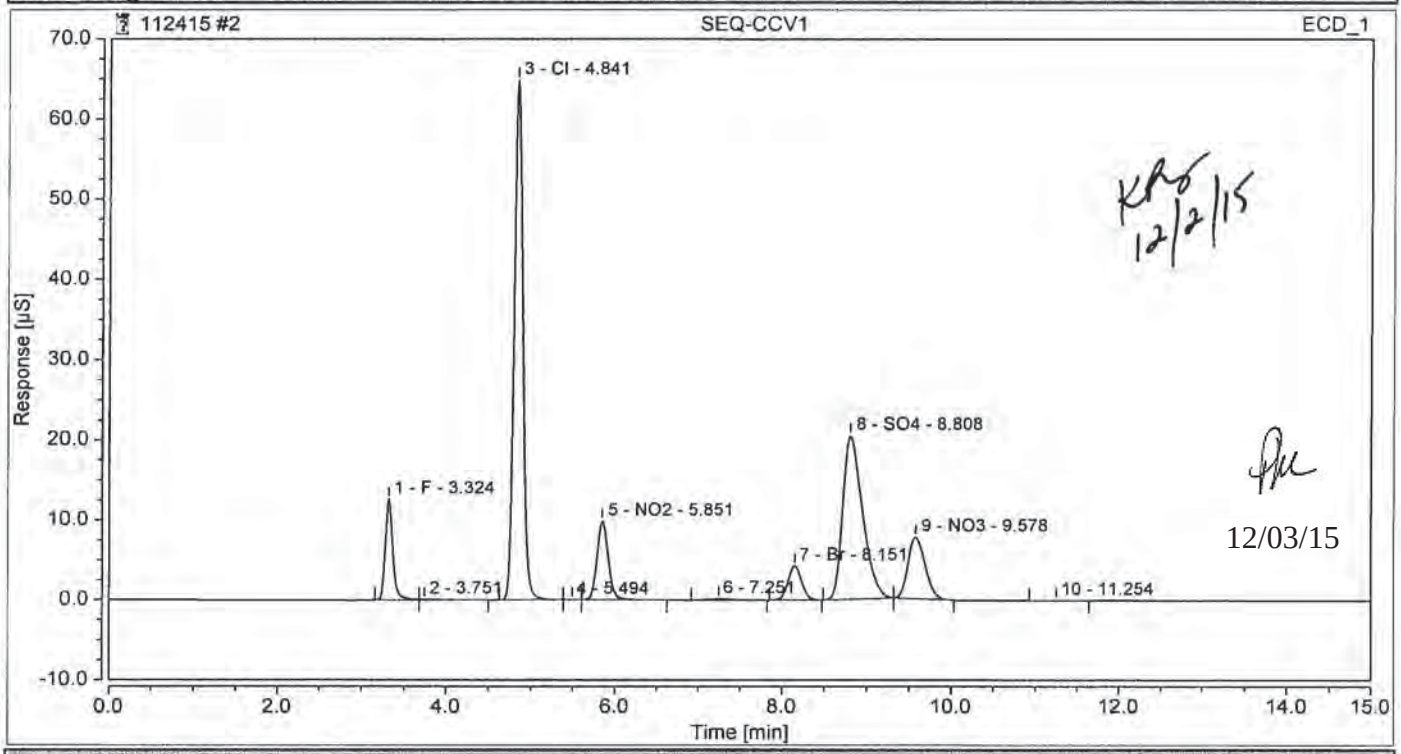
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		24/Nov/15 10:31:35	Finished
2	SEQ-CCV1	2	Unknown		24/Nov/15 10:49:27	Finished
3	SEQ-CCB1	3	Unknown		24/Nov/15 11:07:17	Finished
4	SEQ-CRL1	4	Unknown		24/Nov/15 11:25:08	Finished
5	SEQ-CRL2	5	Unknown		24/Nov/15 11:42:58	Finished
6	SEQ-CRL3	6	Unknown		24/Nov/15 12:00:48	Finished
7	5K24008-BLK1	7	Unknown		24/Nov/15 12:18:40	Finished
8	5K24008-BS1	8	Unknown		24/Nov/15 12:36:30	Finished
9	1511256-01	9	Unknown		24/Nov/15 12:54:21	Finished
10	1511256-02	10	Unknown		24/Nov/15 13:12:12	Finished
11	1511224-04RE1@20	11	Unknown		24/Nov/15 13:30:03	Finished
12	1511258-01	12	Unknown		24/Nov/15 13:47:53	Finished
13	1511258-02	13	Unknown		24/Nov/15 14:05:43	Finished
14	1511258-03	14	Unknown		24/Nov/15 14:23:34	Finished
15	1511258-04	15	Unknown		24/Nov/15 14:41:24	Finished
16	1511258-05	16	Unknown		24/Nov/15 14:59:15	Finished
17	5K24008-MS1	17	Unknown		24/Nov/15 15:17:05	Finished
18	5K24008-MSD1	18	Unknown		24/Nov/15 15:34:55	Finished
19	5K24008-DUP1	19	Unknown		24/Nov/15 15:52:46	Finished
20	SEQ-CCV2	20	Unknown		24/Nov/15 16:10:36	Finished
21	SEQ-CCB2	21	Unknown		24/Nov/15 16:28:26	Finished
22	1511021-01@10X	22	Unknown		24/Nov/15 16:46:17	Finished
23	1511021-01RE1@10	23	Unknown		24/Nov/15 17:04:07	Finished
24	1511021-02@10X	24	Unknown		24/Nov/15 17:21:57	Finished
25	1511021-02RE1@10	25	Unknown		24/Nov/15 17:39:48	Finished
26	SEQ-CCV3	26	Unknown		24/Nov/15 17:57:38	Finished
27	SEQ-CCB3	27	Unknown		24/Nov/15 18:15:29	Finished
28	BLANK	28	Unknown		24/Nov/15 18:33:19	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

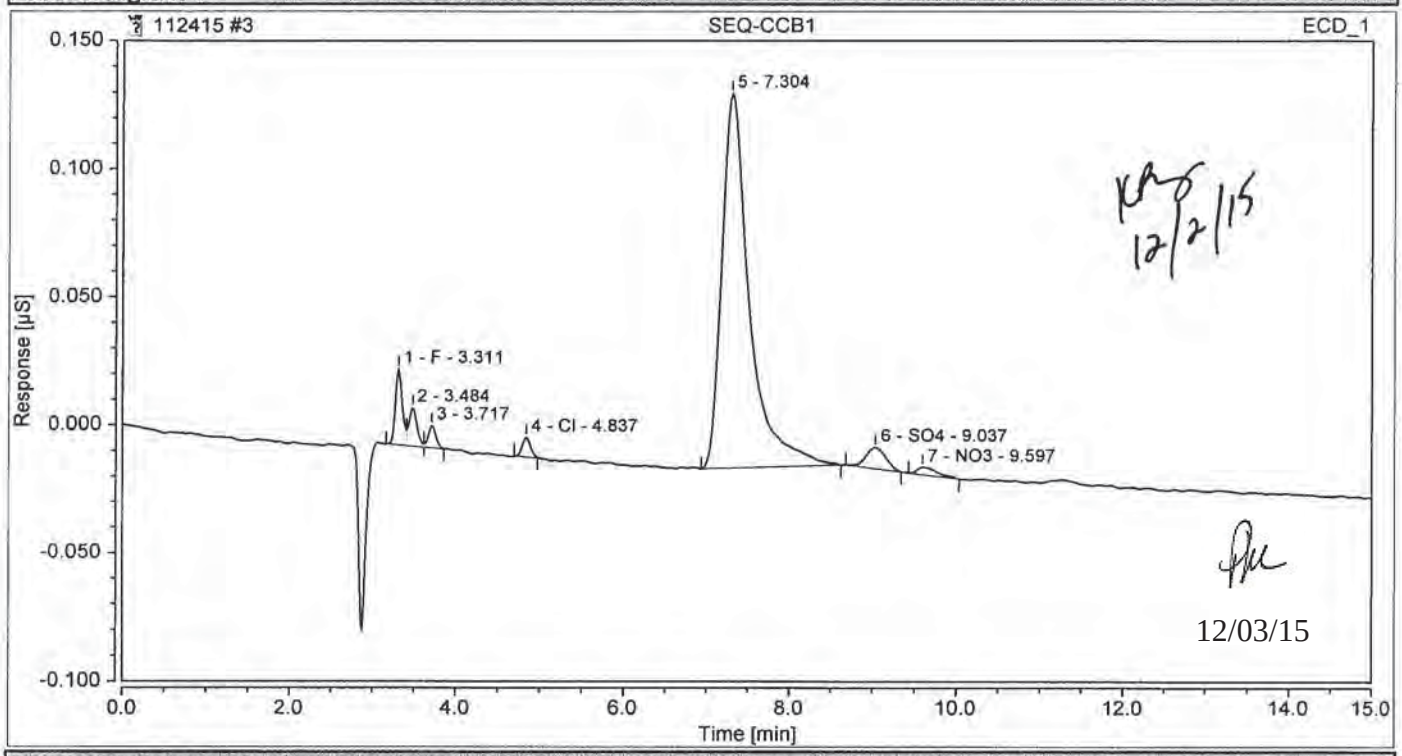
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2705989	12.614	6.79	10.51	2.5626
2		3.751	0.0165799	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7019628	64.849	41.18	54.04	25.3073
4		5.494	0.0004901	0.004	0.00	0.00	n.a.
5	NO2	5.851	1.5240646	9.858	8.15	8.21	2.6783
6		7.251	0.0484673	0.161	0.26	0.13	n.a.
7	Br	8.151	0.7982884	4.298	4.27	3.58	6.1888
8	SO4	8.808	5.5356306	20.443	29.60	17.03	24.7573
9	NO3	9.578	1.8052042	7.718	9.65	6.43	2.3373
10		11.254	0.0013871	0.004	0.01	0.00	n.a.
Total:			**18.703**	**120.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

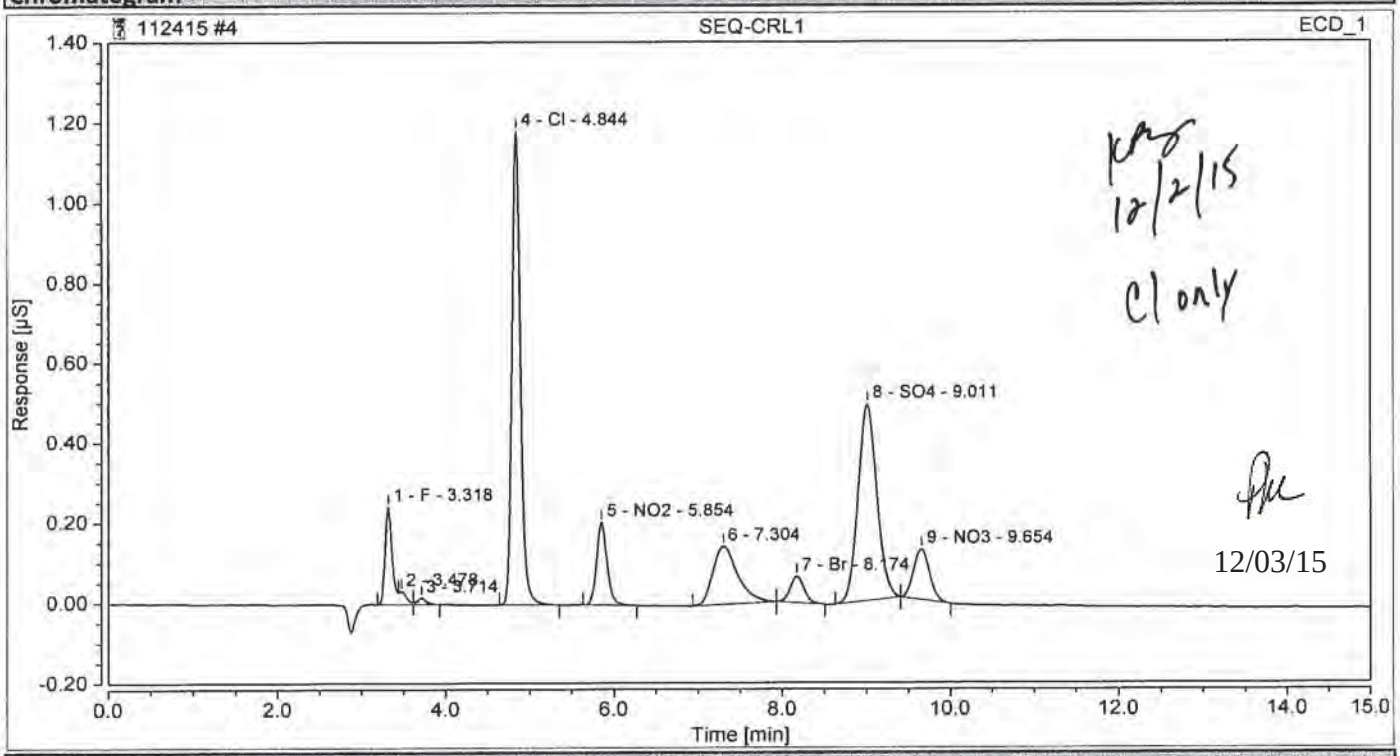
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0028367	0.030	4.30	13.58	0.0057
2		3.484	0.0016975	0.015	2.57	6.95	n.a.
3		3.717	0.0009154	0.009	1.39	4.01	n.a.
4	Cl	4.837	0.0008656	0.008	1.31	3.53	0.0028
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.304	0.0564475	0.146	85.58	66.68	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	9.037	0.0022898	0.008	3.47	3.85	0.0102
7	NO3	9.597	0.0009099	0.003	1.38	1.39	0.0012
Total:			**0.066**	**0.219**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL1**	*Run Time (min):*	**15.00**
Vial Number:	**4**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

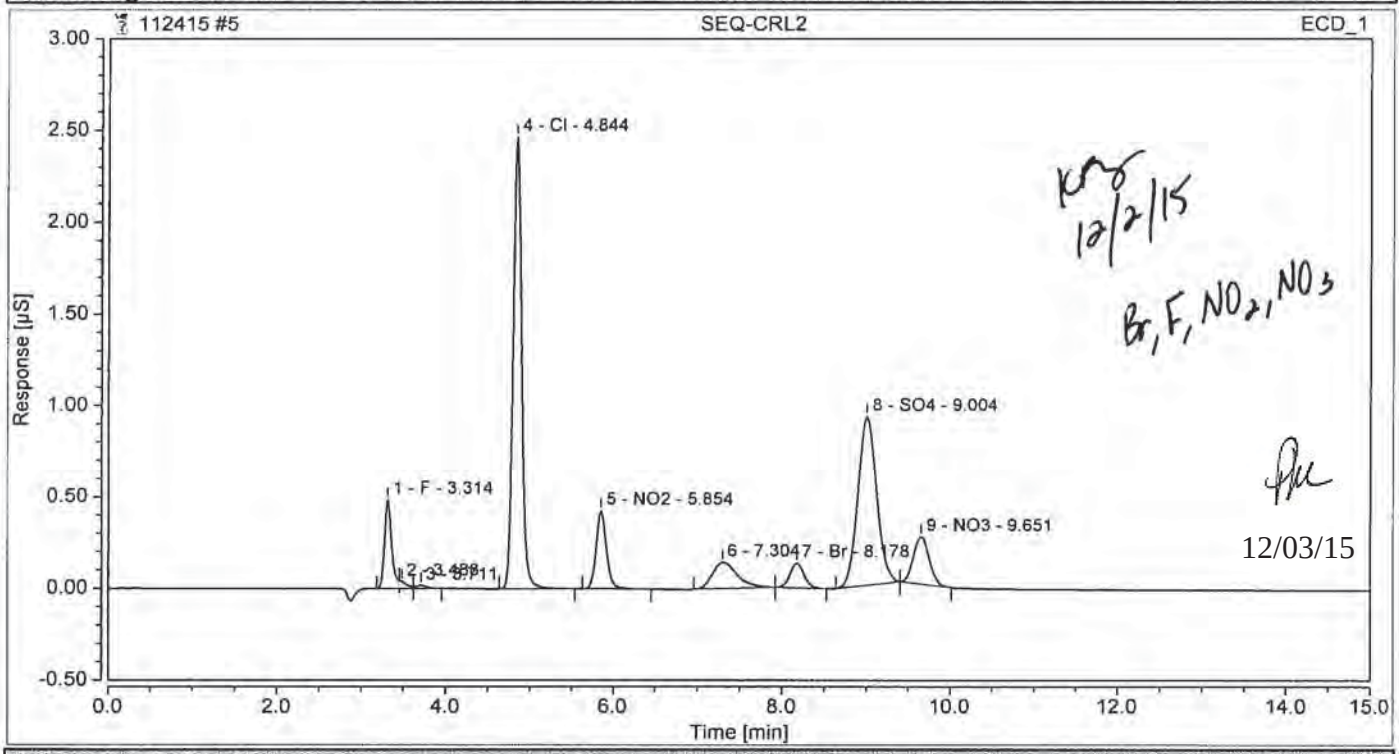
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0234570	0.245	5.67	9.73	0.0473
2		3.478	0.0035300	0.033	0.85	1.31	n.a.
3		3.714	0.0020760	0.017	0.50	0.66	n.a.
4	Cl	4.844	0.1377524	1.183	33.30	47.10	0.4526
5	NO2	5.854	0.0297125	0.207	7.18	8.23	0.0522
6		7.304	0.0493112	0.145	11.92	5.76	n.a.
7	Br	8.174	0.0127636	0.066	3.09	2.64	0.0990
8	SO4	9.011	0.1273038	0.491	30.77	19.56	0.5693
9	NO3	9.654	0.0277810	0.126	6.72	5.00	0.0360
Total:			**0.414**	**2.513**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL2**	*Run Time (min):*	**15.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

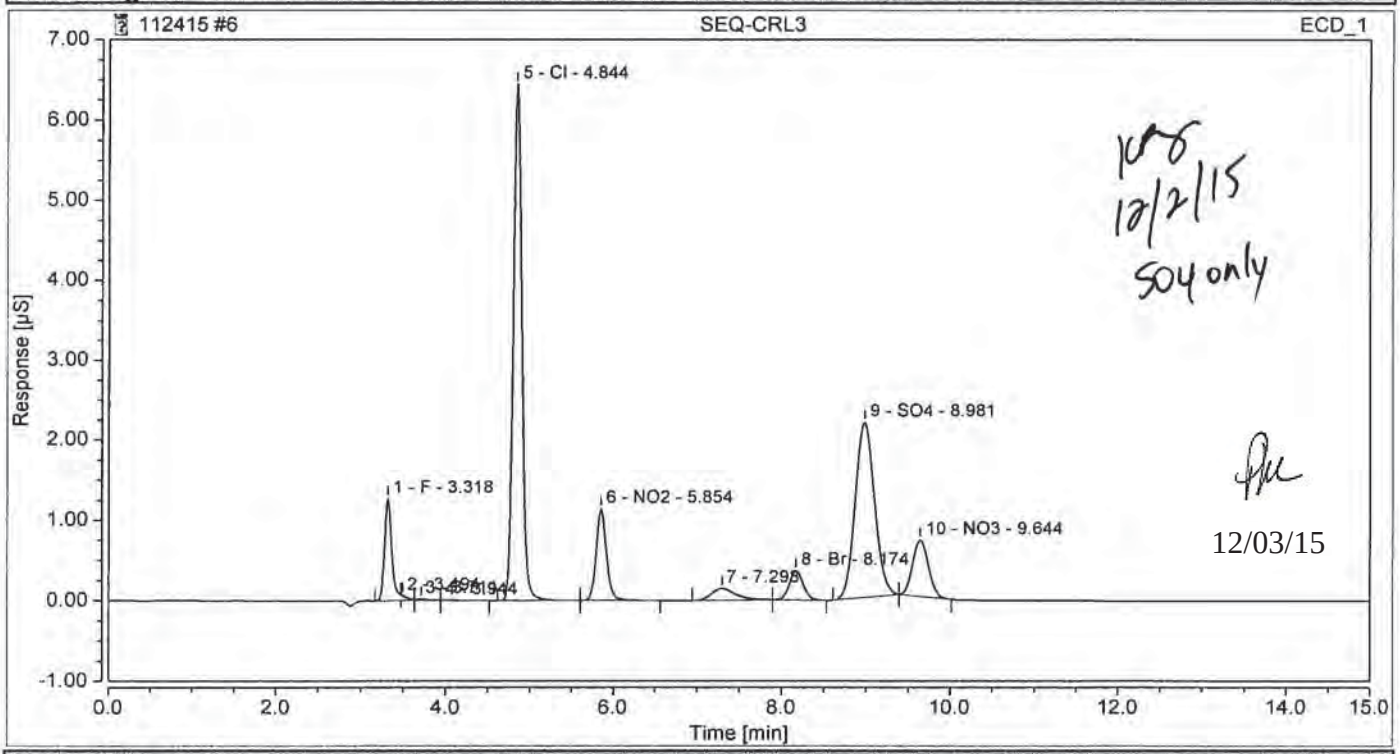
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0463111	0.486	6.02	9.93	0.0934
2		3.488	0.0040702	0.038	0.53	0.78	n.a.
3		3.711	0.0022268	0.016	0.29	0.34	n.a.
4	Cl	4.844	0.2867254	2.467	37.25	50.39	0.9421
5	NO2	5.854	0.0617777	0.429	8.03	8.76	0.1086
6		7.304	0.0487962	0.144	6.34	2.94	n.a.
7	Br	8.178	0.0260488	0.136	3.38	2.77	0.2019
8	SO4	9.004	0.2374141	0.921	30.85	18.82	1.0618
9	NO3	9.651	0.0563100	0.258	7.32	5.26	0.0729
Total:			**0.770**	**4.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL3**	*Run Time (min):*	**15.00**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

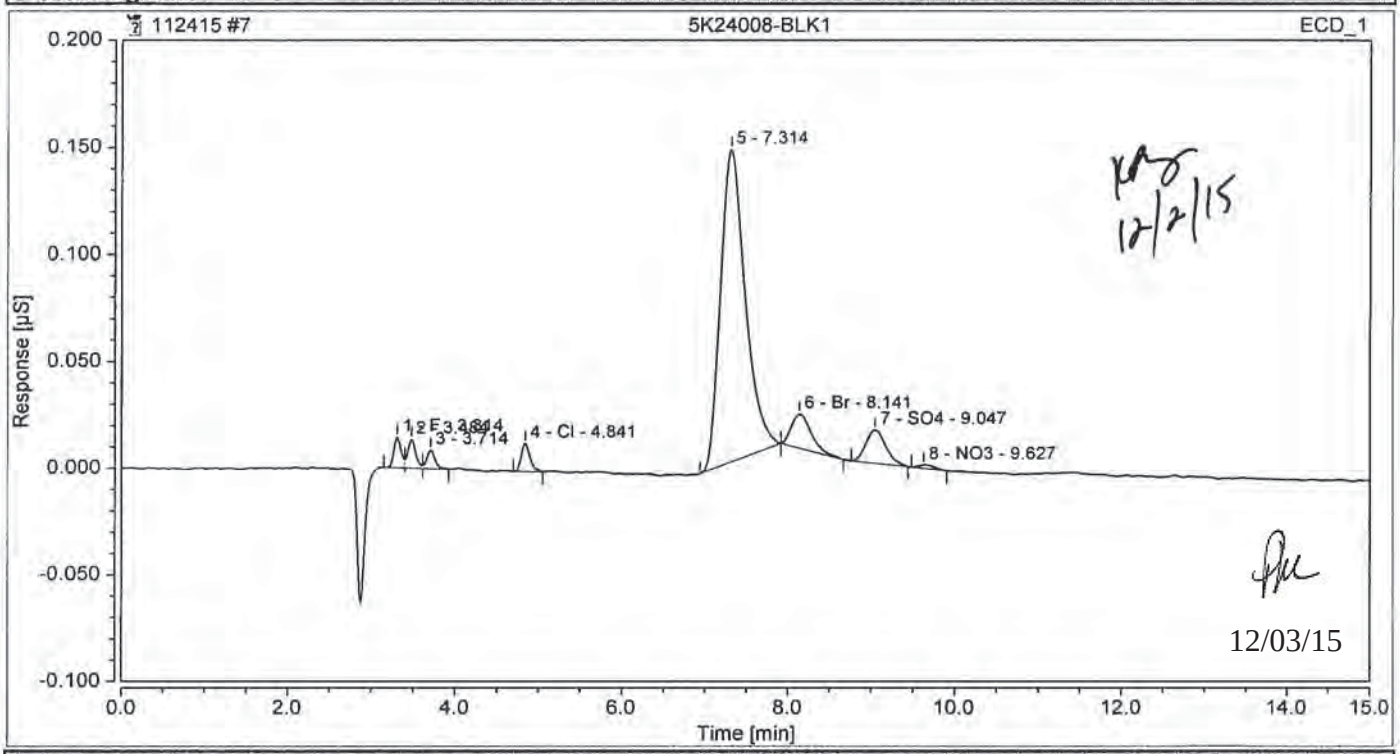
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.1220404	1.271	6.42	10.29	0.2461
2		3.494	0.0059868	0.064	0.31	0.52	n.a.
3		3.711	0.0041172	0.023	0.22	0.19	n.a.
4		3.944	0.0013449	0.005	0.07	0.04	n.a.
5	Cl	4.844	0.7552784	6.444	39.72	52.16	2.4817
6	NO2	5.854	0.1631556	1.142	8.58	9.24	0.2867
7		7.298	0.0499198	0.150	2.63	1.21	n.a.
8	Br	8.174	0.0693017	0.365	3.64	2.96	0.5373
9	SO4	8.981	0.5763721	2.186	30.31	17.69	2.5777
10	NO3	9.644	0.1539200	0.703	8.09	5.69	0.1993
Total:			**1.901**	**12.354**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K24008-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

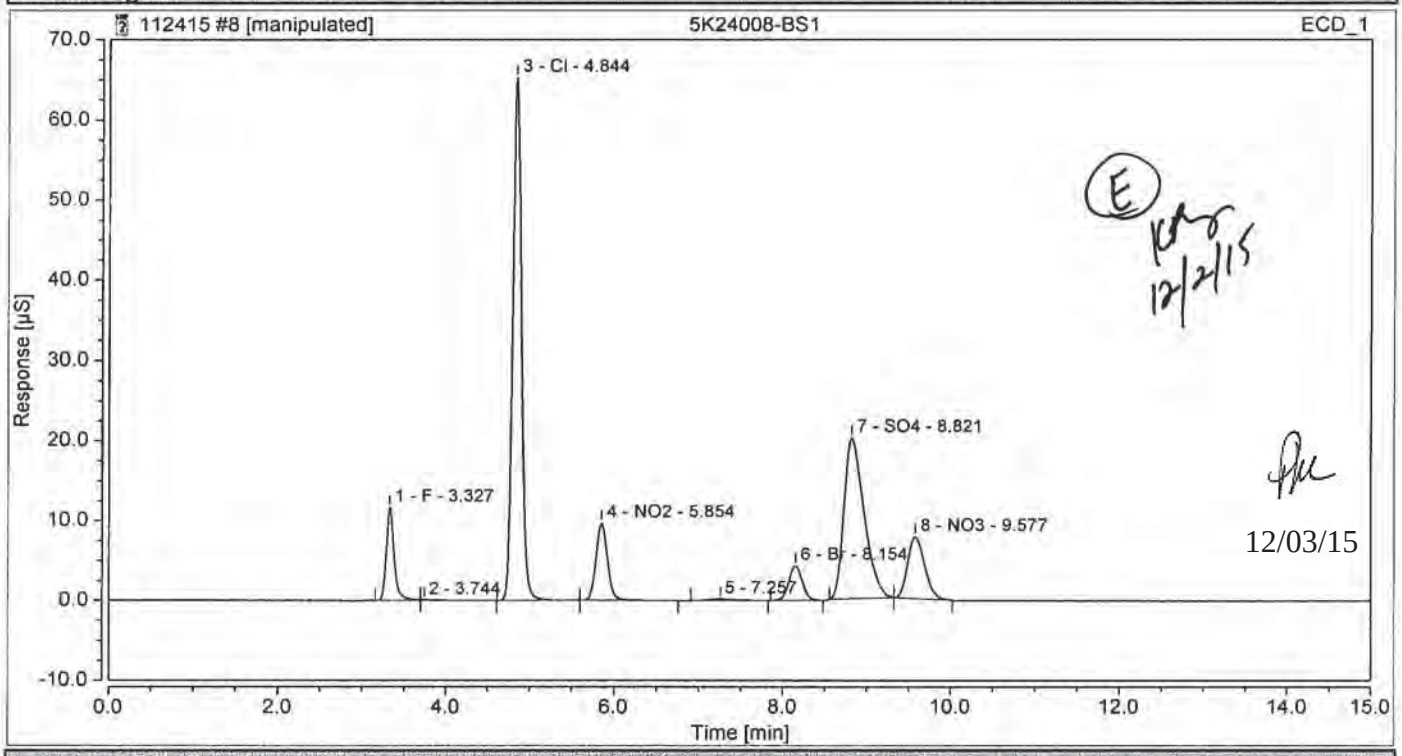
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0014124	0.014	2.17	6.30	0.0028
2		3.484	0.0015164	0.014	2.33	5.94	n.a.
3		3.714	0.0009678	0.009	1.49	3.78	n.a.
4	Cl	4.841	0.0016419	0.013	2.52	5.82	0.0054
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.314	0.0503585	0.146	77.33	63.65	n.a.
6	Br	8.141	0.0045066	0.016	6.92	6.99	0.0349
7	SO4	9.047	0.0043776	0.016	6.72	6.85	0.0196
8	NO3	9.627	0.0003436	0.002	0.53	0.67	0.0004
Total:			**0.065**	**0.230**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

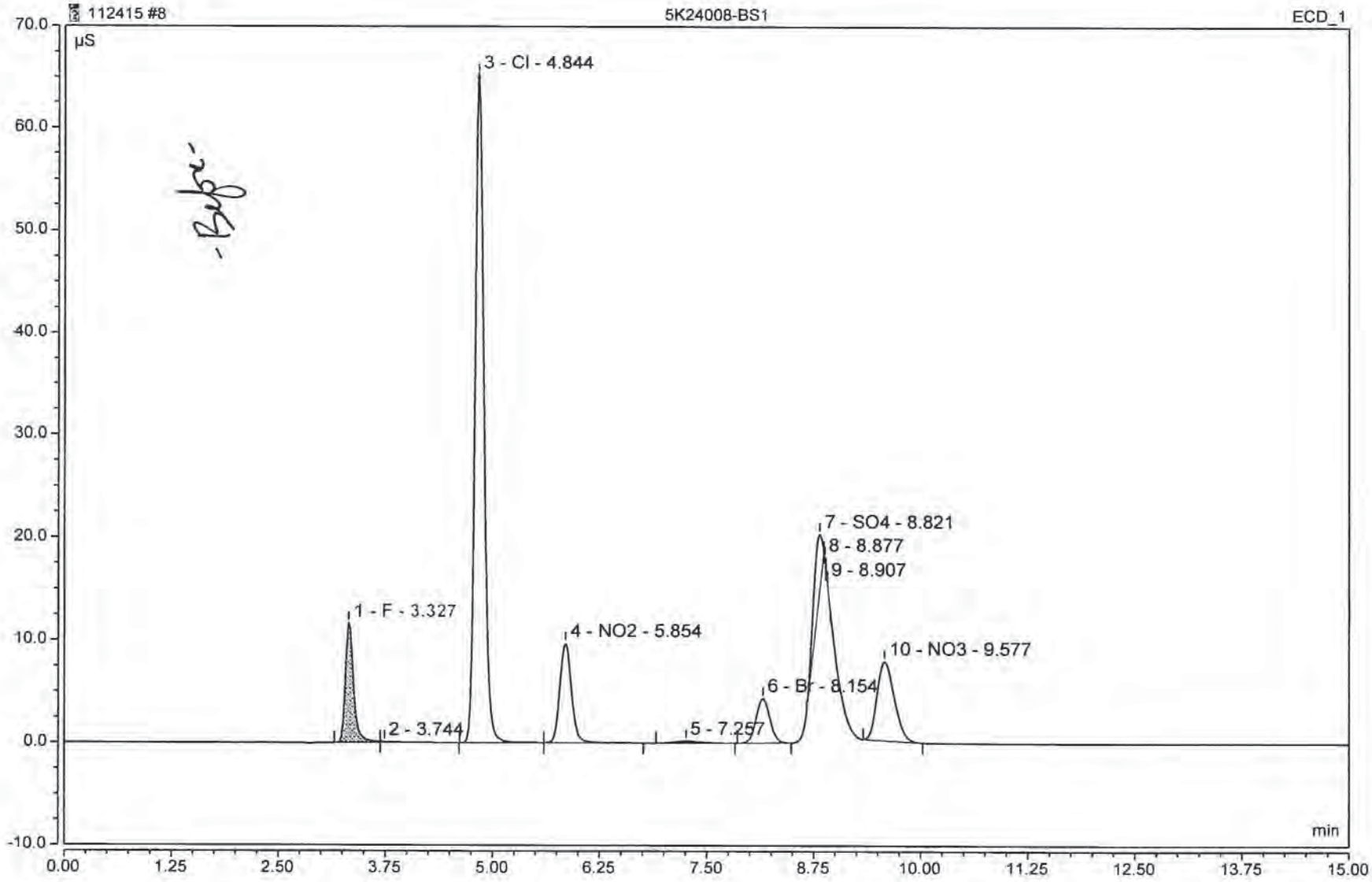
Injection Name:	**5K24008-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2791783	11.655	6.80	9.79	2.5800
2		3.744	0.0246001	0.086	0.13	0.07	n.a.
3	Cl	4.844	7.7768016	65.251	41.32	54.79	25.5532
4	NO2	5.854	1.5205323	9.693	8.08	8.14	2.6721
5		7.257	0.0613635	0.193	0.33	0.16	n.a.
6	Br	8.154	0.8100872	4.347	4.30	3.65	6.2803
7	SO4	8.821	5.5401456	20.145	29.43	16.91	24.7775
8	NO3	9.577	1.8090172	7.729	9.61	6.49	2.3422
Total:			**18.822**	**119.098**	**100.00**	**100.00**	



-Br-

120

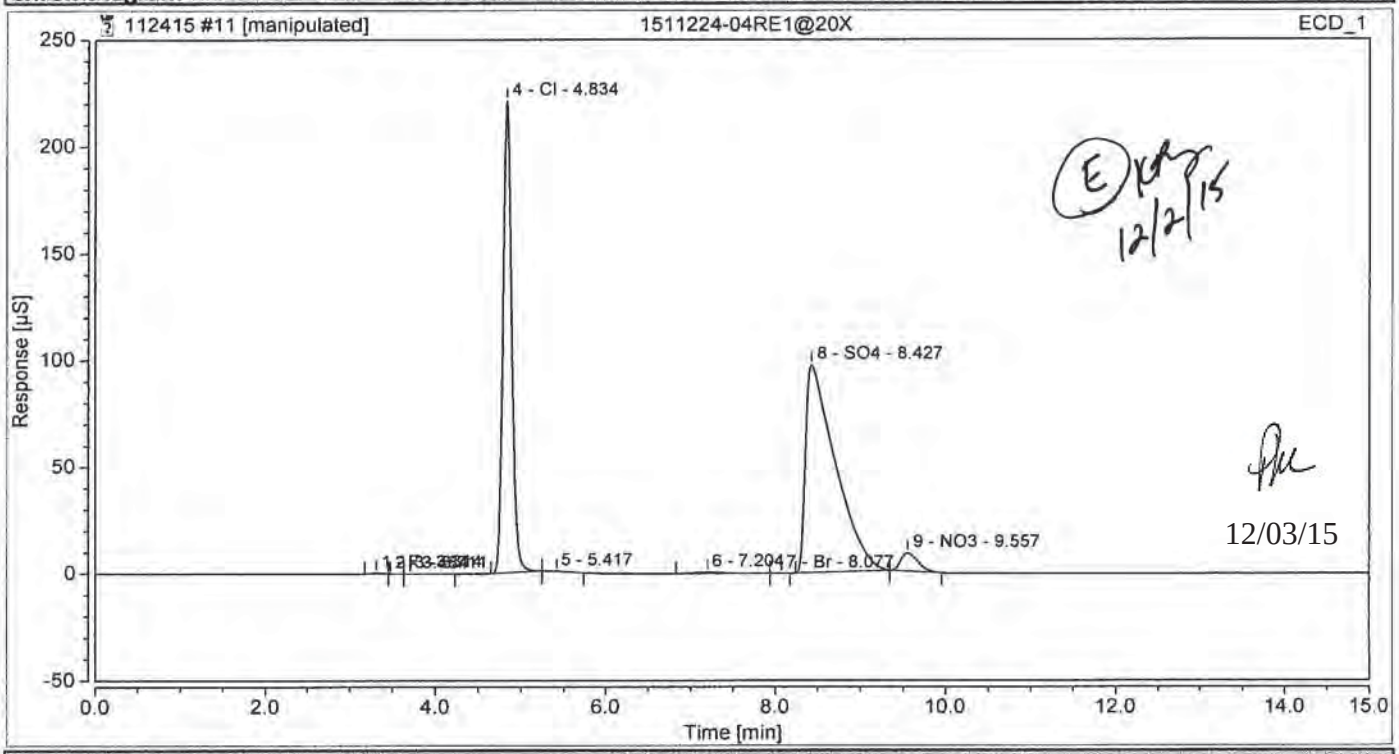
1511224

Chromatogram and Results

Injection Details

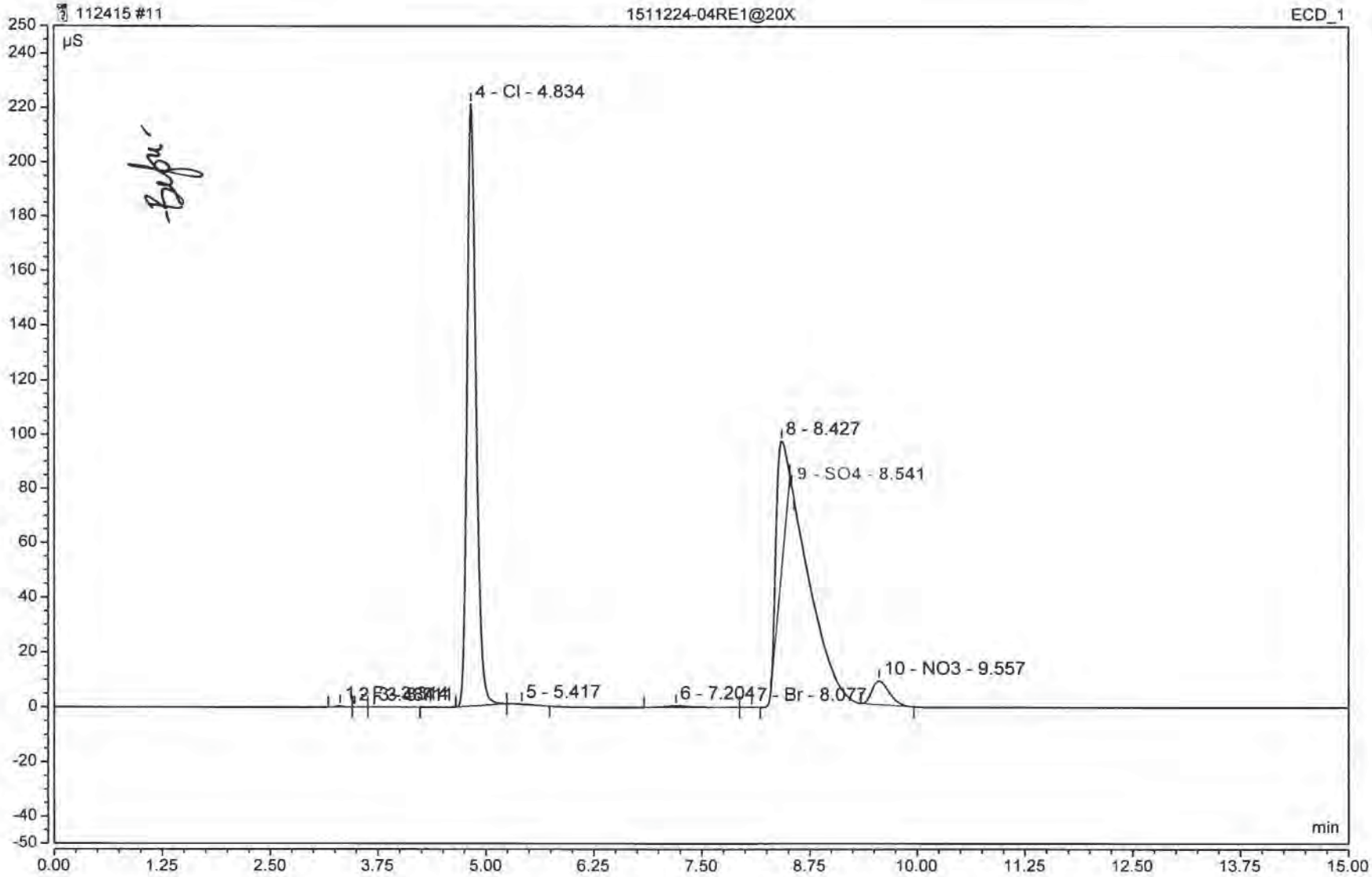
Injection Name:	**1511224-04RE1@20X**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0397200	0.390	0.06	0.12	0.0801
2		3.484	0.0039282	0.038	0.01	0.01	n.a.
3		3.711	0.0021950	0.012	0.00	0.00	n.a.
4	Cl	4.834	26.6381311	220.979	38.99	67.32	87.5283
5		5.417	0.0422264	0.155	0.06	0.05	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		7.204	0.2187776	0.629	0.32	0.19	n.a.
7	Br	8.077	0.0015659	0.013	0.00	0.00	0.0121
8	SO4	8.427	39.3693356	97.433	57.62	29.68	176.0735
9	NO3	9.557	2.0112730	8.610	2.94	2.62	2.6041
Total:			**68.327**	**328.259**	**100.00**	**100.00**	



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122

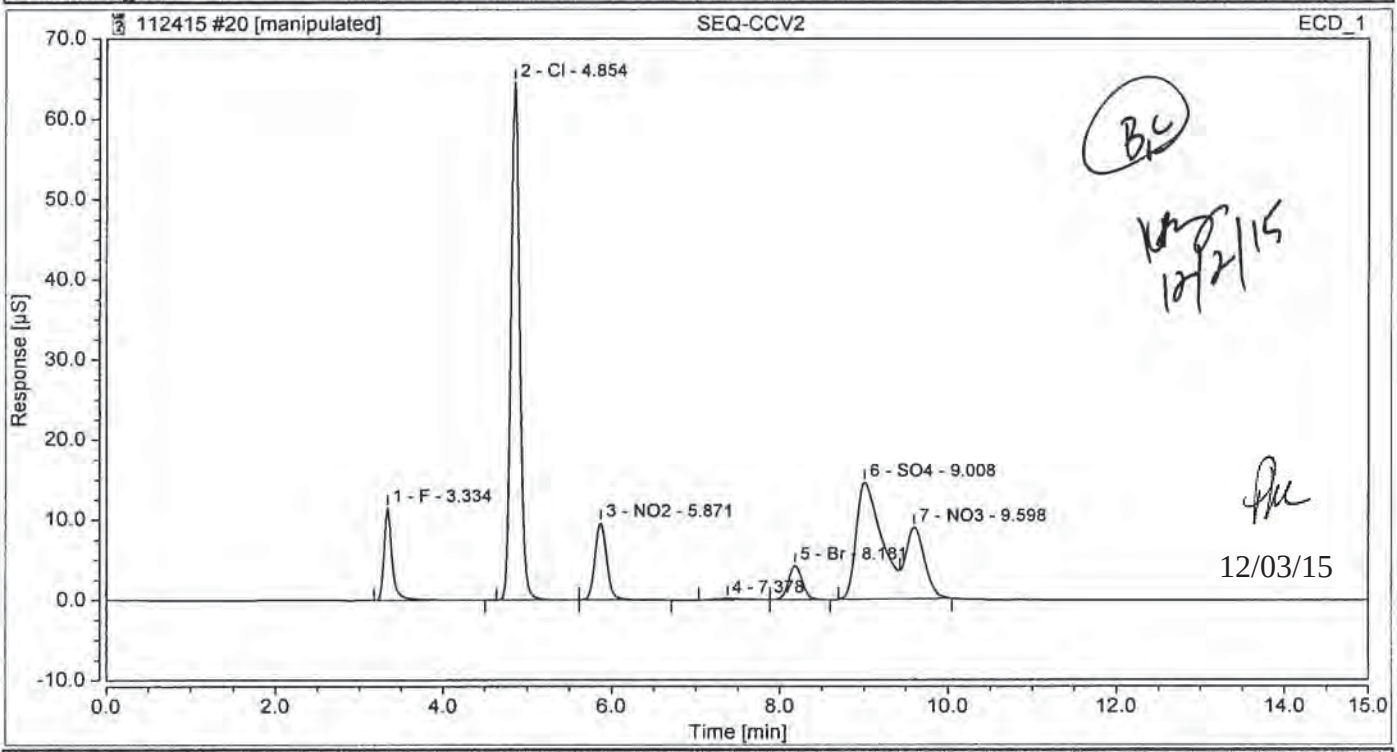
1511224

Chromatogram and Results

Injection Details

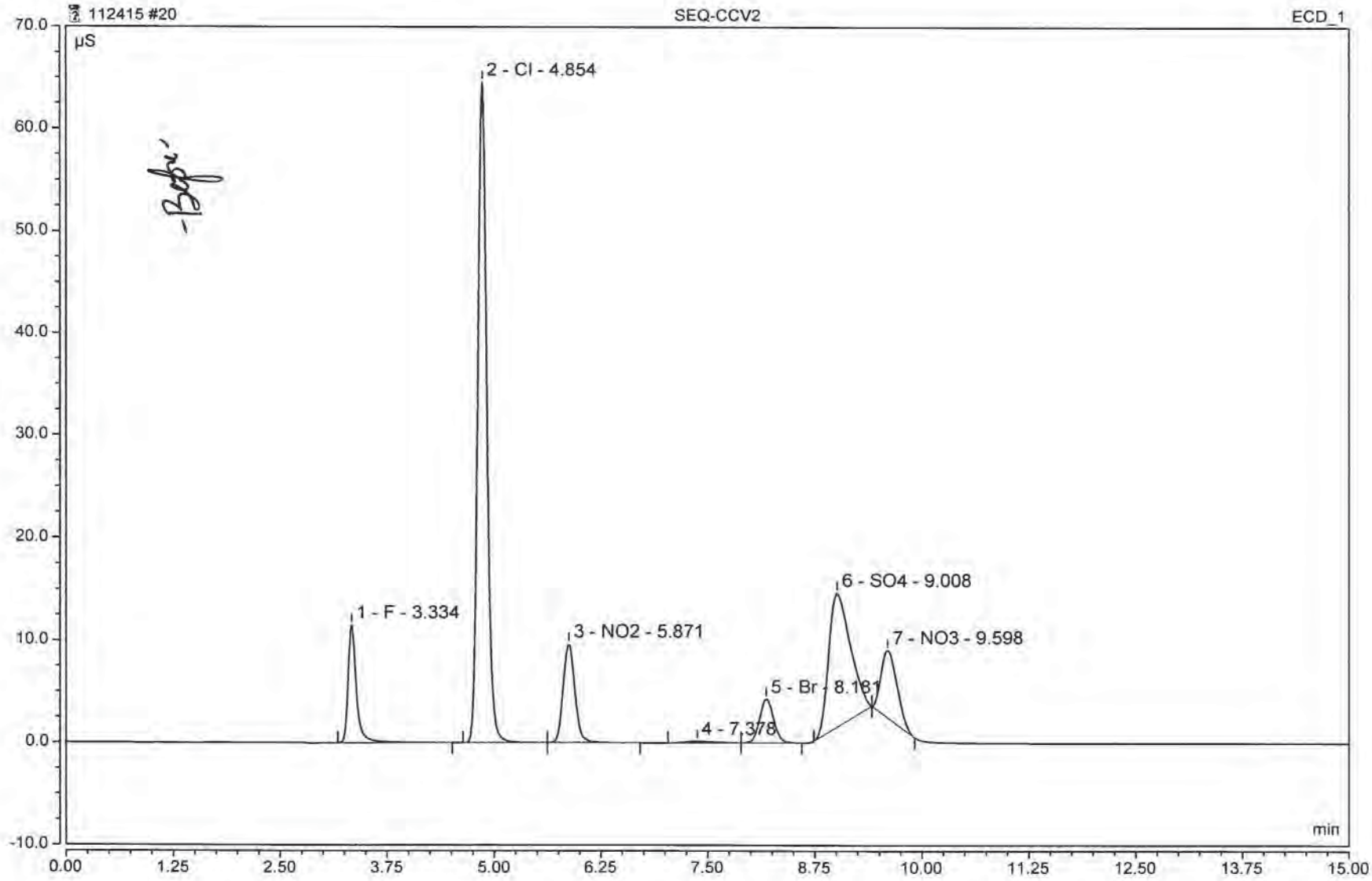
Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**20**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.334	1.2929585	11.531	6.80	10.13	2.6077
2	Cl	4.854	7.8091157	64.592	41.08	56.76	25.6594
3	NO2	5.871	1.5302191	9.658	8.05	8.49	2.6892
4		7.378	0.0588162	0.167	0.31	0.15	n.a.
5	Br	8.181	0.8118993	4.266	4.27	3.75	6.2943
6	SO4	9.008	5.1280134	14.611	26.98	12.84	22.9343
7	NO3	9.598	2.3790218	8.964	12.51	7.88	3.0802
Total:			**19.010**	**113.789**	**100.00**	**100.00**	

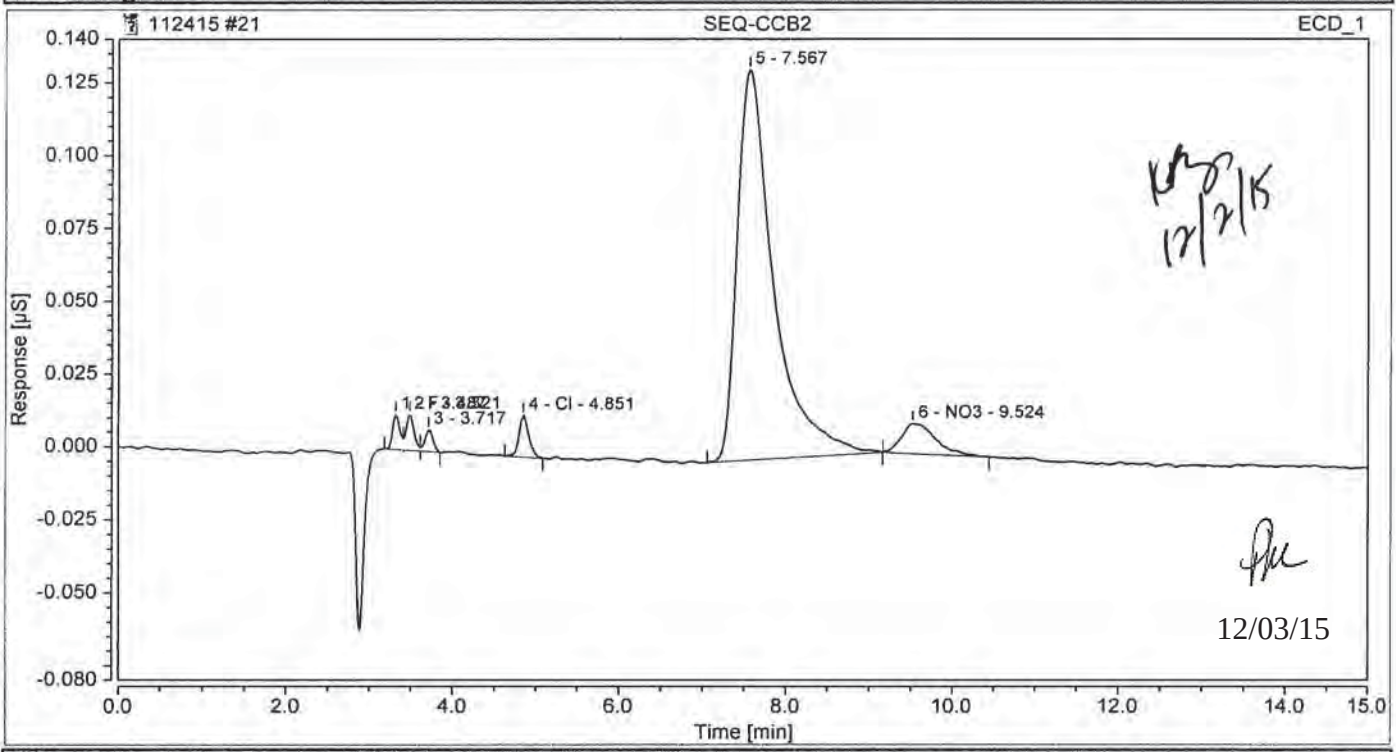

112415 #20
SEQ-CCV2
ECD_1
µS
2 - Cl - 4.854
1 - F - 3.334
3 - NO2 - 5.871
4 - 7.378
5 - Br - 8.181
6 - SO4 - 9.008
7 - NO3 - 9.598
min
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**21**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 16:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0011899	0.012	1.53	6.33	0.0024
2		3.487	0.0013890	0.012	1.78	6.52	n.a.
3		3.717	0.0008291	0.008	1.06	3.96	n.a.
4	Cl	4.851	0.0019656	0.014	2.52	7.53	0.0065
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.567	0.0676114	0.134	86.73	70.23	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NO3	9.524	0.0049676	0.010	6.37	5.43	0.0064
Total:			**0.078**	**0.191**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**112015**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/Dec/15 17:47:43**
No. of Injections:	**69**	*Updated By:*	**NSH-IONC2**

Injection Details

No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		20/Nov/15 14:26:42	Finished
2	SEQ-CCV1	2	Unknown		20/Nov/15 14:44:28	Finished
3	SEQ-CCB1	3	Unknown		20/Nov/15 15:02:19	Finished
4	1511199-14RE1	4	Unknown		20/Nov/15 15:20:09	Finished
5	1511199-13RE1	5	Unknown		20/Nov/15 15:37:58	Finished
6	SEQ-CRL1	6	Unknown		20/Nov/15 15:55:49	Finished
7	SEQ-CRL2	7	Unknown		20/Nov/15 16:13:39	Finished
8	SEQ-CRL3	8	Unknown		20/Nov/15 16:31:30	Finished
9	5K20011-BLK1	9	Unknown		20/Nov/15 16:49:20	Finished
10	5K20011-BS1	10	Unknown		20/Nov/15 17:07:10	Finished
11	1511224-01	11	Unknown		20/Nov/15 17:25:01	Finished
12	1511224-02	12	Unknown		20/Nov/15 17:42:51	Finished
13	1511224-03	13	Unknown		20/Nov/15 18:00:42	Finished
14	5K20011-MS1	14	Unknown		20/Nov/15 18:18:33	Finished
15	5K20011-MSD1	15	Unknown		20/Nov/15 18:36:23	Finished
16	5K20011-DUP1	16	Unknown		20/Nov/15 18:54:13	Finished
17	1511224-04	17	Unknown		20/Nov/15 19:12:03	Finished
18	1511224-05	18	Unknown		20/Nov/15 19:29:53	Finished
19	1511224-06	19	Unknown		20/Nov/15 19:47:44	Finished
20	1511225-01	20	Unknown		20/Nov/15 20:05:34	Finished
21	1511225-03	21	Unknown		20/Nov/15 20:23:25	Finished
22	SEQ-CCV2	22	Unknown		20/Nov/15 20:41:14	Finished
23	SEQ-CCB2	23	Unknown		20/Nov/15 20:59:04	Finished
24	1511225-04	24	Unknown		20/Nov/15 21:16:55	Finished
25	1511226-01	25	Unknown		20/Nov/15 21:34:45	Finished
26	1511226-02	26	Unknown		20/Nov/15 21:52:34	Finished
27	1511226-03	27	Unknown		20/Nov/15 22:10:25	Finished
28	5K20011-MS2	28	Unknown		20/Nov/15 22:28:15	Finished
29	5K20011-MSD2	29	Unknown		20/Nov/15 22:46:06	Finished
30	5K20011-DUP2	30	Unknown		20/Nov/15 23:03:56	Finished
31	1511226-04	31	Unknown		20/Nov/15 23:21:46	Finished
32	1511226-05	32	Unknown		20/Nov/15 23:39:37	Finished
33	1511226-06	33	Unknown		20/Nov/15 23:57:27	Finished
34	1511226-07	34	Unknown		21/Nov/15 00:15:18	Finished
35	SEQ-CCV3	35	Unknown		21/Nov/15 00:33:08	Finished
36	SEQ-CCB3	36	Unknown		21/Nov/15 00:50:59	Finished
37	5K20012-BLK1	37	Unknown		21/Nov/15 01:08:49	Finished
38	5K20012-BS1	38	Unknown		21/Nov/15 01:26:40	Finished
39	1511035-01	39	Unknown		21/Nov/15 01:44:31	Finished
40	1511035-03	40	Unknown		21/Nov/15 02:02:20	Finished
41	1511035-05	41	Unknown		21/Nov/15 02:20:11	Finished
42	1511035-07	42	Unknown		21/Nov/15 02:38:01	Finished

43	1511035-09	43	Unknown		21/Nov/15 02:55:52	Finished
44	1511035-11	44	Unknown		21/Nov/15 03:13:42	Finished
45	1511035-13	45	Unknown		21/Nov/15 03:31:32	Finished
46	1511035-15	46	Unknown		21/Nov/15 03:49:23	Finished
47	1511035-17	47	Unknown		21/Nov/15 04:07:13	Finished
48	1511035-19	48	Unknown		21/Nov/15 04:25:04	Finished
49	5K20012-MS1	49	Unknown		21/Nov/15 04:42:54	Finished
50	5K20012-MSD1	50	Unknown		21/Nov/15 05:00:44	Finished
51	5K20012-DUP1	1	Unknown		21/Nov/15 05:18:35	Finished
52	SEQ-CCV4	2	Unknown		21/Nov/15 05:36:25	Finished
53	SEQ-CCB4	3	Unknown		21/Nov/15 05:54:16	Finished
54	1511035-21	4	Unknown		21/Nov/15 06:12:06	Finished
55	1511035-23	5	Unknown		21/Nov/15 06:29:55	Finished
56	1511035-25	6	Unknown		21/Nov/15 06:47:45	Finished
57	1511068-01	7	Unknown		21/Nov/15 07:05:35	Finished
58	1511068-03	8	Unknown		21/Nov/15 07:23:25	Finished
59	1511068-05	9	Unknown		21/Nov/15 07:41:16	Finished
60	1511068-07	10	Unknown		21/Nov/15 07:59:06	Finished
61	1511068-09	11	Unknown		21/Nov/15 08:16:56	Finished
62	1511068-11	12	Unknown		21/Nov/15 08:34:47	Finished
63	1511068-13	13	Unknown		21/Nov/15 08:52:37	Finished
64	5K20012-MS2	14	Unknown		21/Nov/15 09:10:27	Finished
65	5K20012-MSD2	15	Unknown		21/Nov/15 09:28:17	Finished
66	5K20012-DUP2	16	Unknown		21/Nov/15 09:46:08	Interrupted *
67	SEQ-CCV5	17	Unknown		n.a.	Idle
68	SEQ-CCB5	18	Unknown		n.a.	Idle
69	BLANK	19	Unknown		n.a.	Idle

* Run was interupted/stopped, analyst did not realize run was not done on 11/21/15 and filled the ~~eluent~~ eluent water causing the instrument to stop. Using beginning CCV/CCB from 11/21/15 to finish this run. (Ran 2 Hrs after run was stopped)

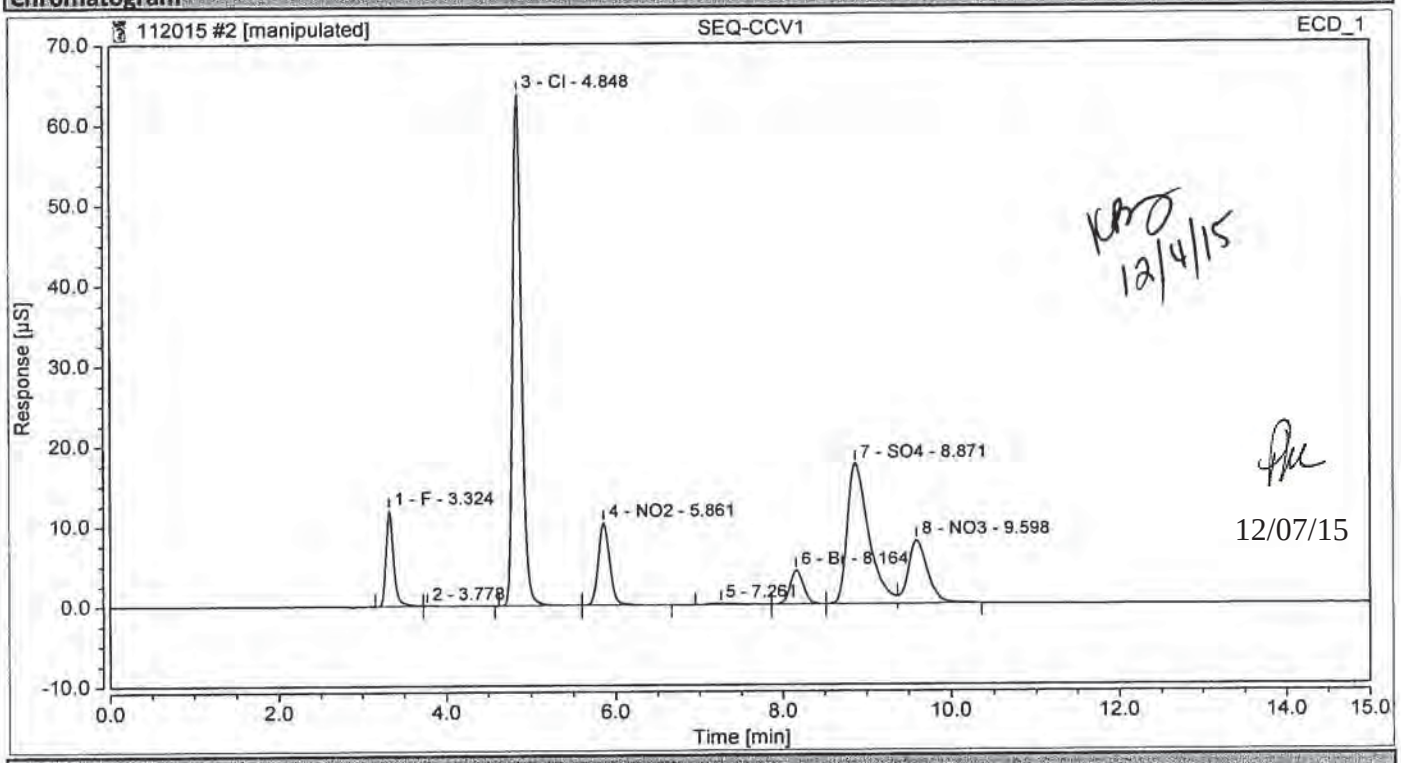
KB 12/4/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

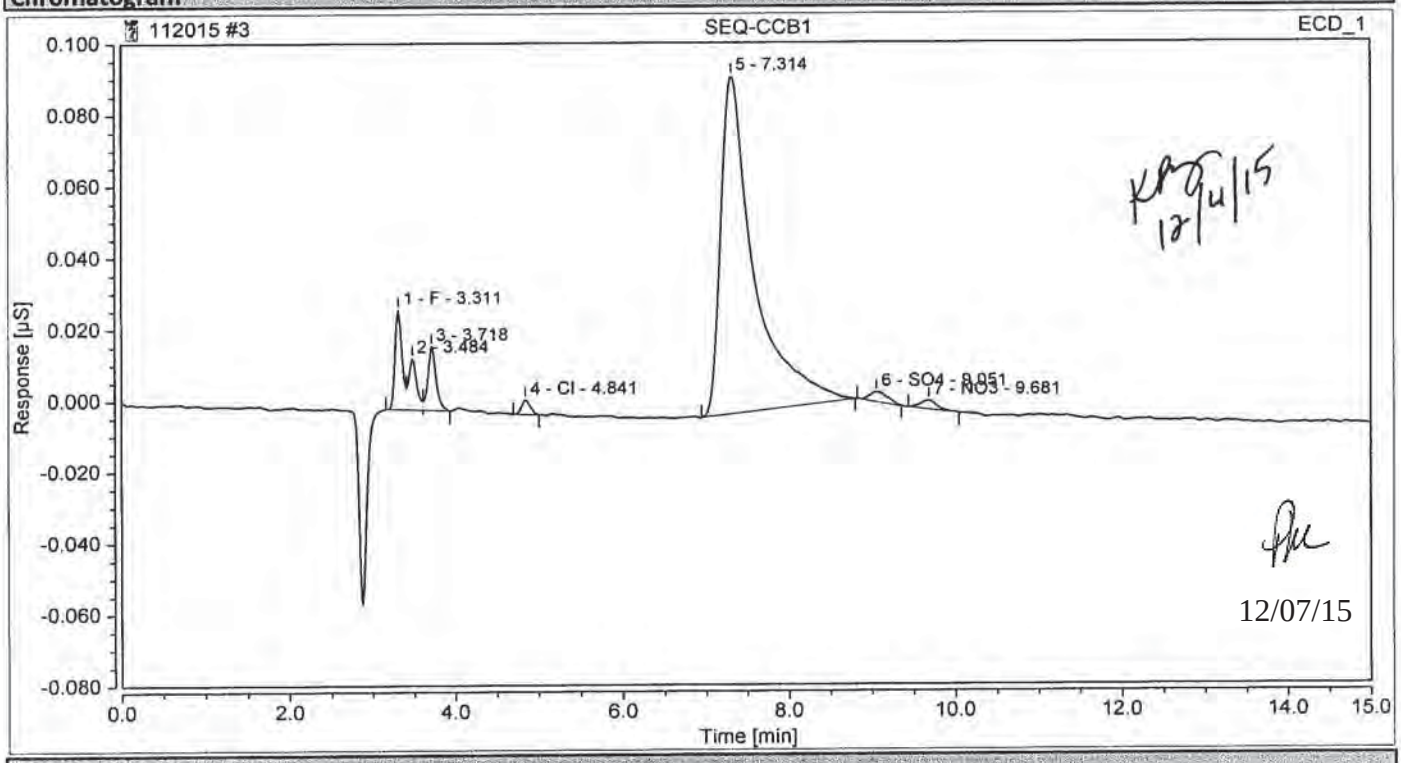
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2495260	12.010	6.67	10.35	2.5201
2		3.778	0.0177791	0.064	0.09	0.06	n.a.
3	Cl	4.848	7.7046069	63.816	41.12	55.02	25.3160
4	NO2	5.861	1.6021927	10.307	8.55	8.89	2.8156
5		7.261	0.0546892	0.162	0.29	0.14	n.a.
6	Br	8.164	0.7987974	4.232	4.26	3.65	6.1928
7	SO4	8.871	5.2207441	17.521	27.87	15.11	23.3490
8	NO3	9.598	2.0865083	7.876	11.14	6.79	2.7015
Total:			**18.735**	**115.988**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 15:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

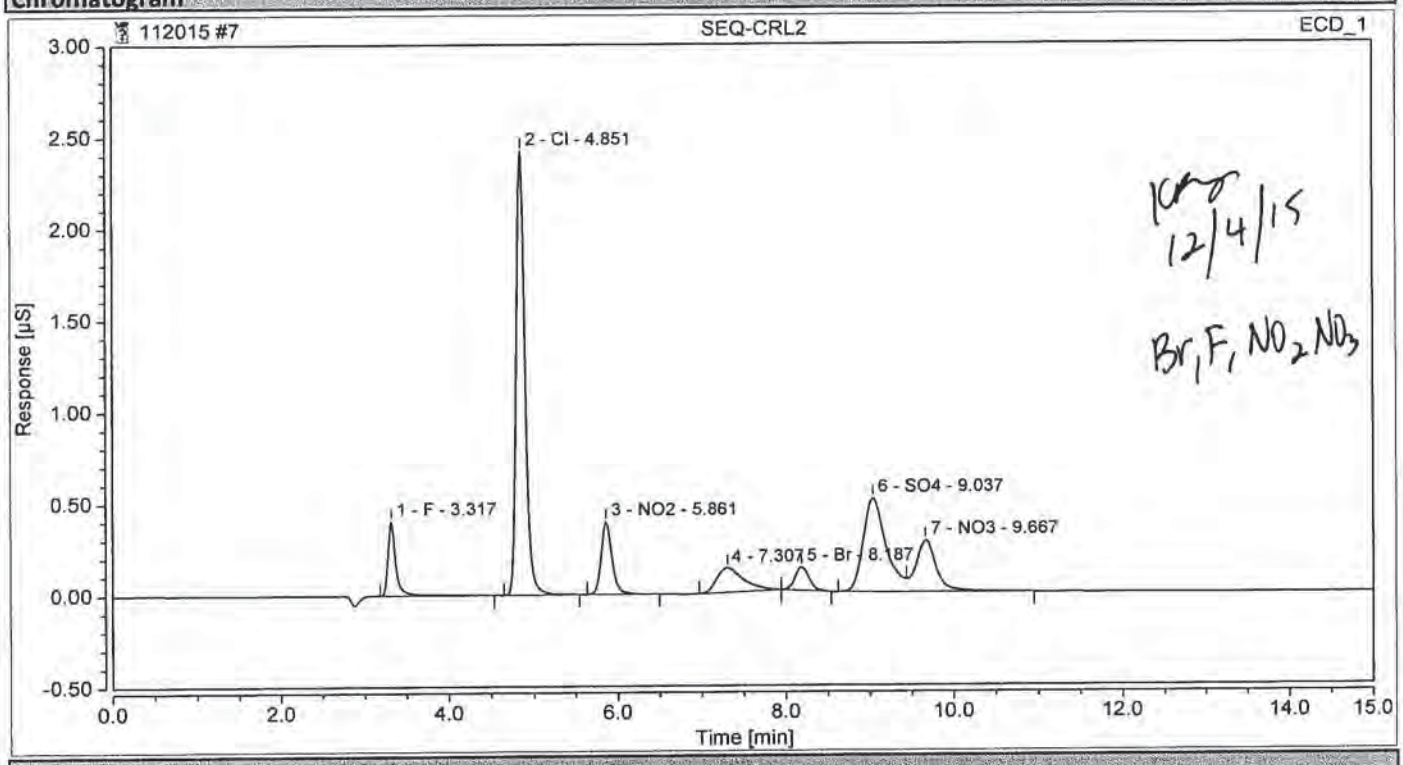
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0026883	0.028	5.12	17.02	0.0054
2		3.484	0.0016489	0.014	3.14	8.78	n.a.
3		3.718	0.0020834	0.018	3.97	10.91	n.a.
4	Cl	4.841	0.0004932	0.004	0.94	2.50	0.0016
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.314	0.0442513	0.095	84.36	57.64	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	9.051	0.0007020	0.003	1.34	1.63	0.0031
7	NO3	9.681	0.0005889	0.003	1.12	1.52	0.0008
Total:			**0.052**	**0.164**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL2**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 16:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.317	0.0430580	0.405	6.11	9.47	0.0868
2	Cl	4.851	0.2875981	2.423	40.84	56.62	0.9450
3	NO2	5.861	0.0588795	0.398	8.36	9.30	0.1035
4		7.307	0.0499310	0.134	7.09	3.13	n.a.
5	Br	8.187	0.0247814	0.128	3.52	3.00	0.1921
6	SO4	9.037	0.1604911	0.510	22.79	11.93	0.7178
7	NO3	9.667	0.0794266	0.280	11.28	6.55	0.1028
Total:			**0.704**	**4.279**	**100.00**	**100.00**	

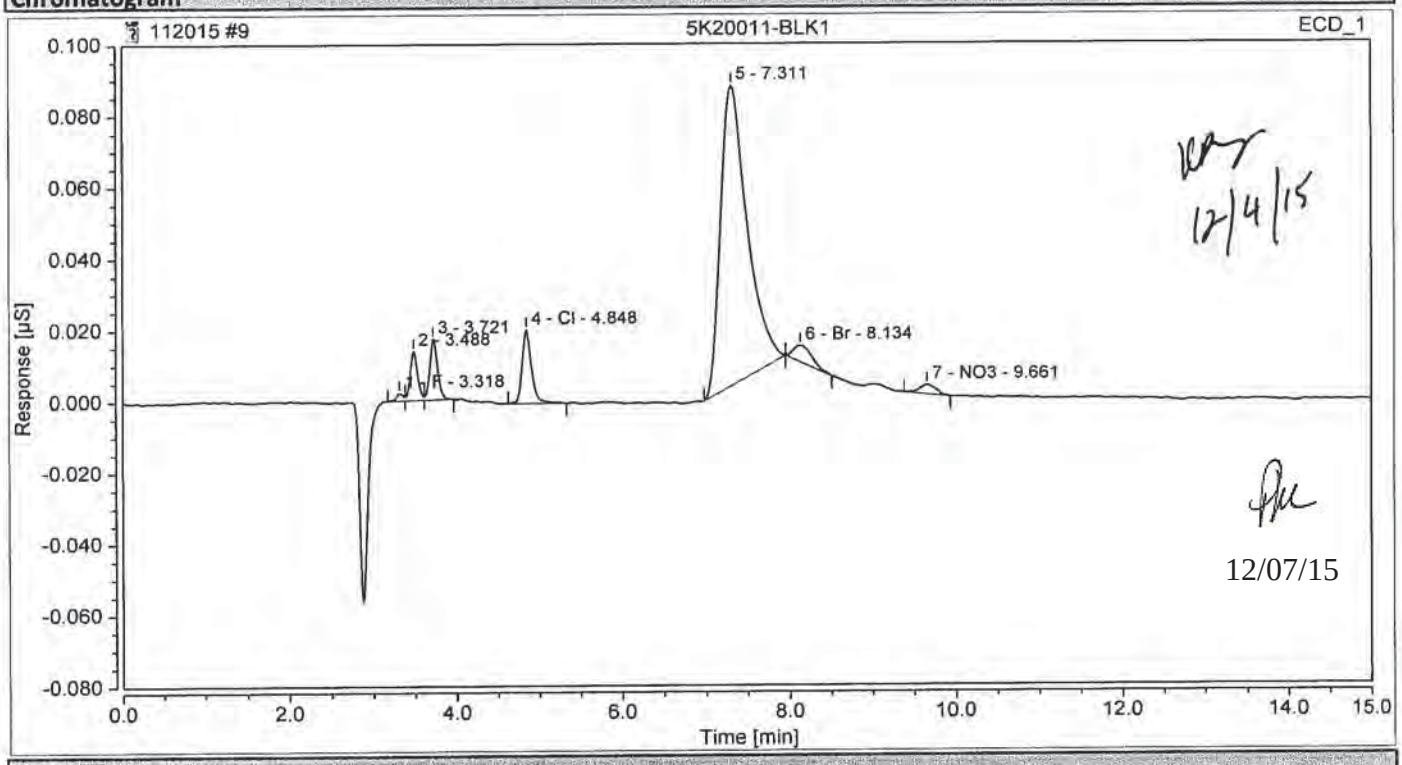
12/07/15

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 16:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

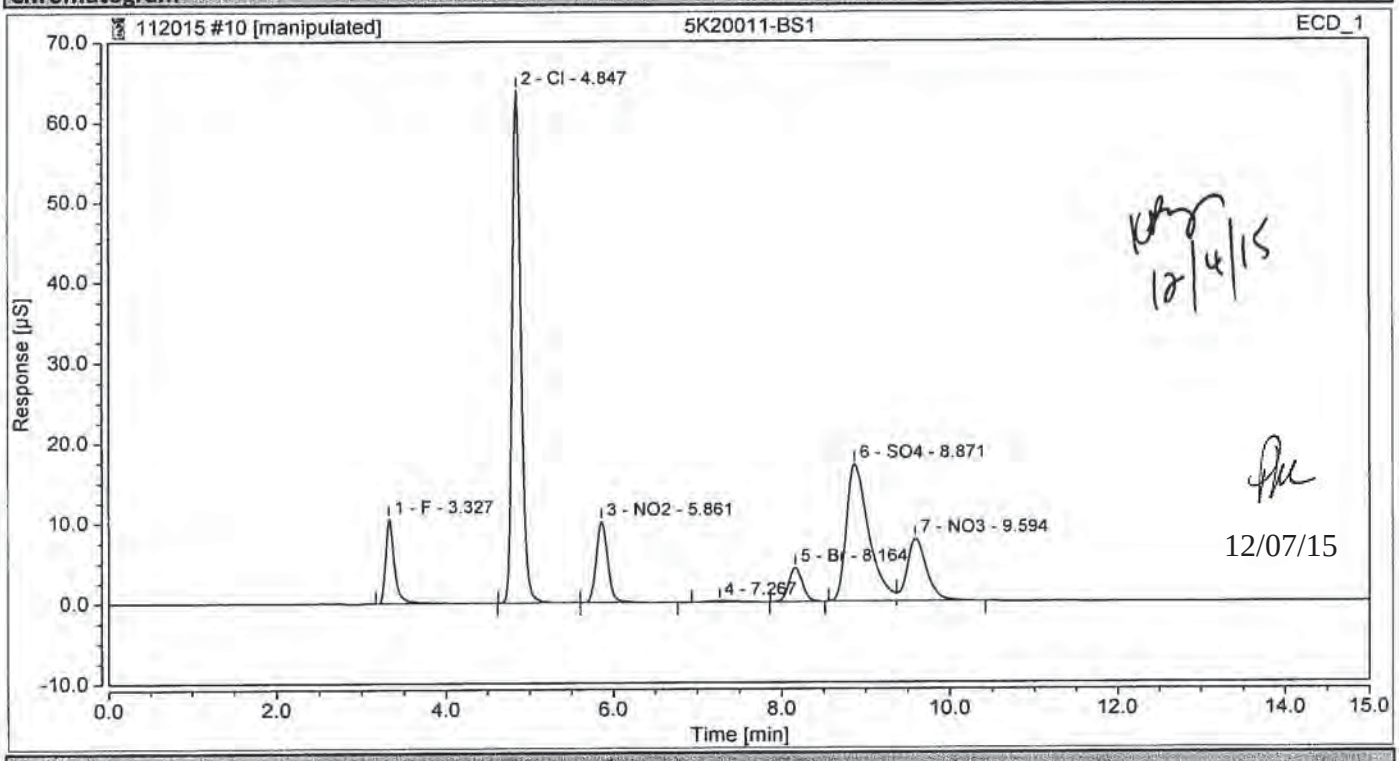
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0002105	0.002	0.54	1.49	0.0004
2		3.488	0.0014544	0.014	3.73	9.51	n.a.
3		3.721	0.0018133	0.017	4.65	11.74	n.a.
4	Cl	4.848	0.0027364	0.021	7.02	14.21	0.0090
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.311	0.0309336	0.084	79.38	58.03	n.a.
6	Br	8.134	0.0012110	0.005	3.11	3.22	0.0094
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.661	0.0006102	0.003	1.57	1.81	0.0008
Total:			**0.039**	**0.145**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

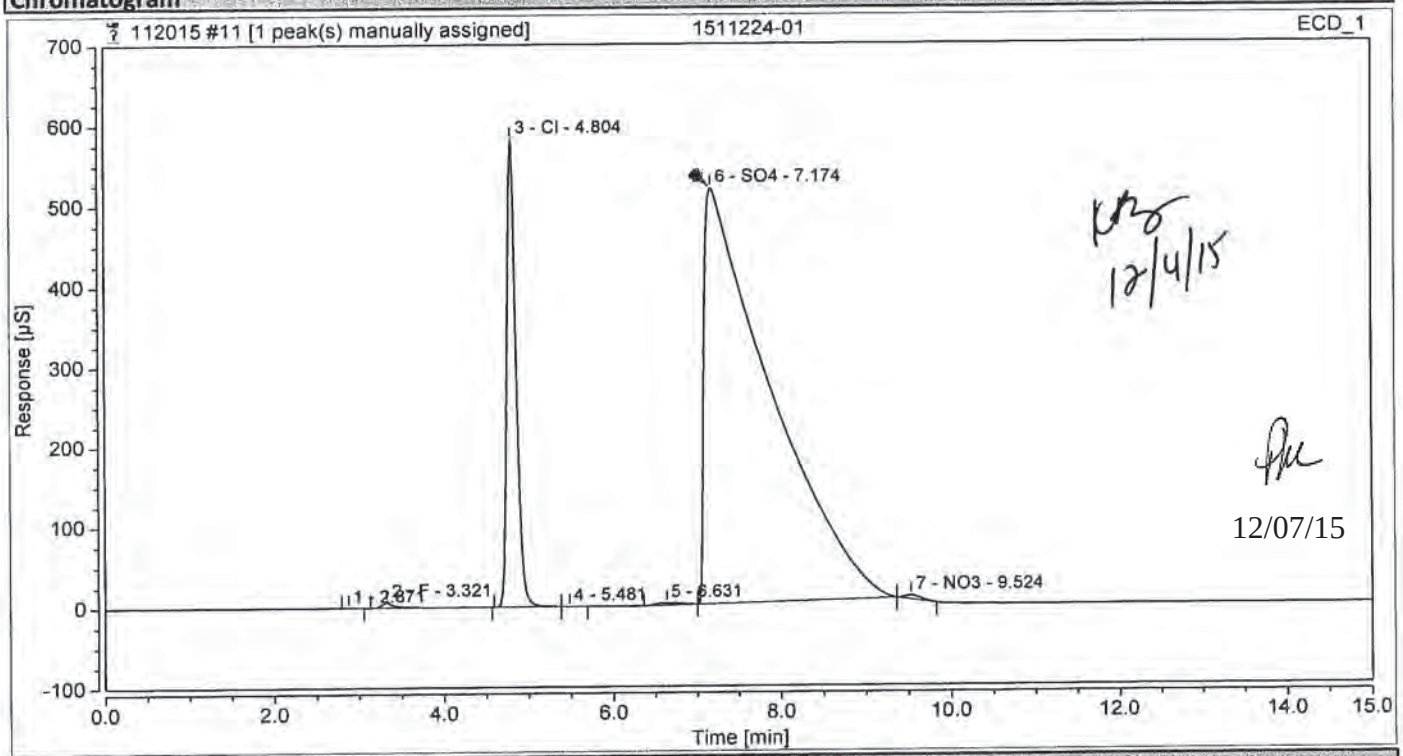
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2680093	10.558	6.72	9.26	2.5574
2	Cl	4.847	7.7815904	63.933	41.23	56.10	25.5690
3	NO2	5.861	1.5948599	10.134	8.45	8.89	2.8028
4		7.267	0.0553102	0.161	0.29	0.14	n.a.
5	Br	8.164	0.8050184	4.257	4.27	3.74	6.2410
6	SO4	8.871	5.2793485	17.110	27.97	15.01	23.6111
7	NO3	9.594	2.0887959	7.809	11.07	6.85	2.7044
Total:			**18.873**	**113.962**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-01**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 17:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

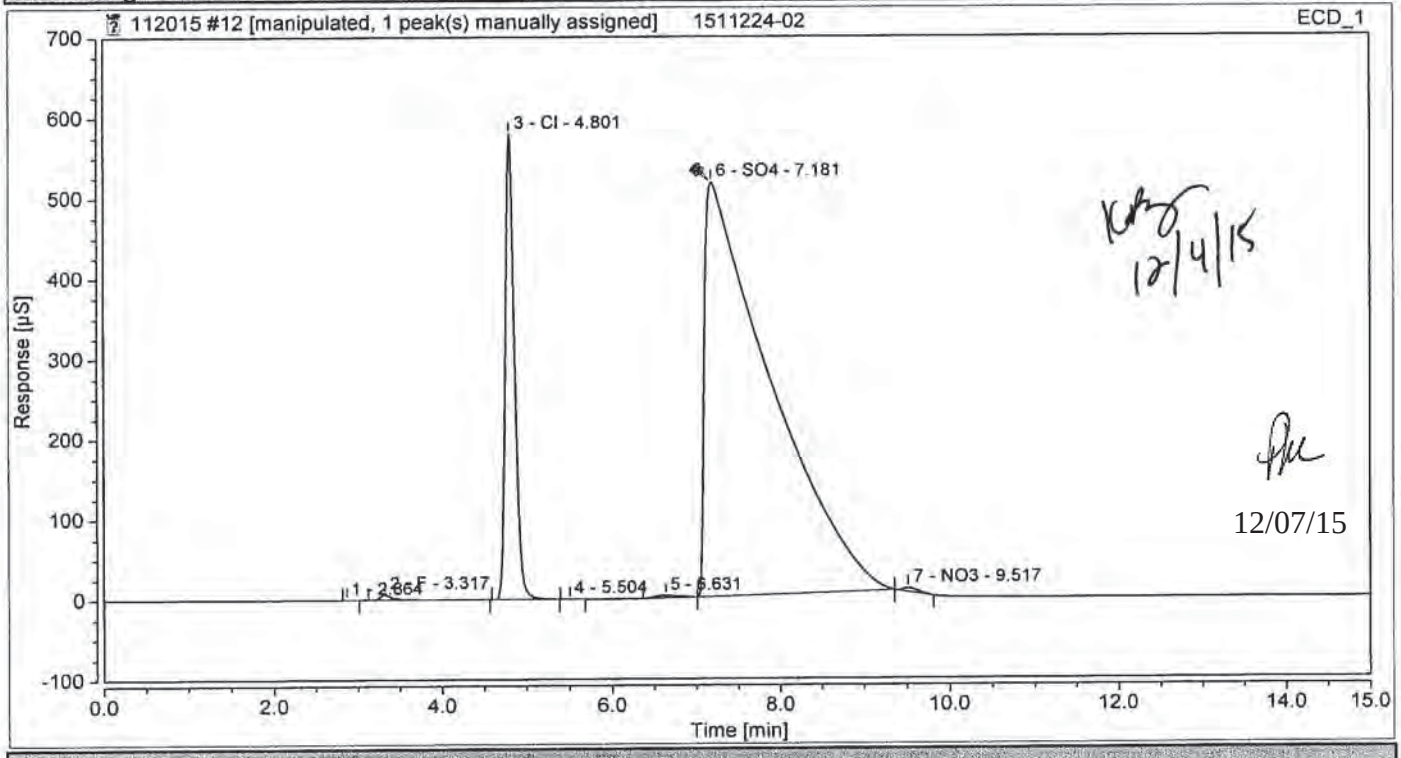
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.871	0.0030742	0.030	0.00	0.00	n.a.
2	F	3.321	1.2082817	6.849	0.22	0.61	2.4370
3	Cl	4.804	73.7652873	582.464	13.48	52.21	242.3801
4		5.481	0.0016619	0.010	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		6.631	1.0264028	2.913	0.19	0.26	n.a.
6	SO4	7.174	470.0482327	518.466	85.91	46.47	2102.2209
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.524	1.0573604	4.861	0.19	0.44	1.3690
Total:			**547.110**	**1115.593**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-02**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 17:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

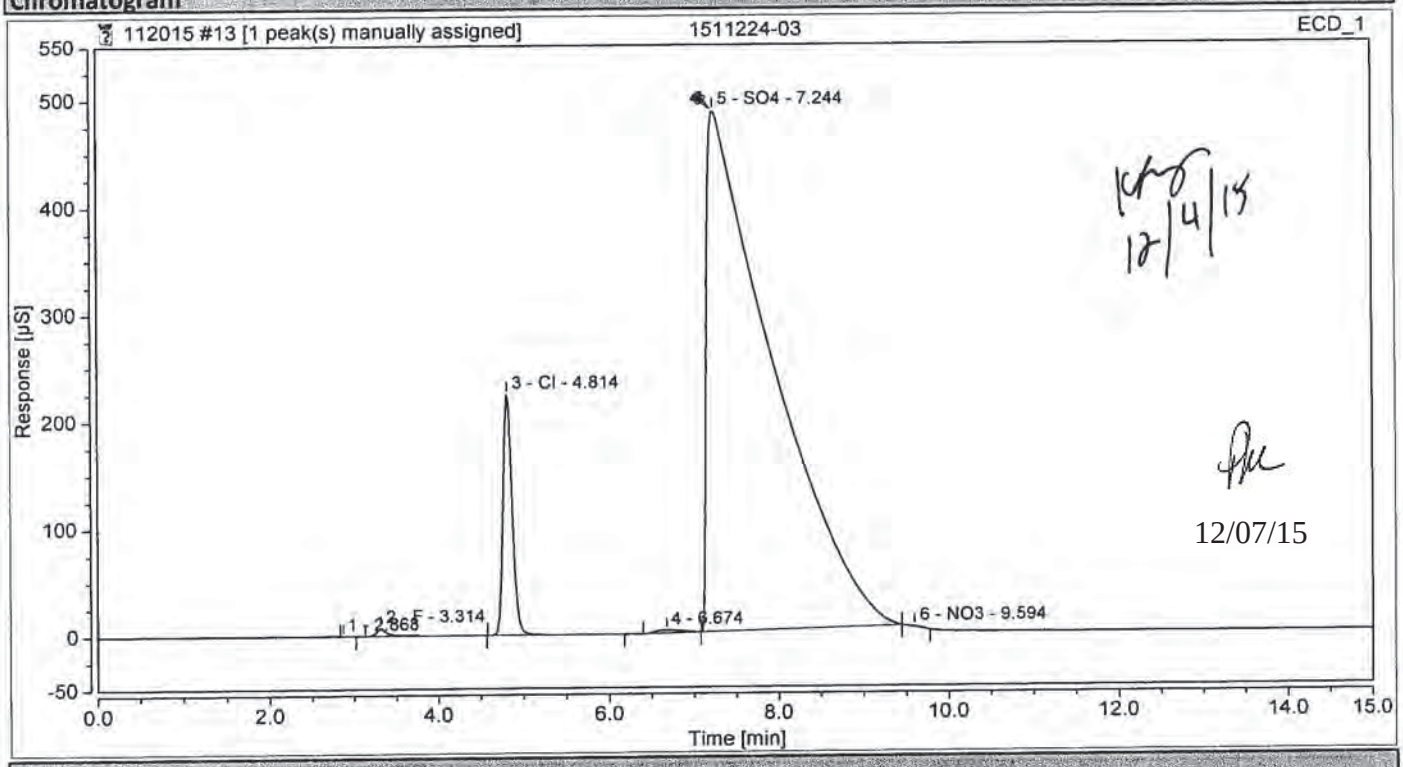
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.864	0.0022804	0.027	0.00	0.00	n.a.
2	F	3.317	1.1932982	6.768	0.22	0.61	2.4067
3	Cl	4.801	73.7065185	579.370	13.51	52.18	242.1870
4		5.504	0.0022465	0.015	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		6.631	1.0483933	2.943	0.19	0.27	n.a.
6	SO4	7.181	468.4834565	516.607	85.89	46.53	2095.2226
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.517	1.0073646	4.644	0.18	0.42	1.3043
Total:			**545.444**	**1110.374**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-03**	*Run Time (min):*	**15.00**
Vial Number:	**13**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 18:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

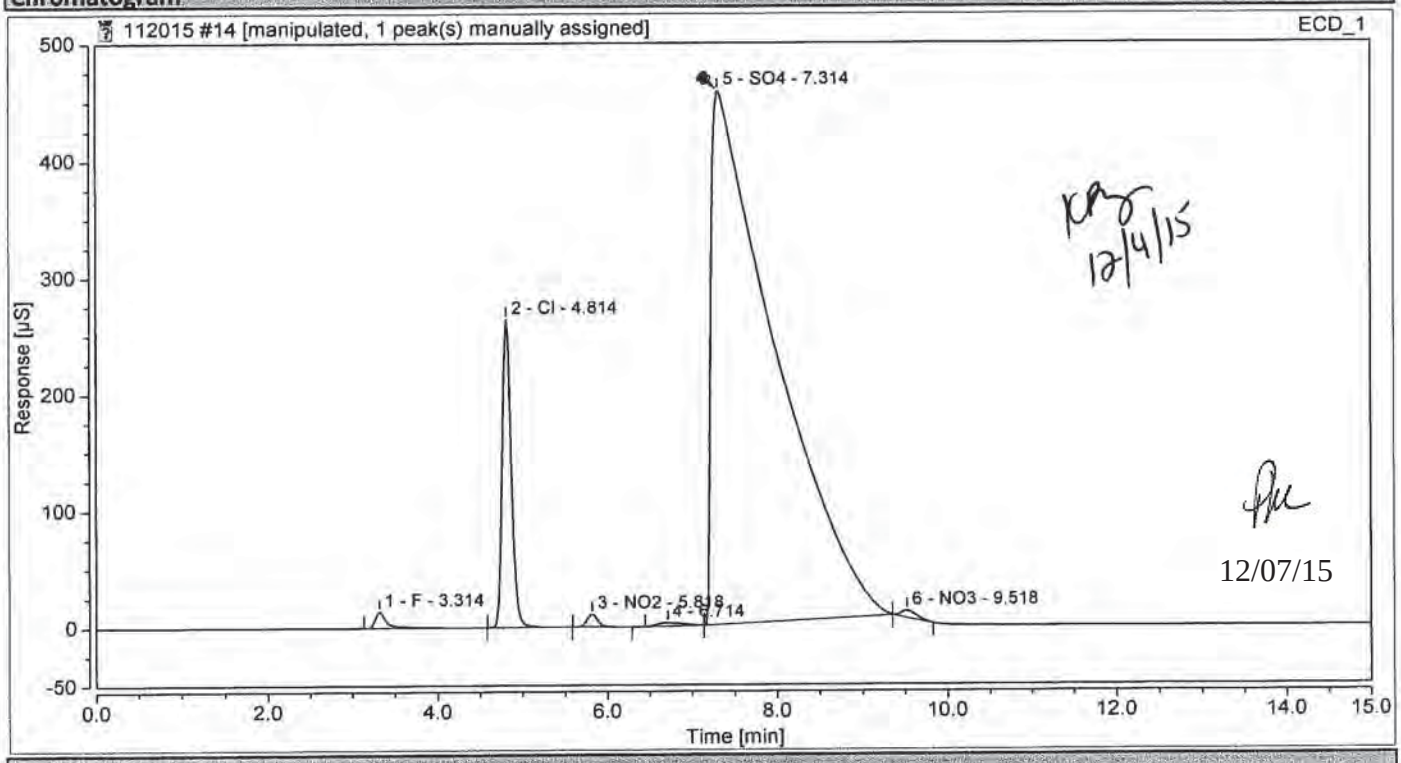
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.868	0.0010423	0.012	0.00	0.00	n.a.
2	F	3.314	1.1525647	7.219	0.25	1.00	2.3246
3	Cl	4.814	27.8636073	224.030	5.99	31.05	91.5551
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		6.674	1.0423333	2.863	0.22	0.40	n.a.
5	SO4	7.244	434.6329826	486.662	93.51	67.45	1943.8314
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NO3	9.594	0.1192382	0.744	0.03	0.10	0.1544
Total:			**464.812**	**721.530**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-MS1**	*Run Time (min):*	**15.00**
Vial Number:	**14**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

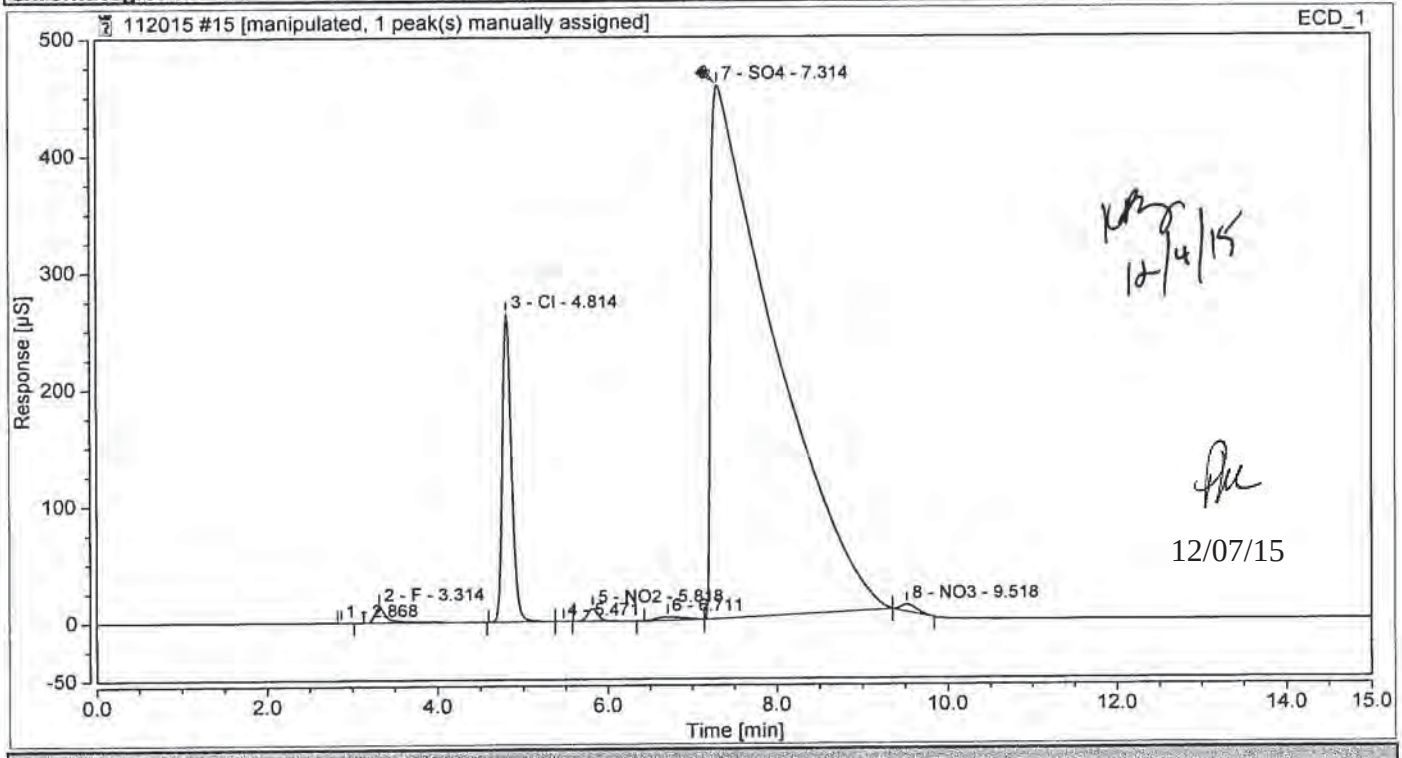
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	2.1899164	13.719	0.51	1.82	4.4168
2	Cl	4.814	32.7332737	263.889	7.56	34.96	107.5559
3	NO2	5.818	1.5727285	10.925	0.36	1.45	2.7639
4		6.714	1.0267058	2.776	0.24	0.37	n.a.
5	SO4	7.314	393.9092242	457.411	91.02	60.60	1761.7005
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NO3	9.518	1.3531457	6.133	0.31	0.81	1.7520
Total:			**432.785**	**754.853**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-MSD1**	*Run Time (min):*	**15.00**
Vial Number:	**15**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

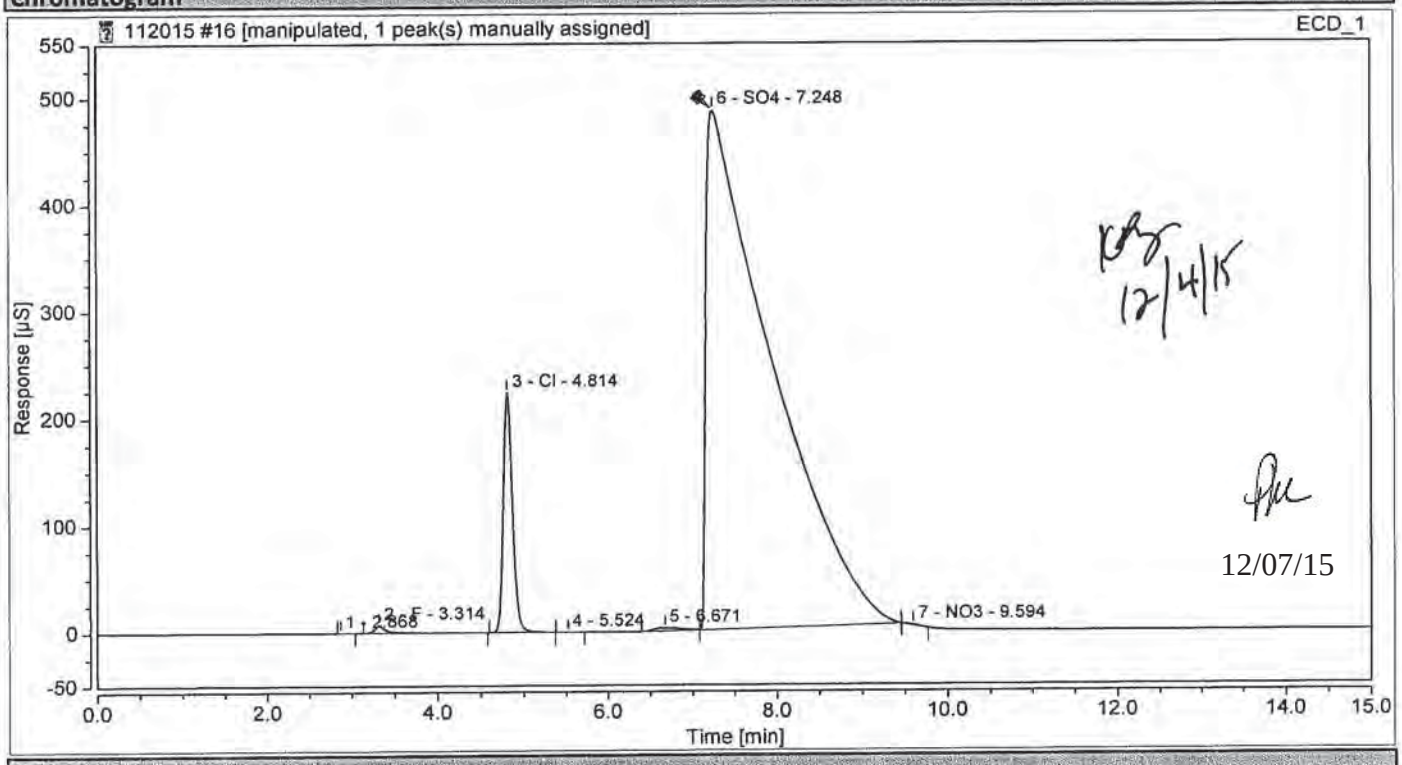
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.868	0.0009097	0.010	0.00	0.00	n.a.
2	F	3.314	2.1880130	13.727	0.51	1.82	4.4130
3	Cl	4.814	32.6916417	263.744	7.55	34.96	107.4191
4		5.471	0.0007406	0.006	0.00	0.00	n.a.
5	NO2	5.818	1.5810146	10.985	0.37	1.46	2.7784
6		6.711	1.0465724	2.799	0.24	0.37	n.a.
7	SO4	7.314	393.9879131	457.009	91.02	60.58	1762.0524
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.518	1.3639556	6.159	0.32	0.82	1.7660
Total:			**432.861**	**754.439**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-DUP1**	*Run Time (min):*	**15.00**
Vial Number:	**16**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

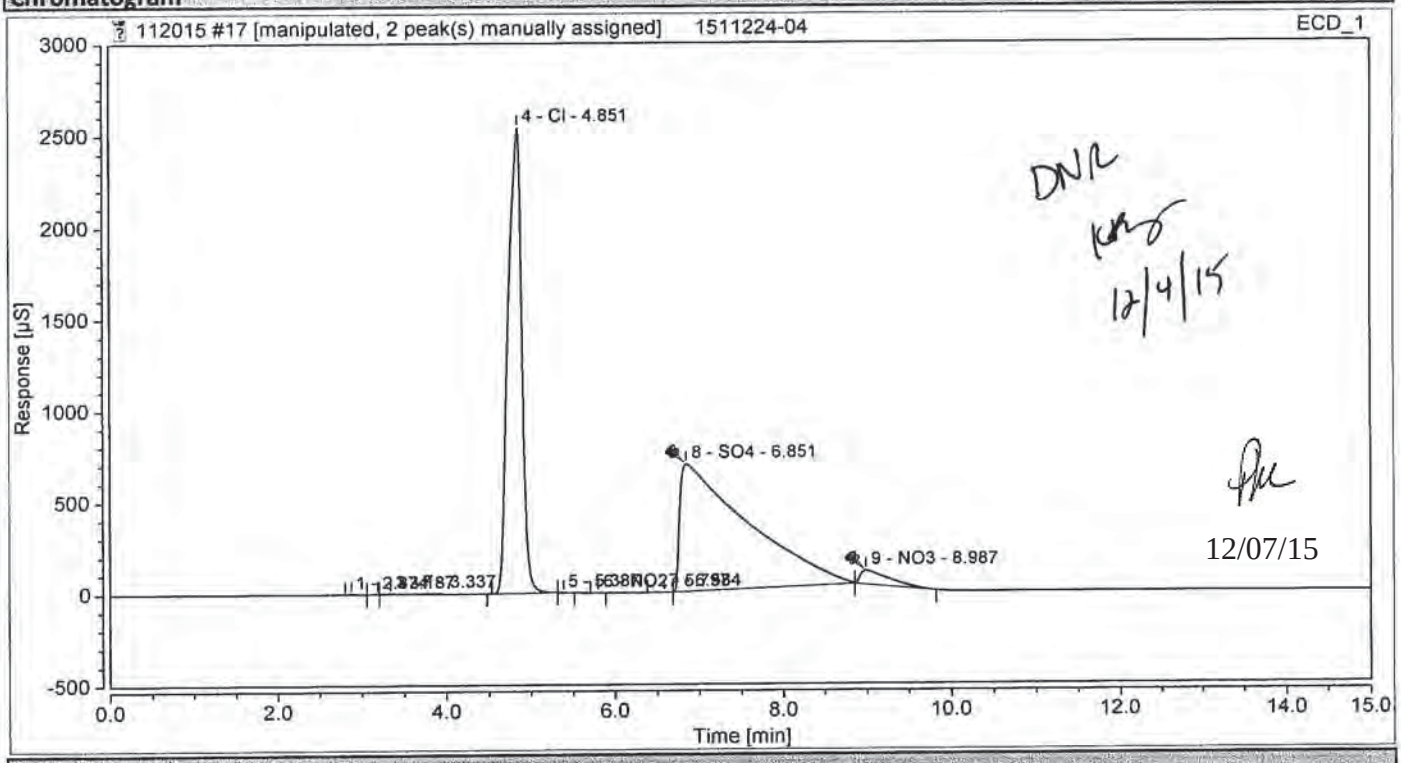
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.868	0.0013391	0.015	0.00	0.00	n.a.
2	F	3.314	1.1457360	7.204	0.25	1.00	2.3108
3	Cl	4.814	27.7506247	223.617	5.98	31.03	91.1838
4		5.524	0.0014160	0.007	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		6.671	1.0488007	2.865	0.23	0.40	n.a.
6	SO4	7.248	433.8103466	486.161	93.52	67.47	1940.1523
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.594	0.1160142	0.741	0.03	0.10	0.1502
Total:			**463.874**	**720.609**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-04**	*Run Time (min):*	**15.00**
Vial Number:	**17**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

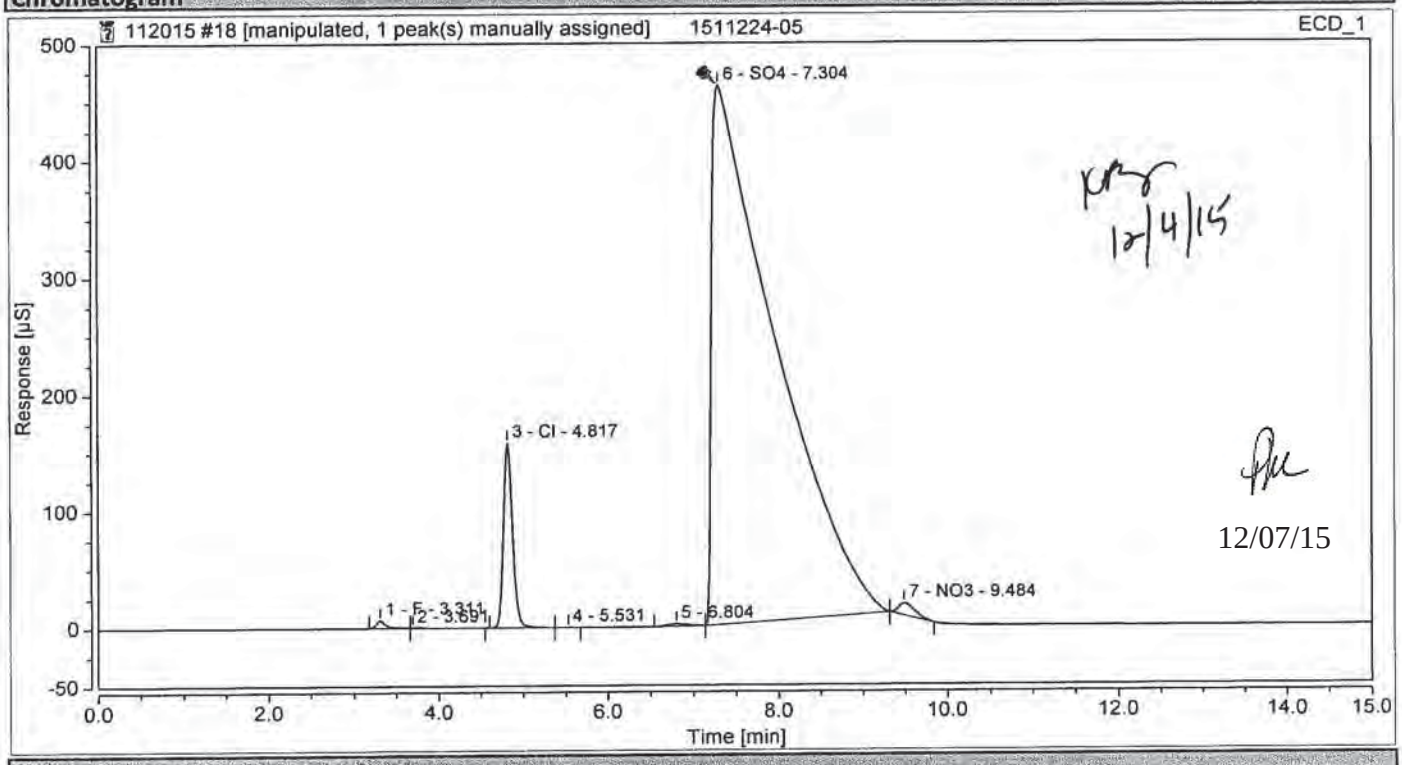
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.874	0.0256055	0.246	0.00	0.01	n.a.
2		3.187	0.0298532	0.534	0.00	0.02	n.a.
3	F	3.337	0.6673526	3.116	0.06	0.09	1.3460
4	Cl	4.851	479.1640638	2540.941	41.61	76.61	1574.4512
5		5.387	0.0084835	0.082	0.00	0.00	n.a.
6	NO2	5.797	0.0044984	0.049	0.00	0.00	0.0079
7		6.584	0.2332840	1.174	0.02	0.04	n.a.
8	SO4	6.851	641.3622672	695.658	55.70	20.98	2868.3974
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9	NO3	8.987	30.0445665	74.718	2.61	2.25	38.8999
Total:			**1151.540**	**3316.518**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-05**	*Run Time (min):*	**15.00**
Vial Number:	**18**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.8953835	6.511	0.21	1.02	1.8059
2		3.691	0.0502254	0.197	0.01	0.03	n.a.
3	Cl	4.817	19.4810074	158.339	4.63	24.78	64.0113
4		5.531	0.0009769	0.005	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		6.804	0.5885547	1.957	0.14	0.31	n.a.
6	SO4	7.304	397.6626080	461.817	94.44	72.27	1778.4869
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.484	2.3764568	10.204	0.56	1.60	3.0769
Total:			**421.055**	**639.030**	**100.00**	**100.00**	

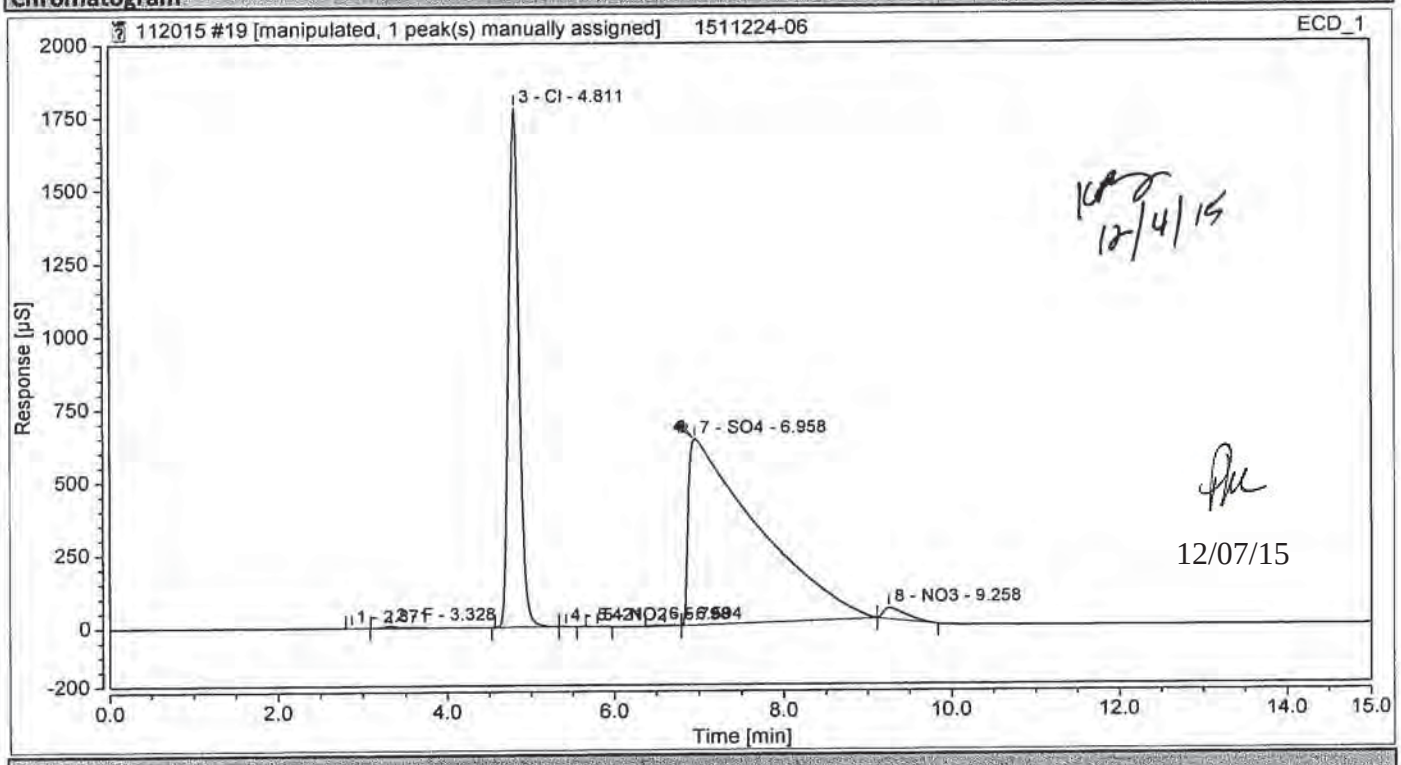
Cl = 19.4810074 / 0.3043372 = 64.0113 x 5mL/5mL = 64.0 mg/L

Chromatogram and Results

Injection Details

Injection Name:	**1511224-06**	*Run Time (min):*	**15.00**
Vial Number:	**19**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 19:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

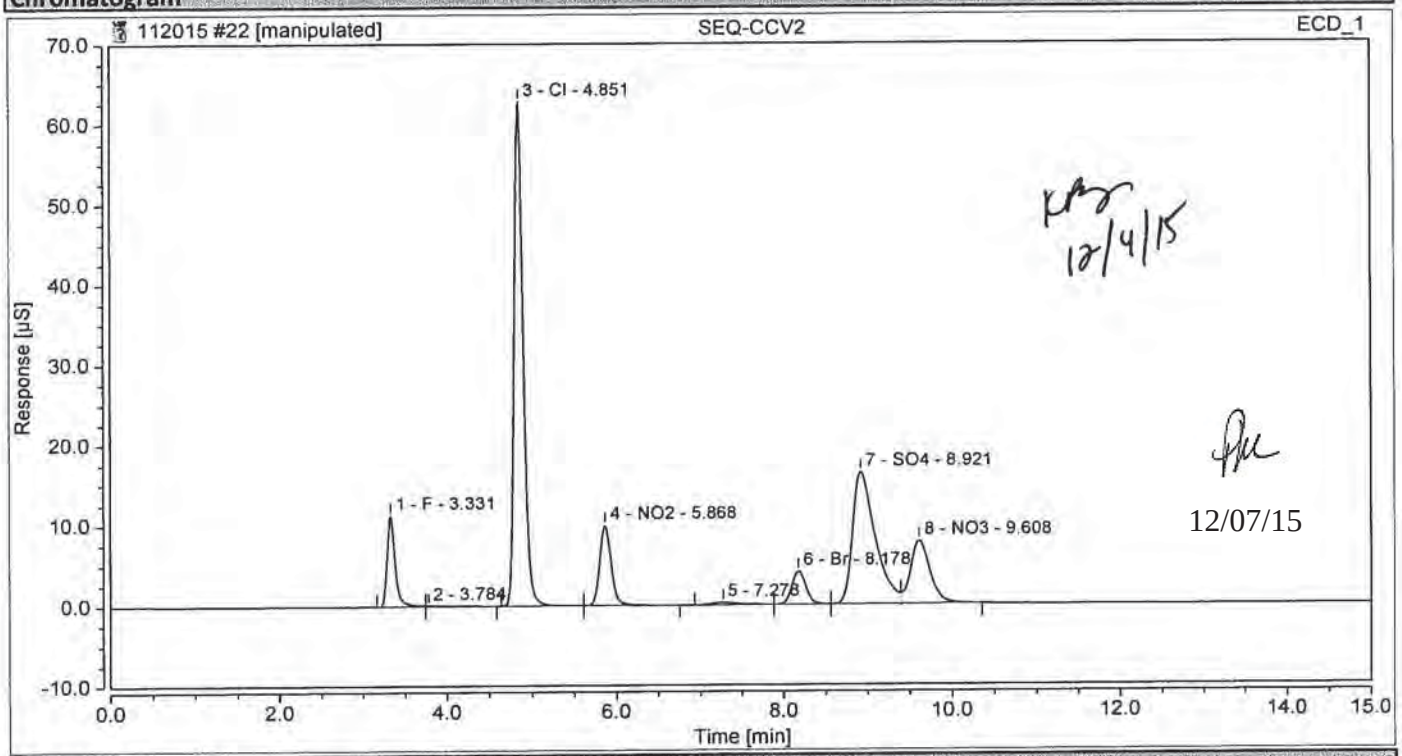
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.871	0.0141479	0.139	0.00	0.01	n.a.
2	F	3.328	1.3013491	6.171	0.15	0.25	2.6247
3	Cl	4.811	259.0540783	1778.347	29.64	72.18	851.2074
4		5.421	0.0031669	0.029	0.00	0.00	n.a.
5	NO2	5.798	0.0635467	0.515	0.01	0.02	0.1117
6		6.594	0.4886626	1.968	0.06	0.08	n.a.
7	SO4	6.958	601.1859066	637.480	68.79	25.88	2688.7146
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.258	11.8552626	38.948	1.36	1.58	15.3495
Total:			**873.966**	**2463.597**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**22**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 20:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

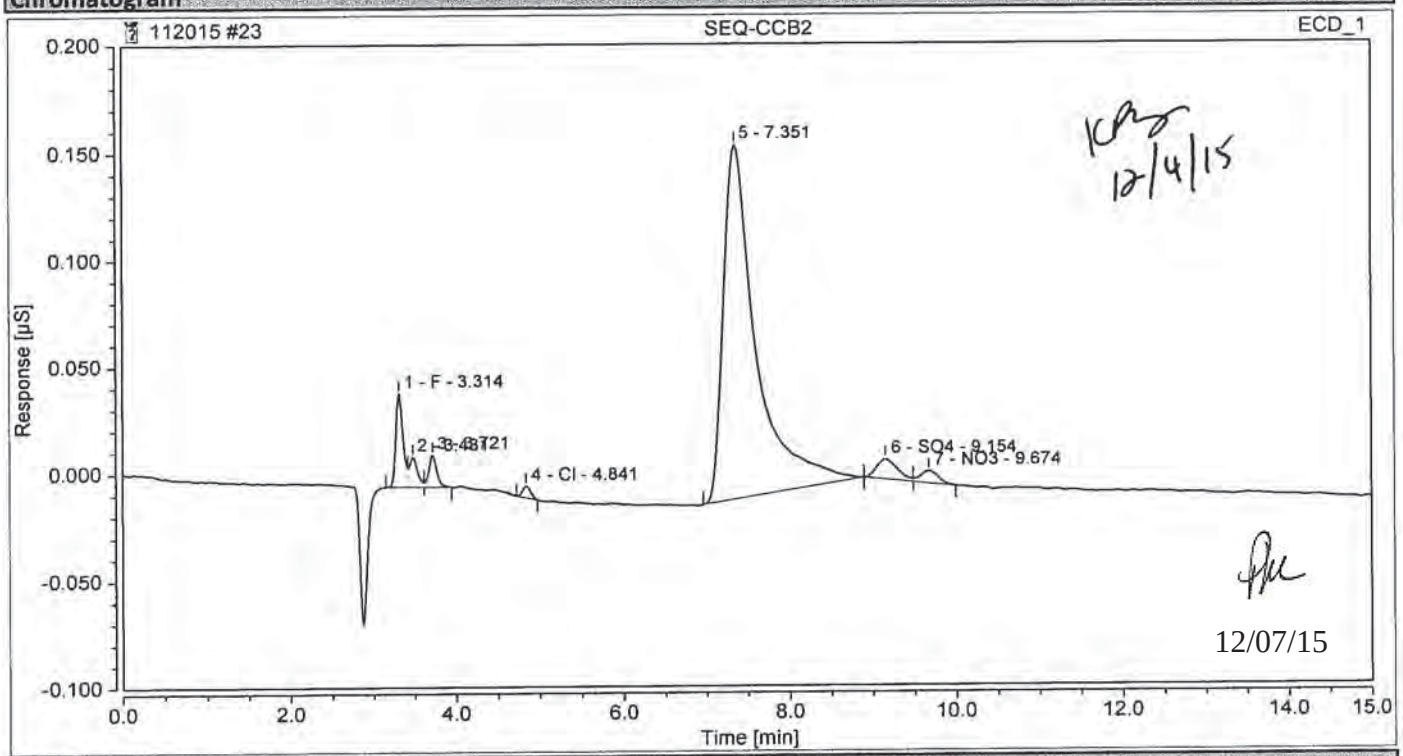
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.2416639	11.304	6.66	10.02	2.5043
2		3.784	0.0188403	0.067	0.10	0.06	n.a.
3	Cl	4.851	7.6908132	62.817	41.27	55.68	25.2707
4	NO2	5.868	1.5800440	9.980	8.48	8.85	2.7767
5		7.278	0.1076181	0.303	0.58	0.27	n.a.
6	Br	8.178	0.7869688	4.125	4.22	3.66	6.1011
7	SO4	8.921	5.1083959	16.399	27.41	14.53	22.8465
8	NO3	9.608	2.1015308	7.832	11.28	6.94	2.7209
Total:			**18.636**	**112.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**23**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 20:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0043244	0.044	4.88	16.89	0.0087
2		3.481	0.0016413	0.014	1.85	5.45	n.a.
3		3.721	0.0017062	0.015	1.93	5.83	n.a.
4	Cl	4.841	0.0005975	0.005	0.67	2.08	0.0020
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.351	0.0762273	0.166	86.03	63.93	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	9.154	0.0027193	0.009	3.07	3.65	0.0122
7	NO3	9.674	0.0013914	0.006	1.57	2.17	0.0018
Total:			**0.089**	**0.260**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**121015**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Dec2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/Dec/15 07:58:58**
No. of Injections:	**63**	*Updated By:*	**NSH-IONC2**

Injection Details

No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		10/Dec/15 07:57:12	Finished
2	BLANK	2	Unknown		10/Dec/15 08:15:18	Finished
3	BLANK	3	Unknown		10/Dec/15 08:33:08	Finished
4	SEQ-CCV1	4	Unknown		10/Dec/15 08:51:22	Finished
5	BLANK	5	Unknown		10/Dec/15 09:11:38	Finished
6	BLANK	6	Unknown		10/Dec/15 09:29:34	Finished
7	BLANK	7	Unknown		10/Dec/15 09:47:24	Finished
8	BLANK	8	Unknown		10/Dec/15 10:05:14	Finished
9	SEQ-CCV1	9	Unknown		10/Dec/15 10:33:50	Finished
10	SEQ-CCB1	10	Unknown		10/Dec/15 10:51:48	Finished
11	SEQ-CRL1	11	Unknown		10/Dec/15 11:09:38	Finished
12	SEQ-CRL2	12	Unknown		10/Dec/15 11:27:29	Finished
13	SEQ-CRL3	13	Unknown		10/Dec/15 11:45:19	Finished
14	5L10011-BLK1	14	Unknown		10/Dec/15 12:03:09	Finished
15	5L10011-BS1	15	Unknown		10/Dec/15 12:20:59	Finished
16	1512101-01@10	16	Unknown		10/Dec/15 12:38:49	Finished
17	1512101-02@10	17	Unknown		10/Dec/15 12:56:53	Finished
18	1512101-03@10	18	Unknown		10/Dec/15 13:14:43	Finished
19	1512101-04@10	19	Unknown		10/Dec/15 13:32:33	Finished
20	1512101-05@10	20	Unknown		10/Dec/15 13:50:24	Finished
21	1512101-06@10	21	Unknown		10/Dec/15 14:08:14	Finished
22	1512101-08@10	22	Unknown		10/Dec/15 14:26:04	Finished
23	5L10011-MS1@10	23	Unknown		10/Dec/15 14:43:55	Finished
24	5L10011-MSD1@10	24	Unknown		10/Dec/15 15:01:46	Finished
25	5L10011-DUP1@10	25	Unknown		10/Dec/15 15:19:36	Finished
26	1512103-03	26	Unknown		10/Dec/15 15:37:26	Finished
27	1512105-01	27	Unknown		10/Dec/15 15:55:16	Finished
28	1512105-03	28	Unknown		10/Dec/15 16:13:06	Finished
29	5L10011-MS2	29	Unknown		10/Dec/15 16:30:57	Finished
30	5L10011-MSD2	30	Unknown		10/Dec/15 16:48:47	Finished
31	5L10011-DUP2	31	Unknown		10/Dec/15 17:06:37	Finished
32	SEQ-CCV2	32	Unknown		10/Dec/15 17:24:27	Finished
33	SEQ-CCB2	33	Unknown		10/Dec/15 17:42:18	Finished
34	1511229-07@20	34	Unknown		10/Dec/15 18:00:08	Finished
35	1511204-08RE1@10	35	Unknown		10/Dec/15 18:17:58	Finished
36	1511204-09RE1@20	36	Unknown		10/Dec/15 18:35:48	Finished
37	1511224-06RE1@10	37	Unknown		10/Dec/15 18:53:38	Finished
38	1511226-01RE1@20	38	Unknown		10/Dec/15 19:11:29	Finished
39	1511226-02RE1@20	39	Unknown		10/Dec/15 19:29:19	Finished
40	1511226-03RE1@20	40	Unknown		10/Dec/15 19:47:09	Finished
41	1511226-04RE1@20	41	Unknown		10/Dec/15 20:04:59	Finished
42	1511226-05RE1@20	42	Unknown		10/Dec/15 20:22:50	Finished

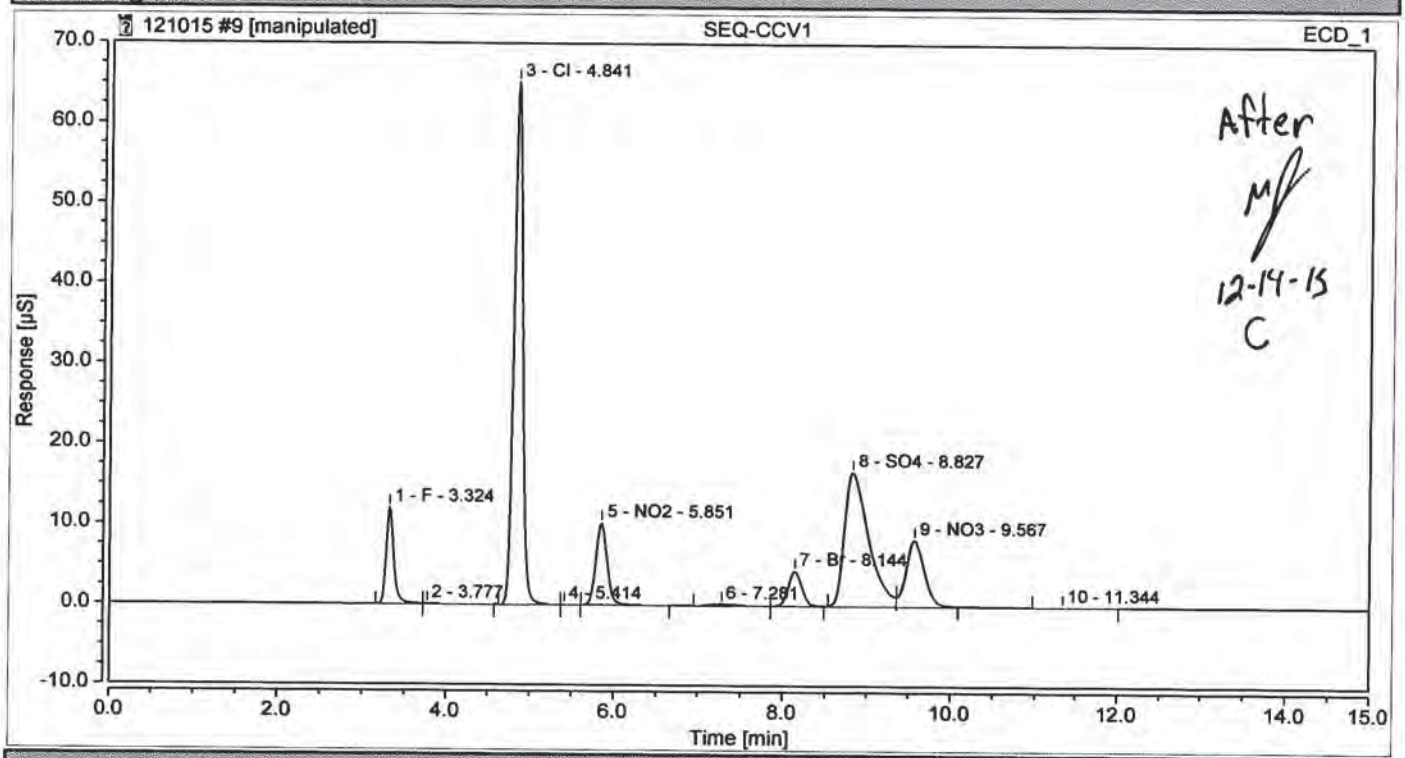
43	1511226-06RE1@20	43	Unknown		10/Dec/15 20:40:40	Finished
44	SEQ-CCV3	44	Unknown		10/Dec/15 20:58:30	Finished
45	SEQ-CCB3	45	Unknown		10/Dec/15 21:16:20	Finished
46	5L06002-BLK1	46	Unknown		10/Dec/15 21:34:10	Finished
47	5L06002-BS1	47	Unknown		10/Dec/15 21:52:01	Finished
48	1511258-01RE1@10	48	Unknown		10/Dec/15 22:09:51	Finished
~~49~~	~~1511226-07RE1@20~~	49	Unknown		10/Dec/15 22:27:41	Finished
50	1511229-01@5X	50	Unknown		10/Dec/15 22:45:31	Finished
51	1511229-02@5X	1	Unknown		10/Dec/15 23:03:22	Finished
52	1511229-03@5X	2	Unknown		10/Dec/15 23:21:12	Finished
53	1511229-04@5X	3	Unknown		10/Dec/15 23:39:02	Finished
54	1511229-05@5X	4	Unknown		10/Dec/15 23:56:53	Finished
55	1511229-06@5X	5	Unknown		11/Dec/15 00:14:43	Finished
56	5L06002-MS1@5X	6	Unknown		11/Dec/15 00:32:33	Finished
57	5L06002-MSD1@5X	7	Unknown		11/Dec/15 00:50:23	Finished
58	5L06002-DUP1@5X	8	Unknown		11/Dec/15 01:08:14	Finished
59	~~1511204-07@5X~~	9	Unknown		11/Dec/15 01:26:04	Finished
60	1511229-08@5X	10	Unknown		11/Dec/15 01:43:54	Finished
61	SEQ-CCV4	11	Unknown		11/Dec/15 02:01:44	Finished
62	SEQ-CCB4	12	Unknown		11/Dec/15 02:19:34	Finished
63	BLANK	13	Unknown		11/Dec/15 02:37:25	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2681993	12.059	6.64	10.30	2.5578
2		3.777	0.0179633	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7098321	65.155	40.39	55.65	25.3332
4		5.414	0.0004088	0.002	0.00	0.00	n.a.
5	NO2	5.851	1.5671010	10.216	8.21	8.73	2.7540
6		7.281	0.0628324	0.185	0.33	0.16	n.a.
7	Br	8.144	0.8036017	4.363	4.21	3.73	6.2300
8	SO4	8.827	5.5518366	16.724	29.08	14.28	24.8298
9	NO3	9.567	2.1027054	8.307	11.02	7.09	2.7225
10		11.344	0.0043632	0.010	0.02	0.01	n.a.
Total:			**19.089**	**117.083**	**100.00**	**100.00**	

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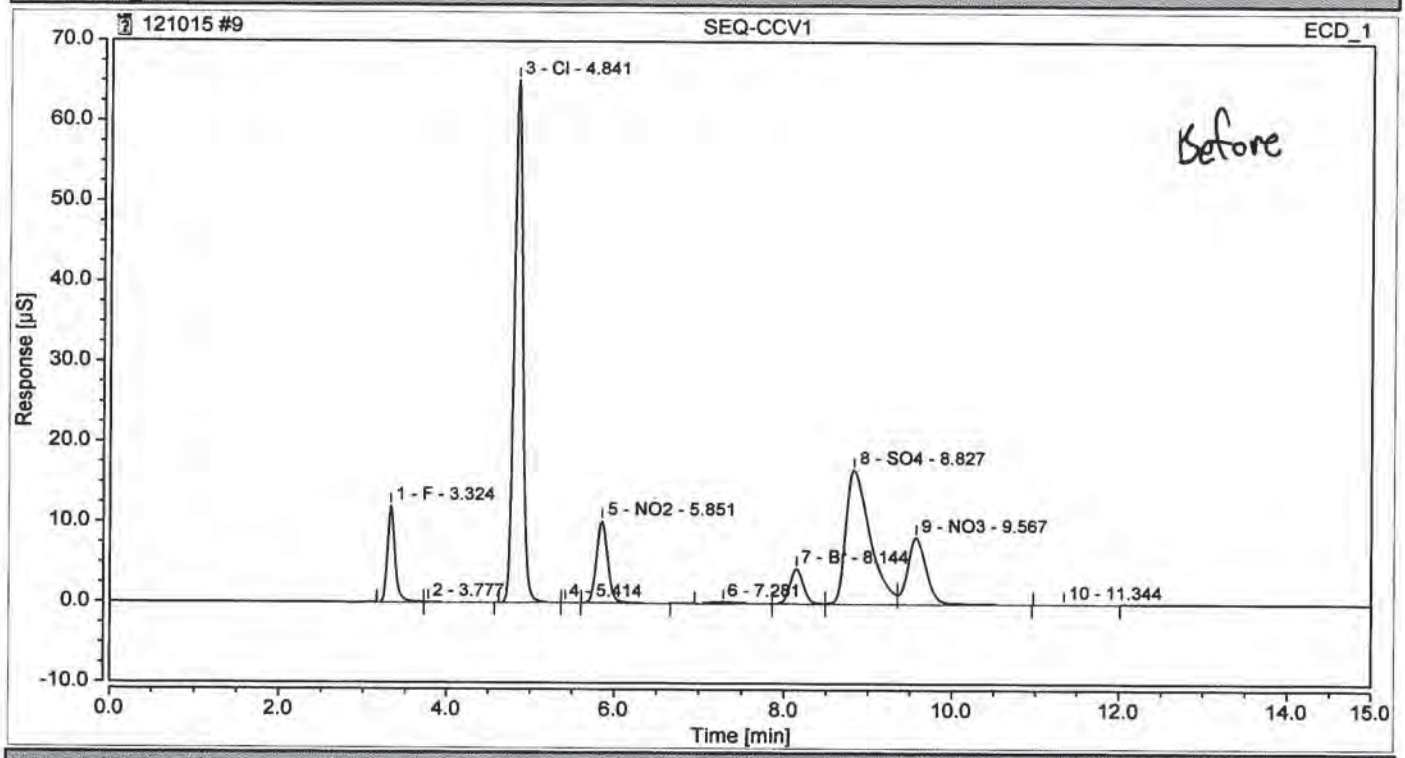
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

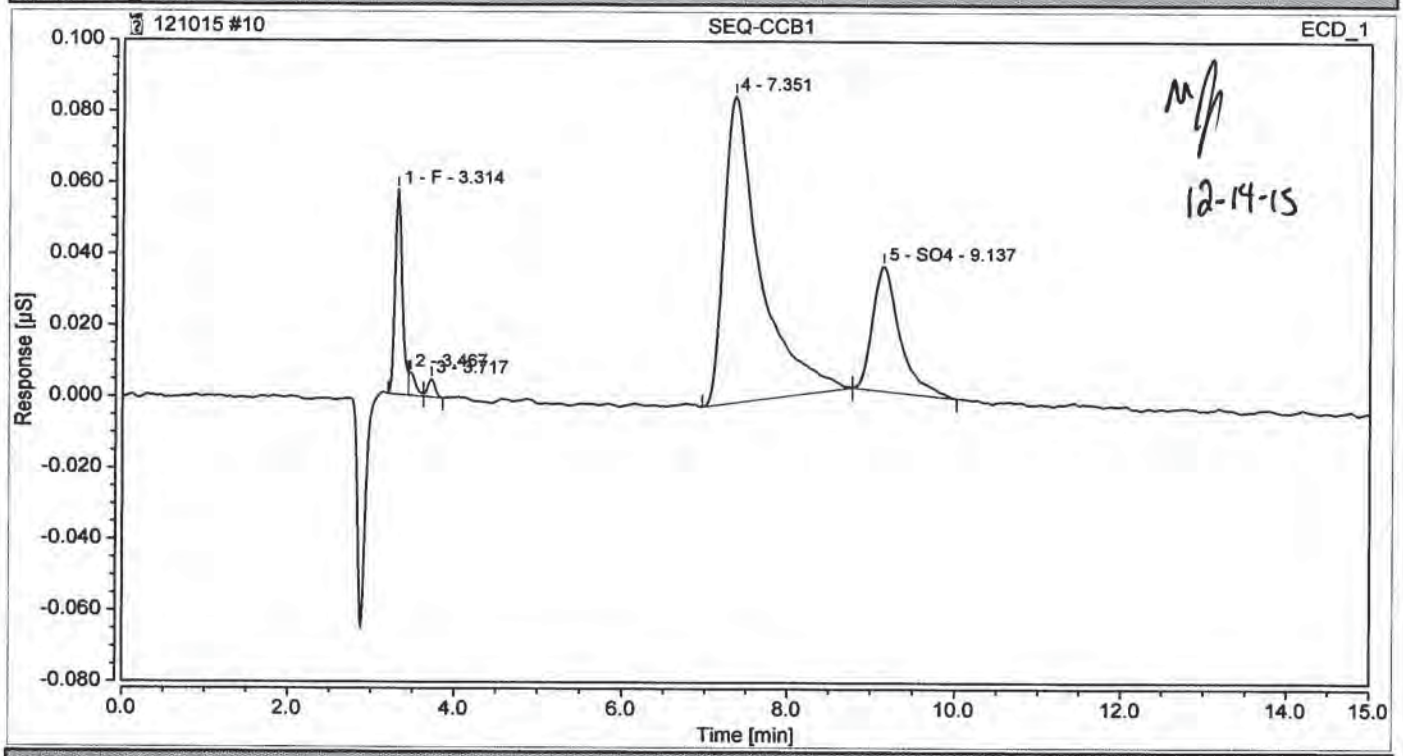
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2681993	12.059	6.64	10.30	2.5578
2		3.777	0.0179633	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7098321	65.155	40.35	55.65	25.3332
4		5.414	0.0004088	0.002	0.00	0.00	n.a.
5	NO2	5.851	1.5671010	10.216	8.20	8.73	2.7540
6		7.281	0.0628324	0.185	0.33	0.16	n.a.
7	Br	8.144	0.8036017	4.363	4.21	3.73	6.2300
8	SO4	8.827	5.5448251	16.724	29.02	14.28	24.7984
9	NO3	9.567	2.1274326	8.307	11.13	7.09	2.7545
10		11.344	0.0043632	0.010	0.02	0.01	n.a.
Total:			**19.107**	**117.083**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0056482	0.058	8.89	30.29	0.0114
2		3.467	0.0006010	0.006	0.95	3.35	n.a.
3		3.717	0.0004926	0.005	0.78	2.65	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.351	0.0437036	0.086	68.79	45.27	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.137	0.0130869	0.035	20.60	18.44	0.0585
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.064**	**0.190**	**100.00**	**100.00**	

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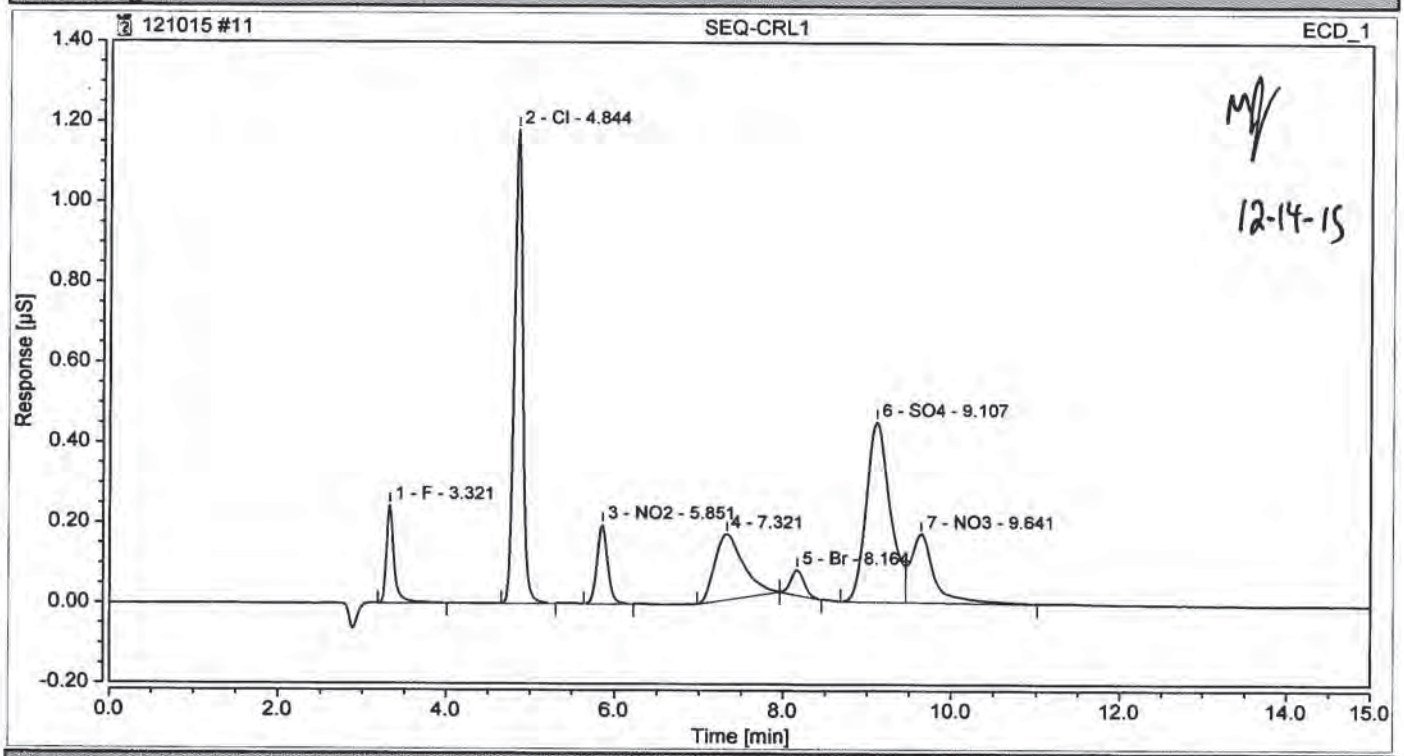
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL1**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0257931	0.245	5.49	9.90	0.0520
2	Cl	4.844	0.1361275	1.182	28.98	47.82	0.4473
3	NO2	5.851	0.0283737	0.198	6.04	8.00	0.0499
4		7.321	0.0643525	0.164	13.70	6.63	n.a.
5	Br	8.164	0.0114553	0.063	2.44	2.54	0.0888
6	SO4	9.107	0.1488035	0.449	31.67	18.18	0.6655
7	NO3	9.641	0.0548869	0.171	11.68	6.93	0.0711
Total:			**0.470**	**2.471**	**100.00**	**100.00**	

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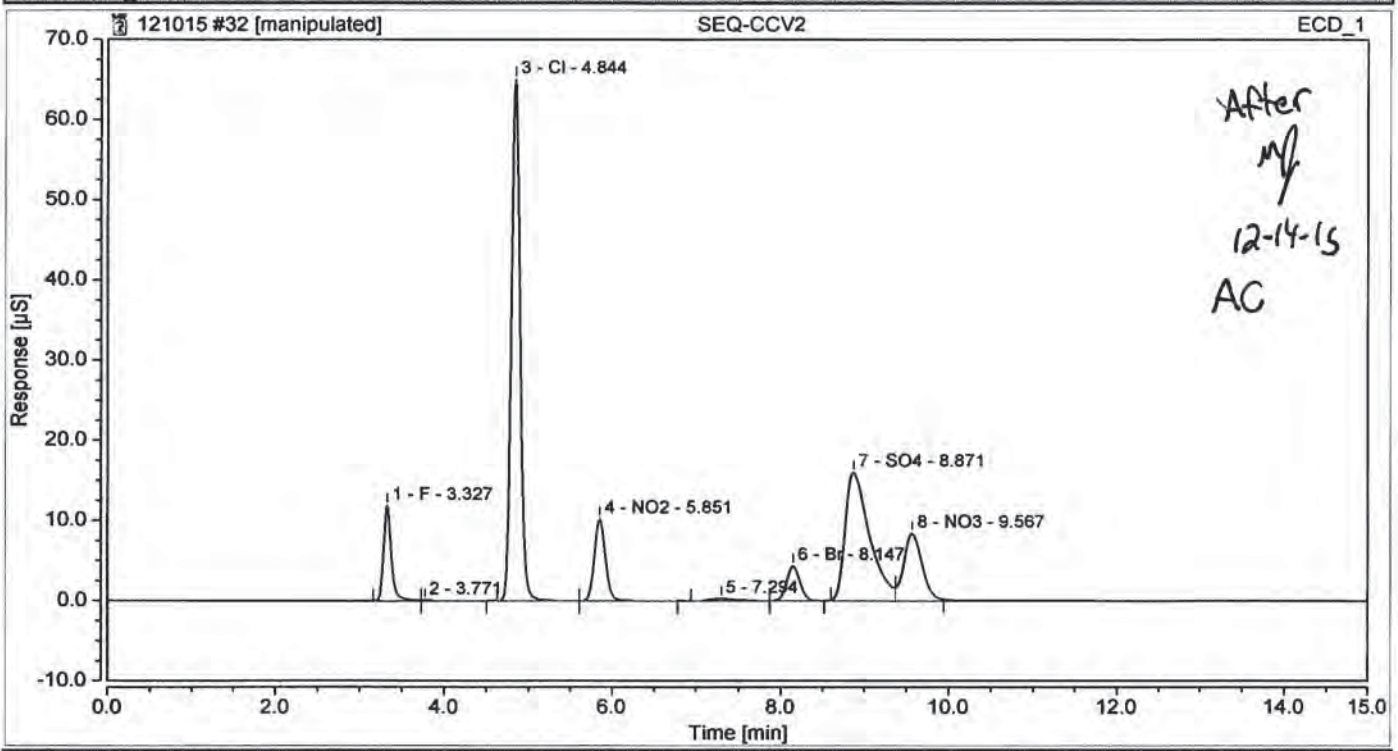
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2625268	11.885	6.64	10.22	2.5464
2		3.771	0.0155769	0.060	0.08	0.05	n.a.
3	Cl	4.844	7.7121553	65.071	40.54	55.94	25.3408
4	NO2	5.851	1.5652284	10.227	8.23	8.79	2.7507
5		7.294	0.0951732	0.270	0.50	0.23	n.a.
6	Br	8.147	0.8003201	4.350	4.21	3.74	6.2046
7	SO4	8.871	5.4467566	16.025	28.63	13.78	24.3598
8	NO3	9.567	2.1241073	8.429	11.17	7.25	2.7502
Total:			**19.022**	**116.318**	**100.00**	**100.00**	

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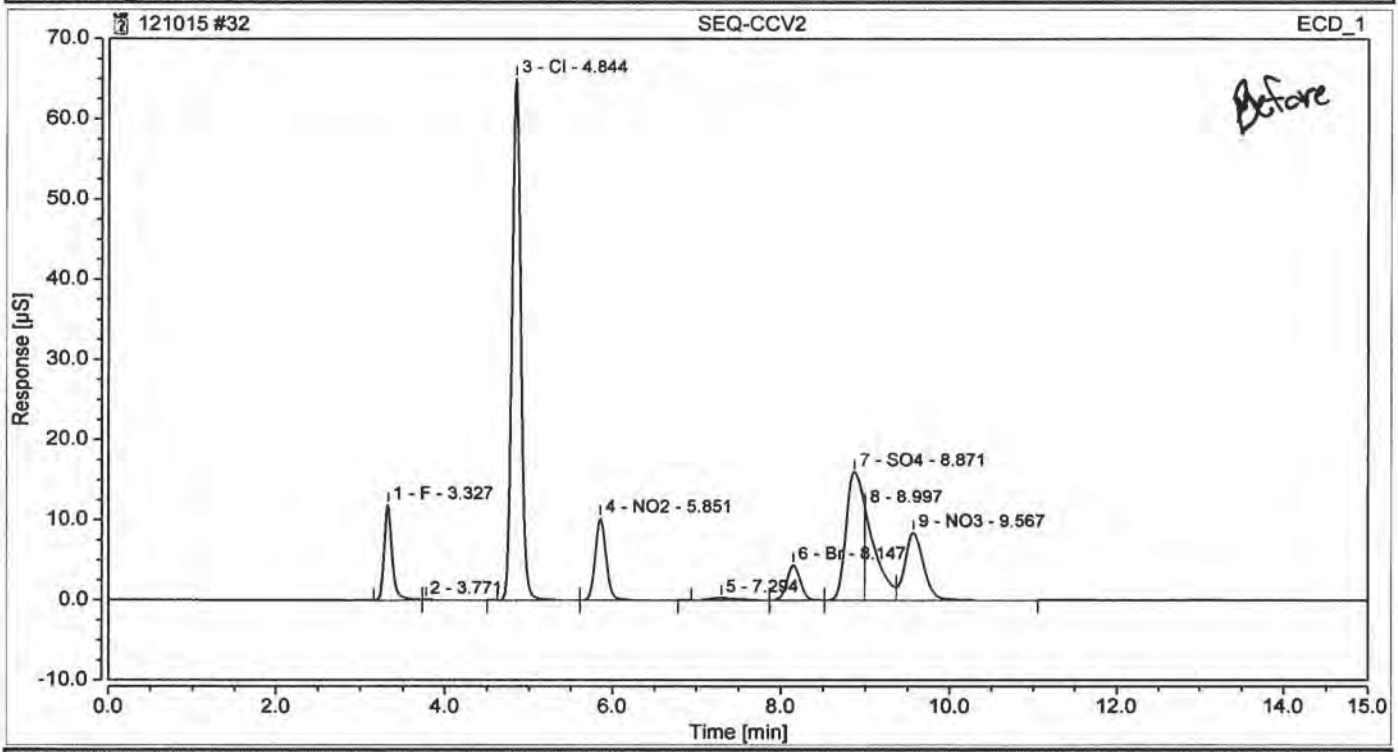
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

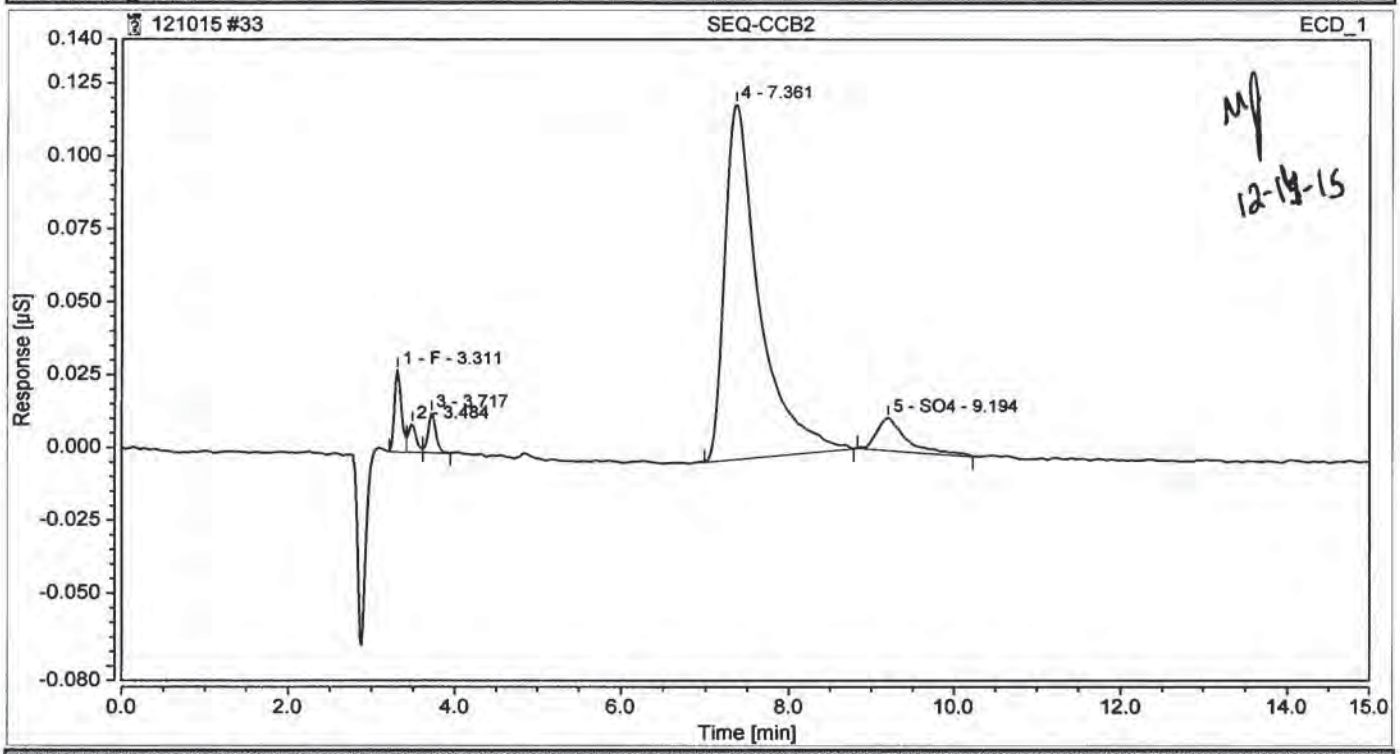
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2625268	11.885	6.63	9.30	2.5464
2		3.771	0.0155769	0.060	0.08	0.05	n.a.
3	Cl	4.844	7.7121553	65.071	40.47	50.92	25.3408
4	NO2	5.851	1.5652284	10.227	8.21	8.00	2.7507
5		7.294	0.0951732	0.270	0.50	0.21	n.a.
6	Br	8.147	0.8003201	4.350	4.20	3.40	6.2046
7	SO4	8.871	3.5511240	16.025	18.63	12.54	15.8819
8		8.997	1.8866960	11.464	9.90	8.97	n.a.
9	NO3	9.567	2.1677431	8.429	11.38	6.60	2.8067
Total:			**19.057**	**127.782**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**33**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0026251	0.028	3.85	15.20	0.0053
2		3.484	0.0010540	0.010	1.55	5.20	n.a.
3		3.717	0.0014490	0.014	2.13	7.34	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.361	0.0583515	0.122	85.68	66.20	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.194	0.0046222	0.011	6.79	6.07	0.0207
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.068**	**0.184**	**100.00**	**100.00**	

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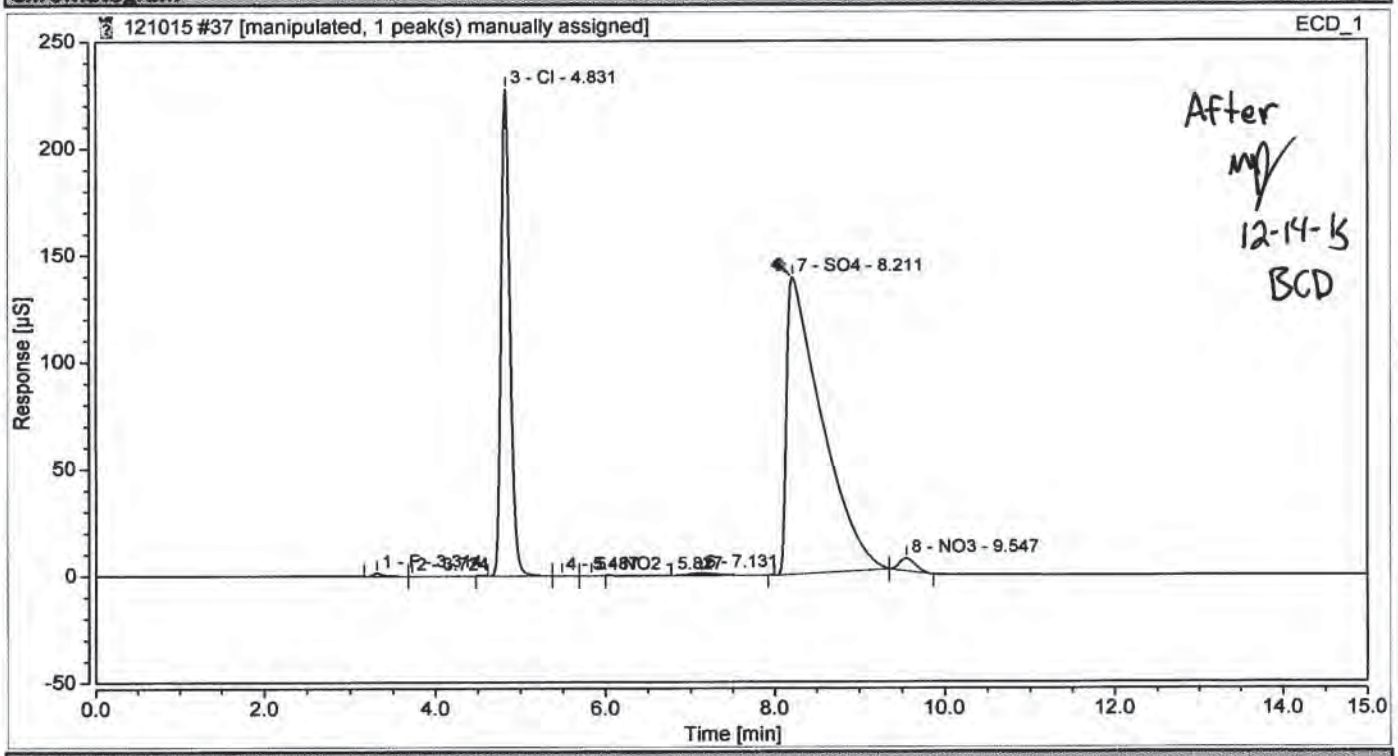
Chromatogram and Results

Injection Details

Injection Name:	**1511224-06RE1@10**	*Run Time (min):*	**15.00**
Vial Number:	**37**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 18:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.1495360	1.427	0.16	0.38	0.3016
2		3.724	0.0039968	0.016	0.00	0.00	n.a.
3	Cl	4.831	27.2272110	227.763	28.44	60.73	89.4640
4		5.487	0.0014357	0.007	0.00	0.00	n.a.
5	NO2	5.827	0.0050775	0.040	0.01	0.01	0.0089
6		7.131	0.3527415	0.985	0.37	0.26	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	SO4	8.211	66.7469454	139.012	69.71	37.07	298.5158
8	NO3	9.547	1.2637997	5.786	1.32	1.54	1.6363
Total:			**95.751**	**375.037**	**100.00**	**100.00**	

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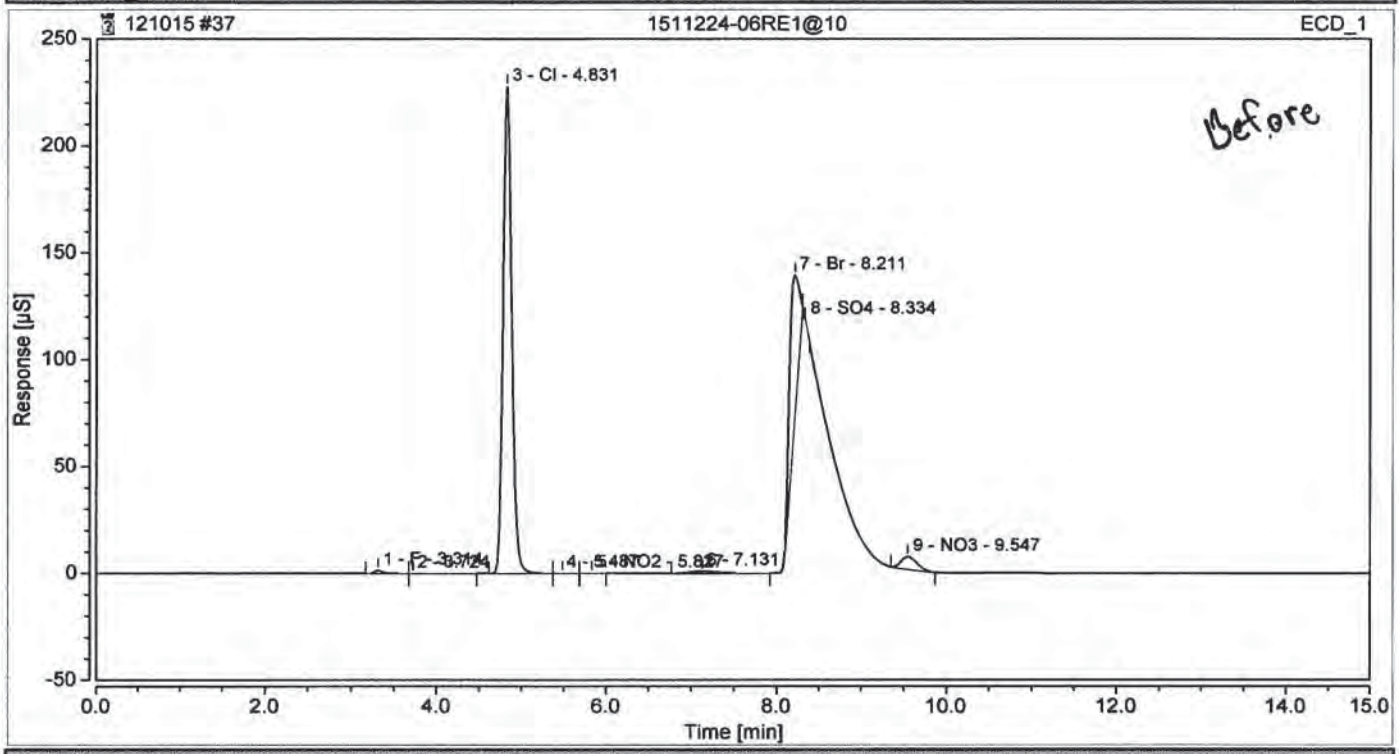
Chromatogram and Results

Injection Details

Injection Name:	**1511224-06RE1@10**	*Run Time (min):*	**15.00**
Vial Number:	**37**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 18:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

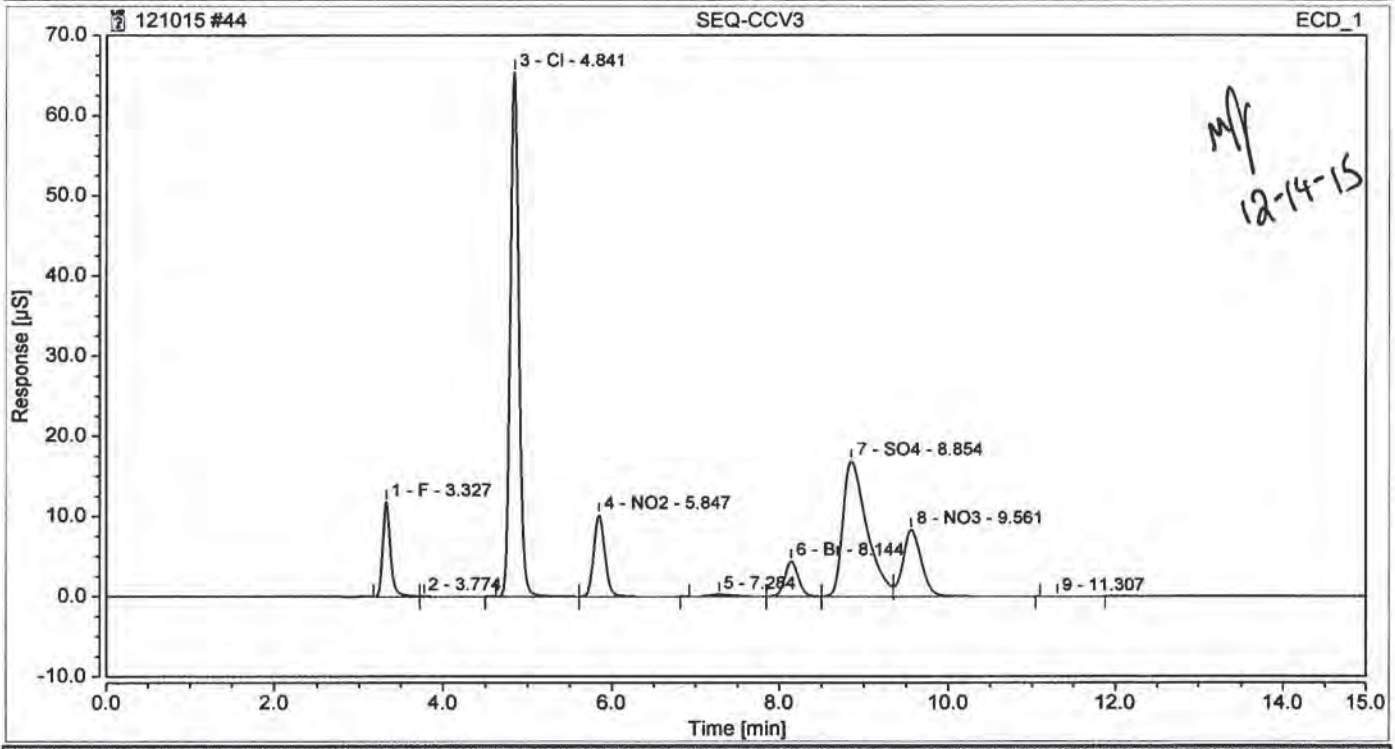
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.1495360	1.427	0.40	0.47	0.3016
2		3.724	0.0039968	0.016	0.01	0.01	n.a.
3	Cl	4.831	27.2272110	227.763	72.64	75.51	89.4640
4		5.487	0.0014357	0.007	0.00	0.00	n.a.
5	NO2	5.827	0.0050775	0.040	0.01	0.01	0.0089
6		7.131	0.3527415	0.985	0.94	0.33	n.a.
7	Br	8.211	8.4750764	65.531	22.61	21.73	65.7041
8	SO4	8.334	0.0029106	0.077	0.01	0.03	0.0130
9	NO3	9.547	1.2637997	5.786	3.37	1.92	1.6363
Total:			**37.482**	**301.631**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV3**	*Run Time (min):*	**15.00**
Vial Number:	**44**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2602441	11.818	6.62	10.07	2.5418
2		3.774	0.0148951	0.057	0.08	0.05	n.a.
3	Cl	4.841	7.7213399	65.408	40.55	55.74	25.3710
4	NO2	5.847	1.5609618	10.206	8.20	8.70	2.7432
5		7.284	0.0762463	0.231	0.40	0.20	n.a.
6	Br	8.144	0.8060314	4.384	4.23	3.74	6.2489
7	SO4	8.854	5.5118054	16.914	28.95	14.41	24.6507
8	NO3	9.561	2.0877079	8.331	10.96	7.10	2.7030
9		11.307	0.0010550	0.003	0.01	0.00	n.a.
Total:			**19.040**	**117.353**	**100.00**	**100.00**	

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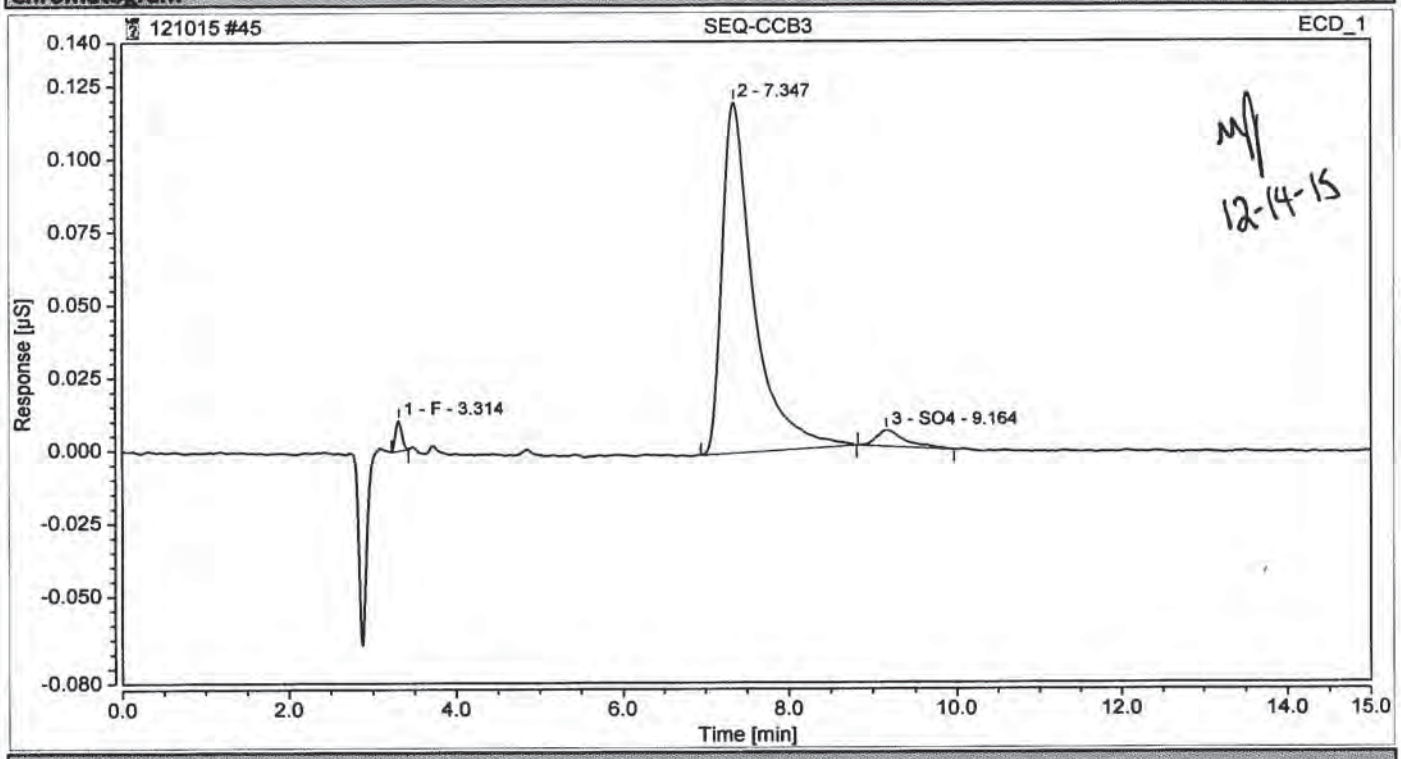
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB3**	*Run Time (min):*	**15.00**
Vial Number:	**45**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 21:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0008938	0.010	1.60	7.64	0.0018
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		7.347	0.0528401	0.120	94.55	88.39	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SO4	9.164	0.0021532	0.005	3.85	3.97	0.0096
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.056**	**0.136**	**100.00**	**100.00**	

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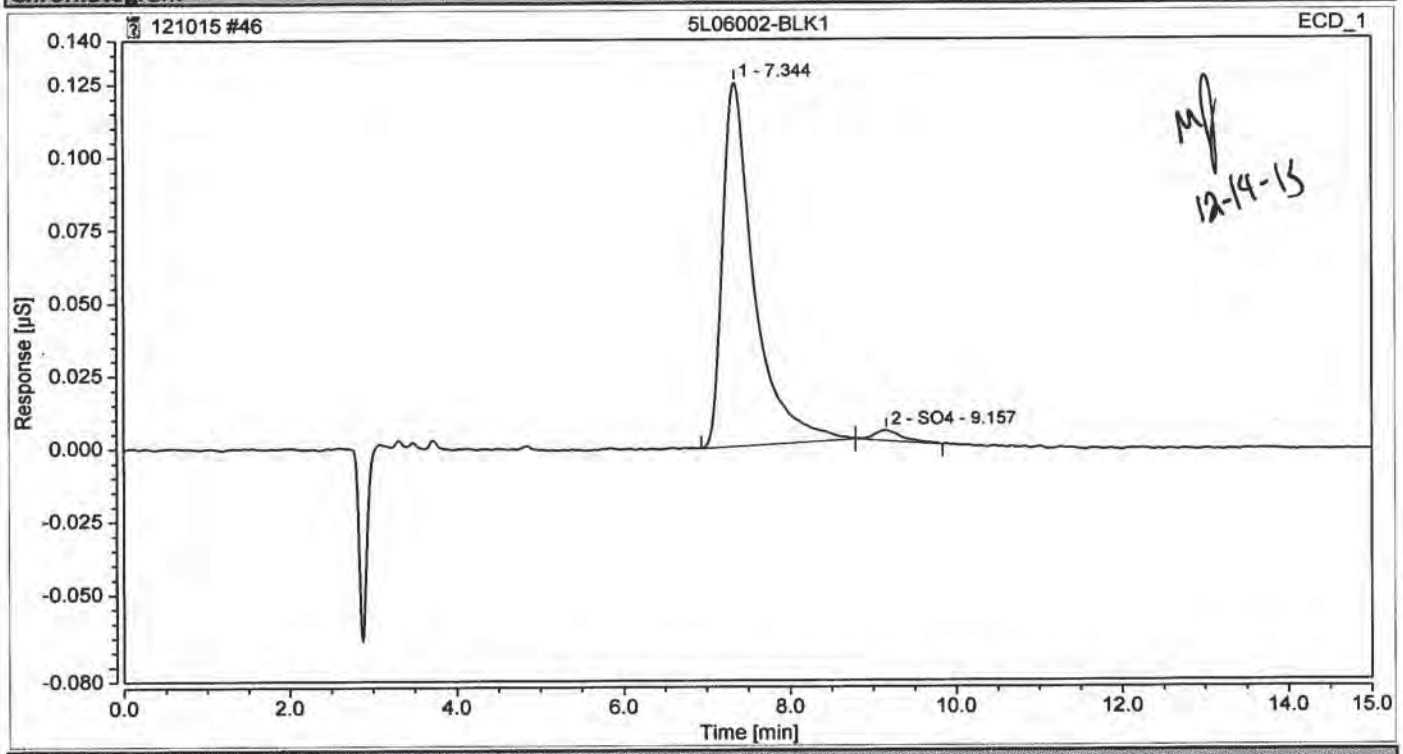
Chromatogram and Results

Injection Details

Injection Name:	**5L06002-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**46**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 21:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	F	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.344	0.0546947	0.125	97.61	97.28	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	SO4	9.157	0.0013380	0.003	2.39	2.72	0.0060
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.056**	**0.128**	**100.00**	**100.00**	

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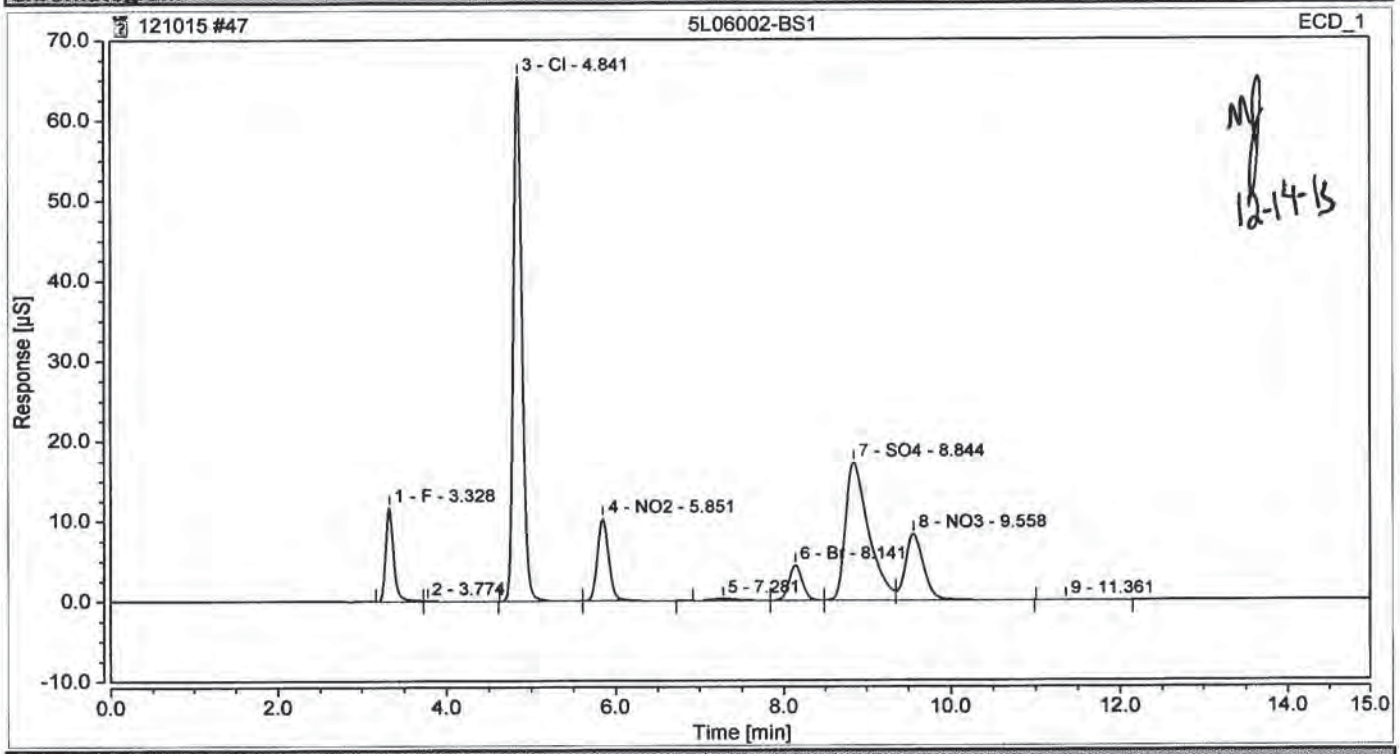
Chromatogram and Results

Injection Details

Injection Name:	**5L06002-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**47**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 21:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	1.2610343	11.717	6.62	9.97	2.5434
2		3.774	0.0165531	0.059	0.09	0.05	n.a.
3	Cl	4.841	7.7153523	65.408	40.48	55.66	25.3513
4	NO2	5.851	1.5624697	10.247	8.20	8.72	2.7458
5		7.281	0.0712432	0.219	0.37	0.19	n.a.
6	Br	8.141	0.8069156	4.386	4.23	3.73	6.2557
7	SO4	8.844	5.5552399	17.177	29.14	14.62	24.8450
8	NO3	9.558	2.0704891	8.291	10.86	7.06	2.6807
9		11.361	0.0022650	0.005	0.01	0.00	n.a.
Total:			**19.062**	**117.509**	**100.00**	**100.00**	

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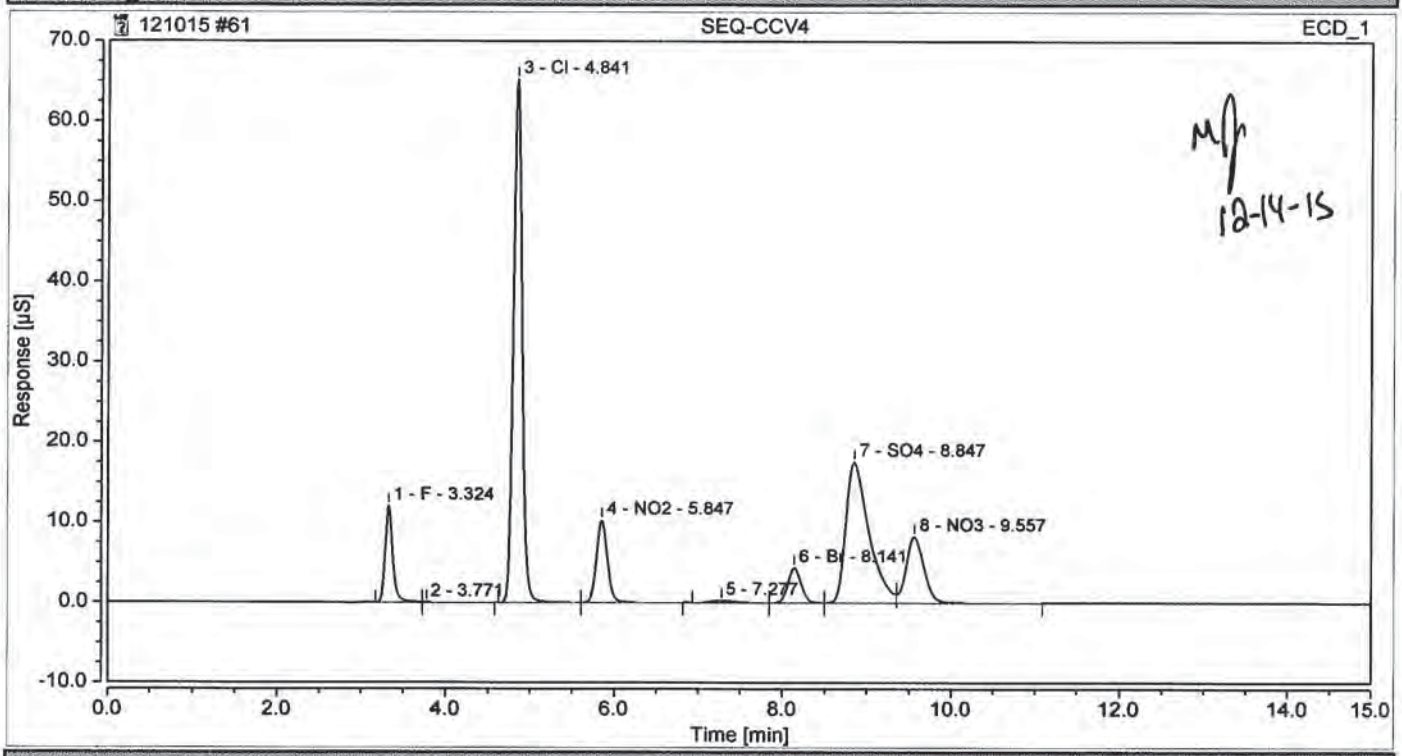
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV4**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/15 02:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2611086	12.069	6.63	10.22	2.5435
2		3.771	0.0146019	0.053	0.08	0.04	n.a.
3	Cl	4.841	7.7055191	65.246	40.50	55.24	25.3190
4	NO2	5.847	1.5682448	10.294	8.24	8.72	2.7560
5		7.277	0.0808172	0.254	0.42	0.22	n.a.
6	Br	8.141	0.8031753	4.367	4.22	3.70	6.2267
7	SO4	8.847	5.5510650	17.573	29.18	14.88	24.8263
8	NO3	9.557	2.0405153	8.253	10.73	6.99	2.6419
Total:			**19.025**	**118.108**	**100.00**	**100.00**	

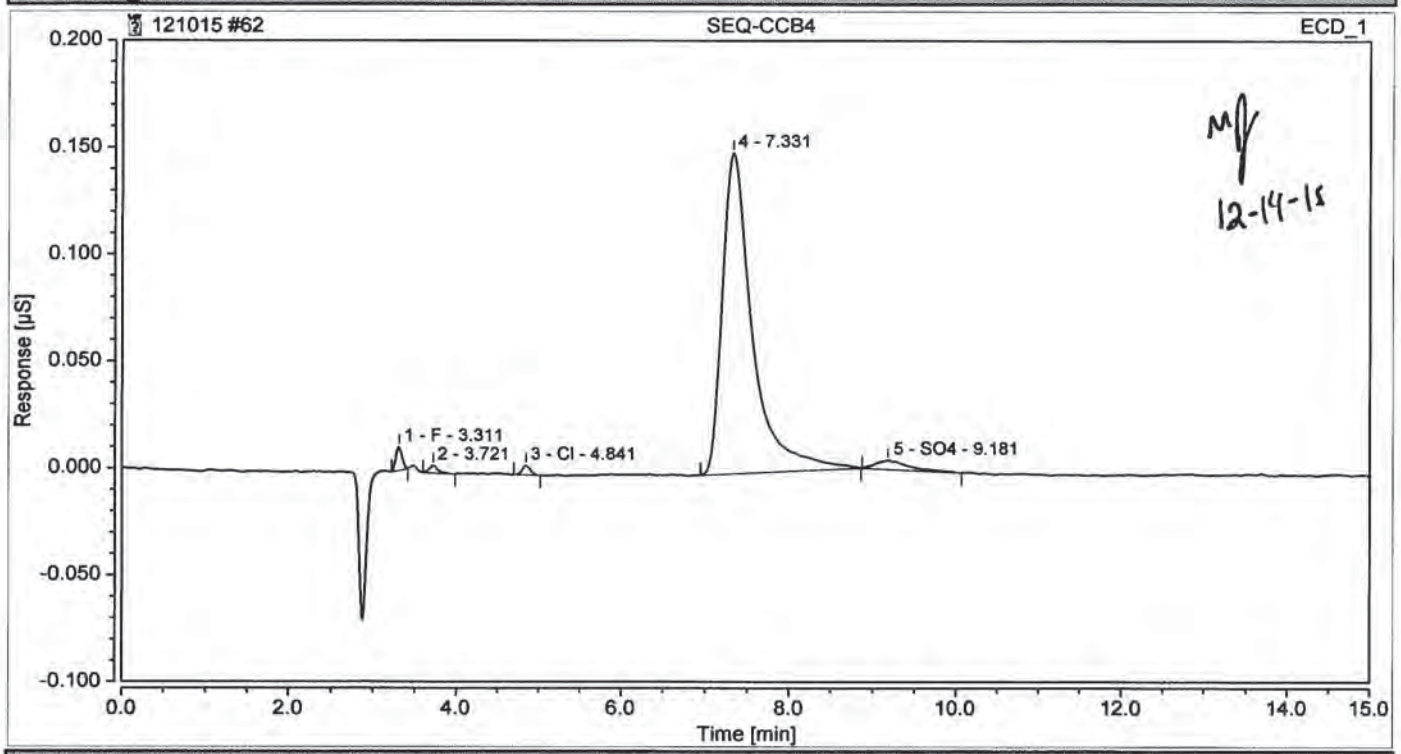
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB4**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/15 02:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0009028	0.011	1.37	6.32	0.0018
2		3.721	0.0003971	0.003	0.60	1.98	n.a.
3	Cl	4.841	0.0005031	0.004	0.77	2.54	0.0017
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.331	0.0620767	0.150	94.53	86.77	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.181	0.0017921	0.004	2.73	2.38	0.0080
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.066**	**0.173**	**100.00**	**100.00**	

12/14/15

PREPARATION BENCH SHEET

5K20011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:07AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511199-13RE1	A	WC_ANIONS_9056A (Short Ho	11/19/2015	5	5						NA	;From 5K19024 by KBG on 11/20/2015;From 5K19024 by KBG on 11/20/2015
1511199-13RE1	A	WC_ANIONS_9056A (Regular)	11/19/2015	5	5						NA	;see versions;see versions
1511199-14RE1	A	WC_ANIONS_9056A (Regular)	11/19/2015	5	5						NA	;see versions;see versions
1511199-14RE1	A	WC_ANIONS_9056A (Short Ho	11/19/2015	5	5						NA	;From 5K19024 by KBG on 11/20/2015;From 5K19024 by KBG on 11/20/2015
1511224-01	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;
1511224-01	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511224-02	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;
1511224-02	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511224-03	A	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5K20011
1511224-03	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	MS/MSD;;
1511224-03	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	MS/MSD;Chloride;Chloride
1511224-03	A	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5K20011
1511224-04	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511224-04	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;
1511224-05	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;
1511224-05	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511224-06	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;

PREPARATION BENCH SHEET

5K20011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:07AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511224-06	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511225-01	G	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;Sulfate Only;Sulfate Only
1511225-01	G	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Nitrate;Nitrate
1511225-03	A	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;Sulfate Only;Sulfate Only
1511225-03	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride Only;Chloride Only
1511225-03	A	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Nitrate;Nitrate
1511225-04	A	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;Sulfate Only;Sulfate Only
1511225-04	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride Only;Chloride Only
1511225-04	A	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Nitrate;Nitrate
1511226-01	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-01	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-01RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-02	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-02	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-02RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-03	H	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K20011
1511226-03	H	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K20011

PREPARATION BENCH SHEET

5K20011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:07AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511226-03	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-03	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-03RE1	H	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;Added 12/7/2015 by MSJ;Added 12/7/2015 by MSJ
1511226-03RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-04	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-04	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-04RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-05	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-05	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-05RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-06	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-06	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-06RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-07	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-07	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
5K20011-BLK1		QC	11/20/2015	5	5						NA	
5K20011-BS1		QC	11/20/2015	5	5	15K0590			5000		NA	

PREPARATION BENCH SHEET

5K20011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:07AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
5K20011-DUP1		QC	11/20/2015	5	5		1511224-03			NA	
5K20011-DUP2		QC	11/20/2015	5	5		1511226-03			NA	
5K20011-MS1		QC	11/20/2015	22.5	25	15I0318	1511224-03	2500		NA	
5K20011-MS2		QC	11/20/2015	22.5	25	15I0318	1511226-03	2500		NA	
5K20011-MSD1		QC	11/20/2015	22.5	25	15I0318	1511224-03	2500		NA	
5K20011-MSD2		QC	11/20/2015	22.5	25	15I0318	1511226-03	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5K23005

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:45AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511199-10	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511199-11	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511199-12	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511199-14	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-01	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-02	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-03	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	MS/MSD;;
1511224-04	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-05	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-06	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
5K23005-BLK1		QC	11/23/2015	100	100					NA	
5K23005-BS1		QC	11/23/2015	20	20	13L0491		20000		NA	
5K23005-DUP1		QC	11/23/2015	100	100		1511224-03			NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511021-01	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-01RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511021-02	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-02RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511224-04RE1	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;From 5K20011 by KBG on 11/24/2015;RR at 20X
1511224-04RE1	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Chloride;RR at 20X
1511256-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511256-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511258-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-01	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-03	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-03	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-05	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K24008

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-05	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5					NA	;NO3;NO3
1511258-05	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5					NA	;Cl;Cl
1511258-05RE1	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5					NA	;Added 12/9/2015 by MSJ;Added 12/9/2015 by MSJ
5K24008-BLK1		QC	11/24/2015	5	5					NA	
5K24008-BS1		QC	11/24/2015	5	5	15K0679		5000		NA	
5K24008-DUP1		QC	11/24/2015	5	5		1511258-05			NA	
5K24008-MS1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	
5K24008-MSD1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511021-01	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-01RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511021-02	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-02RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511224-04RE1	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;From 5K20011 by KBG on 11/24/2015;RR at 20X
1511224-04RE1	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Chloride;RR at 20X
1511256-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511256-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511258-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-01	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-03	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-03	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-05	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K24008

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-05	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5					NA	;NO3;NO3
1511258-05	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5					NA	;Cl;Cl
1511258-05RE1	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5					NA	;Added 12/9/2015 by MSJ;Added 12/9/2015 by MSJ
5K24008-BLK1		QC	11/24/2015	5	5					NA	
5K24008-BS1		QC	11/24/2015	5	5	15K0679		5000		NA	
5K24008-DUP1		QC	11/24/2015	5	5		1511258-05			NA	
5K24008-MS1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	
5K24008-MSD1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5L06002

Empirical Laboratories, LLC

Printed: 12/15/2015 9:02:08AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511204-08RE1	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 10X for SO4; KBG 11/23/15;RR at 10X for SO4; KBG 11/23/15
1511204-09RE1	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 11/23/15;RR at 20X for SO4; KBG 11/23/15
1511224-06RE1	A	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 10X; KBG 12/4/15;RR at 10X; KBG 12/4/15
1511226-01RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-02RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-03RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-04RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-05RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-06RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511229-01	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-02	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-03	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-04	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-05	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-06	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-06	C	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5L06002
1511229-07	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4

PREPARATION BENCH SHEET

5L06002

Empirical Laboratories, LLC

Printed: 12/15/2015 9:02:08AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511229-08	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5					NA	;Cl ,SO4;Cl ,SO4
5L06002-BLK1		QC	12/10/2015	5	5					NA	
5L06002-BS1		QC	12/10/2015	5	5	15L0426		5000		NA	
5L06002-DUP1		QC	12/10/2015	5	5		1511229-06			NA	
5L06002-MS1		QC	12/10/2015	22.5	25	15L0284	1511229-06	12500		NA	
5L06002-MSD1		QC	12/10/2015	22.5	25	15L0284	1511229-06	12500		NA	

Reagents Used:

Standard	Description

ANALYTICAL DATA PACKAGE
SDG # 1511224

PROJECT NAME: HOLLOMAN AFB
PROJECT LOCATION: HOLLOMAN AFB, NM
CONTRACT #: FA8903-D-09-D-8580

SUBMITTAL TO:
Mark Lyon
CB&I Federal Services
2440 Louisiana Blvd NE, Suite 300
Albuquerque, New Mexico 87110

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Sonya Gordon
Tel (615)345-1115
Fax (866)417-0548
Email: sgordon@empirlabs.com

Original Report Date: December 15, 2015
Report Revision #: 01
Revision Date: January 6, 2016
Total # of Pages: 171

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

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Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
Revision 01: The package was revised to add a note to the narrative regarding dilutions.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

Wet Chemistry:
Note – Samples 1511224-04 and -06 were re-analyzed as 1511224-04RE1 (20x for Chloride and Nitrate as N) and -06RE1 (10x for Chloride) due to over linear range concentrations in the 1x.

The following were analyzed outside of the method recommended holding time of 48 hours:
1511224-04RE1 for Nitrate as N
Note – The original analysis of the sample was over linear range and 1511224-04RE1 was re-analyzed at a 20x dilution but not until 124 hours and 23 minutes after the time sample. Both analyses are included in the report.

The following continuing calibration verifications exceeded criteria:
5L33615-CCV2 with a positive bias for Nitrate as N; note – the sample was not re-analyzed since it was already out of the method recommended holding time

The following matrix spikes exceeded criteria:
5K20011-MS1/MSD1 (1511224-03) with a negative bias for Nitrate as N; note – the associated batch spike is within criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

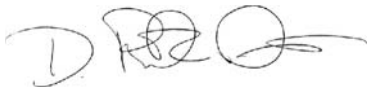
BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.



Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 11/06/2015)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 01/30/2016

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2016

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 11/30/2015

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2015

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of New Jersey, Department of Environmental Protection – NELAP Primary, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 11/30/2015

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-15-11
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Utah, Department of Health – NELAP, Certificate Number: TN0042015-7
- Aqueous
- Non-aqueous
- Expires: 07/31/2016

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 7700, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2015

State of Washington, Department of Ecology – NELAP, Lab ID: C934-15
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2016

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

1511224-01 A

Septic Sites

CHAIN OF CUSTODY

Ref. Document # 144106-H2015-151119 1 OF 1

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: Empirical
Lab Contact: Sonya Gordon
Lab Phone #: 615-345-1115

SAMPLER: P. MIDDLETON (210) 428-7274

Lab Sample Number	Sample Identification	Collection Information Date	Time	G/C	Matrix	# of Bottles	PRESERVATION HCL	NaOH	HNO_3	H2SO4	Ice		Requesting Testing Program: Nitrate by 300	Chloride by 9056A	Total Dissolved Soilds by 2540C				Turn Around Time Required
01	OTC533-GW-5331-MW01-151119	11/19/15	07:10	G	GW	1					X		X	X	X				ST
02	OTC533-GW-5331-MW01-151119-FD	11/19/15	07:10	G	GW	1					X		X	X	X				ST
03	OTC536-GW-5361-MW01-151119+MS/MSD	11/19/15	08:00	G	GW	3					X		X	X	X				ST
04	OTC542-GW-5421-MW01-151119	11/19/15	09:07	G	GW	1					X		X	X	X				ST
05	OTC543-GW-5431-MW01-151119	11/19/15	09:54	G	GW	1					X		X	X	X				ST
06	OTC544-GW-5441-MW01-151119	11/19/15	10:38	G	GW	1					X		X	X	X				ST

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s):

Relinquished By	Date	Time	Received By	Date	Time
Patrick J. Middleton	11/19/15	13:00	[signature]	11/20/15	920 ~~845~~
				TH 11/20/15	

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid
SOL = Other Solid GS = Air Sample

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1511224

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 11/20/15 @ 920 Work order# 1511224

1. Tracking # 1ZC6V7250198487666 (last 4 digits, FedEx)

   Courier: UPS

2. Temperature of rep. sample or temp blank when opened: -0.3 °C + correction factor(+0.4) = 0.1 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES ...NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) TH 11/20/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubble wrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence #_____

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) TH 11/20/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) TH 11/20/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) TH 11/20/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) TH 11/20/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) TH 11/20/15

C \Users\thutchings\Desktop\Cooler Receipt Updated 2014.doc

III. EMPIRICAL LABORATORIES, LLC
DATA ENTRY VERIFICATION FORM – PROJECT MANAGEMENT

Workorder#: 1511224

	Verification Item	Yes	No	NA
1.	**Cooler Receipt Form Issues reviewed and communicated to client**			X
2.	**Element/ Project Screen/items verified to match the COC/CRF:**			
a.	**Client/Project**	X		
b.	Comments requiring laboratory reminder?			X
c.	Client and/or Project Memo requiring laboratory reminder?			X
3.	**Receipt Screen items verified to match the COC/CRF:**			
a.	Received Date/Received By	X		
b.	Workorder Due Date	X		
c.	Package Due Date	X		
d.	TAT	X		
e.	SDG Identifier Populated	X		
4.	**Sample Information verified against COC for each sample:**			
a.	Name	X		
b.	QC Source	X		
c.	Matrix	X		
d.	Sample Type	X		
e.	Sampled Date/Time (Correct Time Zone)	X		
f.	Work Analyses/Versions	X		
g.	Sample Issues included in comments			X
h.	Unpreserved VOA holding time set to 7 days			X
5.	**Containers consistent with tests requested**	X		
6.	**Field data entered and matching COC, if applicable**			X
	I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial/date):	SMG 11/23/2015		

C:\Users\sgordon\Desktop\QS10_R21_20140729_CoolerReceiptForm.doc

WORK ORDER

Printed: 11/23/2015 6:05:14PM

1511224

Empirical Laboratories, LLC

Client: CB&I
Project: Holloman AFB

Project Manager: Sonya Gordon
Project Number: Holloman AFB

Report To:
CB&I
Mark Lyon
P.O. Box 98519
Baton Rouge, LA 70884
Phone: (225) 932-2500
Fax: (225) 932-2661

Invoice To:
CB&I
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Date Due: 12/08/2015 16:00 (10 day TAT)

Received By: Tiana L. Hutchings
Date Received: 11/20/2015 09:20

Logged In By: Tiana L. Hutchings
Date Logged In: 11/20/2015 09:46

Samples Received at: **0.1°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	No		

Analysis	Due	TAT	Expires	Comments
1511224-01 OTC533-GW-5331-MW01-151119 [Water] Sampled 11/19/2015 07:10 (GMT-07:00) Mountain Time (US				
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 08:10	Chloride
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 08:10	
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 08:10	
1511224-02 OTC533-GW-5331-MW01-151119-FD [Water] Sampled 11/19/2015 07:10 (GMT-07:00) Mountain Time (US				
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 08:10	
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 08:10	Chloride
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 08:10	
1511224-03 OTC536-GW-5361-MW01-151119 [Water] Sampled 11/19/2015 08:00 (GMT-07:00) Mountain Time (US				**MS/MSD**
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 09:00	
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 09:00	
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 09:00	Chloride
1511224-04 OTC542-GW-5421-MW01-151119 [Water] Sampled 11/19/2015 09:07 (GMT-07:00) Mountain Time (US				
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 10:07	Chloride
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 10:07	
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 10:07	

1511224

Empirical Laboratories, LLC

Client:	**CB&I**	**Project Manager:**	**Sonya Gordon**
Project:	**Holloman AFB**	**Project Number:**	**Holloman AFB**

Analysis	Due	TAT	Expires	Comments
1511224-05 OTC543-GW-5431-MW01-151119 [Water] Sampled 11/19/2015 09:54 (GMT-07:00) Mountain Time (US				
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 10:54	
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 10:54	Chloride
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 10:54	
1511224-06 OTC544-GW-5441-MW01-151119 [Water] Sampled 11/19/2015 10:38 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/03/2015 16:00	10	11/26/2015 11:38	
WC_ANIONS_300.0 (Short Hold)	12/03/2015 16:00	10	11/21/2015 11:38	
WC_ANIONS_9056A (Regular)	12/03/2015 16:00	10	12/17/2015 11:38	Chloride

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Holloman AFB
SDG #: 1511224

QC LEVEL: Level IV
Report Due: 12/8/2015
Client Sample Count: 5

Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	E300.0	SM2540C	SW9056A
Client Sample	11/19/2015	11/20/2015	1511224-01	OTC533-GW-5331-MW01-151119	Water	X	X	X
Field Duplicate	11/19/2015	11/20/2015	1511224-02	OTC533-GW-5331-MW01-151119-FD	Water	X	X	X
Client Sample	11/19/2015	11/20/2015	1511224-03	OTC536-GW-5361-MW01-151119	Water	MS/MSD	MS/MSD	MS/MSD
Client Sample	11/19/2015	11/20/2015	1511224-04	OTC542-GW-5421-MW01-151119	Water	X	X	X
Client Sample	11/19/2015	11/20/2015	1511224-05	OTC543-GW-5431-MW01-151119	Water	X	X	X
Client Sample	11/19/2015	11/20/2015	1511224-06	OTC544-GW-5441-MW01-151119	Water	X	X	X

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-01 [OTC533-GW-5331-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-02 [OTC533-GW-5331-MW01-151119-FD]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-03 [OTC536-GW-5361-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-04 [OTC542-GW-5421-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-05 [OTC543-GW-5431-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-06 [OTC544-GW-5441-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-01 [OTC533-GW-5331-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-02 [OTC533-GW-5331-MW01-151119-FD]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-03 [OTC536-GW-5361-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15
1511224-05 [OTC543-GW-5431-MW01-151119]	5K20011	5.00/5.00	5.00	5.00	1.00			11/20/15

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-01 [OTC533-GW-5331-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-02 [OTC533-GW-5331-MW01-151119-FD]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-03 [OTC536-GW-5361-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-04 [OTC542-GW-5421-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-05 [OTC543-GW-5431-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15
1511224-06 [OTC544-GW-5441-MW01-151119]	5K23005	100.00/100.00	100	100	1.00			11/23/15

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-04RE1 [OTC542-GW-5421-MW01-151119]	5K24008	5.00/5.00	5.00	5.00	20.00			11/24/15

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-04RE1 [OTC542-GW-5421-MW01-151119]	5K24008	5.00/5.00	5.00	5.00	20.00			11/24/15

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511224-06RE1 [OTC544-GW-5441-MW01-151119]	5L06002	5.00/5.00	5.00	5.00	10.00			12/10/15

ANALYSIS DATA SHEET

OTC533-GW-5331-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-01
Sampled:	11/19/15 07:10	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3860**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**242**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 17:25
14797-55-8	Nitrate as N	**1.37**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 17:25

ANALYSIS DATA SHEET

OTC533-GW-5331-MW01-151119-FD

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-02
Sampled:	11/19/15 07:10	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3340**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**242**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 17:42
14797-55-8	Nitrate as N	**1.30**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 17:42

ANALYSIS DATA SHEET

OTC536-GW-5361-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-03
Sampled:	11/19/15 08:00	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3360**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**91.6**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 18:00
14797-55-8	Nitrate as N	**0.154**	**0.0330**	0.100	0.250	1	JN	E300.0	5K20011	11/20/15 18:00

ANALYSIS DATA SHEET

OTC542-GW-5421-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-04
Sampled:	11/19/15 09:07	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**4440**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**1750**	**3.40**	6.60	10.0	20	D	SW9056A	5K24008	11/24/15 13:30
14797-55-8	Nitrate as N	**38.9**	**0.0330**	0.100	0.250	1	E	E300.0	5K20011	11/20/15 19:12
14797-55-8	Nitrate as N	**52.1**	**0.660**	2.00	5.00	20	DH1X	E300.0	5K24008	11/24/15 13:30

ANALYSIS DATA SHEET

OTC543-GW-5431-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-05
Sampled:	11/19/15 09:54	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3080**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**64.0**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 19:29
14797-55-8	Nitrate as N	**3.08**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 19:29

ANALYSIS DATA SHEET

OTC544-GW-5441-MW01-151119

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511224-06
Sampled:	11/19/15 10:38	Received:	11/20/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3610**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40
16887-00-6	Chloride	**895**	**1.70**	3.30	5.00	10	D	SW9056A	5L06002	12/10/15 18:53
14797-55-8	Nitrate as N	**15.3**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 19:47

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K20011-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5K20011	11/20/15 16:49
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	U	E300.0	5K20011	11/20/15 16:49

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511224

Project: Holloman AFB

Laboratory ID: 5K20011-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.57**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 17:07
14797-55-8	Nitrate as N	**2.704**	**0.0330**	0.100	0.250	1		E300.0	5K20011	11/20/15 17:07

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K20011-DUP1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**91.18**	**0.170**	0.330	0.500	1		SW9056A	5K20011	11/20/15 18:54
14797-55-8	Nitrate as N	**0.1502**	**0.0330**	0.100	0.250	1	J	E300.0	5K20011	11/20/15 18:54

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K20011-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**119.5**	**0.189**	0.367	0.556	1		SW9056A	5K20011	11/20/15 18:18
14797-55-8	Nitrate as N	**1.947**	**0.0367**	0.111	0.278	1		E300.0	5K20011	11/20/15 18:18

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K20011-MSD1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**119.4**	**0.189**	0.367	0.556	1		SW9056A	5K20011	11/20/15 18:36
14797-55-8	Nitrate as N	**1.962**	**0.0367**	0.111	0.278	1		E300.0	5K20011	11/20/15 18:36

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K23005-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	5K23005	11/23/15 17:40

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511224

Project: Holloman AFB

Laboratory ID: 5K23005-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1095**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K23005-DUP1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**3323**	**20.0**	20.0	20.0	1		SM2540C	5K23005	11/23/15 17:40

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K24008-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5K24008	11/24/15 12:18
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	UX	E300.0	5K24008	11/24/15 12:18

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511224

Project: Holloman AFB

Laboratory ID: 5K24008-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.55**	**0.170**	0.330	0.500	1		SW9056A	5K24008	11/24/15 12:36
14797-55-8	Nitrate as N	**2.342**	**0.0330**	0.100	0.250	1	X	E300.0	5K24008	11/24/15 12:36

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L06002-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5L06002	12/10/15 21:34

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511224

Project: Holloman AFB

Laboratory ID: 5L06002-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.35**	**0.170**	0.330	0.500	1		SW9056A	5L06002	12/10/15 21:52

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Nitrate as N	3.164	2.881	91.1	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Chloride	4.200	4.093	97.5	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33615-CCV1	Nitrate as N	2.500	2.337	93.5	mg/L	+/- 10.00%
5L33615-CCV2	**Nitrate as N**	**2.500**	**3.080**	**123**	**mg/L**	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33615-CCV1	Chloride	25.00	25.31	101	mg/L	+/- 10.00%
5L33615-CCV2	Chloride	25.00	25.66	103	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33619

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33619-CCV1	Nitrate as N	2.500	2.702	108	mg/L	+/- 10.00%
5L33619-CCV2	Nitrate as N	2.500	2.721	109	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33619

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33619-CCV1	Chloride	25.00	25.32	101	mg/L	+/- 10.00%
5L33619-CCV2	Chloride	25.00	25.27	101	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511224
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L34802

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L34802-CCV1	Chloride	25.00	25.33	101	mg/L	+/- 10.00%
5L34802-CCV2	Chloride	25.00	25.34	101	mg/L	+/- 10.00%
5L34802-CCV3	Chloride	25.00	25.37	101	mg/L	+/- 10.00%
5L34802-CCV4	Chloride	25.00	25.32	101	mg/L	+/- 10.00%

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33615-CRL2	Nitrate as N	0.1000	0.07290	72.9	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33615-CRL1	Chloride	0.5000	0.4526	90.5	mg/L	50 - 150

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33619

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33619-CRL2	Nitrate as N	0.1000	0.1028	103	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33619

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33619-CRL1	Chloride	0.5000	0.4671	93.4	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L34802

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L34802-CRL1	Chloride	0.5000	0.4473	89.5	mg/L	50 - 150

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K20011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K20011-BLK1	Nitrate as N	0.000800	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K20011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K20011-BLK1	Chloride	0.00900	0.170	0.500	mg/L	U	SW9056A

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K23005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K23005-BLK1	Total Dissolved Solids	9.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K24008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K24008-BLK1	Nitrate as N	0.000400	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5K24008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K24008-BLK1	Chloride	0.00540	0.170	0.500	mg/L	U	SW9056A

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Batch: 5L06002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L06002-BLK1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Nitrate as N	0.001700	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Chloride	0.03020	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L33615
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33615-CCB1	Nitrate as N	0.00120	0.0330	0.250	mg/L	U	E300.0
5L33615-CCB2	Nitrate as N	0.00640	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L33615
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33615-CCB1	Chloride	0.00280	0.170	0.500	mg/L	U	SW9056A
5L33615-CCB2	Chloride	0.00650	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L33619
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33619-CCB1	Nitrate as N	0.000800	0.0330	0.250	mg/L	U	E300.0
5L33619-CCB2	Nitrate as N	0.00180	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L33619
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33619-CCB1	Chloride	0.00160	0.170	0.500	mg/L	U	SW9056A
5L33619-CCB2	Chloride	0.00200	0.170	0.500	mg/L	U	SW9056A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Sequence: 5L34802
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L34802-CCB1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB2	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB3	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB4	Chloride	0.00170	0.170	0.500	mg/L	U	SW9056A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E300.0

OTC536-GW-5361-MW01-151119

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5K20011

% Solids:

Source Sample Name: **1511224-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate as N	2.778	0.1544	1.947	64.5	N	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Nitrate as N	2.778	1.962	65.1	0.796	N	15	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9056A

OTC536-GW-5361-MW01-151119

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5K20011

% Solids:

Source Sample Name: **1511224-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Chloride	27.78	91.56	119.5	101		80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Chloride	27.78	119.4	100	0.127		15	80 - 120

536-GW-5361-MW01-15

DUPLICATES

SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511224
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K20011-DUP1
Batch: 5K20011
Lab Source ID: 1511224-03
Preparation: WC_PREP_ANIONS_W
Initial/Final: 5 mL / 5 mL
Source Sample Name: OTC536-GW-5361-MW01-151119
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Chloride	10	91.6	91.18	0.406		SW9056A
Nitrate as N	10	0.154 J	0.1502 J	2.76		E300.0

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Batch: 5K23005
Preparation: pNone
Source Sample Name: OTC536-GW-5361-MW01-151119

SDG: 1511224
Project: Holloman AFB
Laboratory ID: 5K23005-DUP1
Lab Source ID: 1511224-03
Initial/Final: 100 mL / 100 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	3360	3323	1.05		SM2540C

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K20011	Laboratory ID:	5K20011-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.704	108	90 - 110

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K20011	Laboratory ID:	5K20011-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.57	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K23005	Laboratory ID:	5K23005-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	988.0	1095	111	80 - 120

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K24008	Laboratory ID:	5K24008-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.342	93.7	90 - 110

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K24008	Laboratory ID:	5K24008-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.55	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L06002	Laboratory ID:	5L06002-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.35	101	80 - 120

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K20011 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC533-GW-5331-MW01-151119	1511224-01	11/20/15 14:49	5.00	5.00
OTC533-GW-5331-MW01-151119-FD	1511224-02	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	1511224-03	11/20/15 14:49	5.00	5.00
OTC542-GW-5421-MW01-151119	1511224-04	11/20/15 14:49	5.00	5.00
OTC543-GW-5431-MW01-151119	1511224-05	11/20/15 14:49	5.00	5.00
OTC544-GW-5441-MW01-151119	1511224-06	11/20/15 14:49	5.00	5.00
Blank	5K20011-BLK1	11/20/15 14:49	5.00	5.00
LCS	5K20011-BS1	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	5K20011-DUP1	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	5K20011-MS1	11/20/15 14:49	22.50	25.00
OTC536-GW-5361-MW01-151119	5K20011-MSD1	11/20/15 14:49	22.50	25.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K20011 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC533-GW-5331-MW01-151119	1511224-01	11/20/15 14:49	5.00	5.00
OTC533-GW-5331-MW01-151119-FD	1511224-02	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	1511224-03	11/20/15 14:49	5.00	5.00
OTC543-GW-5431-MW01-151119	1511224-05	11/20/15 14:49	5.00	5.00
Blank	5K20011-BLK1	11/20/15 14:49	5.00	5.00
LCS	5K20011-BS1	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	5K20011-DUP1	11/20/15 14:49	5.00	5.00
OTC536-GW-5361-MW01-151119	5K20011-MS1	11/20/15 14:49	22.50	25.00
OTC536-GW-5361-MW01-151119	5K20011-MSD1	11/20/15 14:49	22.50	25.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K23005 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC533-GW-5331-MW01-151119	1511224-01	11/23/15 06:48	100.00	100.00
OTC533-GW-5331-MW01-151119-FD	1511224-02	11/23/15 06:48	100.00	100.00
OTC536-GW-5361-MW01-151119	1511224-03	11/23/15 06:48	100.00	100.00
OTC542-GW-5421-MW01-151119	1511224-04	11/23/15 06:48	100.00	100.00
OTC543-GW-5431-MW01-151119	1511224-05	11/23/15 06:48	100.00	100.00
OTC544-GW-5441-MW01-151119	1511224-06	11/23/15 06:48	100.00	100.00
Blank	5K23005-BLK1	11/23/15 06:48	100.00	100.00
LCS	5K23005-BS1	11/23/15 06:48	20.00	20.00
OTC536-GW-5361-MW01-151119	5K23005-DUP1	11/23/15 06:48	100.00	100.00

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K24008 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC542-GW-5421-MW01-151119	1511224-04RE1	11/24/15 09:48	5.00	5.00
Blank	5K24008-BLK1	11/24/15 09:48	5.00	5.00
LCS	5K24008-BS1	11/24/15 09:48	5.00	5.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5K24008 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC542-GW-5421-MW01-151119	1511224-04RE1	11/24/15 09:48	5.00	5.00
Blank	5K24008-BLK1	11/24/15 09:48	5.00	5.00
LCS	5K24008-BS1	11/24/15 09:48	5.00	5.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Batch: 5L06002 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC544-GW-5441-MW01-151119	1511224-06RE1	12/10/15 14:40	5.00	5.00
Blank	5L06002-BLK1	12/10/15 14:40	5.00	5.00
LCS	5L06002-BS1	12/10/15 14:40	5.00	5.00

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: 1511224

Client: CB&I

Project: Holloman AFB

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	5K23005-BS1	112315-002	11/23/15 17:40
OTC536-GW-5361-MW01-151119	5K23005-DUP1	112315-003	11/23/15 17:40
Blank	5K23005-BLK1	112315-001	11/23/15 17:40

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33615	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33615-CCV1	SEQ-CCV1_Integration	11/24/15 10:49
Calibration Blank	5L33615-CCB1	SEQ-CCB1_Integration	11/24/15 11:07
Instrument RL Check	5L33615-CRL2	SEQ-CRL2_Integration	11/24/15 11:42
Blank	5K24008-BLK1	5K24008-BLK1_Integration	11/24/15 12:18
LCS	5K24008-BS1	5K24008-BS1_Integration	11/24/15 12:36
OTC542-GW-5421-MW01-151119	1511224-04RE1	11224-04RE1@20X_Integratio	11/24/15 13:30
Calibration Check	5L33615-CCV2	SEQ-CCV2_Integration	11/24/15 16:10
Calibration Blank	5L33615-CCB2	SEQ-CCB2_Integration	11/24/15 16:28

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33615	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33615-CCV1	SEQ-CCV1_Integration	11/24/15 10:49
Calibration Blank	5L33615-CCB1	SEQ-CCB1_Integration	11/24/15 11:07
Instrument RL Check	5L33615-CRL1	SEQ-CRL1_Integration	11/24/15 11:25
Blank	5K24008-BLK1	5K24008-BLK1_Integration	11/24/15 12:18
LCS	5K24008-BS1	5K24008-BS1_Integration	11/24/15 12:36
OTC542-GW-5421-MW01-151119	1511224-04RE1	11224-04RE1@20X_Integratio	11/24/15 13:30
Calibration Check	5L33615-CCV2	SEQ-CCV2_Integration	11/24/15 16:10
Calibration Blank	5L33615-CCB2	SEQ-CCB2_Integration	11/24/15 16:28

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33619	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33619-CCV1	SEQ-CCV1_Integration	11/20/15 14:44
Calibration Blank	5L33619-CCB1	SEQ-CCB1_Integration	11/20/15 15:02
Instrument RL Check	5L33619-CRL2	SEQ-CRL2_Integration	11/20/15 16:13
Blank	5K20011-BLK1	5K20011-BLK1_Integration	11/20/15 16:49
LCS	5K20011-BS1	5K20011-BS1_Integration	11/20/15 17:07
OTC533-GW-5331-MW01-151119	1511224-01	1511224-01_Integration	11/20/15 17:25
OTC533-GW-5331-MW01-151119-F	1511224-02	1511224-02_Integration	11/20/15 17:42
OTC536-GW-5361-MW01-151119	1511224-03	1511224-03_Integration	11/20/15 18:00
OTC536-GW-5361-MW01-151119	5K20011-MS1	5K20011-MS1_Integration	11/20/15 18:18
OTC536-GW-5361-MW01-151119	5K20011-MSD1	5K20011-MSD1_Integration	11/20/15 18:36
OTC536-GW-5361-MW01-151119	5K20011-DUP1	5K20011-DUP1_Integration	11/20/15 18:54
OTC542-GW-5421-MW01-151119	1511224-04	1511224-04_Integration	11/20/15 19:12
OTC543-GW-5431-MW01-151119	1511224-05	1511224-05_Integration	11/20/15 19:29
OTC544-GW-5441-MW01-151119	1511224-06	1511224-06_Integration	11/20/15 19:47
Calibration Check	5L33619-CCV2	SEQ-CCV2_Integration	11/20/15 20:41
Calibration Blank	5L33619-CCB2	SEQ-CCB2_Integration	11/20/15 20:59

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33619	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33619-CCV1	SEQ-CCV1_Integration	11/20/15 14:44
Calibration Blank	5L33619-CCB1	SEQ-CCB1_Integration	11/20/15 15:02
Instrument RL Check	5L33619-CRL1	SEQ-CRL1_Integration	11/20/15 15:55
Blank	5K20011-BLK1	5K20011-BLK1_Integration	11/20/15 16:49
LCS	5K20011-BS1	5K20011-BS1_Integration	11/20/15 17:07
OTC533-GW-5331-MW01-151119	1511224-01	1511224-01_Integration	11/20/15 17:25
OTC533-GW-5331-MW01-151119-F	1511224-02	1511224-02_Integration	11/20/15 17:42
OTC536-GW-5361-MW01-151119	1511224-03	1511224-03_Integration	11/20/15 18:00
OTC536-GW-5361-MW01-151119	5K20011-MS1	5K20011-MS1_Integration	11/20/15 18:18
OTC536-GW-5361-MW01-151119	5K20011-MSD1	5K20011-MSD1_Integration	11/20/15 18:36
OTC536-GW-5361-MW01-151119	5K20011-DUP1	5K20011-DUP1_Integration	11/20/15 18:54
OTC543-GW-5431-MW01-151119	1511224-05	1511224-05_Integration	11/20/15 19:29
Calibration Check	5L33619-CCV2	SEQ-CCV2_Integration	11/20/15 20:41
Calibration Blank	5L33619-CCB2	SEQ-CCB2_Integration	11/20/15 20:59

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L34802	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L34802-CCV1	SEQ-CCV1_Integration	12/10/15 10:33
Calibration Blank	5L34802-CCB1	SEQ-CCB1_Integration	12/10/15 10:51
Instrument RL Check	5L34802-CRL1	SEQ-CRL1_Integration	12/10/15 11:09
Calibration Check	5L34802-CCV2	SEQ-CCV2_Integration	12/10/15 17:24
Calibration Blank	5L34802-CCB2	SEQ-CCB2_Integration	12/10/15 17:42
OTC544-GW-5441-MW01-151119	1511224-06RE1	511224-06RE1@10_Integratio	12/10/15 18:53
Calibration Check	5L34802-CCV3	SEQ-CCV3_Integration	12/10/15 20:58
Calibration Blank	5L34802-CCB3	SEQ-CCB3_Integration	12/10/15 21:16
Blank	5L06002-BLK1	5L06002-BLK1_Integration	12/10/15 21:34
LCS	5L06002-BS1	5L06002-BS1_Integration	12/10/15 21:52
Calibration Check	5L34802-CCV4	SEQ-CCV4_Integration	12/11/15 02:01
Calibration Blank	5L34802-CCB4	SEQ-CCB4_Integration	12/11/15 02:19

INITIAL CALIBRATION DATA

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC		SDG:	1511224	
Client:	CB&I		Project:	Holloman AFB	
Calibration:	5323007		Instrument:	WC-IC2	
Matrix:	Water		Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	0.126	0.1032627	0.252	0.1055079	0.63	0.1077229	1.26	0.114327	6.3	0.1233052	12.6	0.12778
Chloride	0.5	0.2720276	1	0.287169	2.5	0.294335	5	0.3032684	25	0.3014536	50	0.3060892
Fluoride	0.05	0.44033	0.1	0.461829	0.25	0.4932644	0.5	0.50716	2.5	0.5010368	5	0.4944214
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552
Sulfate as SO4	0.5	0.2256678	1	0.2202215	2.5	0.2180314	5	0.2202646	25	0.2174918	50	0.2208332

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	31.5	0.1254725	50.4	0.1305396	63	~~0.1261554~~						
Chloride	125	0.3061993	200	0.3057162	250	0.3029497						
Fluoride	12.5	~~0.4610045~~	20	~~0.4356024~~	25	~~0.4186656~~						
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						
Sulfate as SO4	125	0.2174702	200	0.2259882	250	0.22377						

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511224	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Bromide	0.1172397	9.257594	8.14375	0.8992098	0.9994942		0.995	
Chloride	0.2976898	3.86824	4.845667	0.2683757	0.9999608		0.995	
Fluoride	0.4830069	5.409777	3.326	0.1833613	0.9999443		0.995	
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	
Sulfate as SO4	0.2210821	1.508986	8.729111	3.18872	0.9997657		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC533-GW-5331-MW01-151119	11/19/15 07:10	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 17:25	1.39	2.00	
OTC533-GW-5331-MW01-151119-F	11/19/15 07:10	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 17:42	1.40	2.00	
OTC536-GW-5361-MW01-151119	11/19/15 08:00	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 18:00	1.38	2.00	
OTC542-GW-5421-MW01-151119	11/19/15 09:07	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 19:12	1.38	2.00	
OTC542-GW-5421-MW01-151119	11/19/15 09:07	11/20/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 13:30	5.14	2.00	*
OTC543-GW-5431-MW01-151119	11/19/15 09:54	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 19:29	1.36	2.00	
OTC544-GW-5441-MW01-151119	11/19/15 10:38	11/20/15 09:20	11/20/15 14:49	N/A	2.00	11/20/15 19:47	1.34	2.00	

HOLDING TIME SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC533-GW-5331-MW01-151119	11/19/15 07:10	11/20/15 09:20	11/23/15 06:48	3.94	7.00	11/23/15 17:40	0.45	7.00	
OTC533-GW-5331-MW01-151119-F	11/19/15 07:10	11/20/15 09:20	11/23/15 06:48	3.94	7.00	11/23/15 17:40	0.45	7.00	
OTC536-GW-5361-MW01-151119	11/19/15 08:00	11/20/15 09:20	11/23/15 06:48	3.91	7.00	11/23/15 17:40	0.45	7.00	
OTC542-GW-5421-MW01-151119	11/19/15 09:07	11/20/15 09:20	11/23/15 06:48	3.86	7.00	11/23/15 17:40	0.45	7.00	
OTC543-GW-5431-MW01-151119	11/19/15 09:54	11/20/15 09:20	11/23/15 06:48	3.83	7.00	11/23/15 17:40	0.45	7.00	
OTC544-GW-5441-MW01-151119	11/19/15 10:38	11/20/15 09:20	11/23/15 06:48	3.80	7.00	11/23/15 17:40	0.45	7.00	

HOLDING TIME SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511224

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC533-GW-5331-MW01-151119	11/19/15 07:10	11/20/15 09:20	11/20/15 14:49	N/A	28.00	11/20/15 17:25	1.39	28.00	
OTC533-GW-5331-MW01-151119-F	11/19/15 07:10	11/20/15 09:20	11/20/15 14:49	N/A	28.00	11/20/15 17:42	1.40	28.00	
OTC536-GW-5361-MW01-151119	11/19/15 08:00	11/20/15 09:20	11/20/15 14:49	N/A	28.00	11/20/15 18:00	1.38	28.00	
OTC542-GW-5421-MW01-151119	11/19/15 09:07	11/20/15 09:20	11/24/15 09:48	N/A	28.00	11/24/15 13:30	5.14	28.00	
OTC543-GW-5431-MW01-151119	11/19/15 09:54	11/20/15 09:20	11/20/15 14:49	N/A	28.00	11/20/15 19:29	1.36	28.00	
OTC544-GW-5441-MW01-151119	11/19/15 10:38	11/20/15 09:20	12/10/15 14:40	N/A	28.00	12/10/15 18:53	21.30	28.00	

Data for Wet Chemistry
Supporting Raw Data / Logs

Solids, Total Dissolved
TDS

Empirical Laboratories

Client(s): CB&I

Date on: 11/23/2015
Time on: 17:40
Temp on: 104

Date off: 11/24/2015
Time off: 17:30
Temp off: 109

MDL = 2 mg/L
MDL of 2 mg/L assumes a volume of 1L. Adjust the MDL to be proportional to the volume used.

QC Criteria
Method Blank < MDL
LCS = ±20% of True Value

Analyst(s): TSF
Historical Data Checked: Y
Analyst Authorization:
Method Reference: SM2540C/160.1
Method Type: Gravimetric
Oven Temp. 180 C +/- 2 C?(Y/N): Y
Balance calibration verified?(Y/N): Y
Batch: 5K23005

Crucible ID	Sample Type	Lab ID	Client	Field ID	True Value (mg/L)	Sample Volume (ml)	Crucible Tare Weight (g)	Crucible Dried Weight #1 (g)	Crucible Dried Weight #2 (g)	Crucible Dried Weight #3 (g)	Crucible Dried Weight #4 (g)	Crucible Dried Weight #5 (g)	*TDS (mg/L)*	*Recovery or RPD (%)*	Control Limit, Lower (%)	Control Limit, Upper (%)	Comments
you	QC	5K23005-BLK1	QC	DIWater	0	100	68.2564	68.2568	68.2573				9		-20 mg/L	+20 mg/L	
kiss	QC	5K23005-BS1	QC	13L0491	988	20	67.3187	67.3397	67.6401	67.3407	67.3406		1095	110.8	80	120	
word	QC	5K23005-DUP1	1511224-03			100	67.2635	67.6071	67.5919	67.5961	67.5958		3323				
w		1511199-10				100	76.7618	76.7701	76.7675	76.7707	76.7712		94				
107		1511199-11				100	77.3380	77.4007	77.3963	77.3985	77.3985		605				
Ant		1511199-12				100	67.9340	68.0009	67.9502	67.9528	67.9524		184				
H		1511199-14				100	67.9223	67.9287	67.9287				64				
YO		1511224-01				100	67.6090	68.0190	67.9906	67.9930	67.9946	67.9945	3855				
RJD		1511224-02				100	78.2838	78.6875	78.6148	78.6172	78.6177		3339				
LA		1511224-03				100	67.2341	67.5848	67.5655	67.5685	67.5695	67.5699	3358				
G		1511224-04				100	67.2526	68.7946	67.6908	67.6960	67.6963		4437				
US		1511224-05				100	67.0120	68.5497	67.3181	67.3207	67.3202		3082				
NYE		1511224-06				100	68.9931	70.1605	69.3502	69.3525	69.3538	69.3541	3610				

Comments:

Temp on (°C):	104	180	180	185		
Temp off (°C):	109	185	185	180		
Date/Time on:	11/23/2015 17:40	11/24/2015 20:00	11/25/2015 15:10	11/29/2015 15:15		
Date/Time off :	11/24/2015 17:30	11/25/2015 14:00	11/29/2015 13:45	11/29/2015 17:40		

2nd BLQ 12/11/15

SOP186_R09_20140730_TDS_Blank.xls

Sequence Overview

Sequence Details

Name:	**111715**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**17/Nov/15 12:51:49**
No. of Injections:	**14**	*Updated By:*	**NSH-IONC2**

Injection Details

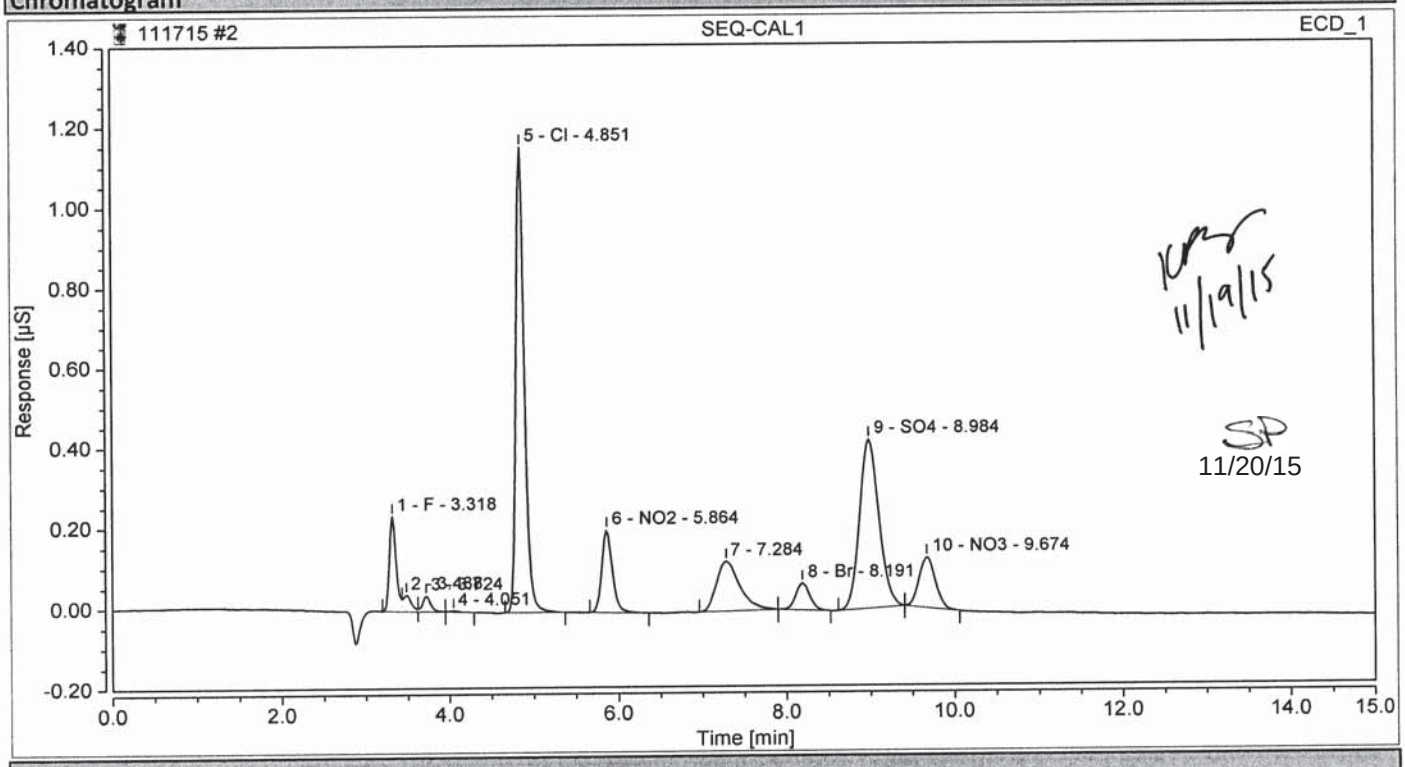
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		17/Nov/15 07:37:12	Finished
2	SEQ-CAL1	2	Calibration Standard	01	17/Nov/15 07:54:59	Finished
3	SEQ-CAL2	3	Calibration Standard	02	17/Nov/15 08:12:50	Finished
4	SEQ-CAL3	4	Calibration Standard	03	17/Nov/15 08:30:40	Finished
5	SEQ-CAL4	5	Calibration Standard	04	17/Nov/15 08:48:31	Finished
6	SEQ-CAL5	6	Calibration Standard	05	17/Nov/15 09:06:21	Finished
7	SEQ-CAL6	7	Calibration Standard	06	17/Nov/15 09:24:11	Finished
8	SEQ-CAL7	8	Calibration Standard	07	17/Nov/15 09:42:01	Finished
9	SEQ-CAL8	9	Calibration Standard	08	17/Nov/15 09:59:51	Finished
10	SEQ-CAL9	10	Calibration Standard	09	17/Nov/15 10:17:41	Finished
11	SEQ-ICV1	11	Unknown		17/Nov/15 10:35:31	Finished
12	SEQ-ICB1	12	Unknown		17/Nov/15 10:53:21	Finished
13	CCV TEST	13	Unknown		17/Nov/15 11:11:11	Finished
14	BLANK	14	Unknown		17/Nov/15 11:29:01	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**01**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 07:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

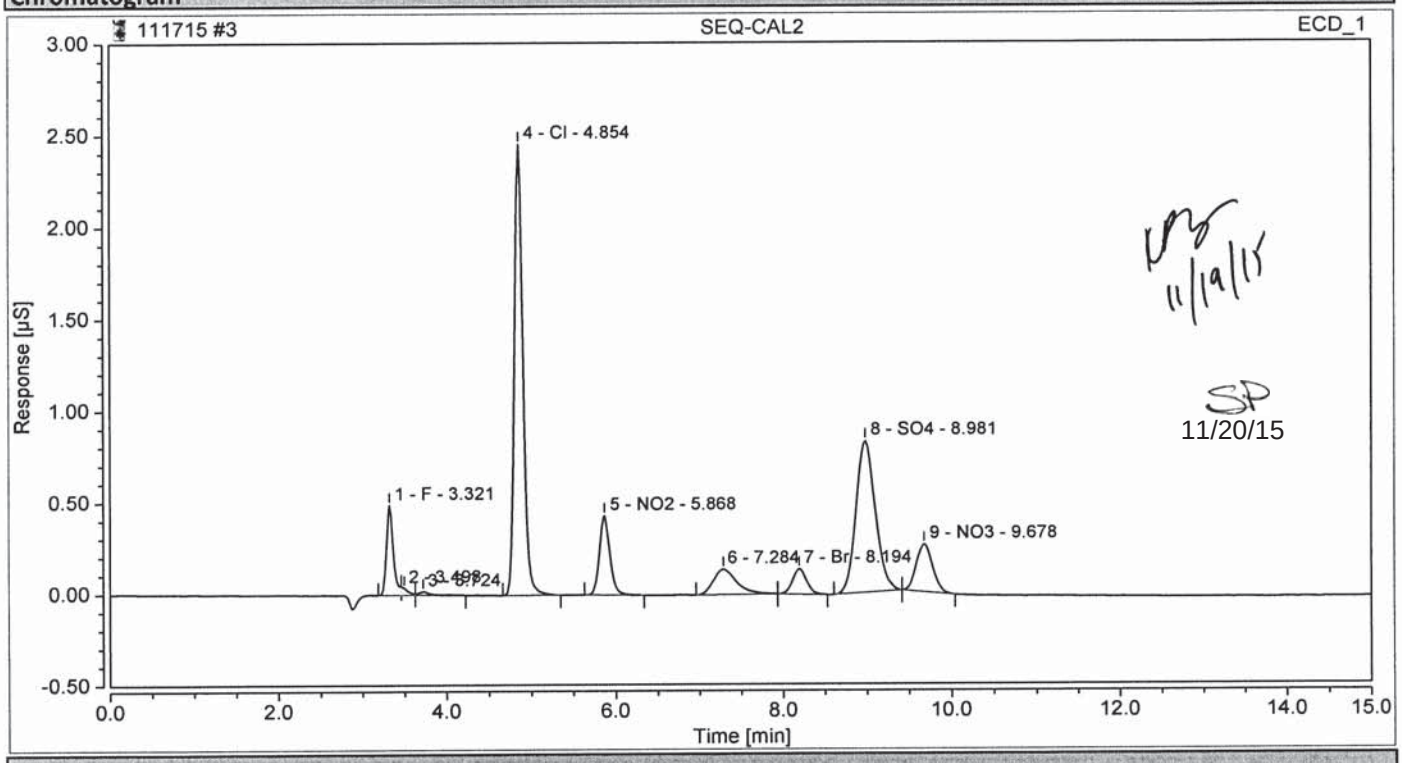
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0220165	0.236	5.61	9.74	0.0444
2		3.488	0.0046279	0.041	1.18	1.69	n.a.
3		3.724	0.0045613	0.040	1.16	1.64	n.a.
4		4.051	0.0004082	0.003	0.10	0.12	n.a.
5	Cl	4.851	0.1360138	1.160	34.67	47.89	0.4469
6	NO2	5.864	0.0301038	0.206	7.67	8.48	0.0529
7		7.284	0.0402353	0.124	10.26	5.12	n.a.
8	Br	8.191	0.0130111	0.067	3.32	2.75	0.1009
9	SO4	8.984	0.1128339	0.421	28.76	17.37	0.5046
10	NO3	9.674	0.0284874	0.126	7.26	5.21	0.0369
Total:			**0.392**	**2.423**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL2**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**02**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

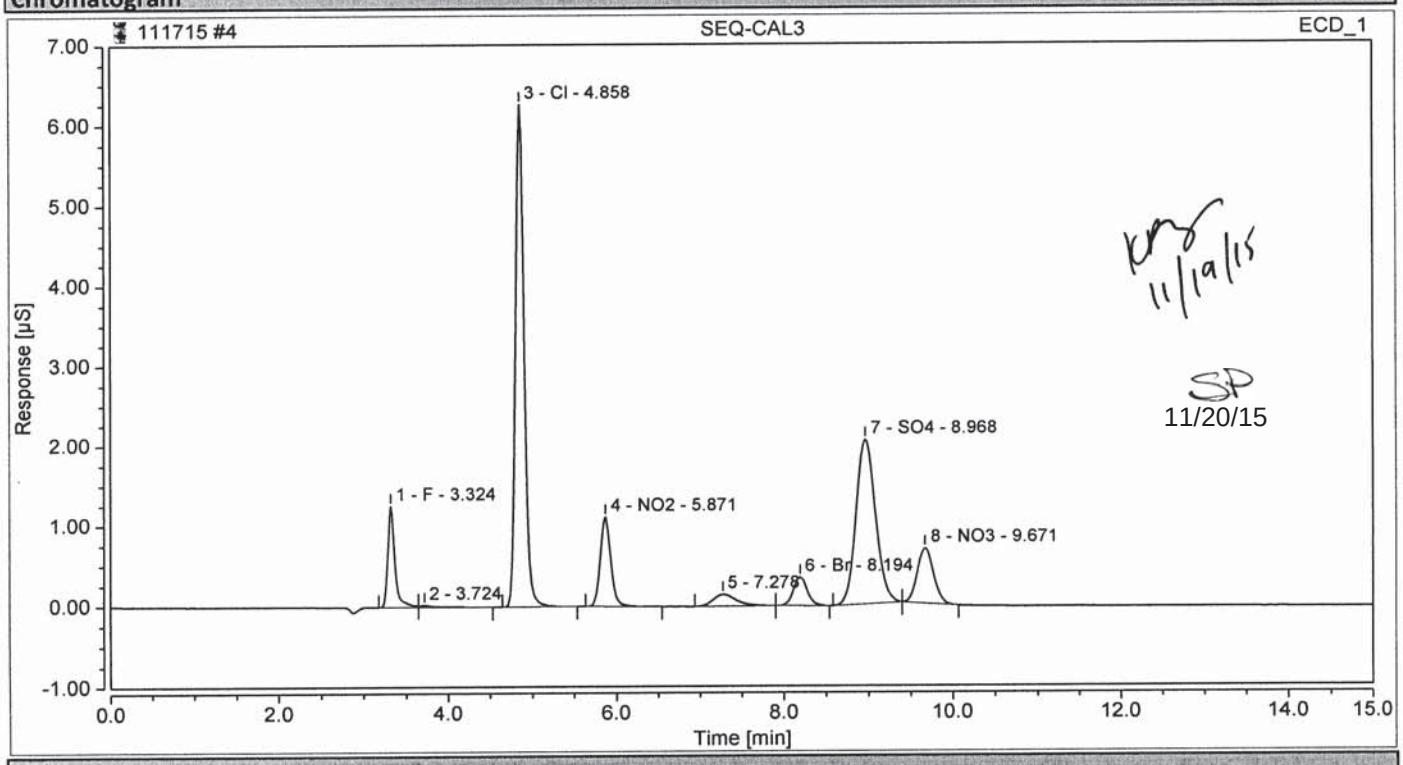
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0461829	0.490	6.14	10.21	0.0931
2		3.498	0.0038392	0.037	0.51	0.78	n.a.
3		3.724	0.0031064	0.019	0.41	0.40	n.a.
4	Cl	4.854	0.2871690	2.458	38.17	51.18	0.9436
5	NO2	5.868	0.0623479	0.433	8.29	9.01	0.1096
6		7.284	0.0446872	0.139	5.94	2.89	n.a.
7	Br	8.194	0.0265880	0.137	3.53	2.86	0.2061
8	SO4	8.981	0.2202215	0.829	29.27	17.25	0.9849
9	NO3	9.678	0.0581981	0.260	7.74	5.42	0.0754
Total:			**0.752**	**4.803**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL3**	*Run Time (min):*	**15.00**
Vial Number:	**4**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**03**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

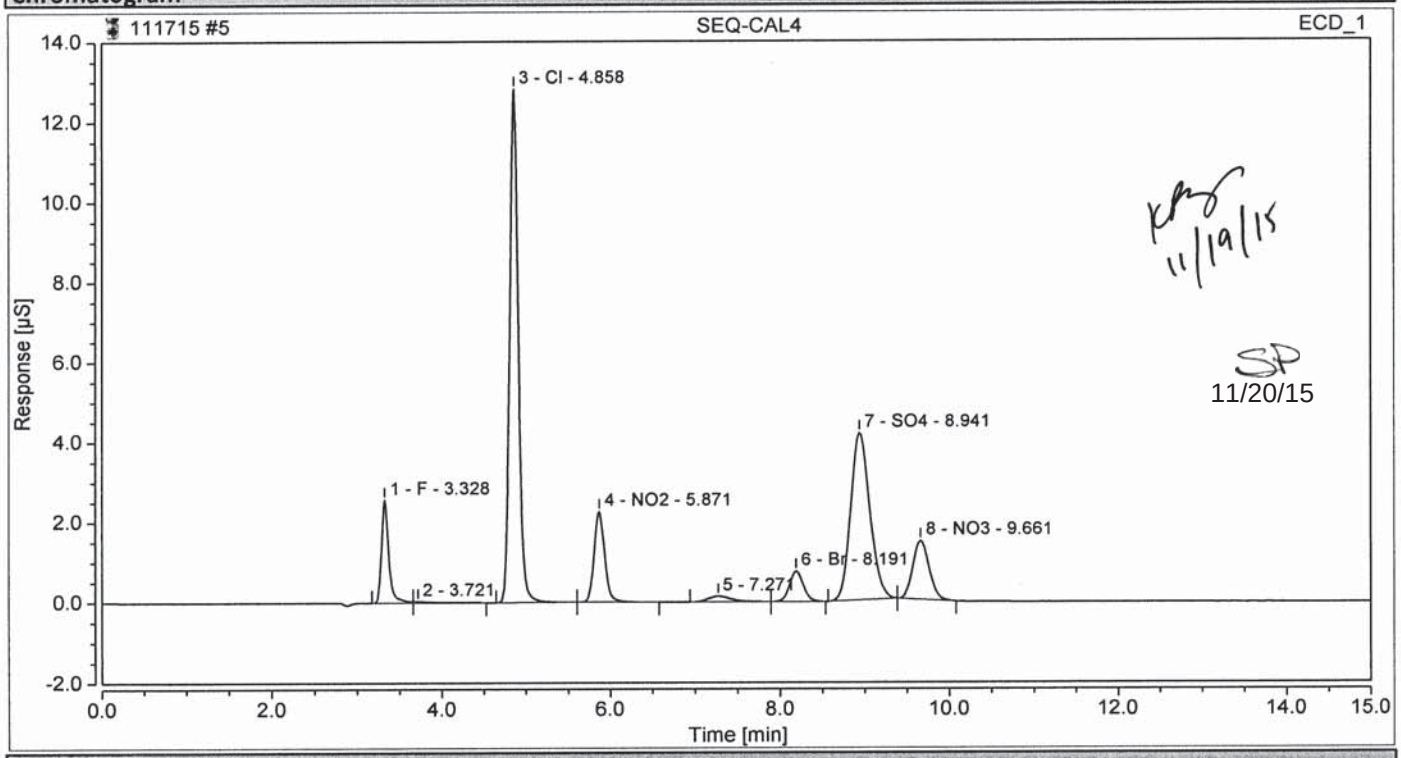
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.1233161	1.257	6.71	10.57	0.2487
2		3.724	0.0046231	0.023	0.25	0.19	n.a.
3	Cl	4.858	0.7358376	6.264	40.05	52.66	2.4178
4	NO2	5.871	0.1596659	1.114	8.69	9.36	0.2806
5		7.278	0.0473937	0.148	2.58	1.25	n.a.
6	Br	8.194	0.0678654	0.355	3.69	2.99	0.5261
7	SO4	8.968	0.5450785	2.048	29.67	17.21	2.4378
8	NO3	9.671	0.1536592	0.687	8.36	5.77	0.1989
Total:			**1.837**	**11.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL4**	*Run Time (min):*	**15.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**04**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

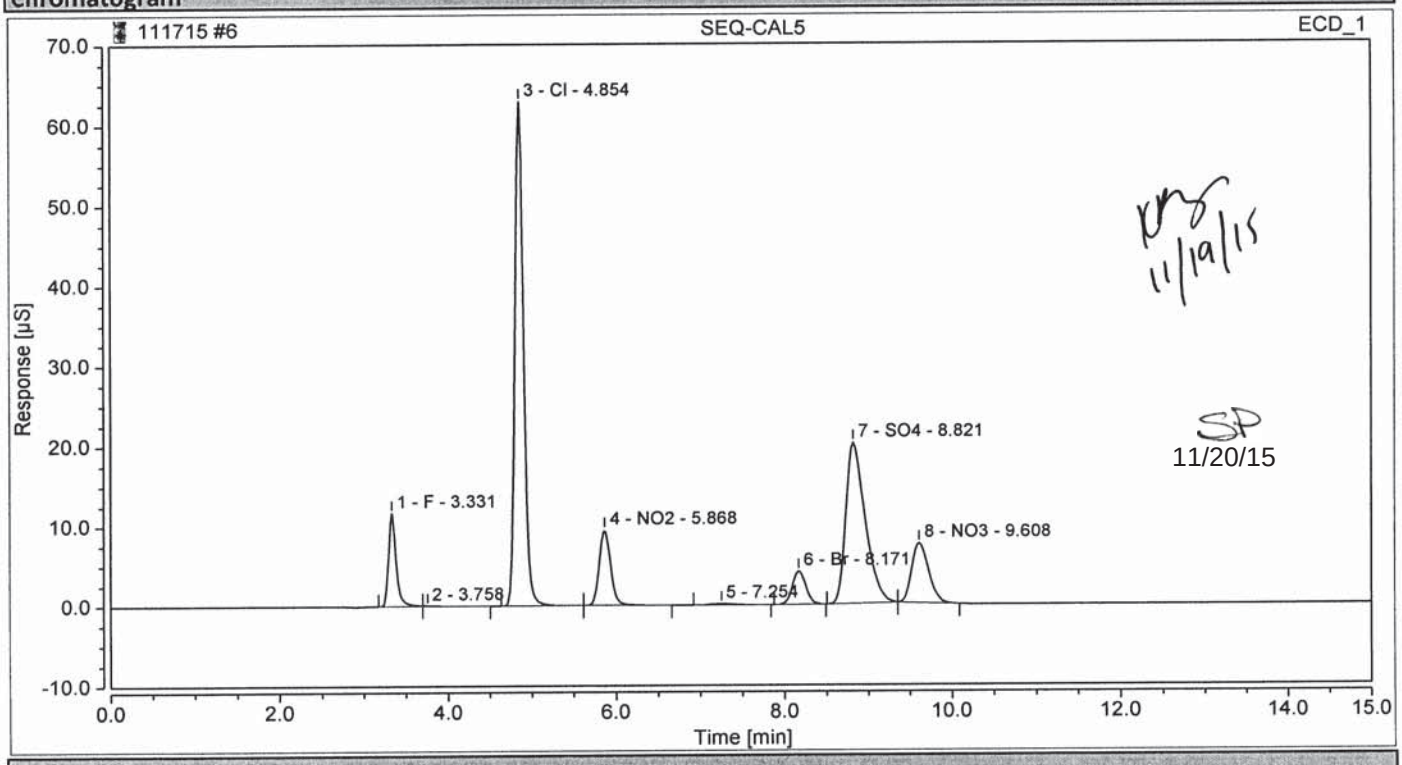
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	0.2535800	2.569	6.80	10.60	0.5114
2		3.721	0.0075683	0.032	0.20	0.13	n.a.
3	Cl	4.858	1.5163418	12.815	40.69	52.90	4.9824
4	NO2	5.871	0.3282896	2.259	8.81	9.33	0.5769
5		7.271	0.0453793	0.144	1.22	0.59	n.a.
6	Br	8.191	0.1440520	0.762	3.87	3.15	1.1168
7	SO4	8.941	1.1013233	4.174	29.55	17.23	4.9255
8	NO3	9.661	0.3300388	1.472	8.86	6.07	0.4273
Total:			**3.727**	**24.227**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL5**	*Run Time (min):*	**15.00**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**05**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

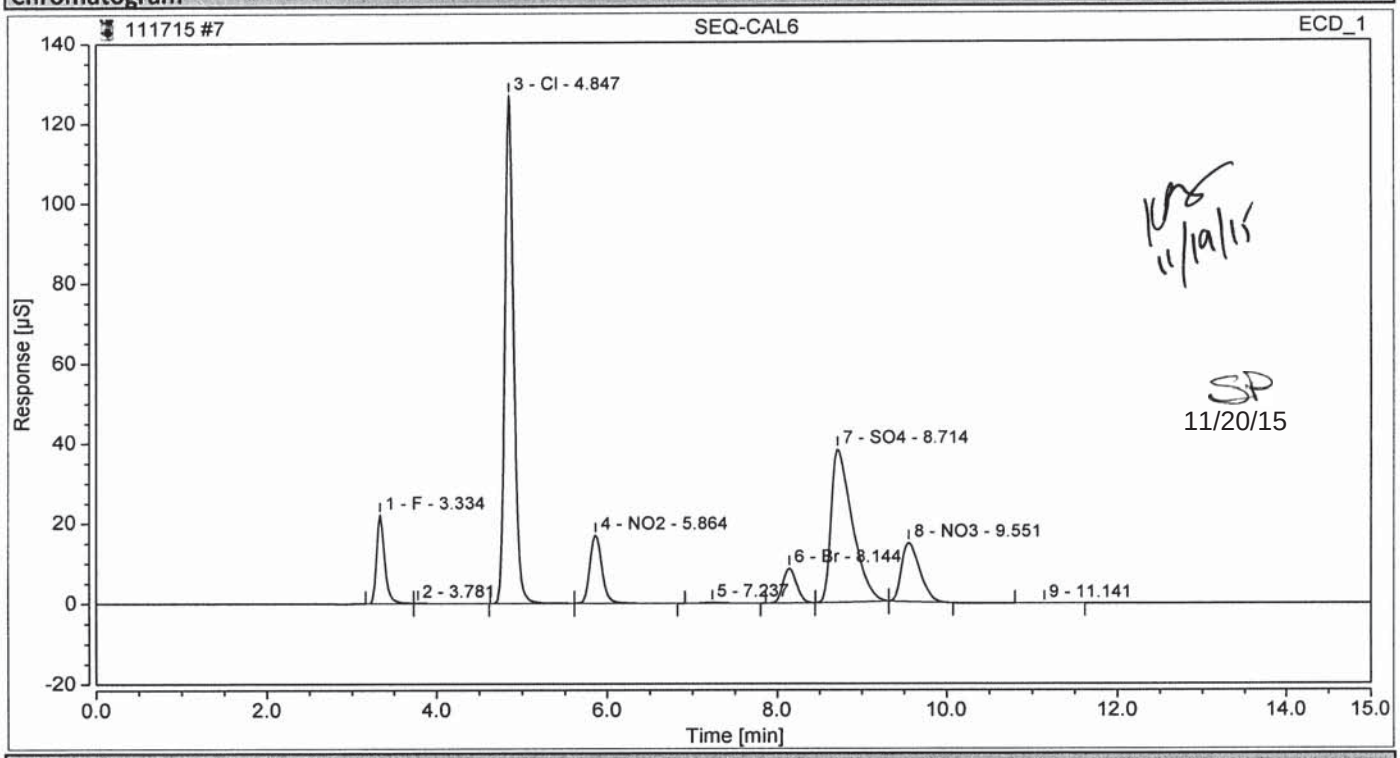
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.2525921	11.699	6.84	10.08	2.5263
2		3.758	0.0190090	0.072	0.10	0.06	n.a.
3	Cl	4.854	7.5363404	62.882	41.14	54.21	24.7631
4	NO2	5.868	1.4836250	9.448	8.10	8.14	2.6073
5		7.254	0.0485316	0.160	0.26	0.14	n.a.
6	Br	8.171	0.7768228	4.164	4.24	3.59	6.0224
7	SO4	8.821	5.4372952	20.102	29.68	17.33	24.3175
8	NO3	9.608	1.7660024	7.478	9.64	6.45	2.2865
Total:			**18.320**	**116.005**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL6**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	% R
1	F	3.334	2.4721069	22.141	6.69	9.72	4.9859	99.718
2		3.781	0.0322715	0.113	0.09	0.05	n.a.	
3	Cl	4.847	15.3044626	126.800	41.40	55.68	50.2878	
4	NO2	5.864	2.8092761	16.969	7.60	7.45	4.9369	98.738
5		7.237	0.0504916	0.173	0.14	0.08	n.a.	
6	Br	8.144	1.6100283	8.683	4.36	3.81	12.4819	
7	SO4	8.714	11.0416639	38.155	29.87	16.76	49.3822	
8	NO3	9.551	3.6425462	14.675	9.85	6.44	4.7162	
9		11.141	0.0027315	0.007	0.01	0.00	n.a.	
Total:			**36.966**	**227.715**	**100.00**	**100.00**		

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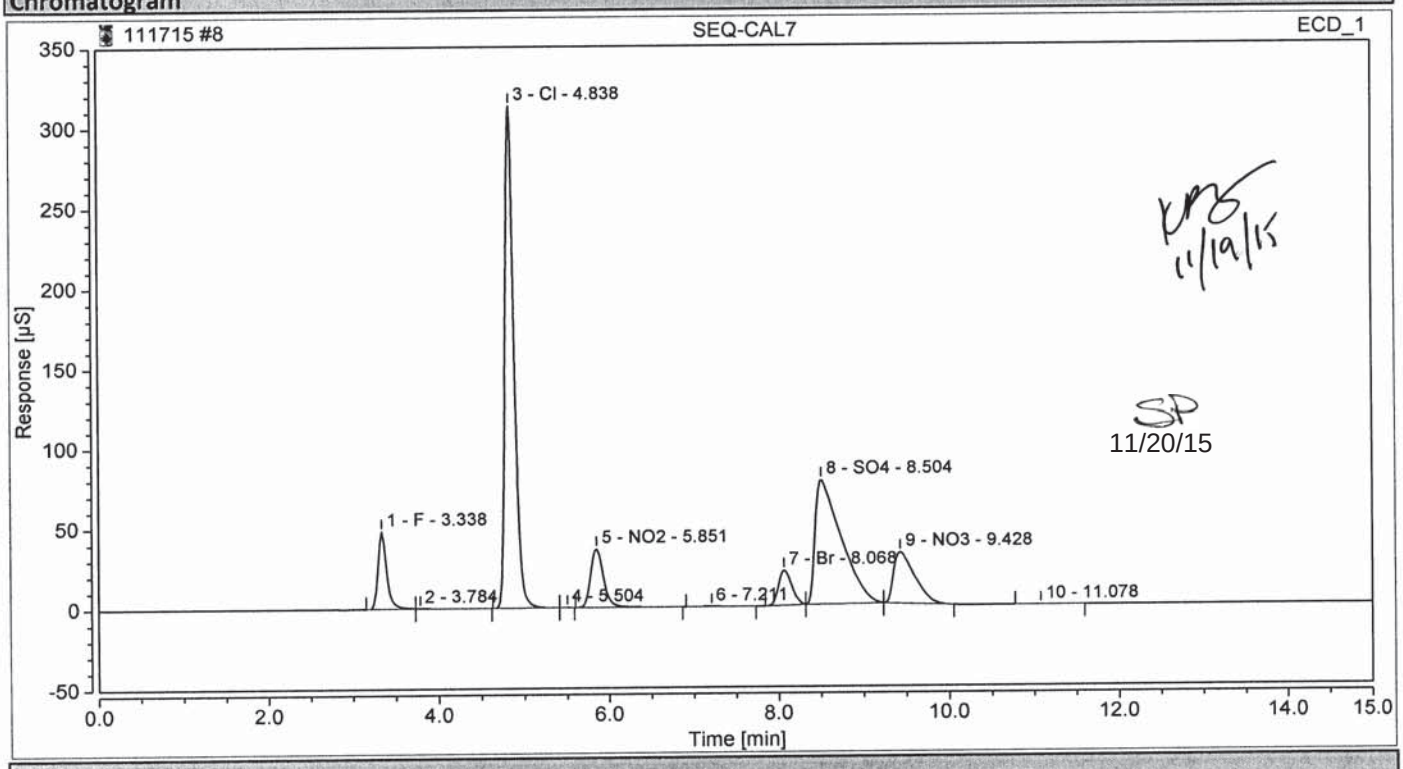
Chromatogram and Results

Injection Details

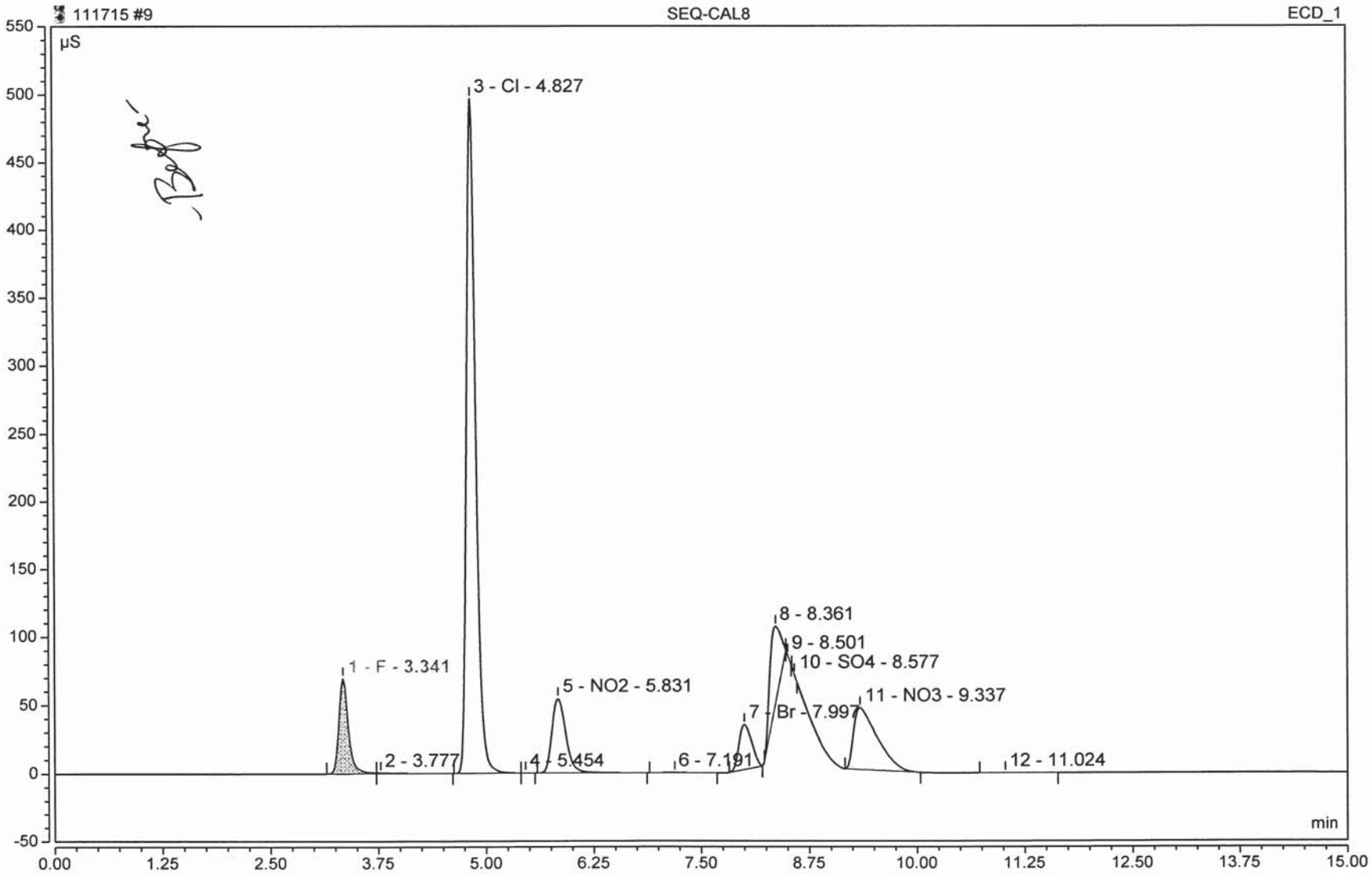
Injection Name:	**SEQ-CAL7**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**07**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.338	5.7625559	48.349	6.34	9.12	11.6224
2		3.784	0.0854296	0.296	0.09	0.06	n.a.
3	Cl	4.838	38.2749054	313.315	42.10	59.13	125.7648
4		5.504	0.0002744	0.002	0.00	0.00	n.a.
5	NO2	5.851	6.4639480	36.442	7.11	6.88	11.3595
6		7.211	0.0579694	0.208	0.06	0.04	n.a.
7	Br	8.068	3.9523854	21.796	4.35	4.11	30.6414
8	SO4	8.504	27.1837844	77.489	29.90	14.62	121.5754
9	NO3	9.428	9.1270172	31.979	10.04	6.04	11.8171
10		11.078	0.0042754	0.011	0.00	0.00	n.a.
Total:			**90.913**	**529.888**	**100.00**	**100.00**	


111715 #9
SEQ-CAL8
ECD_1
µS
3 - Cl - 4.827
1 - F - 3.341
2 - 3.777
4 - 5.454
5 - NO2 - 5.831
6 - 7.191
7 - Br - 7.997
8 - 8.361
9 - 8.501
10 - SO4 - 8.577
11 - NO3 - 9.337
12 - 11.024
min
550
500
450
400
350
300
250
200
150
100
50
0
-50
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

106

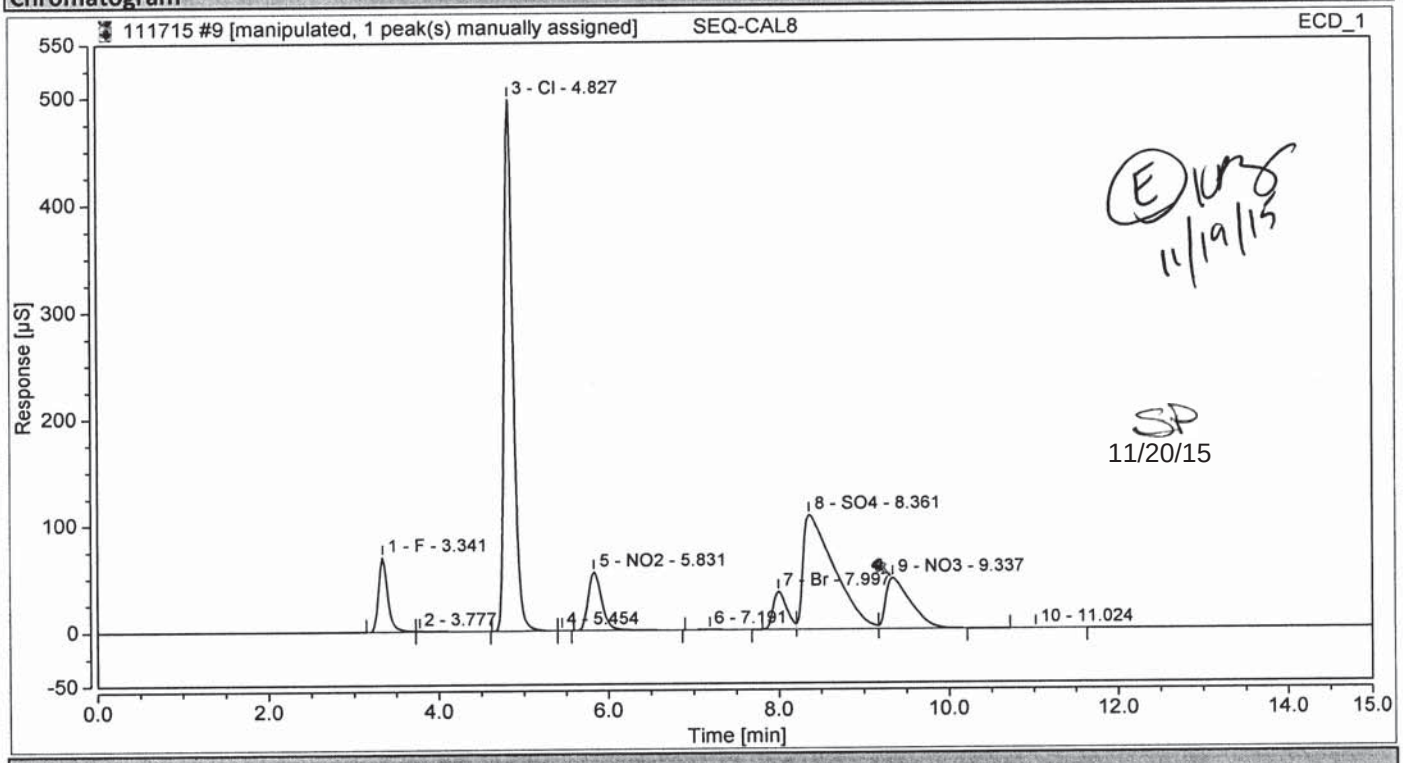
1511224

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL8**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**08**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:59**	*Sample Weight:*	**1.0000**

Chromatogram

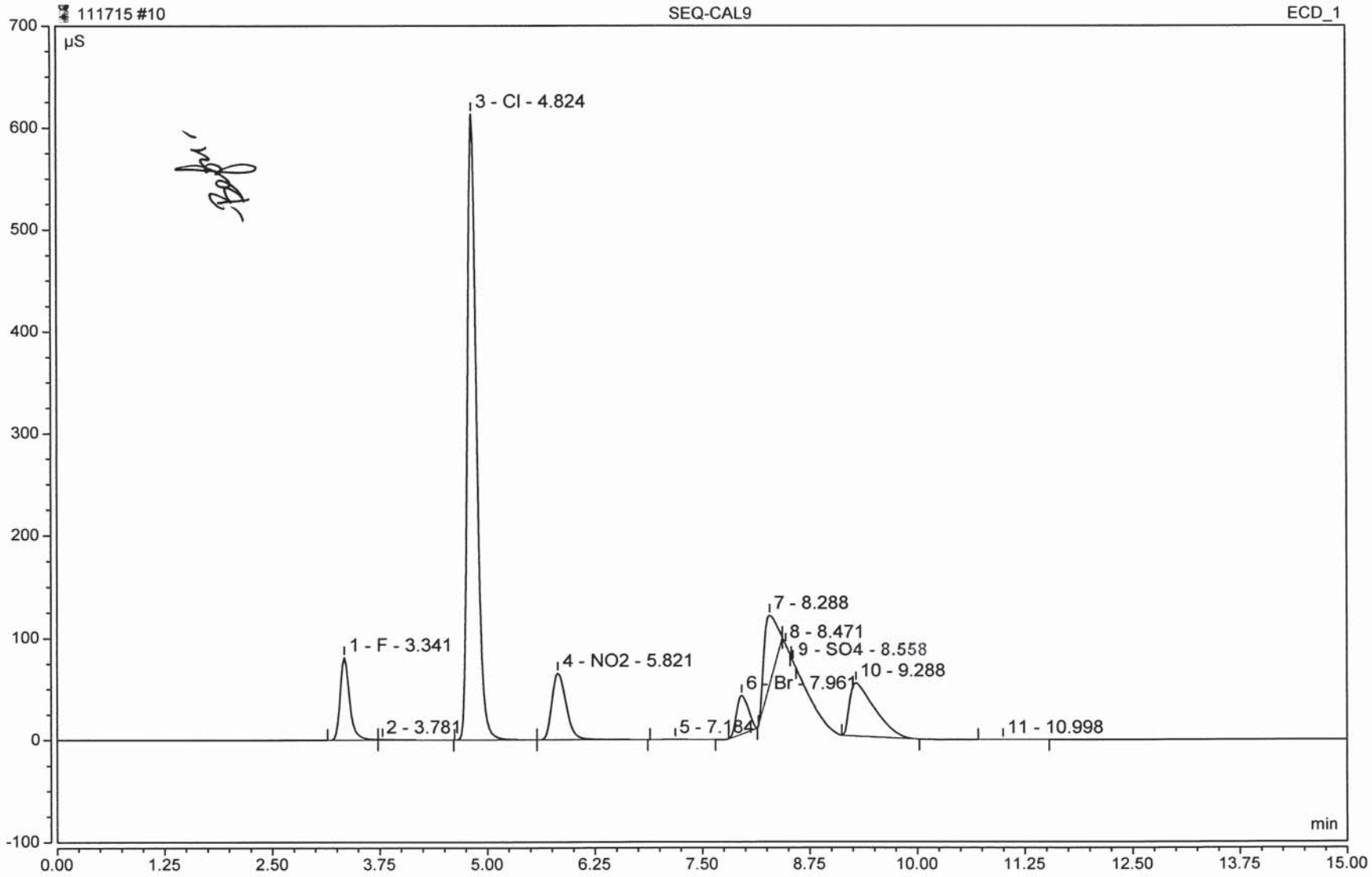


Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.341	8.7120474	69.634	5.90	8.58	17.5712
2		3.777	0.1512737	0.528	0.10	0.07	n.a.
3	Cl	4.827	61.1432401	496.862	41.39	61.23	200.9062
4		5.454	0.0003503	0.004	0.00	0.00	n.a.
5	NO2	5.831	10.1145387	54.420	6.85	6.71	17.7749
6		7.191	0.0645880	0.237	0.04	0.03	n.a.
7	Br	7.997	6.5791969	35.218	4.45	4.34	51.0060
8	SO4	8.361	45.1976399	107.066	30.60	13.19	202.1397
9	NO3	9.337	15.7421504	47.503	10.66	5.85	20.3820
10		11.024	0.0056704	0.014	0.00	0.00	n.a.
Total:			**147.711**	**811.485**	**100.00**	**100.00**	

101.202%

12/8/2015


111715 #10
SEQ-CAL9
ECD_1
µS
700
600
500
400
300
200
100
0
-100
1 - F - 3.341
2 - 3.781
3 - Cl - 4.824
4 - NO2 - 5.821
5 - 7.184
6 - Br - 7.961
7 - 8.288
8 - 8.471
9 - SO4 - 8.558
10 - 9.288
11 - 10.998
min
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

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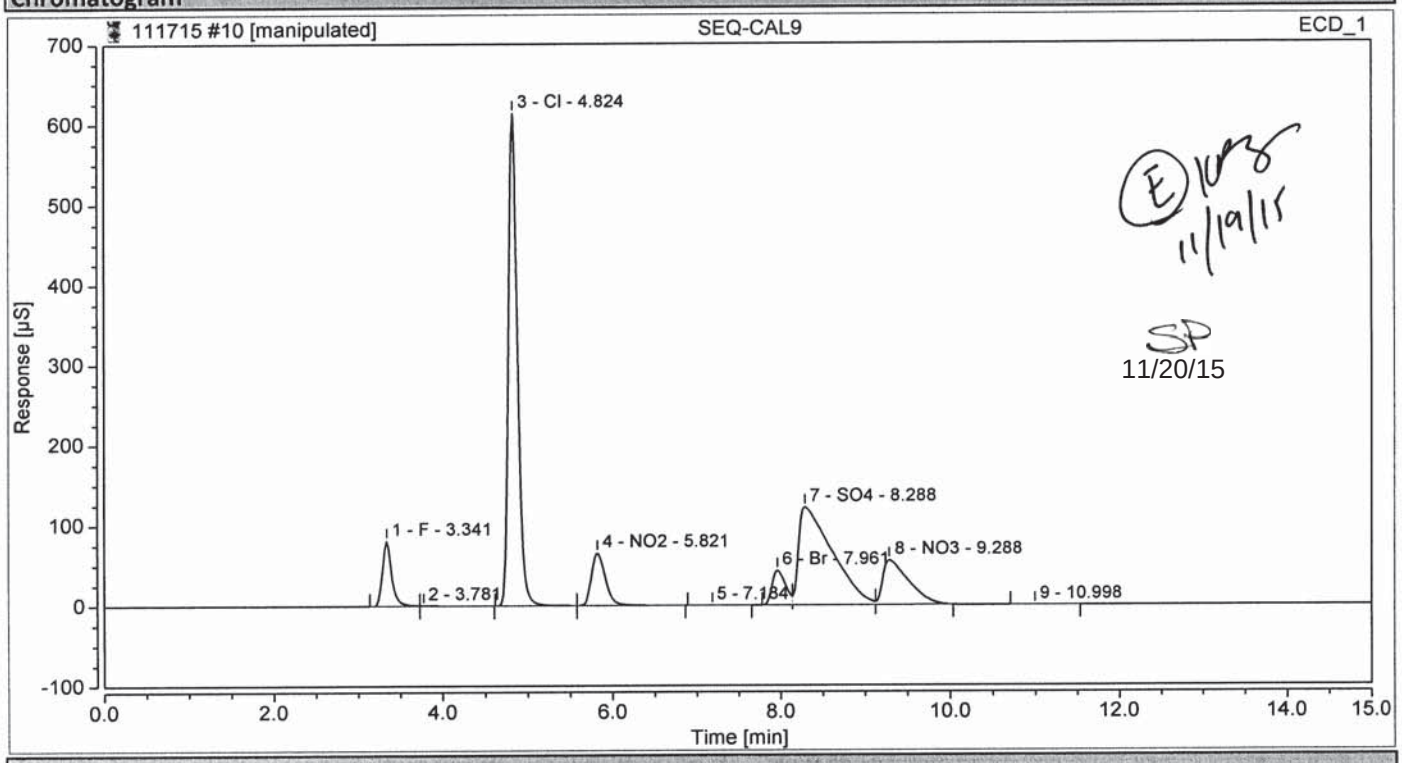
1511224

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL9**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**09**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	
1	F	3.341	10.4666430	81.281	5.74	8.28	21.1100	
2		3.781	0.1907167	0.659	0.10	0.07	n.a.	
3	Cl	4.824	75.7374228	613.482	41.56	62.51	248.8602	99.54%
4	NO2	5.821	12.4914856	65.434	6.85	6.67	21.9521	
5		7.184	0.0690776	0.255	0.04	0.03	n.a.	
6	Br	7.961	7.9477879	43.168	4.36	4.40	61.6162	
7	SO4	8.288	55.9424901	121.640	30.70	12.39	250.1945	100.08%
8	NO3	9.288	19.3985090	55.441	10.64	5.65	25.1160	100.46%
9		10.998	0.0065839	0.016	0.00	0.00	n.a.	
Total:			**182.251**	**981.376**	**100.00**	**100.00**		

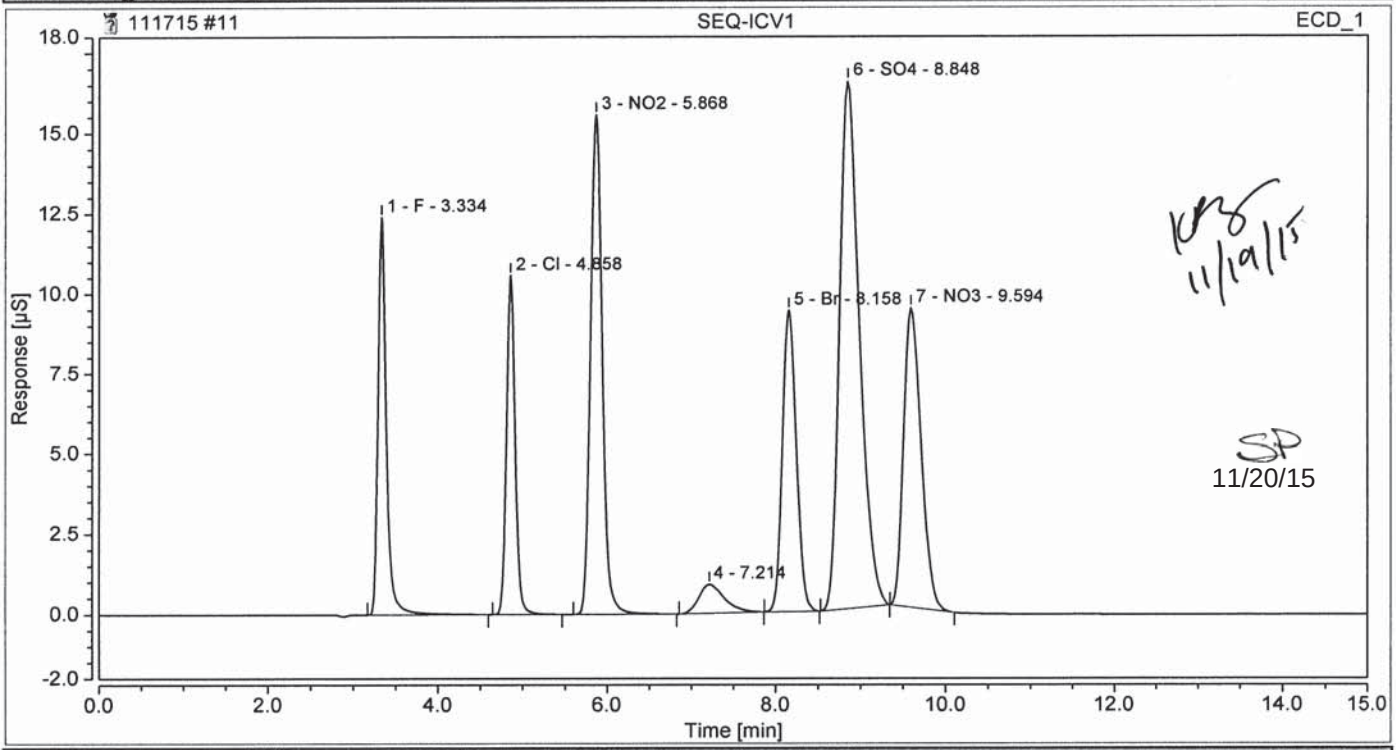
12/8/2015

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICV1**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

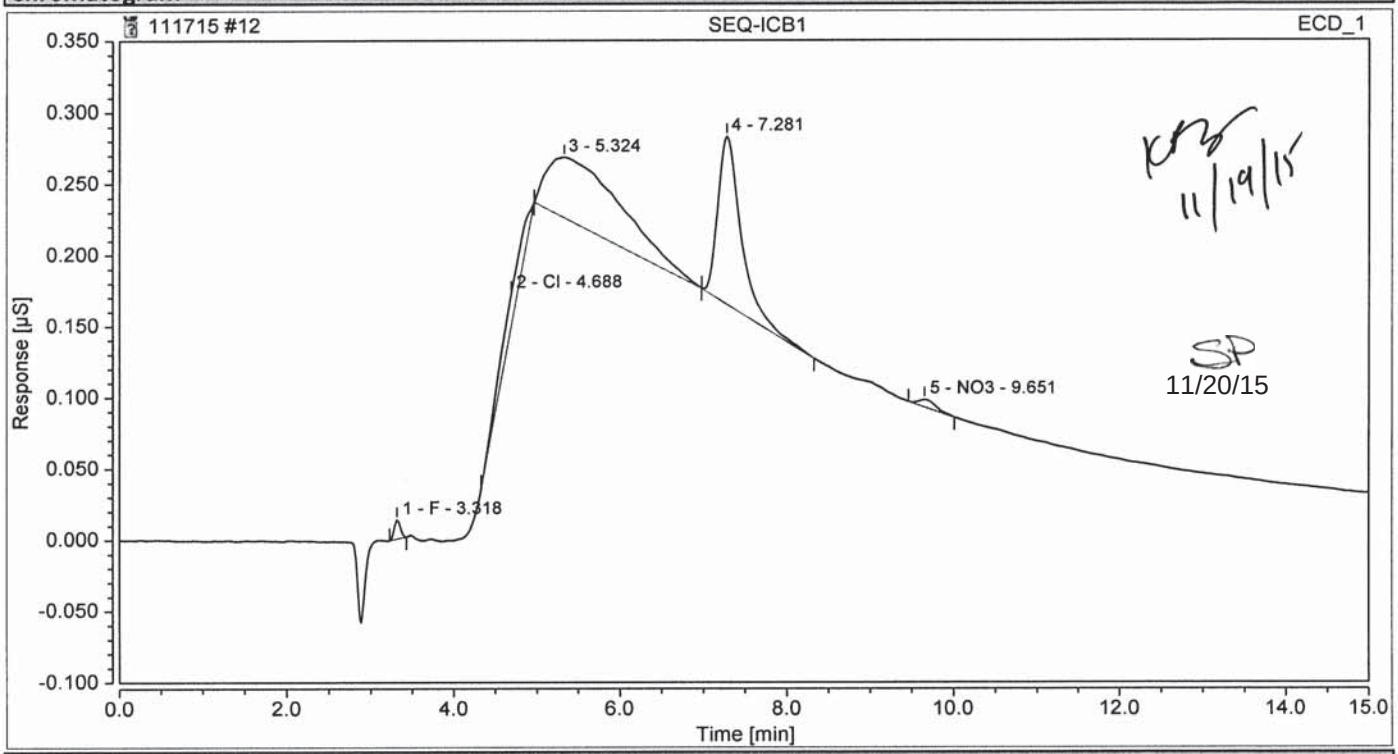
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.334	1.3903067	12.395	9.97	16.62	2.8041
2	Cl	4.858	1.2457670	10.572	8.93	14.18	4.0934
3	NO2	5.868	2.5129040	15.562	18.02	20.87	4.4161
4		7.214	0.3185593	0.899	2.28	1.20	n.a.
5	Br	8.158	1.7875226	9.386	12.82	12.58	13.8580
6	SO4	8.848	4.4654223	16.435	32.02	22.04	19.9709
7	NO3	9.594	2.2250539	9.334	15.96	12.51	2.8809
Total:			**13.946**	**74.583**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICB1**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0011415	0.014	1.17	6.70	0.0023
2	Cl	4.688	0.0091828	0.023	9.40	11.50	0.0302
3		5.324	0.0478564	0.042	49.00	20.91	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.281	0.0381807	0.118	39.09	58.31	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NO3	9.651	0.0013022	0.005	1.33	2.58	0.0017
Total:			**0.098**	**0.202**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**112415**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Nov/15 08:06:59**
No. of Injections:	**28**	*Updated By:*	**NSH-IONC2**

Injection Details

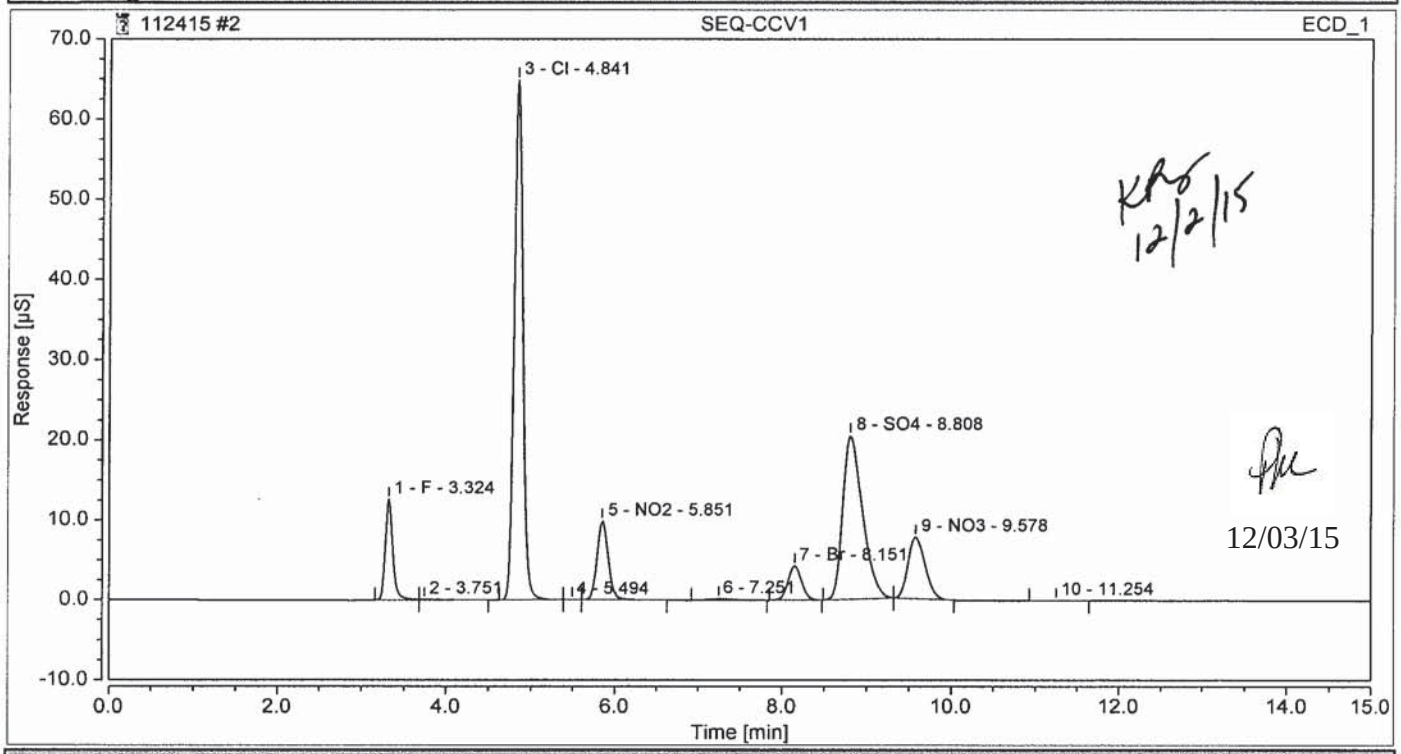
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		24/Nov/15 10:31:35	Finished
2	SEQ-CCV1	2	Unknown		24/Nov/15 10:49:27	Finished
3	SEQ-CCB1	3	Unknown		24/Nov/15 11:07:17	Finished
4	SEQ-CRL1	4	Unknown		24/Nov/15 11:25:08	Finished
5	SEQ-CRL2	5	Unknown		24/Nov/15 11:42:58	Finished
6	SEQ-CRL3	6	Unknown		24/Nov/15 12:00:48	Finished
7	5K24008-BLK1	7	Unknown		24/Nov/15 12:18:40	Finished
8	5K24008-BS1	8	Unknown		24/Nov/15 12:36:30	Finished
9	1511256-01	9	Unknown		24/Nov/15 12:54:21	Finished
10	1511256-02	10	Unknown		24/Nov/15 13:12:12	Finished
11	1511224-04RE1@20	11	Unknown		24/Nov/15 13:30:03	Finished
12	1511258-01	12	Unknown		24/Nov/15 13:47:53	Finished
13	1511258-02	13	Unknown		24/Nov/15 14:05:43	Finished
14	1511258-03	14	Unknown		24/Nov/15 14:23:34	Finished
15	1511258-04	15	Unknown		24/Nov/15 14:41:24	Finished
16	1511258-05	16	Unknown		24/Nov/15 14:59:15	Finished
17	5K24008-MS1	17	Unknown		24/Nov/15 15:17:05	Finished
18	5K24008-MSD1	18	Unknown		24/Nov/15 15:34:55	Finished
19	5K24008-DUP1	19	Unknown		24/Nov/15 15:52:46	Finished
20	SEQ-CCV2	20	Unknown		24/Nov/15 16:10:36	Finished
21	SEQ-CCB2	21	Unknown		24/Nov/15 16:28:26	Finished
22	1511021-01@10X	22	Unknown		24/Nov/15 16:46:17	Finished
23	1511021-01RE1@10	23	Unknown		24/Nov/15 17:04:07	Finished
24	1511021-02@10X	24	Unknown		24/Nov/15 17:21:57	Finished
25	1511021-02RE1@10	25	Unknown		24/Nov/15 17:39:48	Finished
26	SEQ-CCV3	26	Unknown		24/Nov/15 17:57:38	Finished
27	SEQ-CCB3	27	Unknown		24/Nov/15 18:15:29	Finished
28	BLANK	28	Unknown		24/Nov/15 18:33:19	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

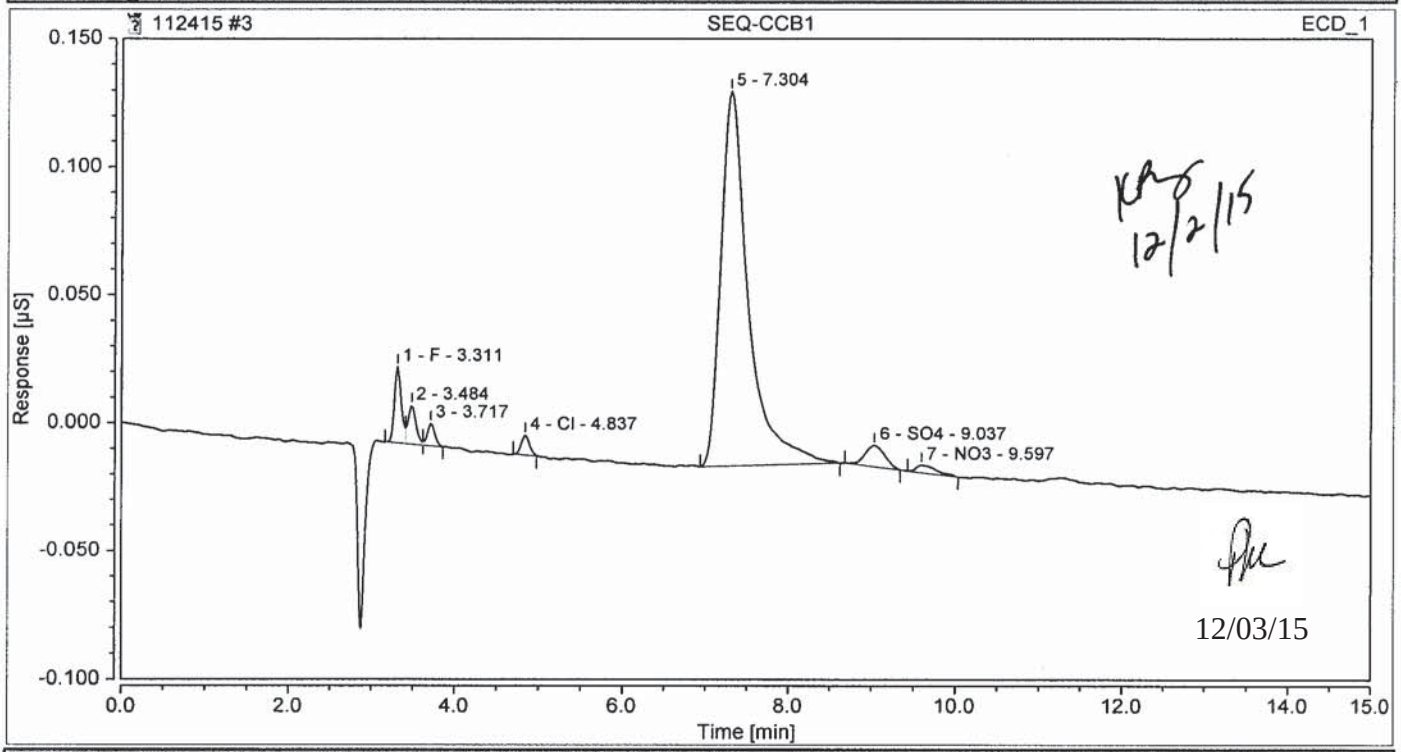
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2705989	12.614	6.79	10.51	2.5626
2		3.751	0.0165799	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7019628	64.849	41.18	54.04	25.3073
4		5.494	0.0004901	0.004	0.00	0.00	n.a.
5	NO2	5.851	1.5240646	9.858	8.15	8.21	2.6783
6		7.251	0.0484673	0.161	0.26	0.13	n.a.
7	Br	8.151	0.7982884	4.298	4.27	3.58	6.1888
8	SO4	8.808	5.5356306	20.443	29.60	17.03	24.7573
9	NO3	9.578	1.8052042	7.718	9.65	6.43	2.3373
10		11.254	0.0013871	0.004	0.01	0.00	n.a.
Total:			**18.703**	**120.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

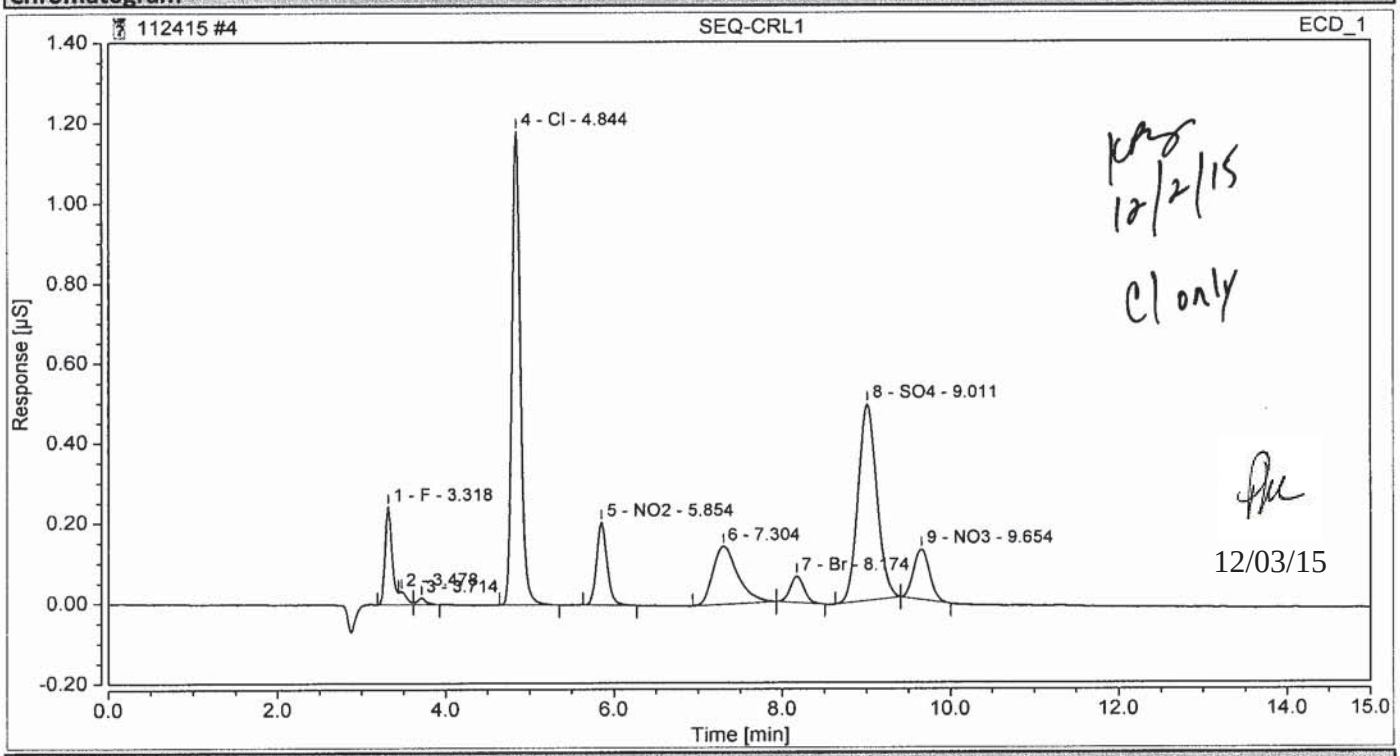
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0028367	0.030	4.30	13.58	0.0057
2		3.484	0.0016975	0.015	2.57	6.95	n.a.
3		3.717	0.0009154	0.009	1.39	4.01	n.a.
4	Cl	4.837	0.0008656	0.008	1.31	3.53	0.0028
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.304	0.0564475	0.146	85.58	66.68	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	9.037	0.0022898	0.008	3.47	3.85	0.0102
7	NO3	9.597	0.0009099	0.003	1.38	1.39	0.0012
Total:			**0.066**	**0.219**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL1**	*Run Time (min):*	**15.00**
Vial Number:	**4**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

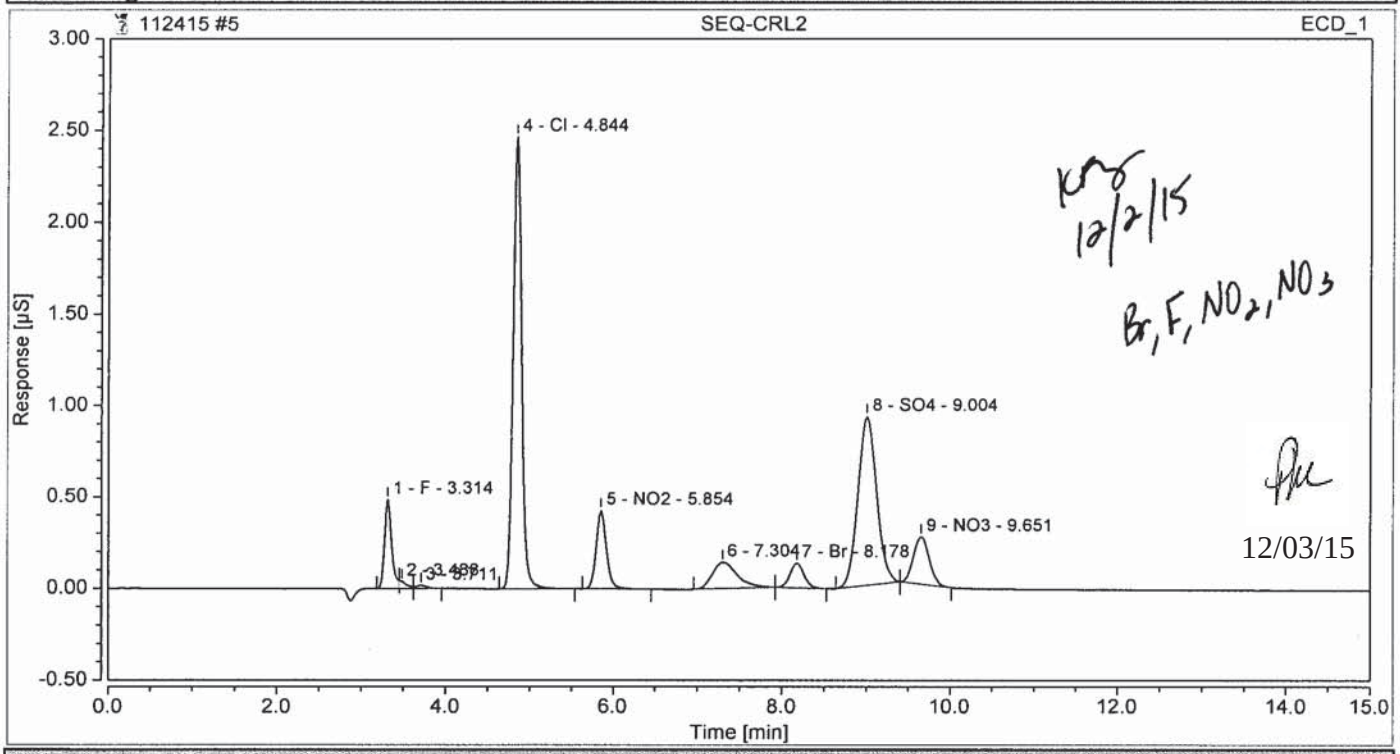
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0234570	0.245	5.67	9.73	0.0473
2		3.478	0.0035300	0.033	0.85	1.31	n.a.
3		3.714	0.0020760	0.017	0.50	0.66	n.a.
4	Cl	4.844	0.1377524	1.183	33.30	47.10	0.4526
5	NO2	5.854	0.0297125	0.207	7.18	8.23	0.0522
6		7.304	0.0493112	0.145	11.92	5.76	n.a.
7	Br	8.174	0.0127636	0.066	3.09	2.64	0.0990
8	SO4	9.011	0.1273038	0.491	30.77	19.56	0.5693
9	NO3	9.654	0.0277810	0.126	6.72	5.00	0.0360
Total:			**0.414**	**2.513**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL2**	*Run Time (min):*	**15.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

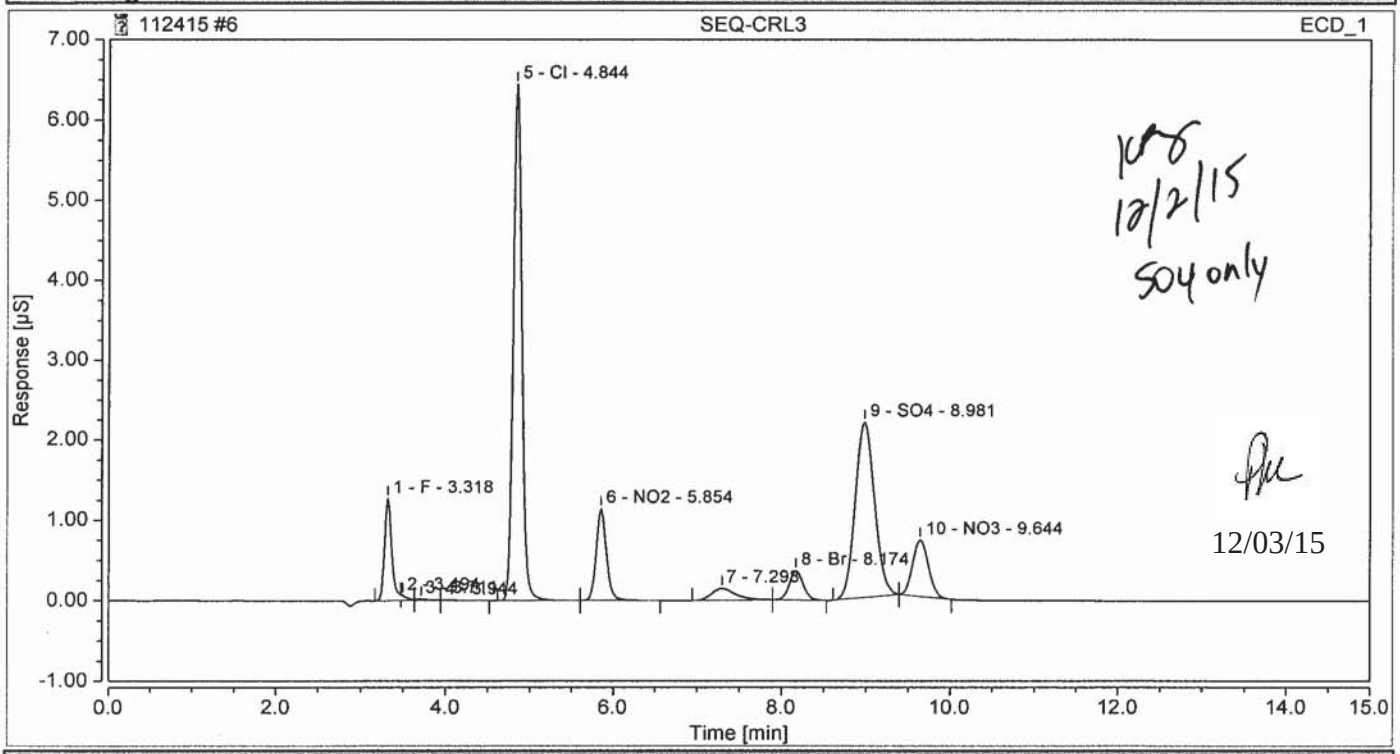
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0463111	0.486	6.02	9.93	0.0934
2		3.488	0.0040702	0.038	0.53	0.78	n.a.
3		3.711	0.0022268	0.016	0.29	0.34	n.a.
4	Cl	4.844	0.2867254	2.467	37.25	50.39	0.9421
5	NO2	5.854	0.0617777	0.429	8.03	8.76	0.1086
6		7.304	0.0487962	0.144	6.34	2.94	n.a.
7	Br	8.178	0.0260488	0.136	3.38	2.77	0.2019
8	SO4	9.004	0.2374141	0.921	30.85	18.82	1.0618
9	NO3	9.651	0.0563100	0.258	7.32	5.26	0.0729
Total:			**0.770**	**4.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL3**	*Run Time (min):*	**15.00**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

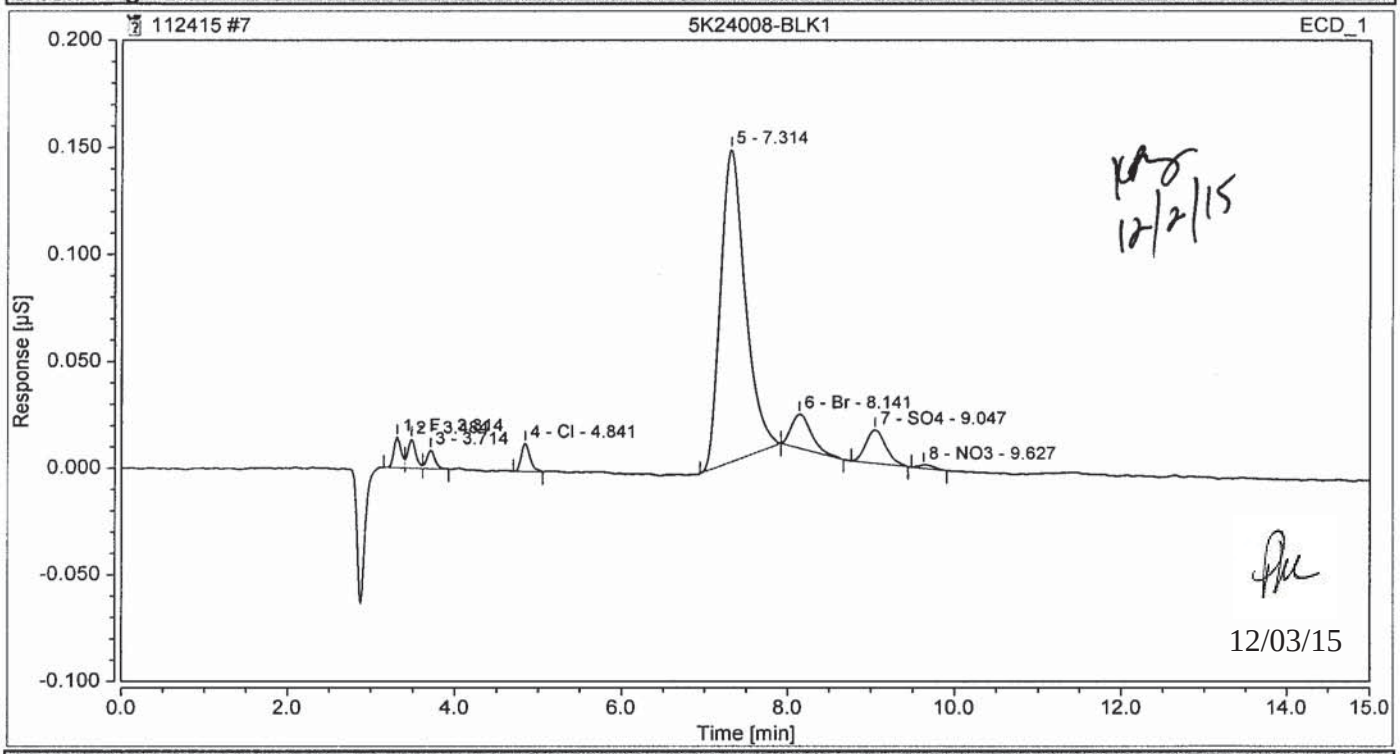
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.1220404	1.271	6.42	10.29	0.2461
2		3.494	0.0059868	0.064	0.31	0.52	n.a.
3		3.711	0.0041172	0.023	0.22	0.19	n.a.
4		3.944	0.0013449	0.005	0.07	0.04	n.a.
5	Cl	4.844	0.7552784	6.444	39.72	52.16	2.4817
6	NO2	5.854	0.1631556	1.142	8.58	9.24	0.2867
7		7.298	0.0499198	0.150	2.63	1.21	n.a.
8	Br	8.174	0.0693017	0.365	3.64	2.96	0.5373
9	SO4	8.981	0.5763721	2.186	30.31	17.69	2.5777
10	NO3	9.644	0.1539200	0.703	8.09	5.69	0.1993
Total:			**1.901**	**12.354**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K24008-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

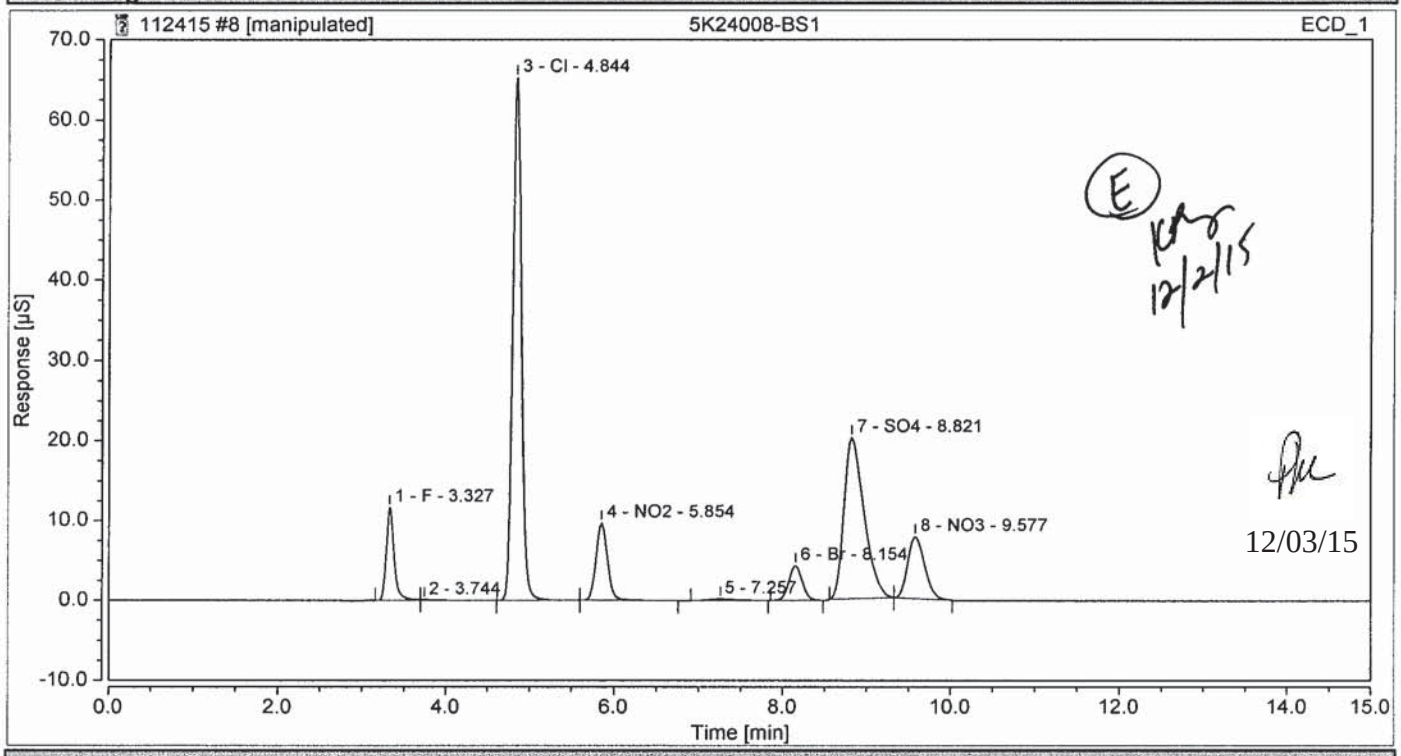
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0014124	0.014	2.17	6.30	0.0028
2		3.484	0.0015164	0.014	2.33	5.94	n.a.
3		3.714	0.0009678	0.009	1.49	3.78	n.a.
4	Cl	4.841	0.0016419	0.013	2.52	5.82	0.0054
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.314	0.0503585	0.146	77.33	63.65	n.a.
6	Br	8.141	0.0045066	0.016	6.92	6.99	0.0349
7	SO4	9.047	0.0043776	0.016	6.72	6.85	0.0196
8	NO3	9.627	0.0003436	0.002	0.53	0.67	0.0004
Total:			**0.065**	**0.230**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

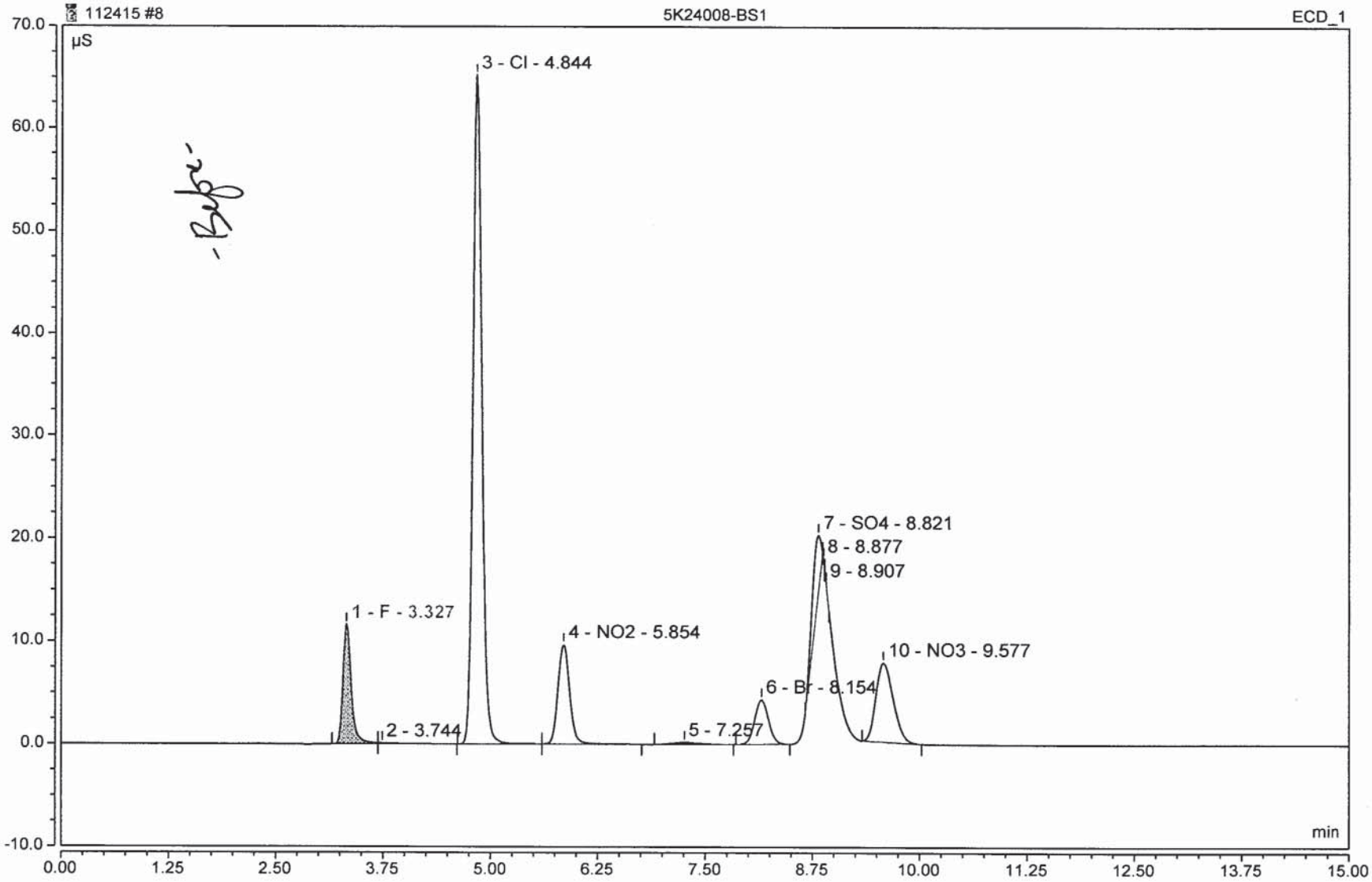
Injection Name:	**5K24008-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2791783	11.655	6.80	9.79	2.5800
2		3.744	0.0246001	0.086	0.13	0.07	n.a.
3	Cl	4.844	7.7768016	65.251	41.32	54.79	25.5532
4	NO2	5.854	1.5205323	9.693	8.08	8.14	2.6721
5		7.257	0.0613635	0.193	0.33	0.16	n.a.
6	Br	8.154	0.8100872	4.347	4.30	3.65	6.2803
7	SO4	8.821	5.5401456	20.145	29.43	16.91	24.7775
8	NO3	9.577	1.8090172	7.729	9.61	6.49	2.3422
Total:			**18.822**	**119.098**	**100.00**	**100.00**	



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120

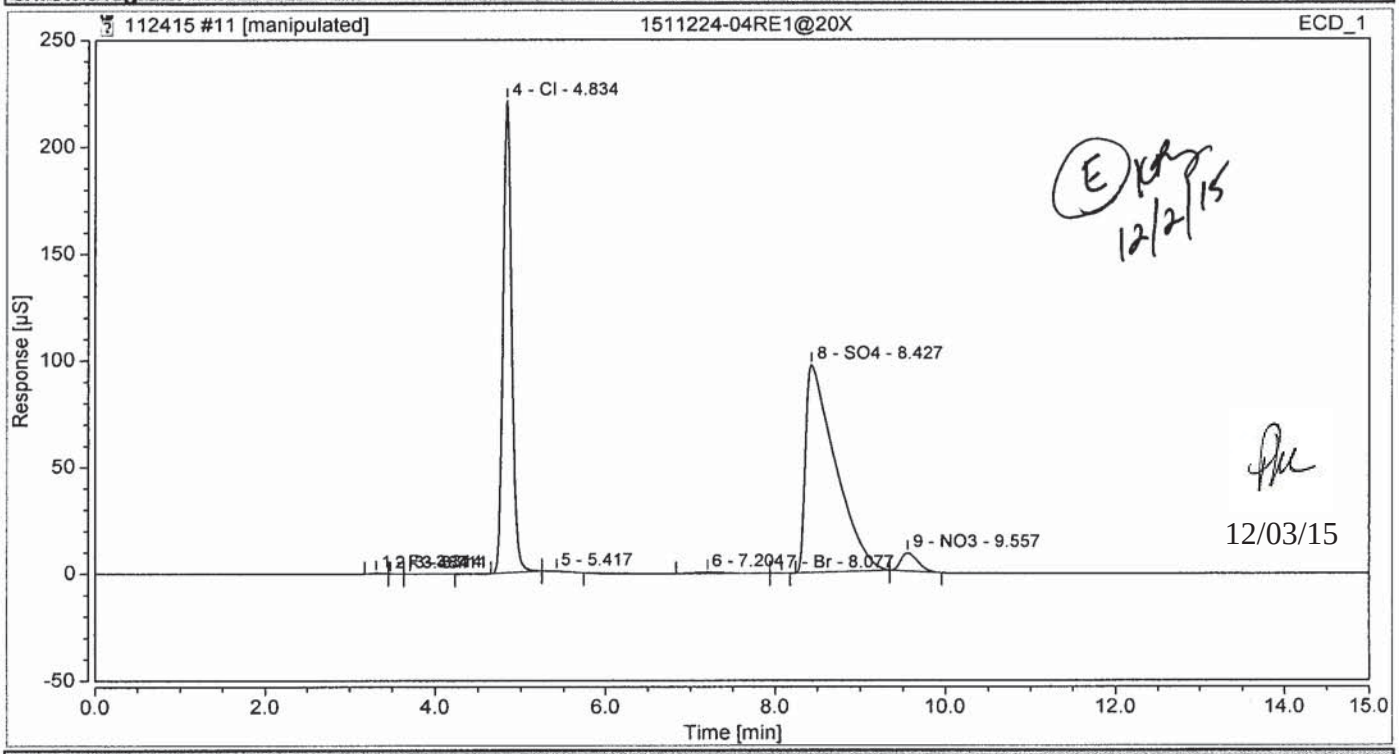
1511224

Chromatogram and Results

Injection Details

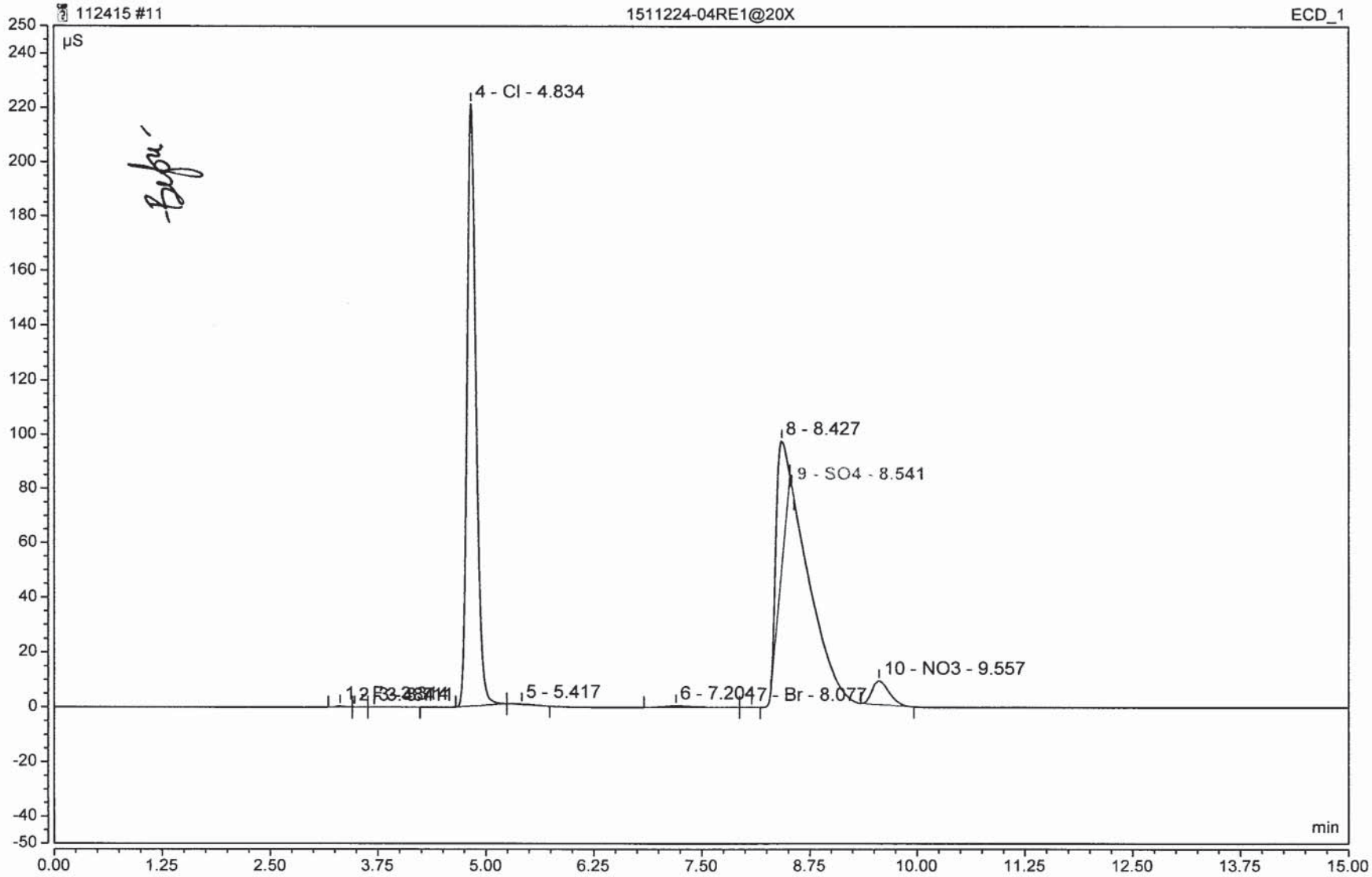
Injection Name:	**1511224-04RE1@20X**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0397200	0.390	0.06	0.12	0.0801
2		3.484	0.0039282	0.038	0.01	0.01	n.a.
3		3.711	0.0021950	0.012	0.00	0.00	n.a.
4	Cl	4.834	26.6381311	220.979	38.99	67.32	87.5283
5		5.417	0.0422264	0.155	0.06	0.05	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		7.204	0.2187776	0.629	0.32	0.19	n.a.
7	Br	8.077	0.0015659	0.013	0.00	0.00	0.0121
8	SO4	8.427	39.3693356	97.433	57.62	29.68	176.0735
9	NO3	9.557	2.0112730	8.610	2.94	2.62	2.6041
Total:			**68.327**	**328.259**	**100.00**	**100.00**	

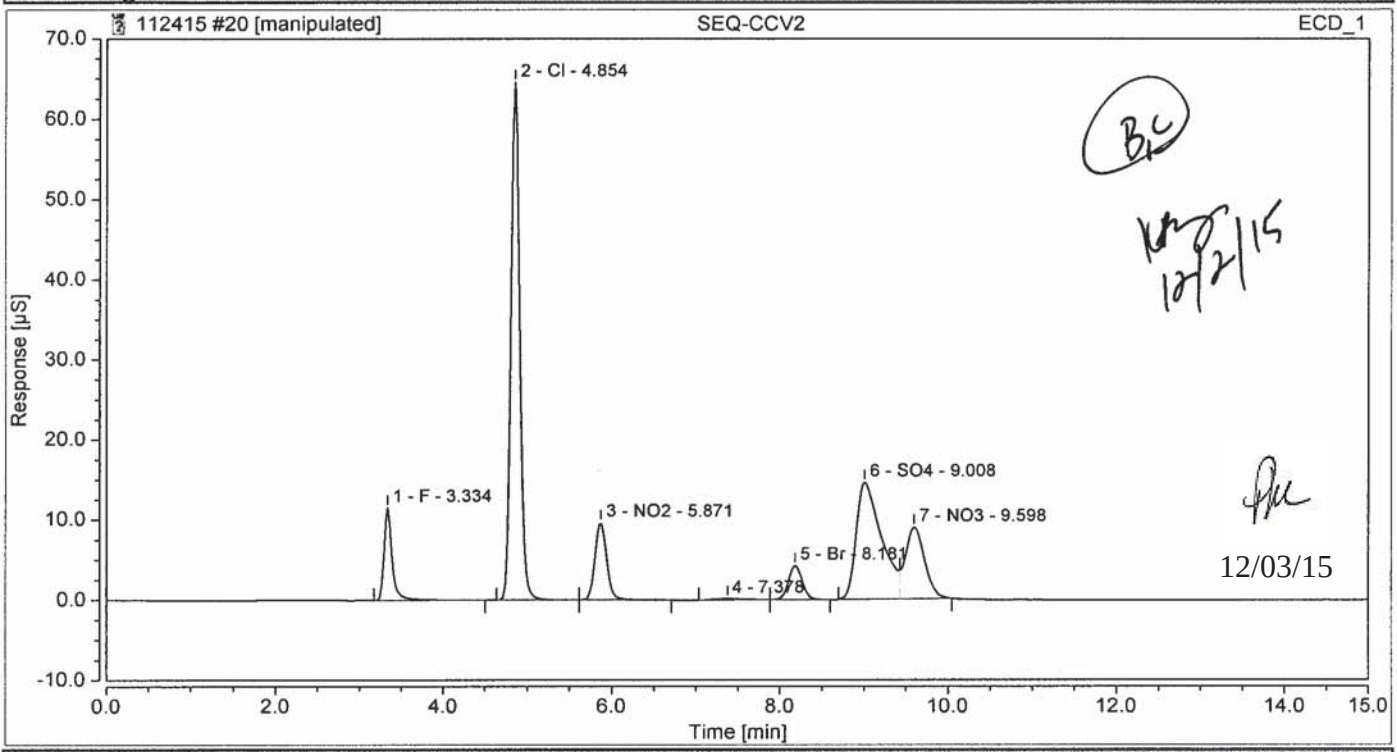

112415 #11
1511224-04RE1@20X
ECD_1
µS
4 - Cl - 4.834
8 - 8.427
9 - SO4 - 8.541
10 - NO3 - 9.557
5 - 5.417
6 - 7.2047
- Br - 8.077
min
250
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-50
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

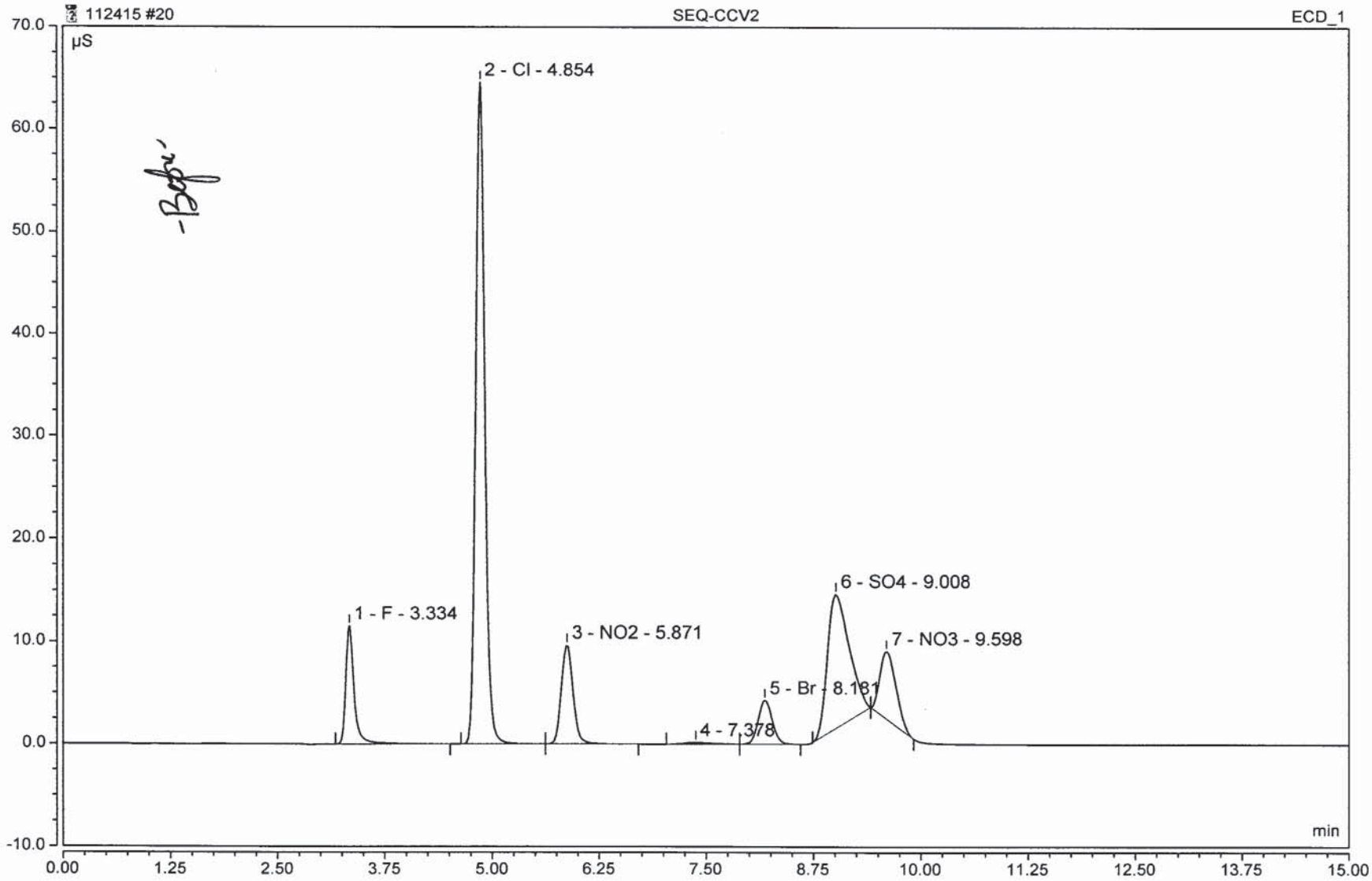
Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**20**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.334	1.2929585	11.531	6.80	10.13	2.6077
2	Cl	4.854	7.8091157	64.592	41.08	56.76	25.6594
3	NO2	5.871	1.5302191	9.658	8.05	8.49	2.6892
4		7.378	0.0588162	0.167	0.31	0.15	n.a.
5	Br	8.181	0.8118993	4.266	4.27	3.75	6.2943
6	SO4	9.008	5.1280134	14.611	26.98	12.84	22.9343
7	NO3	9.598	2.3790218	8.964	12.51	7.88	3.0802
Total:			**19.010**	**113.789**	**100.00**	**100.00**	

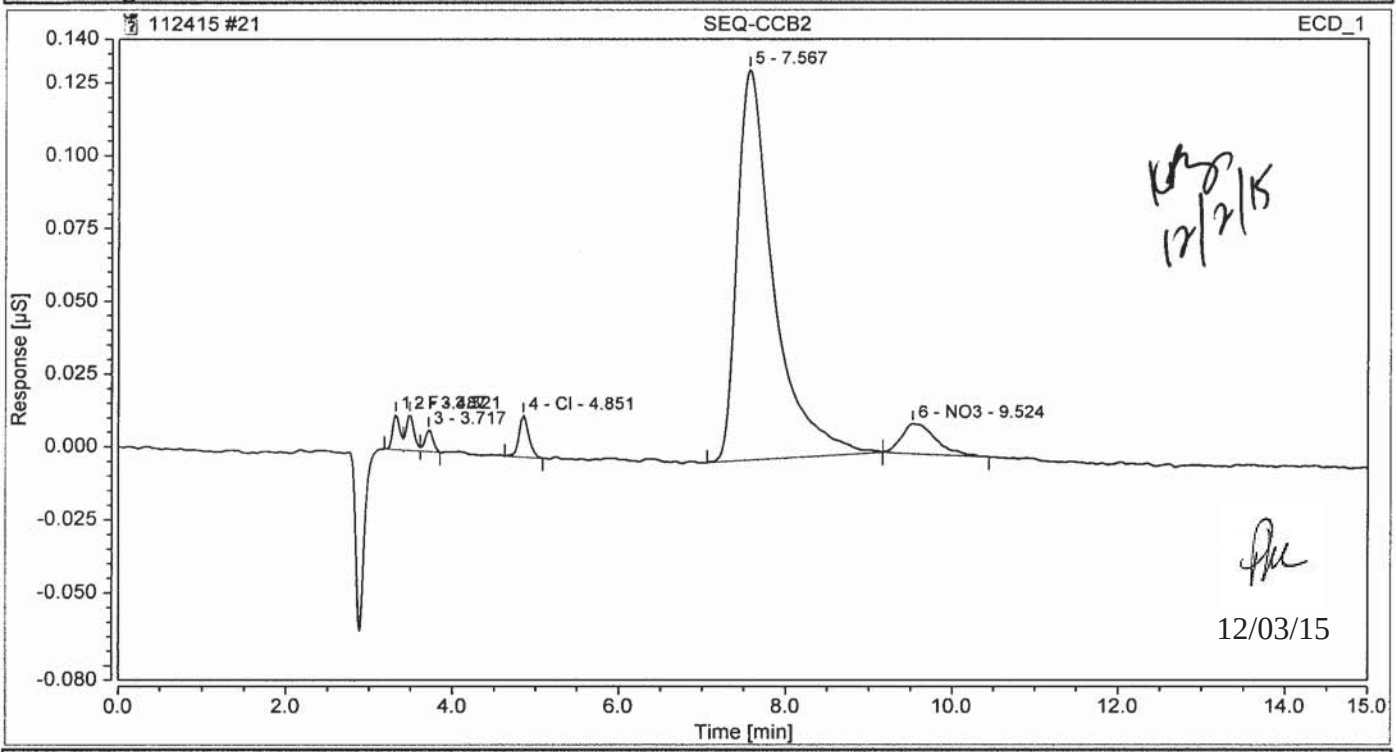

112415 #20
SEQ-CCV2
ECD_1
µS
1 - F - 3.334
2 - Cl - 4.854
3 - NO2 - 5.871
4 - 7.378
5 - Br - 8.181
6 - SO4 - 9.008
7 - NO3 - 9.598
min
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**21**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 16:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0011899	0.012	1.53	6.33	0.0024
2		3.487	0.0013890	0.012	1.78	6.52	n.a.
3		3.717	0.0008291	0.008	1.06	3.96	n.a.
4	Cl	4.851	0.0019656	0.014	2.52	7.53	0.0065
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.567	0.0676114	0.134	86.73	70.23	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NO3	9.524	0.0049676	0.010	6.37	5.43	0.0064
Total:			**0.078**	**0.191**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**112015**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/Dec/15 17:47:43**
No. of Injections:	**69**	*Updated By:*	**NSH-IONC2**

Injection Details

No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		20/Nov/15 14:26:42	Finished
2	SEQ-CCV1	2	Unknown		20/Nov/15 14:44:28	Finished
3	SEQ-CCB1	3	Unknown		20/Nov/15 15:02:19	Finished
4	1511199-14RE1	4	Unknown		20/Nov/15 15:20:09	Finished
5	1511199-13RE1	5	Unknown		20/Nov/15 15:37:58	Finished
6	SEQ-CRL1	6	Unknown		20/Nov/15 15:55:49	Finished
7	SEQ-CRL2	7	Unknown		20/Nov/15 16:13:39	Finished
8	SEQ-CRL3	8	Unknown		20/Nov/15 16:31:30	Finished
9	5K20011-BLK1	9	Unknown		20/Nov/15 16:49:20	Finished
10	5K20011-BS1	10	Unknown		20/Nov/15 17:07:10	Finished
11	1511224-01	11	Unknown		20/Nov/15 17:25:01	Finished
12	1511224-02	12	Unknown		20/Nov/15 17:42:51	Finished
13	1511224-03	13	Unknown		20/Nov/15 18:00:42	Finished
14	5K20011-MS1	14	Unknown		20/Nov/15 18:18:33	Finished
15	5K20011-MSD1	15	Unknown		20/Nov/15 18:36:23	Finished
16	5K20011-DUP1	16	Unknown		20/Nov/15 18:54:13	Finished
17	1511224-04	17	Unknown		20/Nov/15 19:12:03	Finished
18	1511224-05	18	Unknown		20/Nov/15 19:29:53	Finished
19	1511224-06	19	Unknown		20/Nov/15 19:47:44	Finished
20	1511225-01	20	Unknown		20/Nov/15 20:05:34	Finished
21	1511225-03	21	Unknown		20/Nov/15 20:23:25	Finished
22	SEQ-CCV2	22	Unknown		20/Nov/15 20:41:14	Finished
23	SEQ-CCB2	23	Unknown		20/Nov/15 20:59:04	Finished
24	1511225-04	24	Unknown		20/Nov/15 21:16:55	Finished
25	1511226-01	25	Unknown		20/Nov/15 21:34:45	Finished
26	1511226-02	26	Unknown		20/Nov/15 21:52:34	Finished
27	1511226-03	27	Unknown		20/Nov/15 22:10:25	Finished
28	5K20011-MS2	28	Unknown		20/Nov/15 22:28:15	Finished
29	5K20011-MSD2	29	Unknown		20/Nov/15 22:46:06	Finished
30	5K20011-DUP2	30	Unknown		20/Nov/15 23:03:56	Finished
31	1511226-04	31	Unknown		20/Nov/15 23:21:46	Finished
32	1511226-05	32	Unknown		20/Nov/15 23:39:37	Finished
33	1511226-06	33	Unknown		20/Nov/15 23:57:27	Finished
34	1511226-07	34	Unknown		21/Nov/15 00:15:18	Finished
35	SEQ-CCV3	35	Unknown		21/Nov/15 00:33:08	Finished
36	SEQ-CCB3	36	Unknown		21/Nov/15 00:50:59	Finished
37	5K20012-BLK1	37	Unknown		21/Nov/15 01:08:49	Finished
38	5K20012-BS1	38	Unknown		21/Nov/15 01:26:40	Finished
39	1511035-01	39	Unknown		21/Nov/15 01:44:31	Finished
40	1511035-03	40	Unknown		21/Nov/15 02:02:20	Finished
41	1511035-05	41	Unknown		21/Nov/15 02:20:11	Finished
42	1511035-07	42	Unknown		21/Nov/15 02:38:01	Finished

43	1511035-09	43	Unknown		21/Nov/15 02:55:52	Finished
44	1511035-11	44	Unknown		21/Nov/15 03:13:42	Finished
45	1511035-13	45	Unknown		21/Nov/15 03:31:32	Finished
46	1511035-15	46	Unknown		21/Nov/15 03:49:23	Finished
47	1511035-17	47	Unknown		21/Nov/15 04:07:13	Finished
48	1511035-19	48	Unknown		21/Nov/15 04:25:04	Finished
49	5K20012-MS1	49	Unknown		21/Nov/15 04:42:54	Finished
50	5K20012-MSD1	50	Unknown		21/Nov/15 05:00:44	Finished
51	5K20012-DUP1	1	Unknown		21/Nov/15 05:18:35	Finished
52	SEQ-CCV4	2	Unknown		21/Nov/15 05:36:25	Finished
53	SEQ-CCB4	3	Unknown		21/Nov/15 05:54:16	Finished
54	1511035-21	4	Unknown		21/Nov/15 06:12:06	Finished
55	1511035-23	5	Unknown		21/Nov/15 06:29:55	Finished
56	1511035-25	6	Unknown		21/Nov/15 06:47:45	Finished
57	1511068-01	7	Unknown		21/Nov/15 07:05:35	Finished
58	1511068-03	8	Unknown		21/Nov/15 07:23:25	Finished
59	1511068-05	9	Unknown		21/Nov/15 07:41:16	Finished
60	1511068-07	10	Unknown		21/Nov/15 07:59:06	Finished
61	1511068-09	11	Unknown		21/Nov/15 08:16:56	Finished
62	1511068-11	12	Unknown		21/Nov/15 08:34:47	Finished
63	1511068-13	13	Unknown		21/Nov/15 08:52:37	Finished
64	5K20012-MS2	14	Unknown		21/Nov/15 09:10:27	Finished
65	5K20012-MSD2	15	Unknown		21/Nov/15 09:28:17	Finished
66	5K20012-DUP2	16	Unknown		21/Nov/15 09:46:08	Interrupted *
67	SEQ-CCV5	17	Unknown		n.a.	Idle
68	SEQ-CCB5	18	Unknown		n.a.	Idle
69	BLANK	19	Unknown		n.a.	Idle

* Run was interupted/stopped, analyst did not realize run was not done on 11/21/15 and filled the ~~eluent~~ eluent water causing the instrument to stop. Using beginning CCV/CCB from 11/21/15 to finish this run. (Ran 2 Hrs after run was stopped)

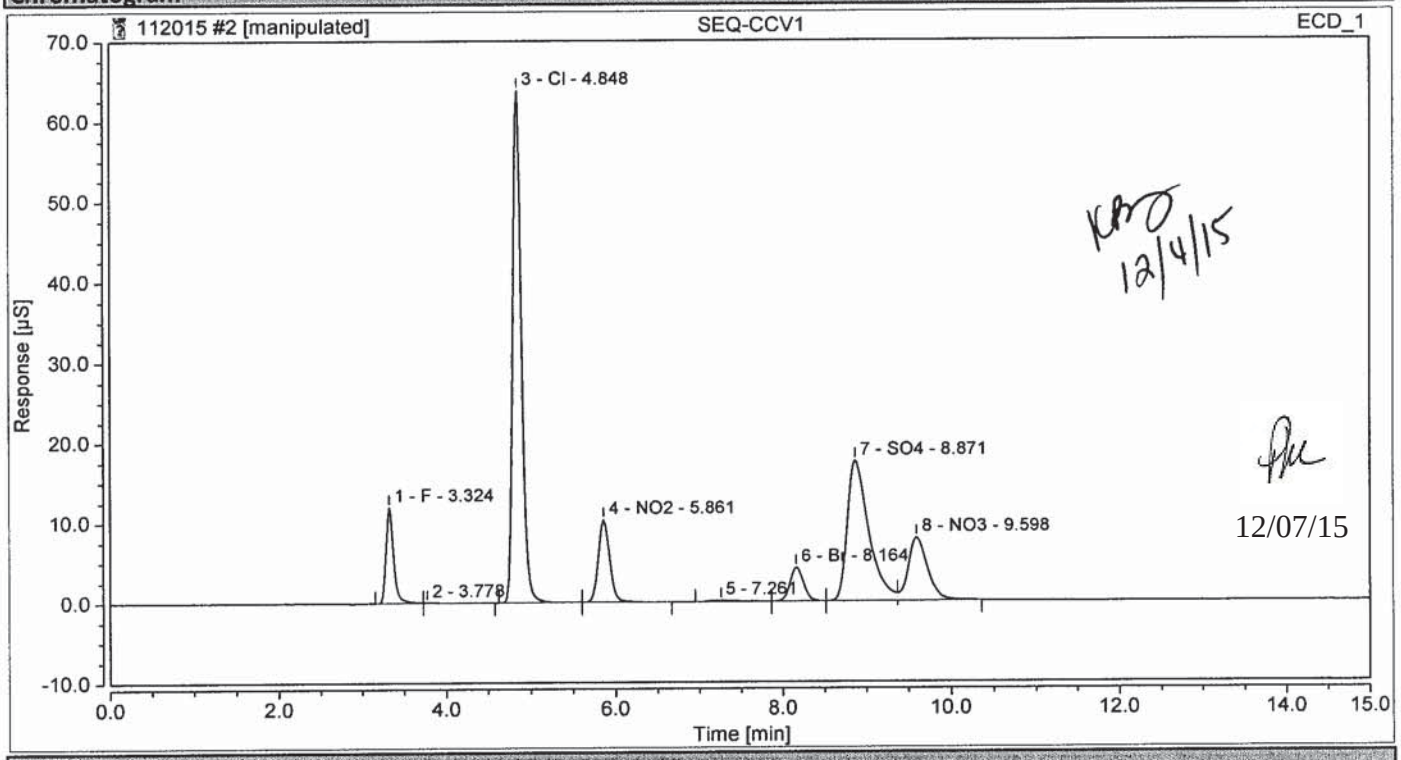
KB 12/4/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

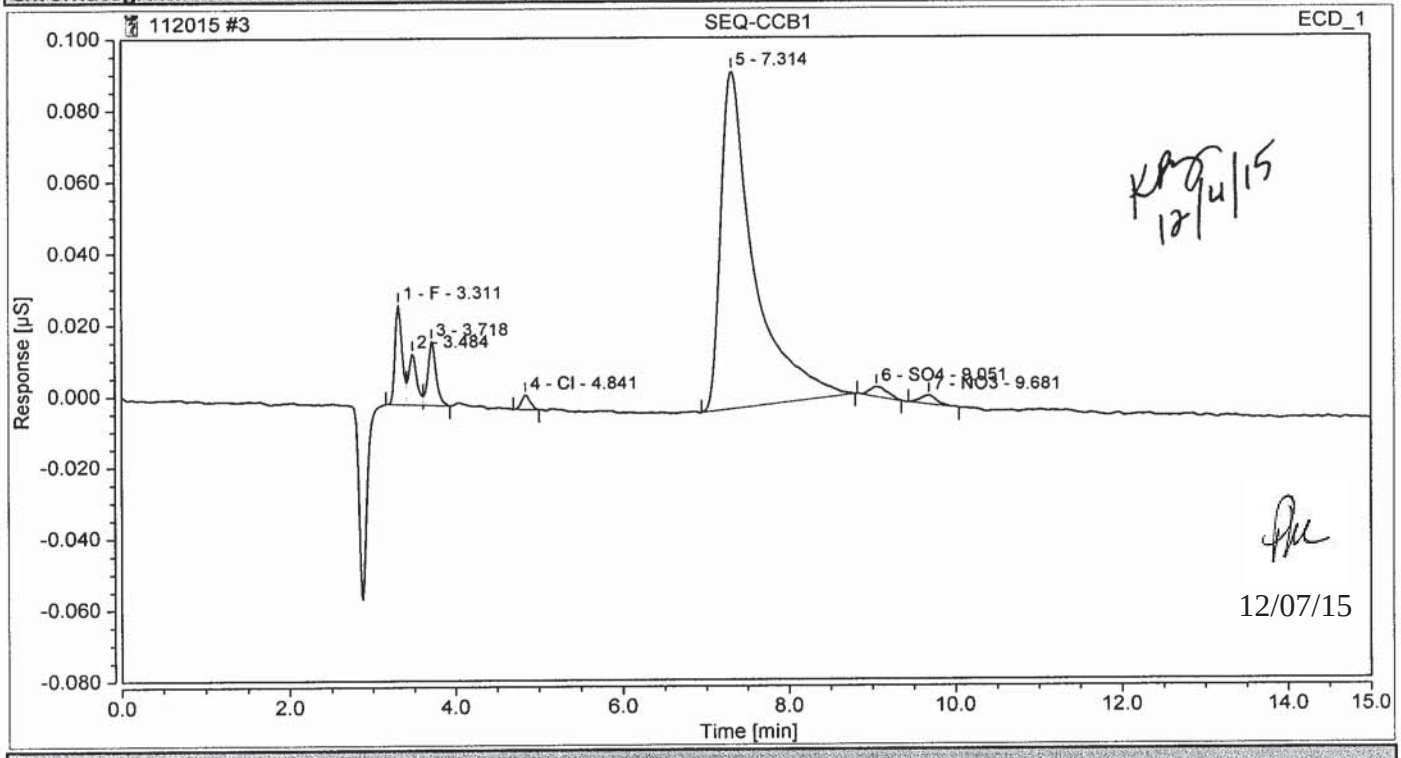
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2495260	12.010	6.67	10.35	2.5201
2		3.778	0.0177791	0.064	0.09	0.06	n.a.
3	Cl	4.848	7.7046069	63.816	41.12	55.02	25.3160
4	NO2	5.861	1.6021927	10.307	8.55	8.89	2.8156
5		7.261	0.0546892	0.162	0.29	0.14	n.a.
6	Br	8.164	0.7987974	4.232	4.26	3.65	6.1928
7	SO4	8.871	5.2207441	17.521	27.87	15.11	23.3490
8	NO3	9.598	2.0865083	7.876	11.14	6.79	2.7015
Total:			**18.735**	**115.988**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 15:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

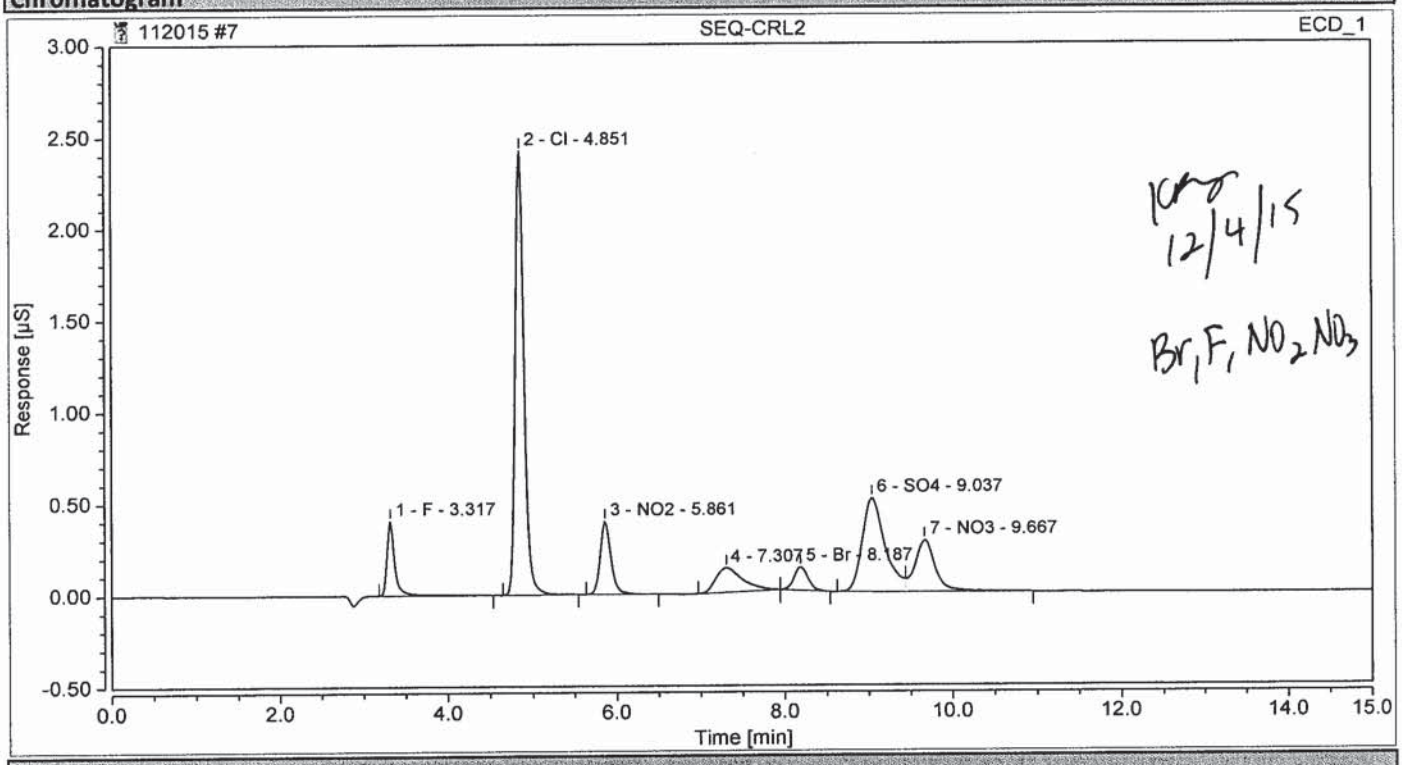
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0026883	0.028	5.12	17.02	0.0054
2		3.484	0.0016489	0.014	3.14	8.78	n.a.
3		3.718	0.0020834	0.018	3.97	10.91	n.a.
4	Cl	4.841	0.0004932	0.004	0.94	2.50	0.0016
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.314	0.0442513	0.095	84.36	57.64	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	9.051	0.0007020	0.003	1.34	1.63	0.0031
7	NO3	9.681	0.0005889	0.003	1.12	1.52	0.0008
Total:			**0.052**	**0.164**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL2**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 16:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.317	0.0430580	0.405	6.11	9.47	0.0868
2	Cl	4.851	0.2875981	2.423	40.84	56.62	0.9450
3	NO2	5.861	0.0588795	0.398	8.36	9.30	0.1035
4		7.307	0.0499310	0.134	7.09	3.13	n.a.
5	Br	8.187	0.0247814	0.128	3.52	3.00	0.1921
6	SO4	9.037	0.1604911	0.510	22.79	11.93	0.7178
7	NO3	9.667	0.0794266	0.280	11.28	6.55	0.1028
Total:			**0.704**	**4.279**	**100.00**	**100.00**	

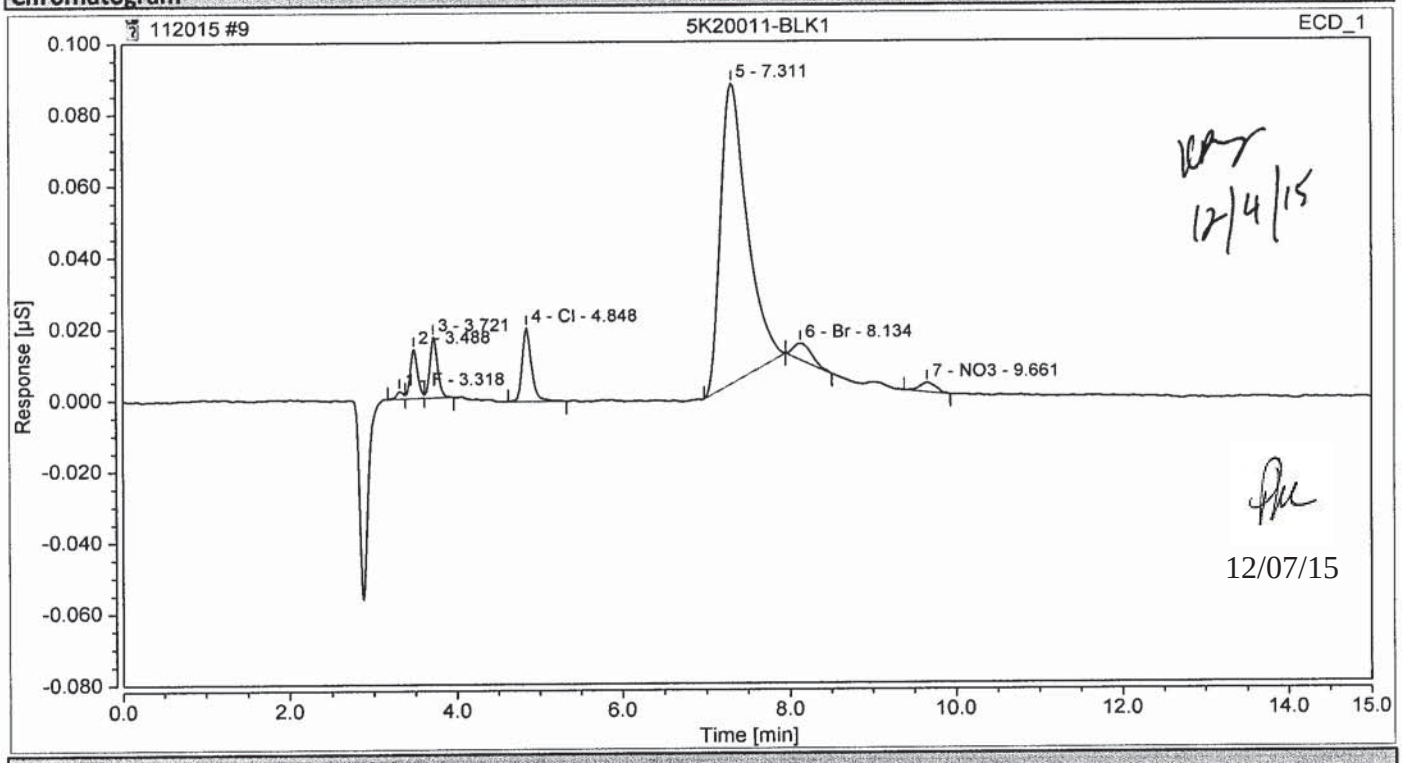
12/07/15

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 16:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

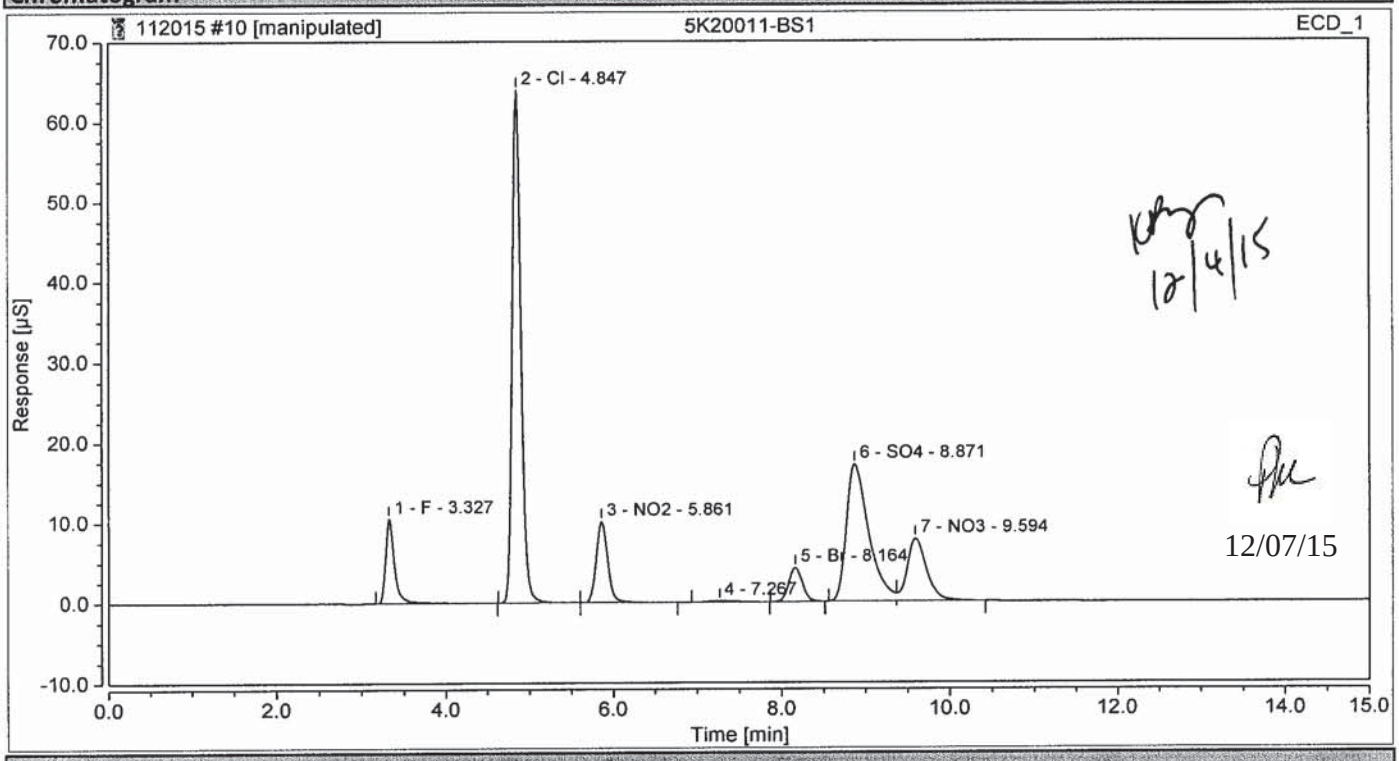
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0002105	0.002	0.54	1.49	0.0004
2		3.488	0.0014544	0.014	3.73	9.51	n.a.
3		3.721	0.0018133	0.017	4.65	11.74	n.a.
4	Cl	4.848	0.0027364	0.021	7.02	14.21	0.0090
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.311	0.0309336	0.084	79.38	58.03	n.a.
6	Br	8.134	0.0012110	0.005	3.11	3.22	0.0094
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.661	0.0006102	0.003	1.57	1.81	0.0008
Total:			**0.039**	**0.145**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

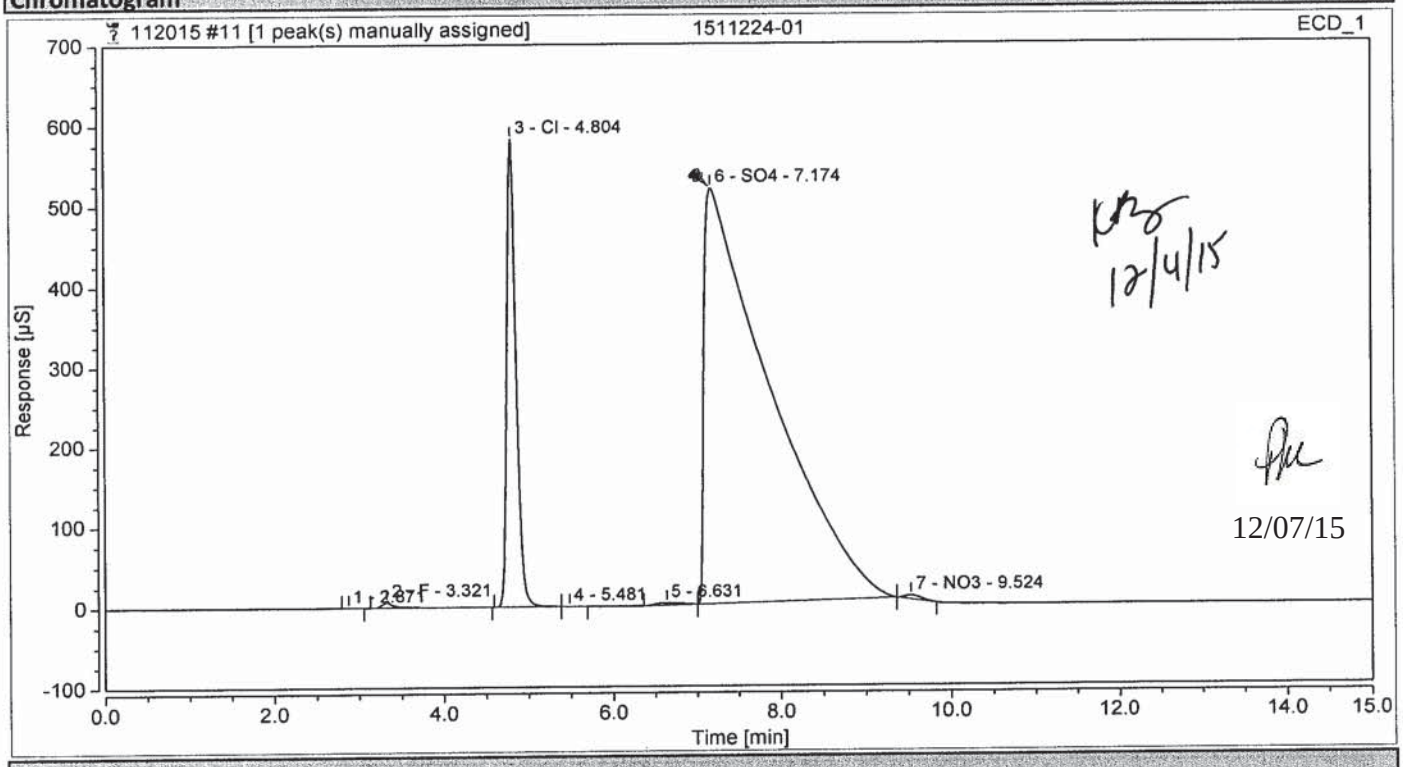
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2680093	10.558	6.72	9.26	2.5574
2	Cl	4.847	7.7815904	63.933	41.23	56.10	25.5690
3	NO2	5.861	1.5948599	10.134	8.45	8.89	2.8028
4		7.267	0.0553102	0.161	0.29	0.14	n.a.
5	Br	8.164	0.8050184	4.257	4.27	3.74	6.2410
6	SO4	8.871	5.2793485	17.110	27.97	15.01	23.6111
7	NO3	9.594	2.0887959	7.809	11.07	6.85	2.7044
Total:			**18.873**	**113.962**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-01**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 17:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

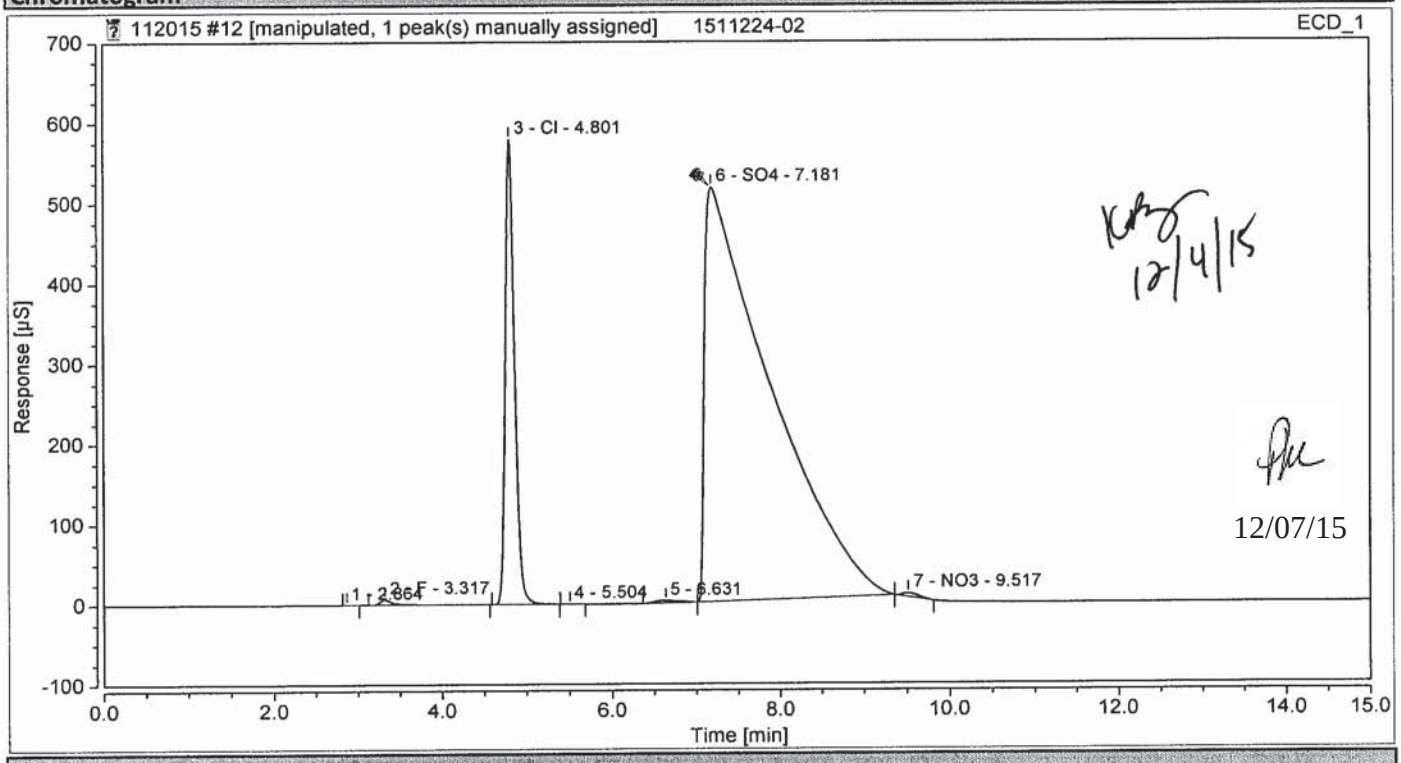
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.871	0.0030742	0.030	0.00	0.00	n.a.
2	F	3.321	1.2082817	6.849	0.22	0.61	2.4370
3	Cl	4.804	73.7652873	582.464	13.48	52.21	242.3801
4		5.481	0.0016619	0.010	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		6.631	1.0264028	2.913	0.19	0.26	n.a.
6	SO4	7.174	470.0482327	518.466	85.91	46.47	2102.2209
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.524	1.0573604	4.861	0.19	0.44	1.3690
Total:			**547.110**	**1115.593**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-02**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 17:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

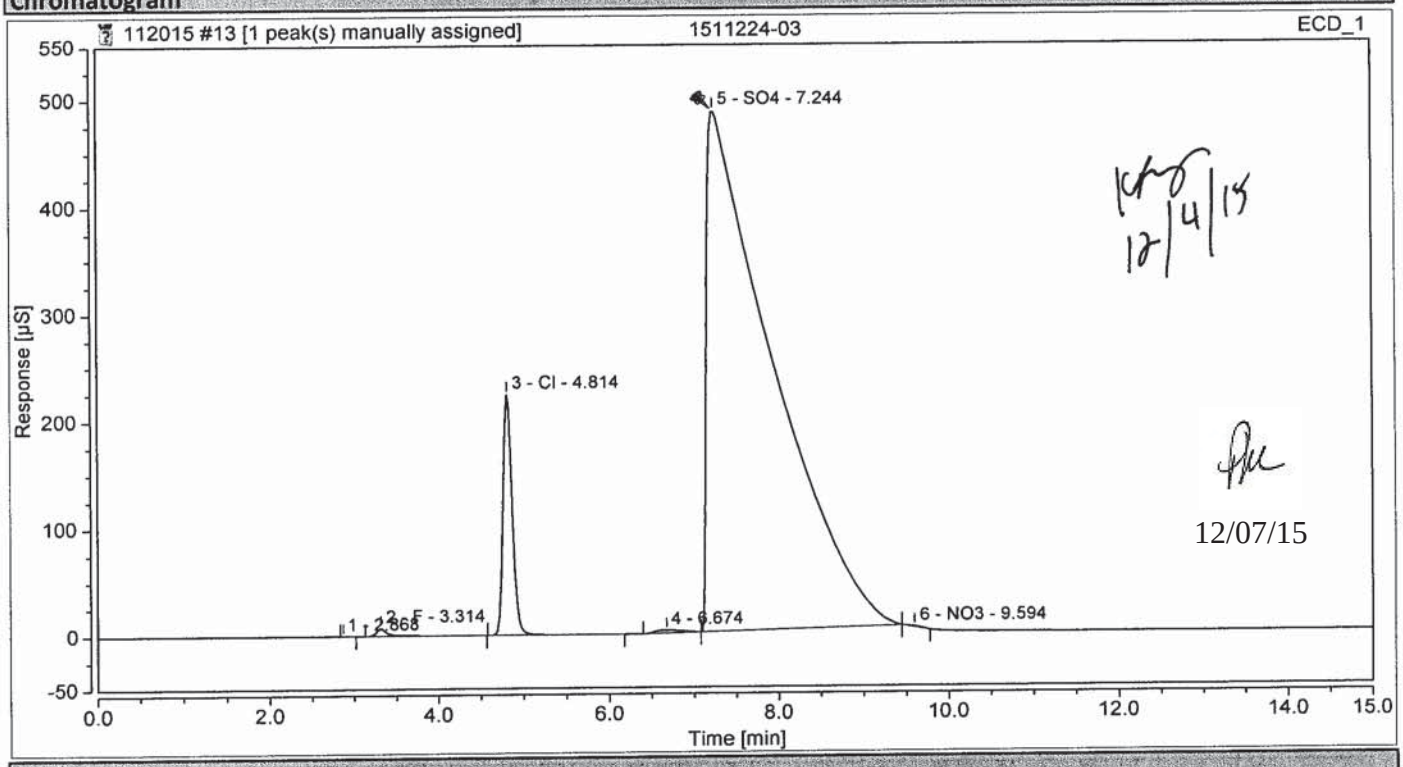
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.864	0.0022804	0.027	0.00	0.00	n.a.
2	F	3.317	1.1932982	6.768	0.22	0.61	2.4067
3	Cl	4.801	73.7065185	579.370	13.51	52.18	242.1870
4		5.504	0.0022465	0.015	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		6.631	1.0483933	2.943	0.19	0.27	n.a.
6	SO4	7.181	468.4834565	516.607	85.89	46.53	2095.2226
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.517	1.0073646	4.644	0.18	0.42	1.3043
Total:			**545.444**	**1110.374**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-03**	*Run Time (min):*	**15.00**
Vial Number:	**13**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 18:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

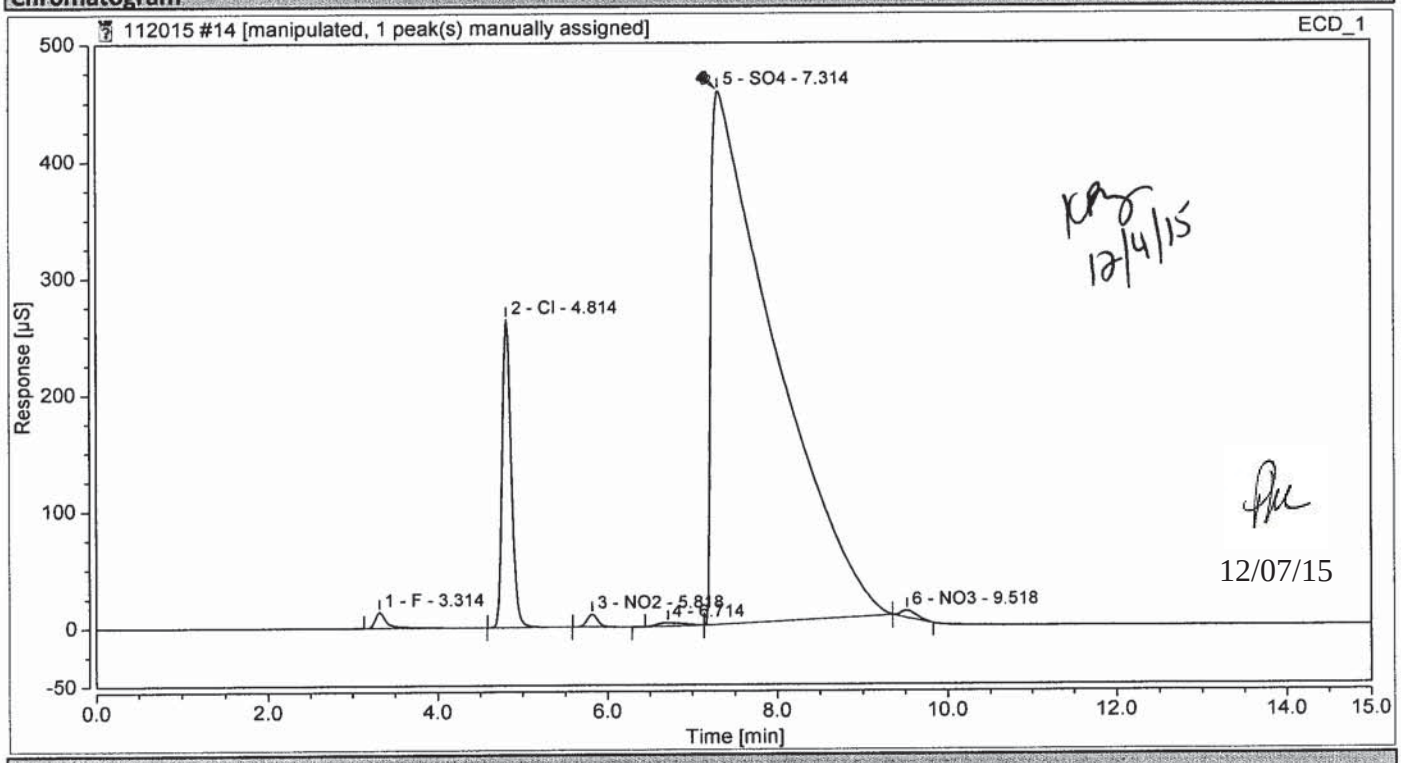
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.868	0.0010423	0.012	0.00	0.00	n.a.
2	F	3.314	1.1525647	7.219	0.25	1.00	2.3246
3	Cl	4.814	27.8636073	224.030	5.99	31.05	91.5551
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		6.674	1.0423333	2.863	0.22	0.40	n.a.
5	SO4	7.244	434.6329826	486.662	93.51	67.45	1943.8314
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NO3	9.594	0.1192382	0.744	0.03	0.10	0.1544
Total:			**464.812**	**721.530**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-MS1**	*Run Time (min):*	**15.00**
Vial Number:	**14**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

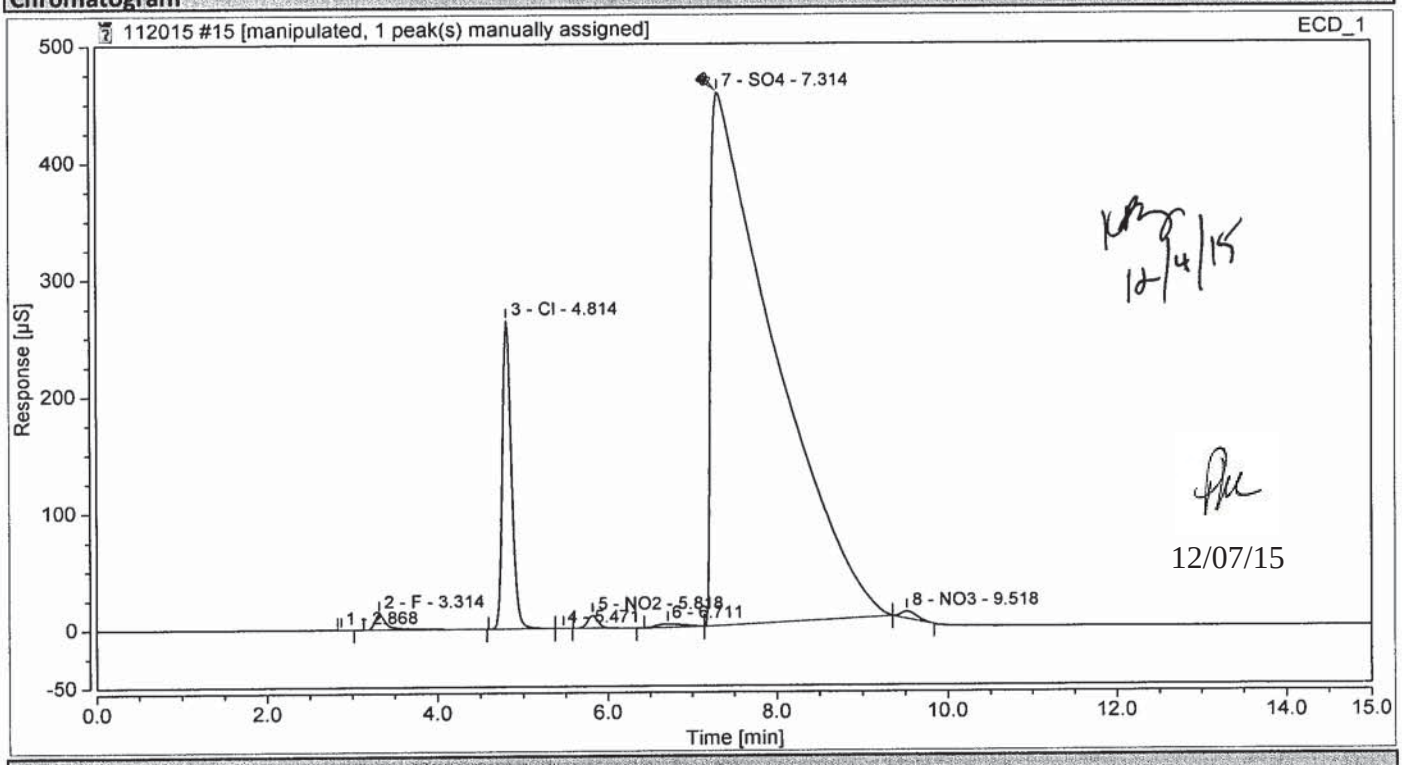
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	2.1899164	13.719	0.51	1.82	4.4168
2	Cl	4.814	32.7332737	263.889	7.56	34.96	107.5559
3	NO2	5.818	1.5727285	10.925	0.36	1.45	2.7639
4		6.714	1.0267058	2.776	0.24	0.37	n.a.
5	SO4	7.314	393.9092242	457.411	91.02	60.60	1761.7005
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NO3	9.518	1.3531457	6.133	0.31	0.81	1.7520
Total:			**432.785**	**754.853**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-MSD1**	*Run Time (min):*	**15.00**
Vial Number:	**15**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

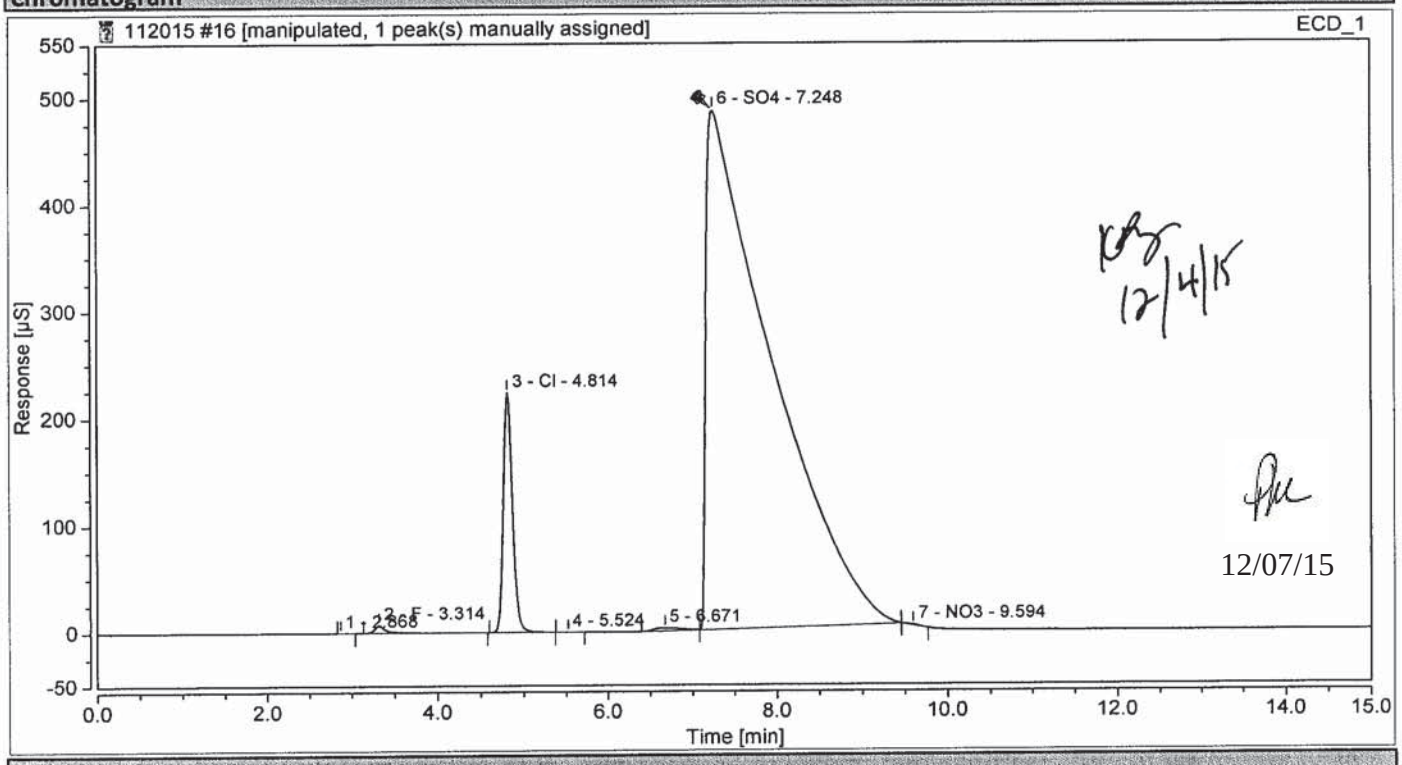
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.868	0.0009097	0.010	0.00	0.00	n.a.
2	F	3.314	2.1880130	13.727	0.51	1.82	4.4130
3	Cl	4.814	32.6916417	263.744	7.55	34.96	107.4191
4		5.471	0.0007406	0.006	0.00	0.00	n.a.
5	NO2	5.818	1.5810146	10.985	0.37	1.46	2.7784
6		6.711	1.0465724	2.799	0.24	0.37	n.a.
7	SO4	7.314	393.9879131	457.009	91.02	60.58	1762.0524
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.518	1.3639556	6.159	0.32	0.82	1.7660
Total:			**432.861**	**754.439**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K20011-DUP1**	*Run Time (min):*	**15.00**
Vial Number:	**16**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

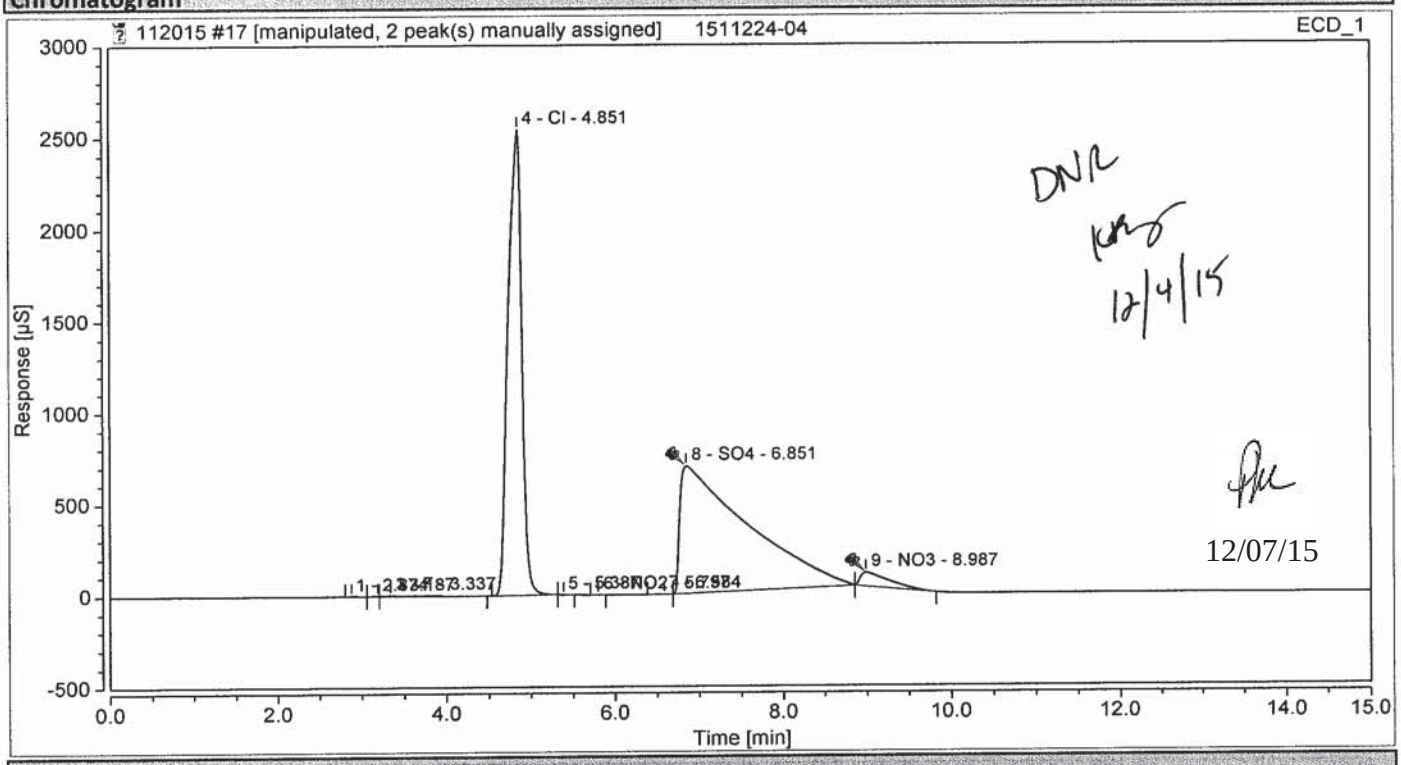
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.868	0.0013391	0.015	0.00	0.00	n.a.
2	F	3.314	1.1457360	7.204	0.25	1.00	2.3108
3	Cl	4.814	27.7506247	223.617	5.98	31.03	91.1838
4		5.524	0.0014160	0.007	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		6.671	1.0488007	2.865	0.23	0.40	n.a.
6	SO4	7.248	433.8103466	486.161	93.52	67.47	1940.1523
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.594	0.1160142	0.741	0.03	0.10	0.1502
Total:			**463.874**	**720.609**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-04**	*Run Time (min):*	**15.00**
Vial Number:	**17**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

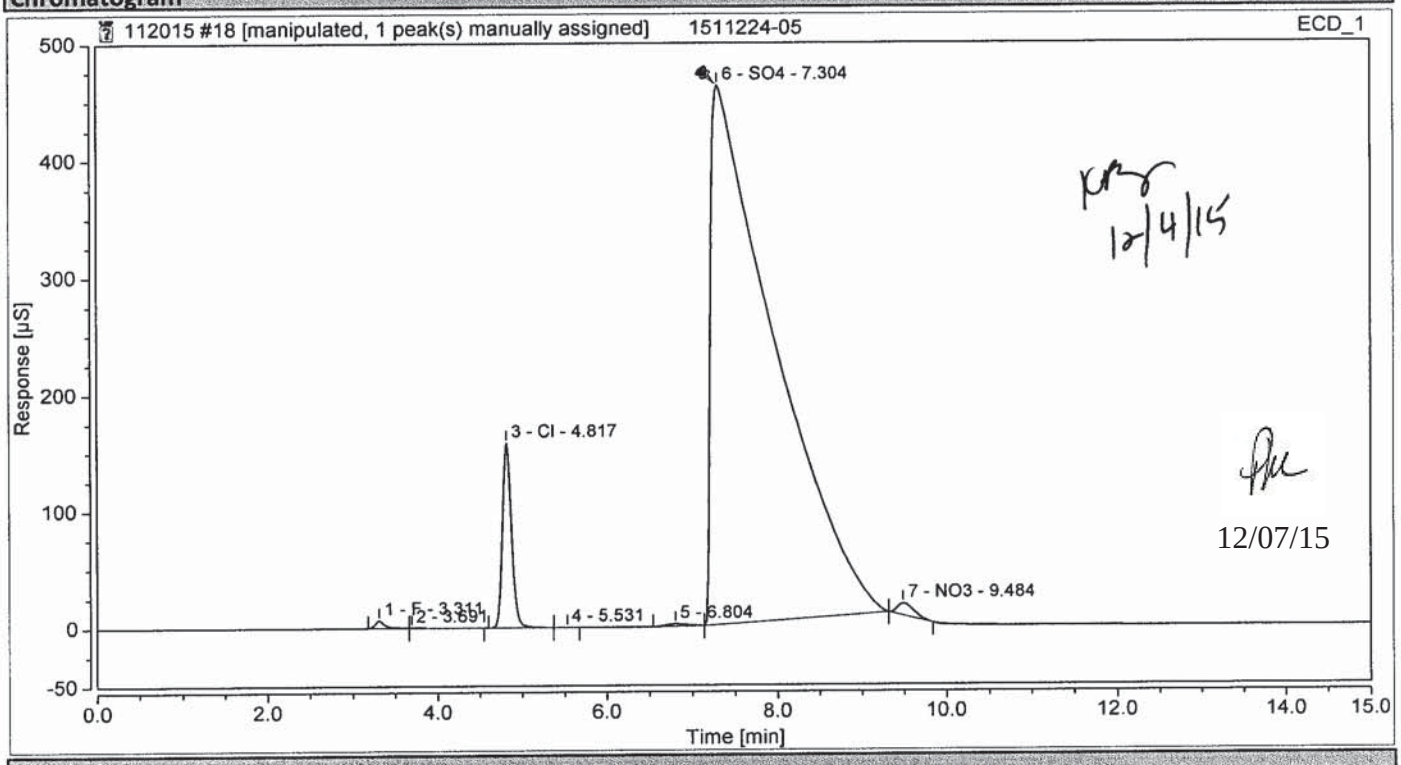
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.874	0.0256055	0.246	0.00	0.01	n.a.
2		3.187	0.0298532	0.534	0.00	0.02	n.a.
3	F	3.337	0.6673526	3.116	0.06	0.09	1.3460
4	Cl	4.851	479.1640638	2540.941	41.61	76.61	1574.4512
5		5.387	0.0084835	0.082	0.00	0.00	n.a.
6	NO2	5.797	0.0044984	0.049	0.00	0.00	0.0079
7		6.584	0.2332840	1.174	0.02	0.04	n.a.
8	SO4	6.851	641.3622672	695.658	55.70	20.98	2868.3974
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9	NO3	8.987	30.0445665	74.718	2.61	2.25	38.8999
Total:			**1151.540**	**3316.518**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1511224-05**	*Run Time (min):*	**15.00**
Vial Number:	**18**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.8953835	6.511	0.21	1.02	1.8059
2		3.691	0.0502254	0.197	0.01	0.03	n.a.
3	Cl	4.817	19.4810074	158.339	4.63	24.78	64.0113
4		5.531	0.0009769	0.005	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		6.804	0.5885547	1.957	0.14	0.31	n.a.
6	SO4	7.304	397.6626080	461.817	94.44	72.27	1778.4869
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NO3	9.484	2.3764568	10.204	0.56	1.60	3.0769
Total:			**421.055**	**639.030**	**100.00**	**100.00**	

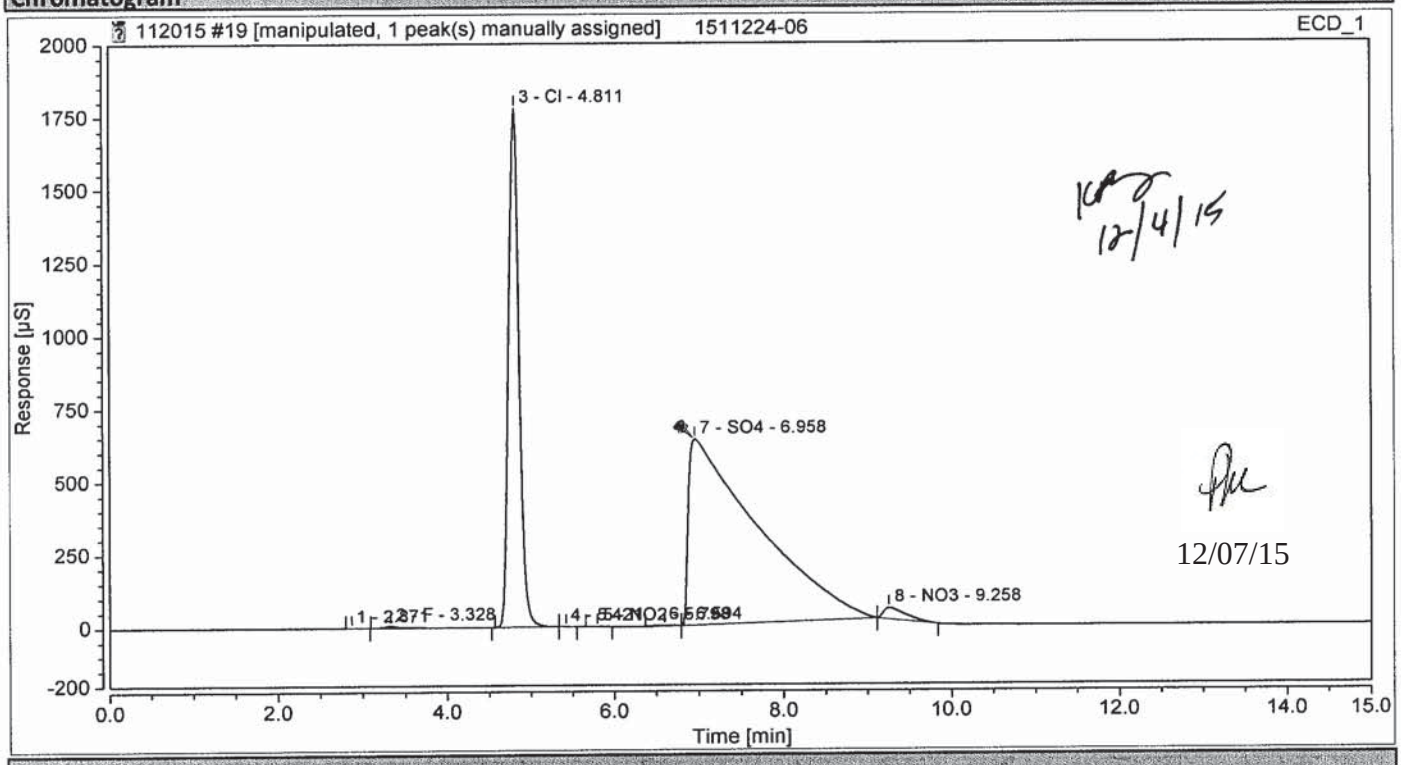
$Cl = 19.4810074 / 0.3043372 = 64.0113 \times 5mL / 5mL = 64.0\ mg/L$

Chromatogram and Results

Injection Details

Injection Name:	**1511224-06**	*Run Time (min):*	**15.00**
Vial Number:	**19**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 19:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

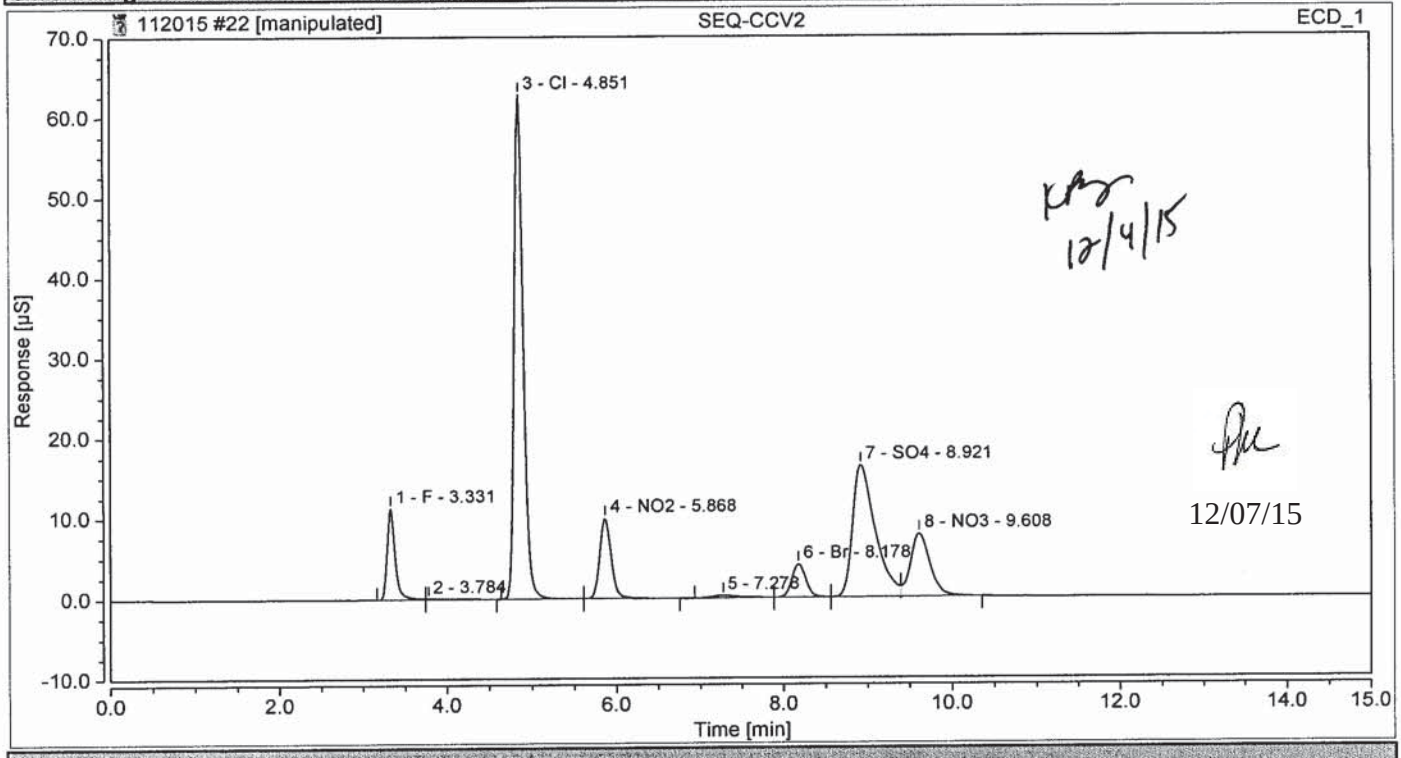
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.871	0.0141479	0.139	0.00	0.01	n.a.
2	F	3.328	1.3013491	6.171	0.15	0.25	2.6247
3	Cl	4.811	259.0540783	1778.347	29.64	72.18	851.2074
4		5.421	0.0031669	0.029	0.00	0.00	n.a.
5	NO2	5.798	0.0635467	0.515	0.01	0.02	0.1117
6		6.594	0.4886626	1.968	0.06	0.08	n.a.
7	SO4	6.958	601.1859066	637.480	68.79	25.88	2688.7146
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.258	11.8552626	38.948	1.36	1.58	15.3495
Total:			**873.966**	**2463.597**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**22**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 20:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

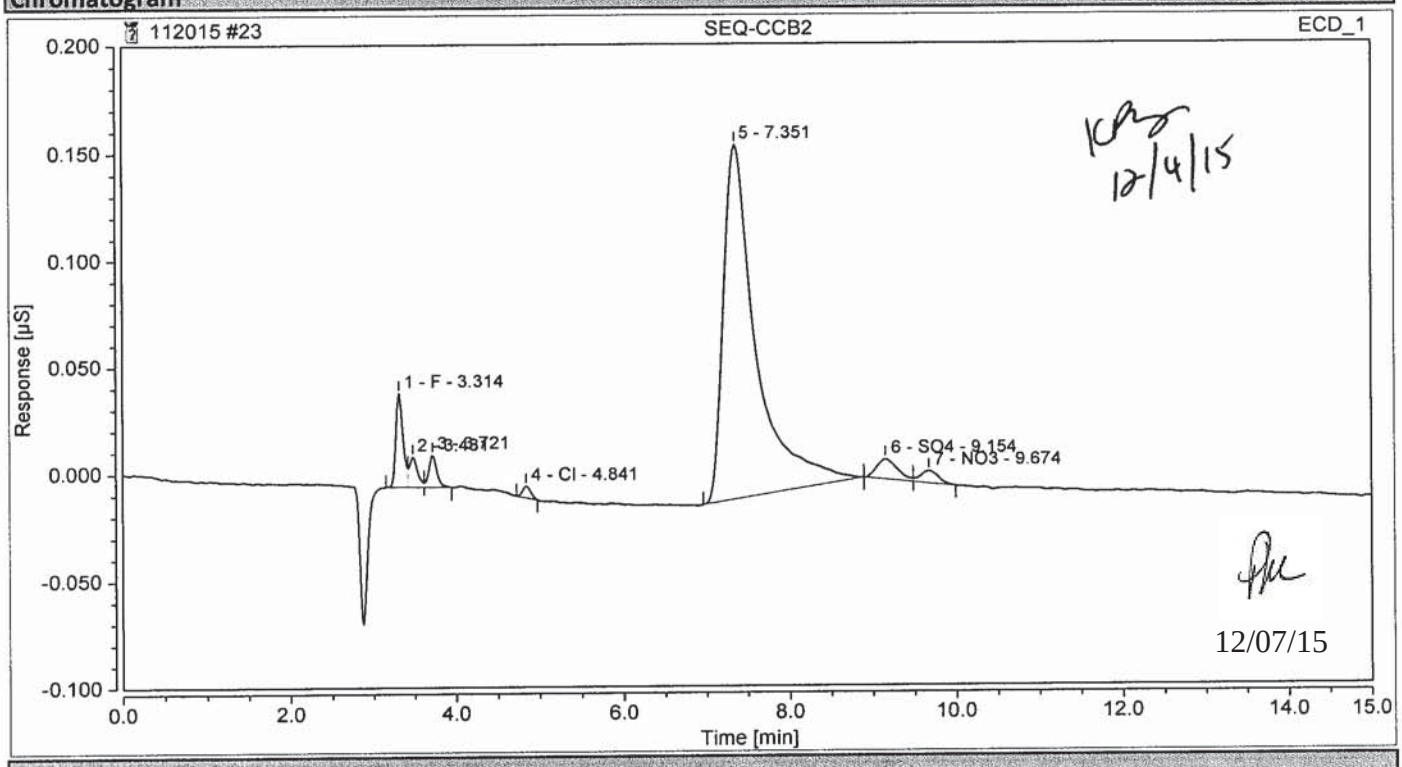
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.2416639	11.304	6.66	10.02	2.5043
2		3.784	0.0188403	0.067	0.10	0.06	n.a.
3	Cl	4.851	7.6908132	62.817	41.27	55.68	25.2707
4	NO2	5.868	1.5800440	9.980	8.48	8.85	2.7767
5		7.278	0.1076181	0.303	0.58	0.27	n.a.
6	Br	8.178	0.7869688	4.125	4.22	3.66	6.1011
7	SO4	8.921	5.1083959	16.399	27.41	14.53	22.8465
8	NO3	9.608	2.1015308	7.832	11.28	6.94	2.7209
Total:			**18.636**	**112.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**23**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Nov/15 20:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0043244	0.044	4.88	16.89	0.0087
2		3.481	0.0016413	0.014	1.85	5.45	n.a.
3		3.721	0.0017062	0.015	1.93	5.83	n.a.
4	Cl	4.841	0.0005975	0.005	0.67	2.08	0.0020
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.351	0.0762273	0.166	86.03	63.93	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	9.154	0.0027193	0.009	3.07	3.65	0.0122
7	NO3	9.674	0.0013914	0.006	1.57	2.17	0.0018
Total:			**0.089**	**0.260**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**121015**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Dec2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/Dec/15 07:58:58**
No. of Injections:	**63**	*Updated By:*	**NSH-IONC2**

Injection Details

No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		10/Dec/15 07:57:12	Finished
2	BLANK	2	Unknown		10/Dec/15 08:15:18	Finished
3	BLANK	3	Unknown		10/Dec/15 08:33:08	Finished
4	SEQ-CCV1	4	Unknown		10/Dec/15 08:51:22	Finished
5	BLANK	5	Unknown		10/Dec/15 09:11:38	Finished
6	BLANK	6	Unknown		10/Dec/15 09:29:34	Finished
7	BLANK	7	Unknown		10/Dec/15 09:47:24	Finished
8	BLANK	8	Unknown		10/Dec/15 10:05:14	Finished
9	SEQ-CCV1	9	Unknown		10/Dec/15 10:33:50	Finished
10	SEQ-CCB1	10	Unknown		10/Dec/15 10:51:48	Finished
11	SEQ-CRL1	11	Unknown		10/Dec/15 11:09:38	Finished
12	SEQ-CRL2	12	Unknown		10/Dec/15 11:27:29	Finished
13	SEQ-CRL3	13	Unknown		10/Dec/15 11:45:19	Finished
14	5L10011-BLK1	14	Unknown		10/Dec/15 12:03:09	Finished
15	5L10011-BS1	15	Unknown		10/Dec/15 12:20:59	Finished
16	1512101-01@10	16	Unknown		10/Dec/15 12:38:49	Finished
17	1512101-02@10	17	Unknown		10/Dec/15 12:56:53	Finished
18	1512101-03@10	18	Unknown		10/Dec/15 13:14:43	Finished
19	1512101-04@10	19	Unknown		10/Dec/15 13:32:33	Finished
20	1512101-05@10	20	Unknown		10/Dec/15 13:50:24	Finished
21	1512101-06@10	21	Unknown		10/Dec/15 14:08:14	Finished
22	1512101-08@10	22	Unknown		10/Dec/15 14:26:04	Finished
23	5L10011-MS1@10	23	Unknown		10/Dec/15 14:43:55	Finished
24	5L10011-MSD1@10	24	Unknown		10/Dec/15 15:01:46	Finished
25	5L10011-DUP1@10	25	Unknown		10/Dec/15 15:19:36	Finished
26	1512103-03	26	Unknown		10/Dec/15 15:37:26	Finished
27	1512105-01	27	Unknown		10/Dec/15 15:55:16	Finished
28	1512105-03	28	Unknown		10/Dec/15 16:13:06	Finished
29	5L10011-MS2	29	Unknown		10/Dec/15 16:30:57	Finished
30	5L10011-MSD2	30	Unknown		10/Dec/15 16:48:47	Finished
31	5L10011-DUP2	31	Unknown		10/Dec/15 17:06:37	Finished
32	SEQ-CCV2	32	Unknown		10/Dec/15 17:24:27	Finished
33	SEQ-CCB2	33	Unknown		10/Dec/15 17:42:18	Finished
34	1511229-07@20	34	Unknown		10/Dec/15 18:00:08	Finished
35	1511204-08RE1@10	35	Unknown		10/Dec/15 18:17:58	Finished
36	1511204-09RE1@20	36	Unknown		10/Dec/15 18:35:48	Finished
37	1511224-06RE1@10	37	Unknown		10/Dec/15 18:53:38	Finished
38	1511226-01RE1@20	38	Unknown		10/Dec/15 19:11:29	Finished
39	1511226-02RE1@20	39	Unknown		10/Dec/15 19:29:19	Finished
40	1511226-03RE1@20	40	Unknown		10/Dec/15 19:47:09	Finished
41	1511226-04RE1@20	41	Unknown		10/Dec/15 20:04:59	Finished
42	1511226-05RE1@20	42	Unknown		10/Dec/15 20:22:50	Finished

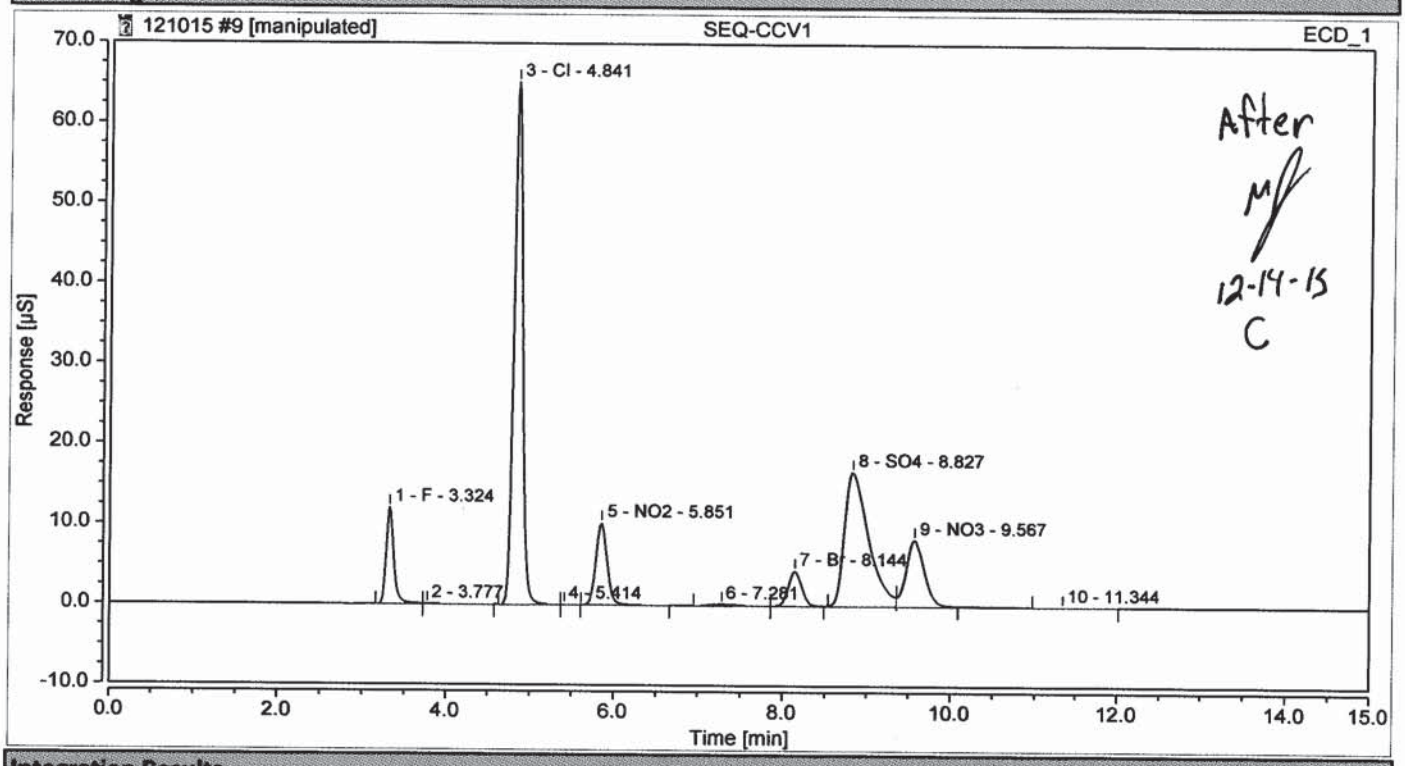
43	1511226-06RE1@20	43	Unknown		10/Dec/15 20:40:40	Finished
44	SEQ-CCV3	44	Unknown		10/Dec/15 20:58:30	Finished
45	SEQ-CCB3	45	Unknown		10/Dec/15 21:16:20	Finished
46	5L06002-BLK1	46	Unknown		10/Dec/15 21:34:10	Finished
47	5L06002-BS1	47	Unknown		10/Dec/15 21:52:01	Finished
48	1511258-01RE1@10	48	Unknown		10/Dec/15 22:09:51	Finished
~~49~~	~~1511226-07RE1@20~~	49	Unknown		10/Dec/15 22:27:41	Finished
50	1511229-01@5X	50	Unknown		10/Dec/15 22:45:31	Finished
51	1511229-02@5X	1	Unknown		10/Dec/15 23:03:22	Finished
52	1511229-03@5X	2	Unknown		10/Dec/15 23:21:12	Finished
53	1511229-04@5X	3	Unknown		10/Dec/15 23:39:02	Finished
54	1511229-05@5X	4	Unknown		10/Dec/15 23:56:53	Finished
55	1511229-06@5X	5	Unknown		11/Dec/15 00:14:43	Finished
56	5L06002-MS1@5X	6	Unknown		11/Dec/15 00:32:33	Finished
57	5L06002-MSD1@5X	7	Unknown		11/Dec/15 00:50:23	Finished
58	5L06002-DUP1@5X	8	Unknown		11/Dec/15 01:08:14	Finished
59	~~1511204-07@5X~~	9	Unknown		11/Dec/15 01:26:04	Finished
60	1511229-08@5X	10	Unknown		11/Dec/15 01:43:54	Finished
61	SEQ-CCV4	11	Unknown		11/Dec/15 02:01:44	Finished
62	SEQ-CCB4	12	Unknown		11/Dec/15 02:19:34	Finished
63	BLANK	13	Unknown		11/Dec/15 02:37:25	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2681993	12.059	6.64	10.30	2.5578
2		3.777	0.0179633	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7098321	65.155	40.39	55.65	25.3332
4		5.414	0.0004088	0.002	0.00	0.00	n.a.
5	NO2	5.851	1.5671010	10.216	8.21	8.73	2.7540
6		7.281	0.0628324	0.185	0.33	0.16	n.a.
7	Br	8.144	0.8036017	4.363	4.21	3.73	6.2300
8	SO4	8.827	5.5518366	16.724	29.08	14.28	24.8298
9	NO3	9.567	2.1027054	8.307	11.02	7.09	2.7225
10		11.344	0.0043632	0.010	0.02	0.01	n.a.
Total:			**19.089**	**117.083**	**100.00**	**100.00**	

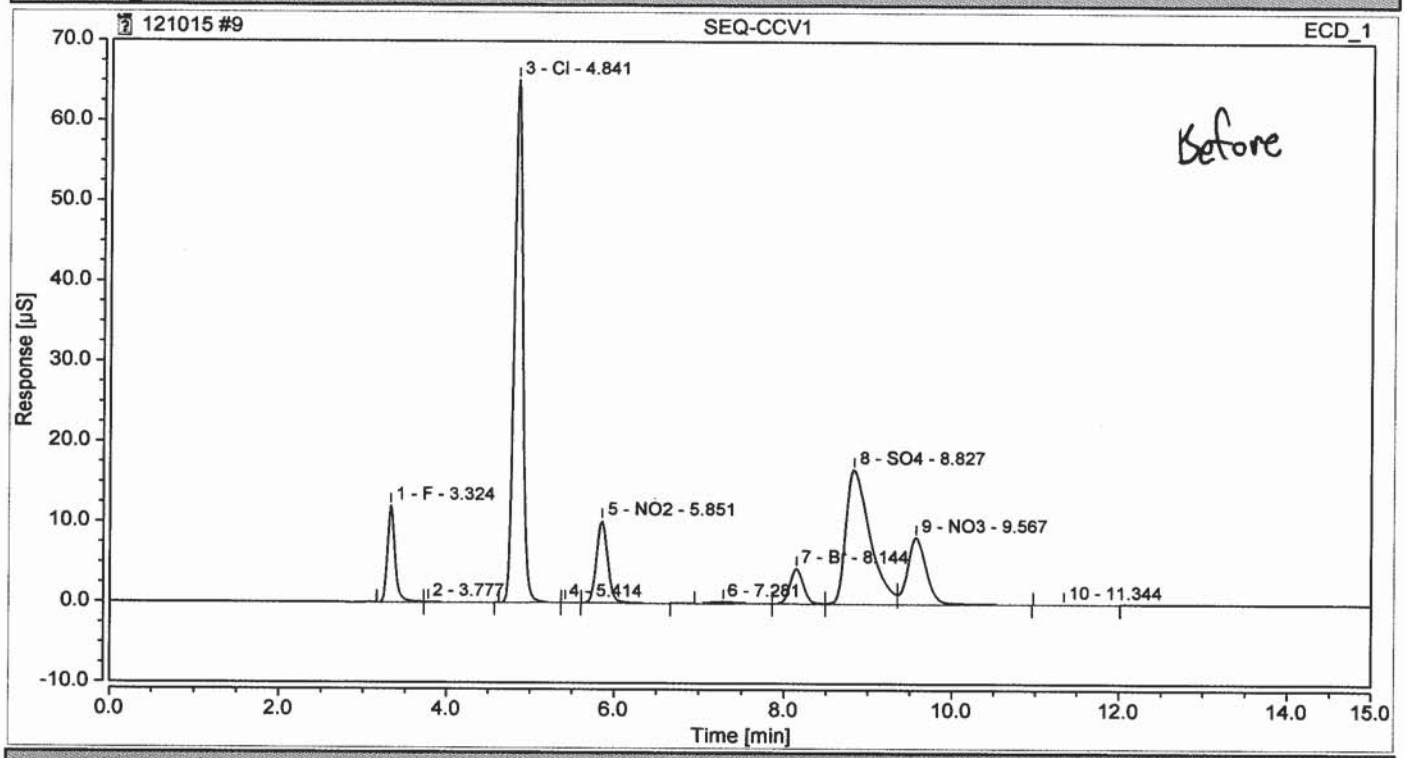
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

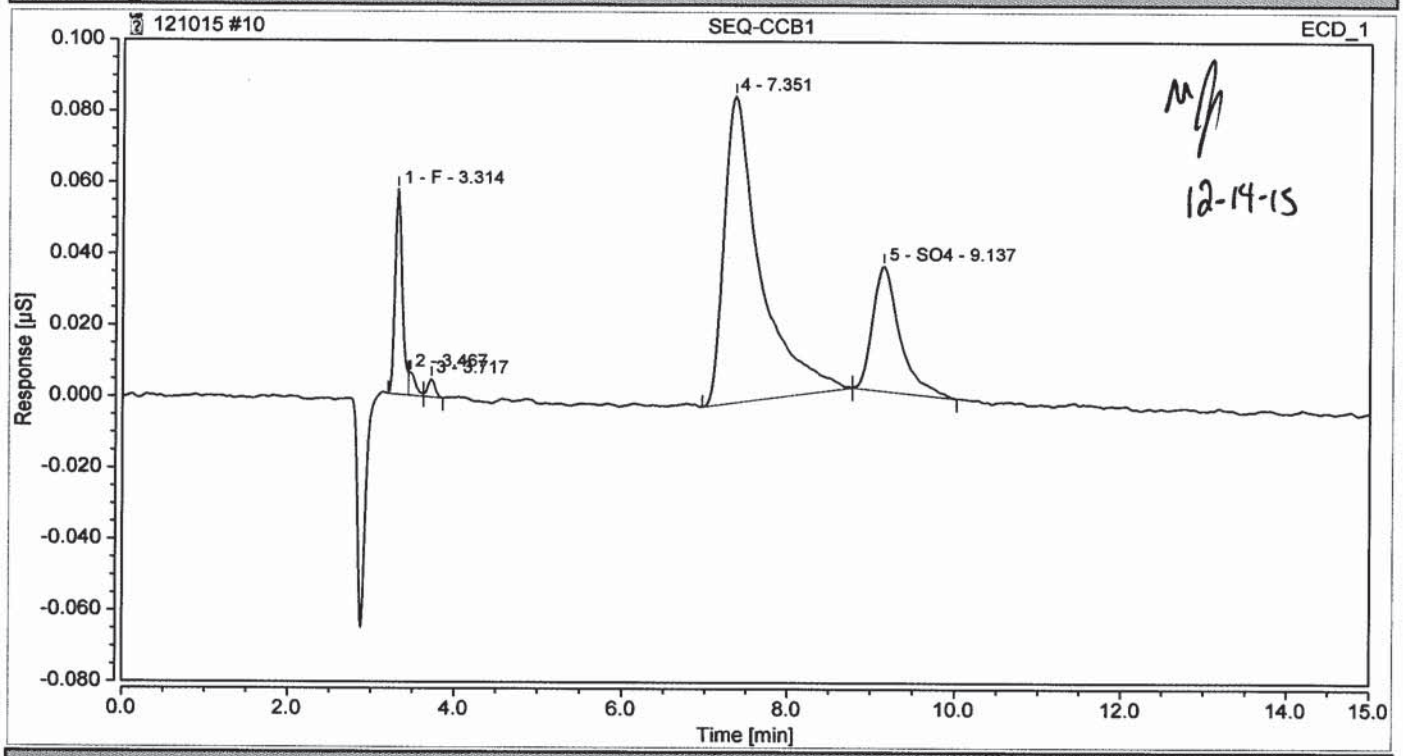
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2681993	12.059	6.64	10.30	2.5578
2		3.777	0.0179633	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7098321	65.155	40.35	55.65	25.3332
4		5.414	0.0004088	0.002	0.00	0.00	n.a.
5	NO2	5.851	1.5671010	10.216	8.20	8.73	2.7540
6		7.281	0.0628324	0.185	0.33	0.16	n.a.
7	Br	8.144	0.8036017	4.363	4.21	3.73	6.2300
8	SO4	8.827	5.5448251	16.724	29.02	14.28	24.7984
9	NO3	9.567	2.1274326	8.307	11.13	7.09	2.7545
10		11.344	0.0043632	0.010	0.02	0.01	n.a.
Total:			**19.107**	**117.083**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0056482	0.058	8.89	30.29	0.0114
2		3.467	0.0006010	0.006	0.95	3.35	n.a.
3		3.717	0.0004926	0.005	0.78	2.65	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.351	0.0437036	0.086	68.79	45.27	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.137	0.0130869	0.035	20.60	18.44	0.0585
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.064**	**0.190**	**100.00**	**100.00**	

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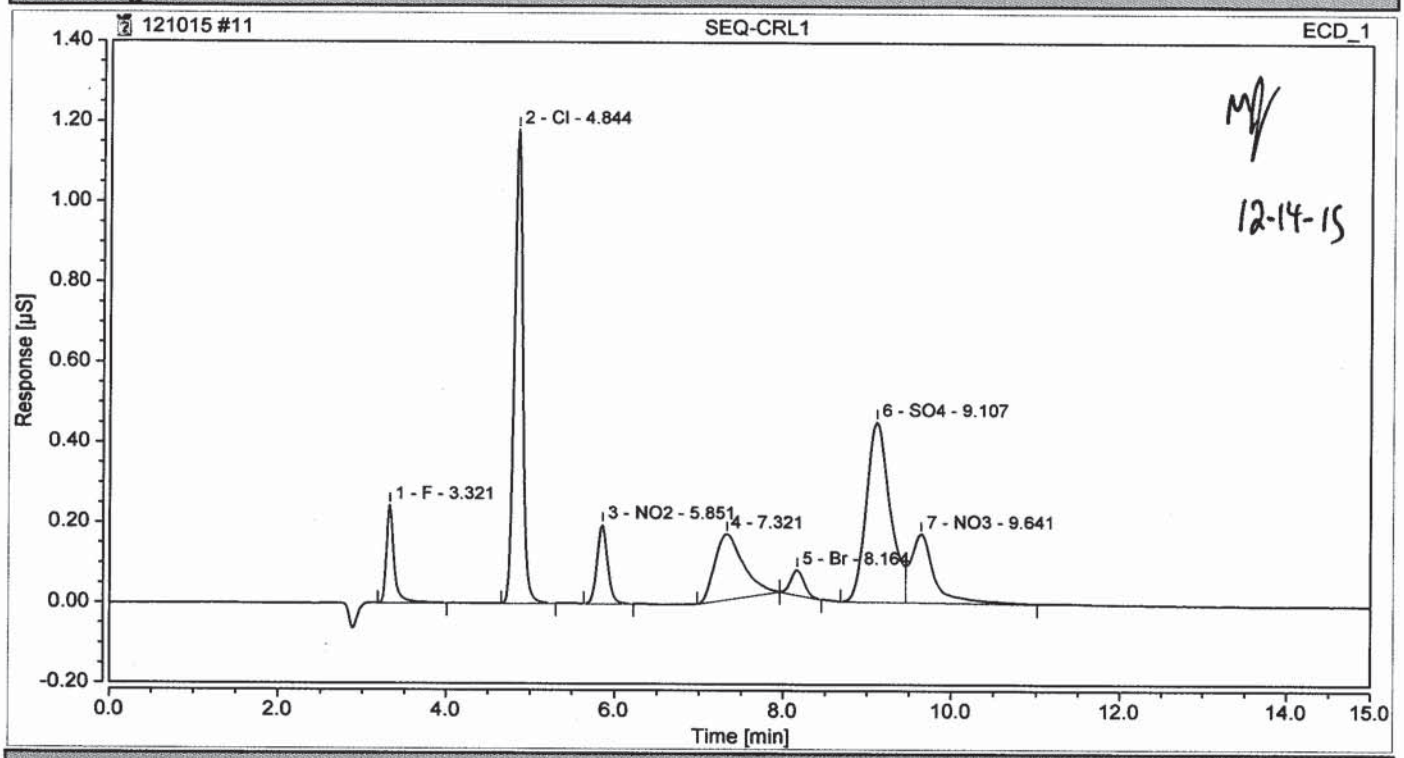
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL1**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0257931	0.245	5.49	9.90	0.0520
2	Cl	4.844	0.1361275	1.182	28.98	47.82	0.4473
3	NO2	5.851	0.0283737	0.198	6.04	8.00	0.0499
4		7.321	0.0643525	0.164	13.70	6.63	n.a.
5	Br	8.164	0.0114553	0.063	2.44	2.54	0.0888
6	SO4	9.107	0.1488035	0.449	31.67	18.18	0.6655
7	NO3	9.641	0.0548869	0.171	11.68	6.93	0.0711
Total:			**0.470**	**2.471**	**100.00**	**100.00**	

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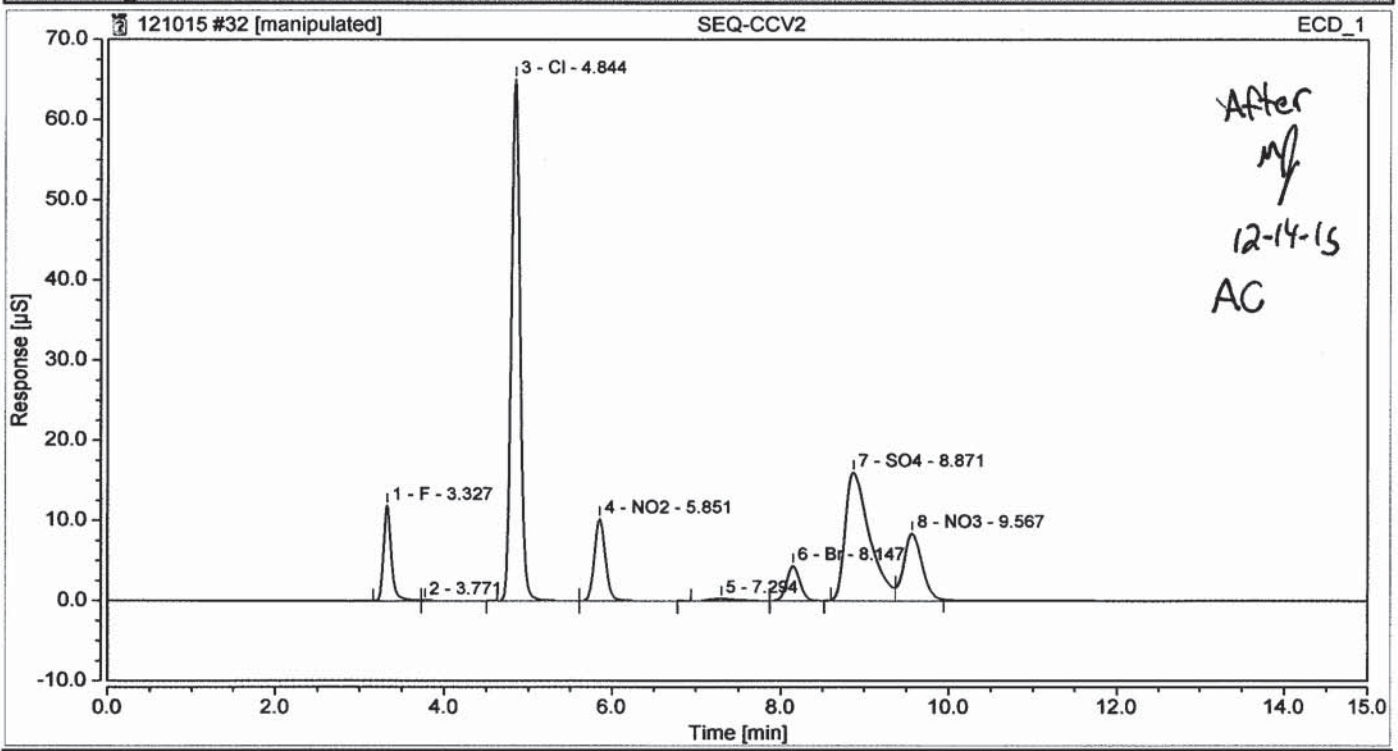
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2625268	11.885	6.64	10.22	2.5464
2		3.771	0.0155769	0.060	0.08	0.05	n.a.
3	Cl	4.844	7.7121553	65.071	40.54	55.94	25.3408
4	NO2	5.851	1.5652284	10.227	8.23	8.79	2.7507
5		7.294	0.0951732	0.270	0.50	0.23	n.a.
6	Br	8.147	0.8003201	4.350	4.21	3.74	6.2046
7	SO4	8.871	5.4467566	16.025	28.63	13.78	24.3598
8	NO3	9.567	2.1241073	8.429	11.17	7.25	2.7502
Total:			**19.022**	**116.318**	**100.00**	**100.00**	

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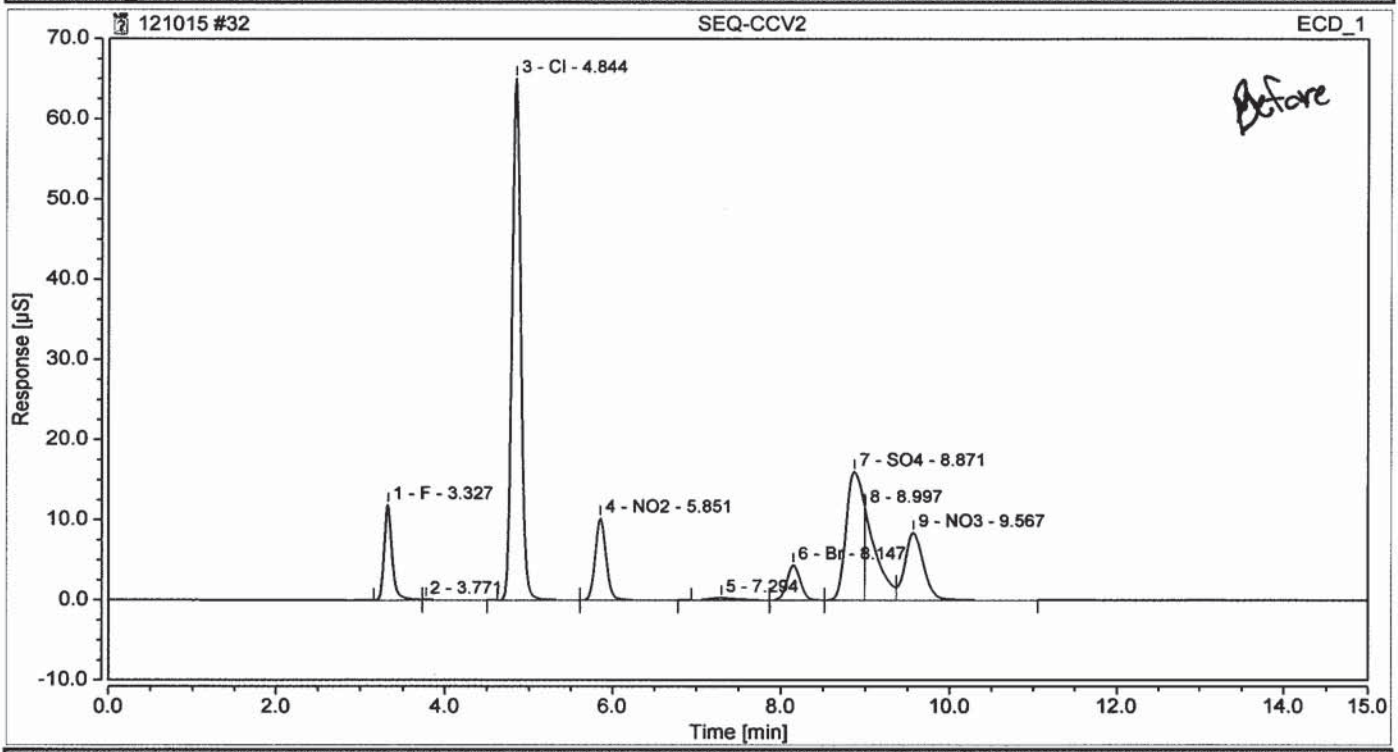
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

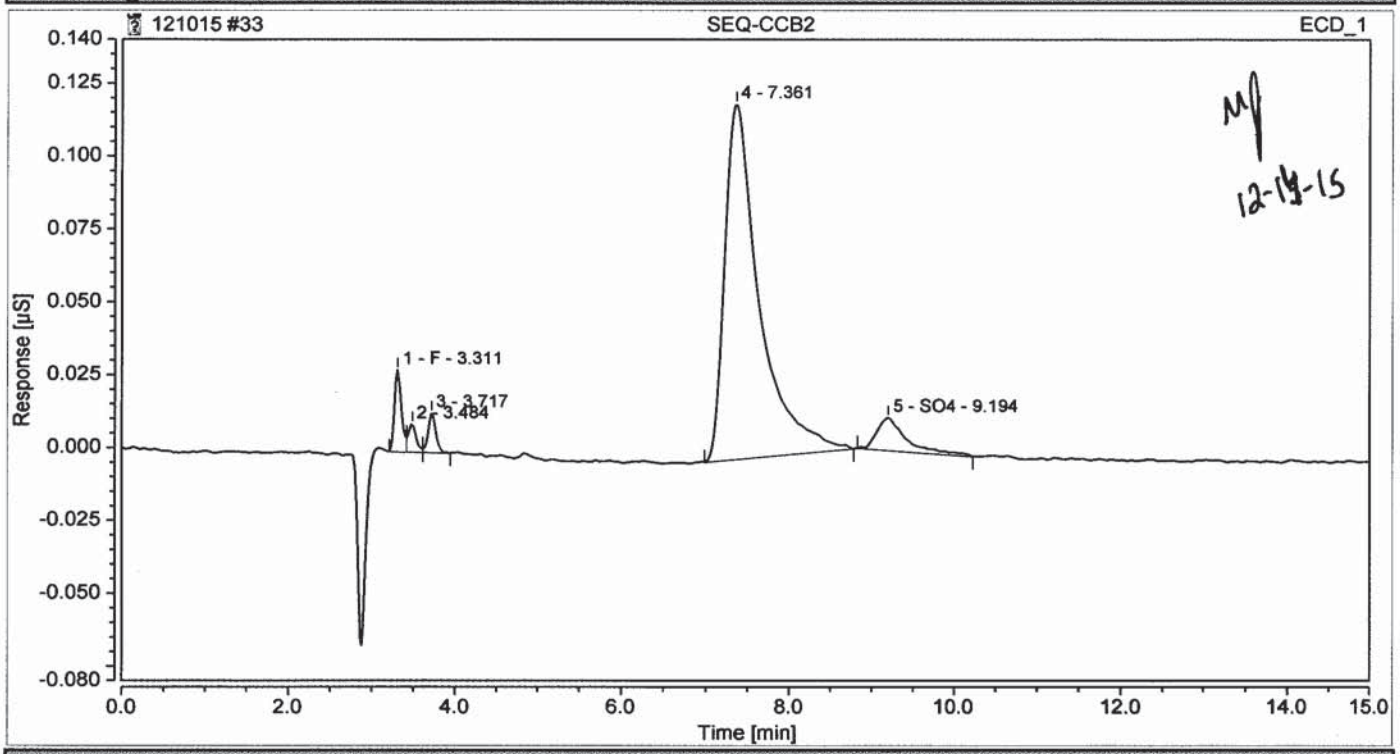
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2625268	11.885	6.63	9.30	2.5464
2		3.771	0.0155769	0.060	0.08	0.05	n.a.
3	Cl	4.844	7.7121553	65.071	40.47	50.92	25.3408
4	NO2	5.851	1.5652284	10.227	8.21	8.00	2.7507
5		7.294	0.0951732	0.270	0.50	0.21	n.a.
6	Br	8.147	0.8003201	4.350	4.20	3.40	6.2046
7	SO4	8.871	3.5511240	16.025	18.63	12.54	15.8819
8		8.997	1.8866960	11.464	9.90	8.97	n.a.
9	NO3	9.567	2.1677431	8.429	11.38	6.60	2.8067
Total:			**19.057**	**127.782**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**33**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0026251	0.028	3.85	15.20	0.0053
2		3.484	0.0010540	0.010	1.55	5.20	n.a.
3		3.717	0.0014490	0.014	2.13	7.34	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.361	0.0583515	0.122	85.68	66.20	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.194	0.0046222	0.011	6.79	6.07	0.0207
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.068**	**0.184**	**100.00**	**100.00**	

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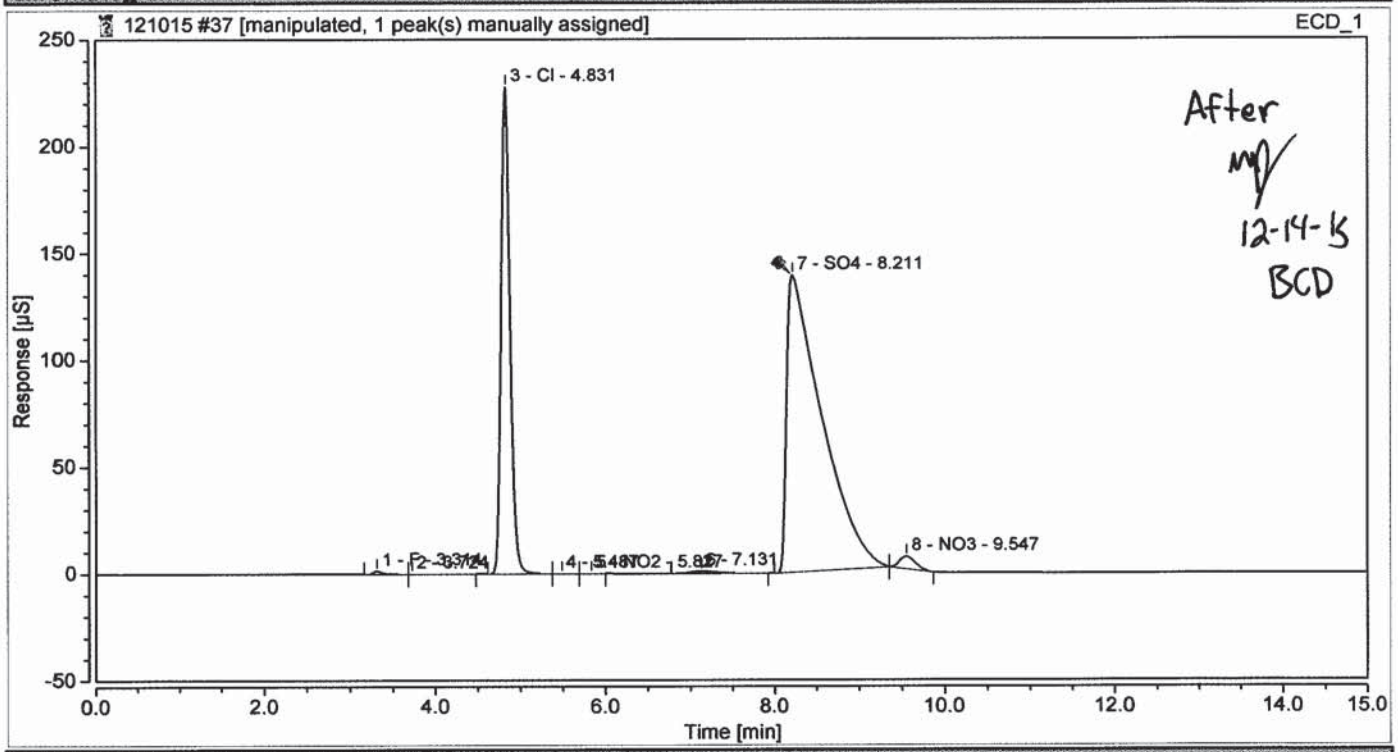
Chromatogram and Results

Injection Details

Injection Name:	**1511224-06RE1@10**	*Run Time (min):*	**15.00**
Vial Number:	**37**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 18:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.1495360	1.427	0.16	0.38	0.3016
2		3.724	0.0039968	0.016	0.00	0.00	n.a.
3	Cl	4.831	27.2272110	227.763	28.44	60.73	89.4640
4		5.487	0.0014357	0.007	0.00	0.00	n.a.
5	NO2	5.827	0.0050775	0.040	0.01	0.01	0.0089
6		7.131	0.3527415	0.985	0.37	0.26	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	SO4	8.211	66.7469454	139.012	69.71	37.07	298.5158
8	NO3	9.547	1.2637997	5.786	1.32	1.54	1.6363
Total:			**95.751**	**375.037**	**100.00**	**100.00**	

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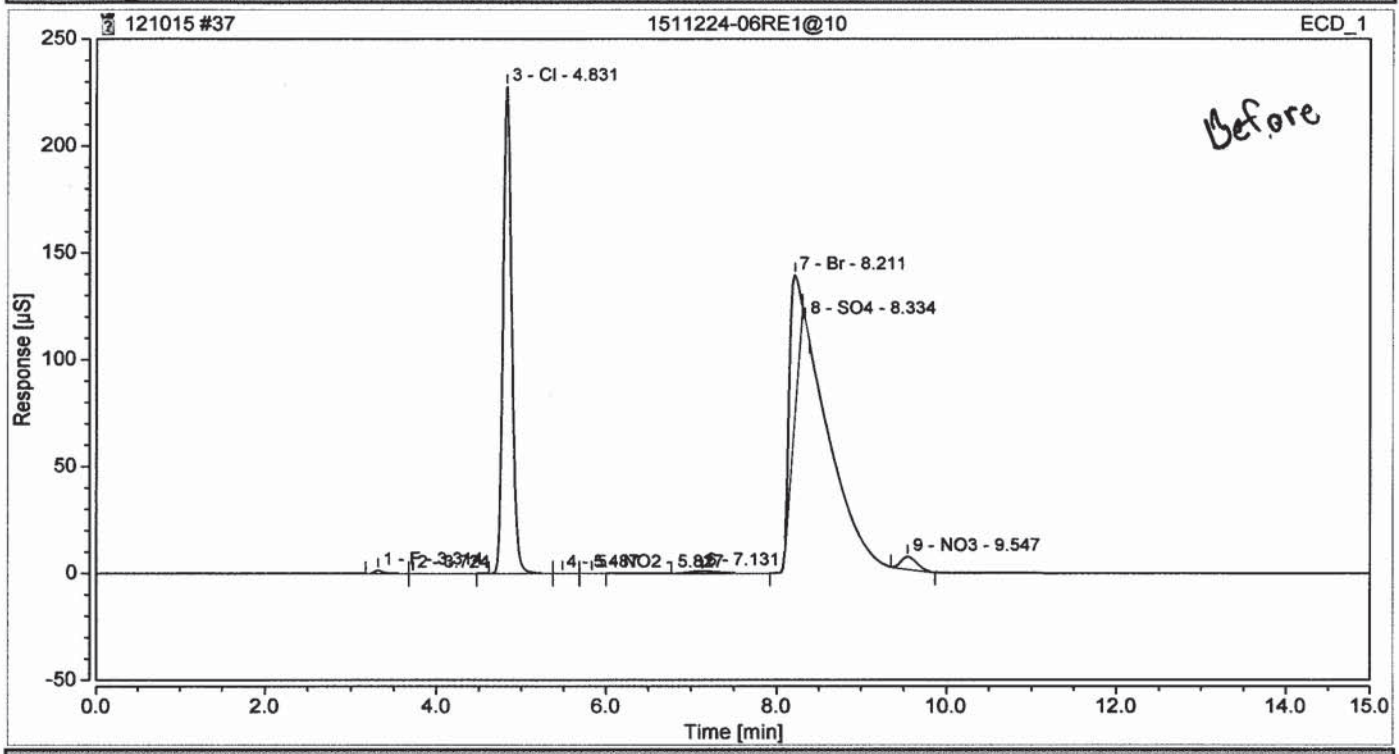
Chromatogram and Results

Injection Details

Injection Name:	**1511224-06RE1@10**	*Run Time (min):*	**15.00**
Vial Number:	**37**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 18:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

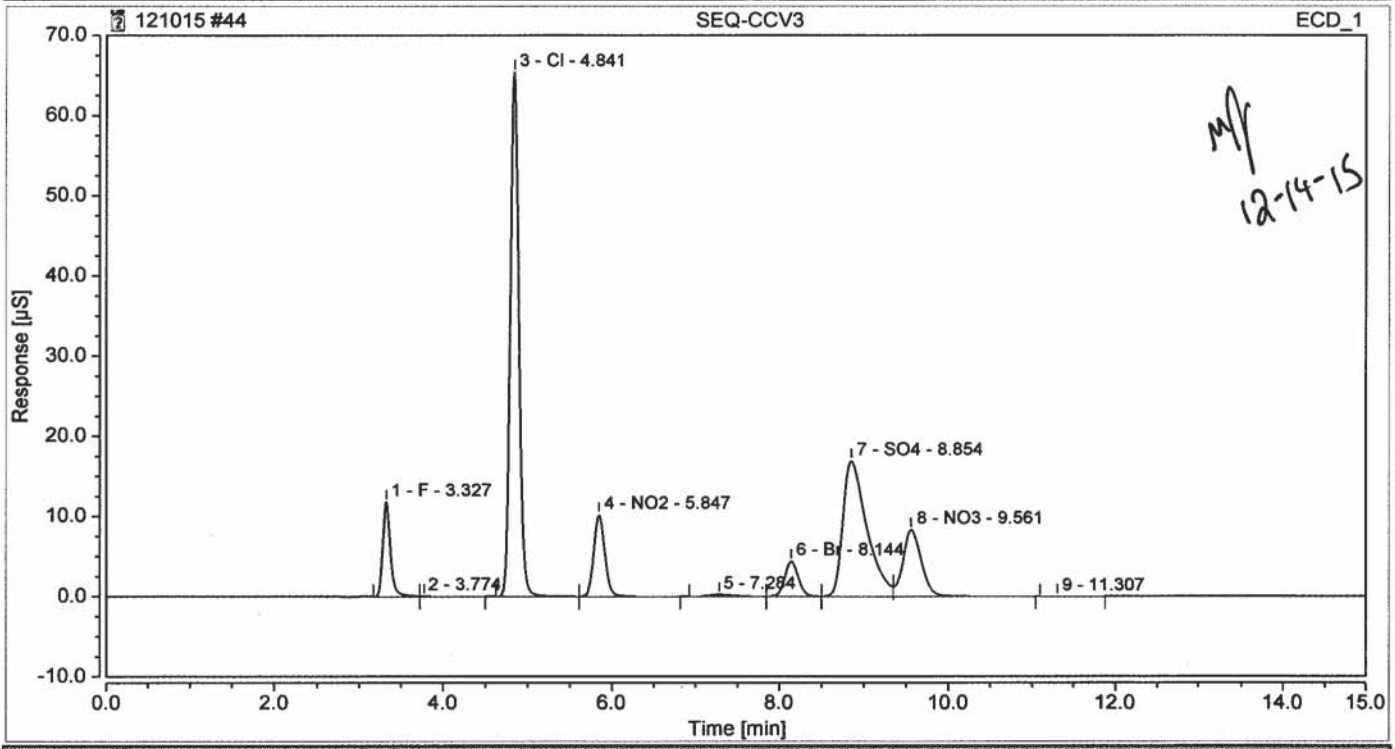
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.1495360	1.427	0.40	0.47	0.3016
2		3.724	0.0039968	0.016	0.01	0.01	n.a.
3	Cl	4.831	27.2272110	227.763	72.64	75.51	89.4640
4		5.487	0.0014357	0.007	0.00	0.00	n.a.
5	NO2	5.827	0.0050775	0.040	0.01	0.01	0.0089
6		7.131	0.3527415	0.985	0.94	0.33	n.a.
7	Br	8.211	8.4750764	65.531	22.61	21.73	65.7041
8	SO4	8.334	0.0029106	0.077	0.01	0.03	0.0130
9	NO3	9.547	1.2637997	5.786	3.37	1.92	1.6363
Total:			**37.482**	**301.631**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV3**	*Run Time (min):*	**15.00**
Vial Number:	**44**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2602441	11.818	6.62	10.07	2.5418
2		3.774	0.0148951	0.057	0.08	0.05	n.a.
3	Cl	4.841	7.7213399	65.408	40.55	55.74	25.3710
4	NO2	5.847	1.5609618	10.206	8.20	8.70	2.7432
5		7.284	0.0762463	0.231	0.40	0.20	n.a.
6	Br	8.144	0.8060314	4.384	4.23	3.74	6.2489
7	SO4	8.854	5.5118054	16.914	28.95	14.41	24.6507
8	NO3	9.561	2.0877079	8.331	10.96	7.10	2.7030
9		11.307	0.0010550	0.003	0.01	0.00	n.a.
Total:			**19.040**	**117.353**	**100.00**	**100.00**	

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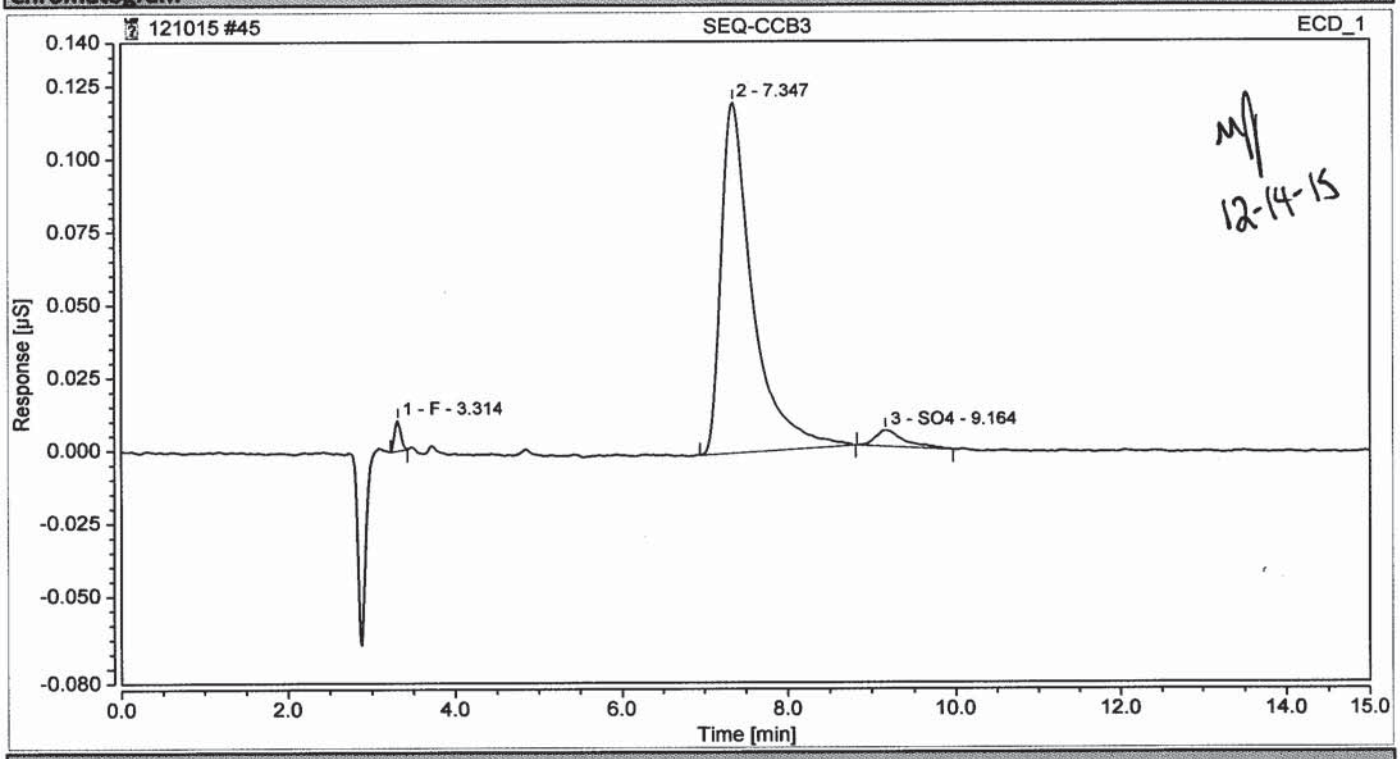
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB3**	*Run Time (min):*	**15.00**
Vial Number:	**45**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 21:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0008938	0.010	1.60	7.64	0.0018
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		7.347	0.0528401	0.120	94.55	88.39	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SO4	9.164	0.0021532	0.005	3.85	3.97	0.0096
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.056**	**0.136**	**100.00**	**100.00**	

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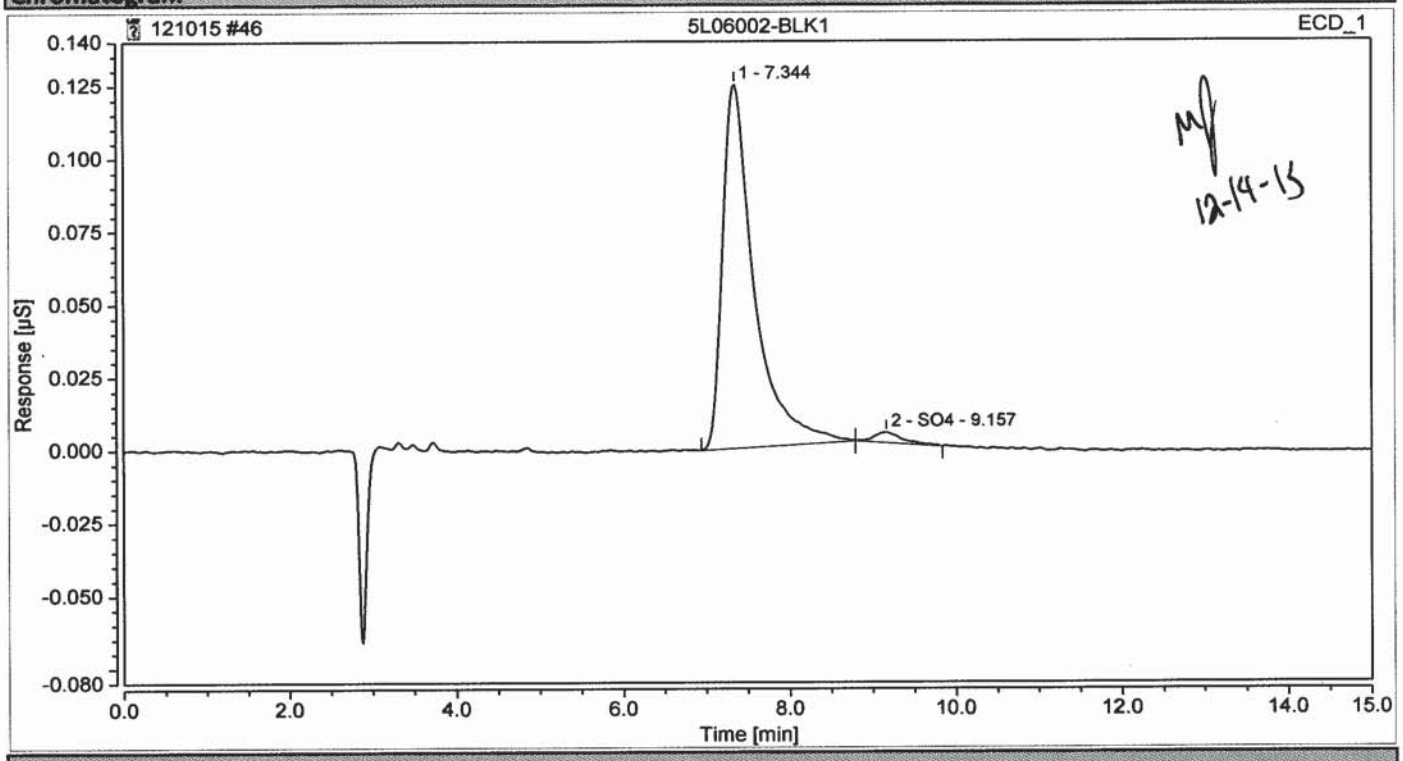
Chromatogram and Results

Injection Details

Injection Name:	**5L06002-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**46**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 21:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	F	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.344	0.0546947	0.125	97.61	97.28	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	SO4	9.157	0.0013380	0.003	2.39	2.72	0.0060
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.056**	**0.128**	**100.00**	**100.00**	

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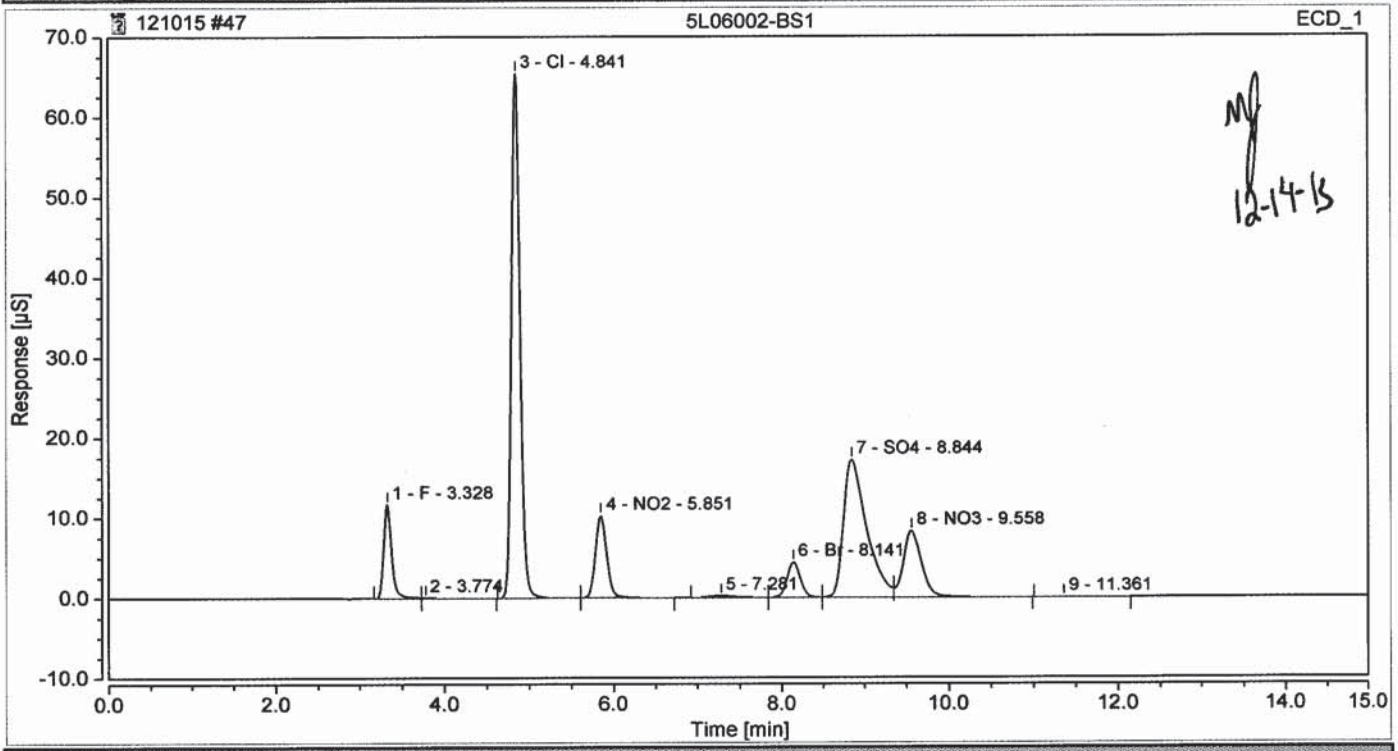
Chromatogram and Results

Injection Details

Injection Name:	**5L06002-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**47**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 21:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	1.2610343	11.717	6.62	9.97	2.5434
2		3.774	0.0165531	0.059	0.09	0.05	n.a.
3	Cl	4.841	7.7153523	65.408	40.48	55.66	25.3513
4	NO2	5.851	1.5624697	10.247	8.20	8.72	2.7458
5		7.281	0.0712432	0.219	0.37	0.19	n.a.
6	Br	8.141	0.8069156	4.386	4.23	3.73	6.2557
7	SO4	8.844	5.5552399	17.177	29.14	14.62	24.8450
8	NO3	9.558	2.0704891	8.291	10.86	7.06	2.6807
9		11.361	0.0022650	0.005	0.01	0.00	n.a.
Total:			**19.062**	**117.509**	**100.00**	**100.00**	

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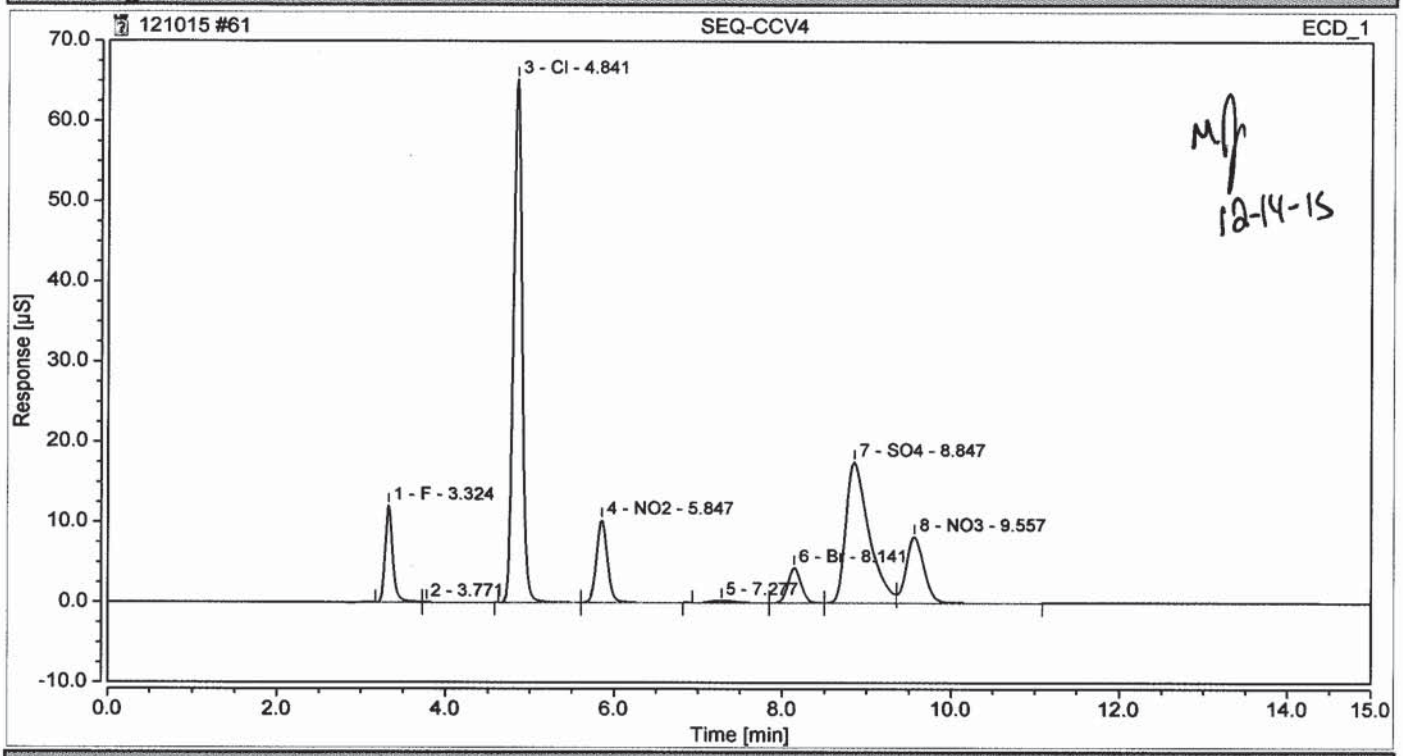
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV4**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/15 02:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2611086	12.069	6.63	10.22	2.5435
2		3.771	0.0146019	0.053	0.08	0.04	n.a.
3	Cl	4.841	7.7055191	65.246	40.50	55.24	25.3190
4	NO2	5.847	1.5682448	10.294	8.24	8.72	2.7560
5		7.277	0.0808172	0.254	0.42	0.22	n.a.
6	Br	8.141	0.8031753	4.367	4.22	3.70	6.2267
7	SO4	8.847	5.5510650	17.573	29.18	14.88	24.8263
8	NO3	9.557	2.0405153	8.253	10.73	6.99	2.6419
Total:			**19.025**	**118.108**	**100.00**	**100.00**	

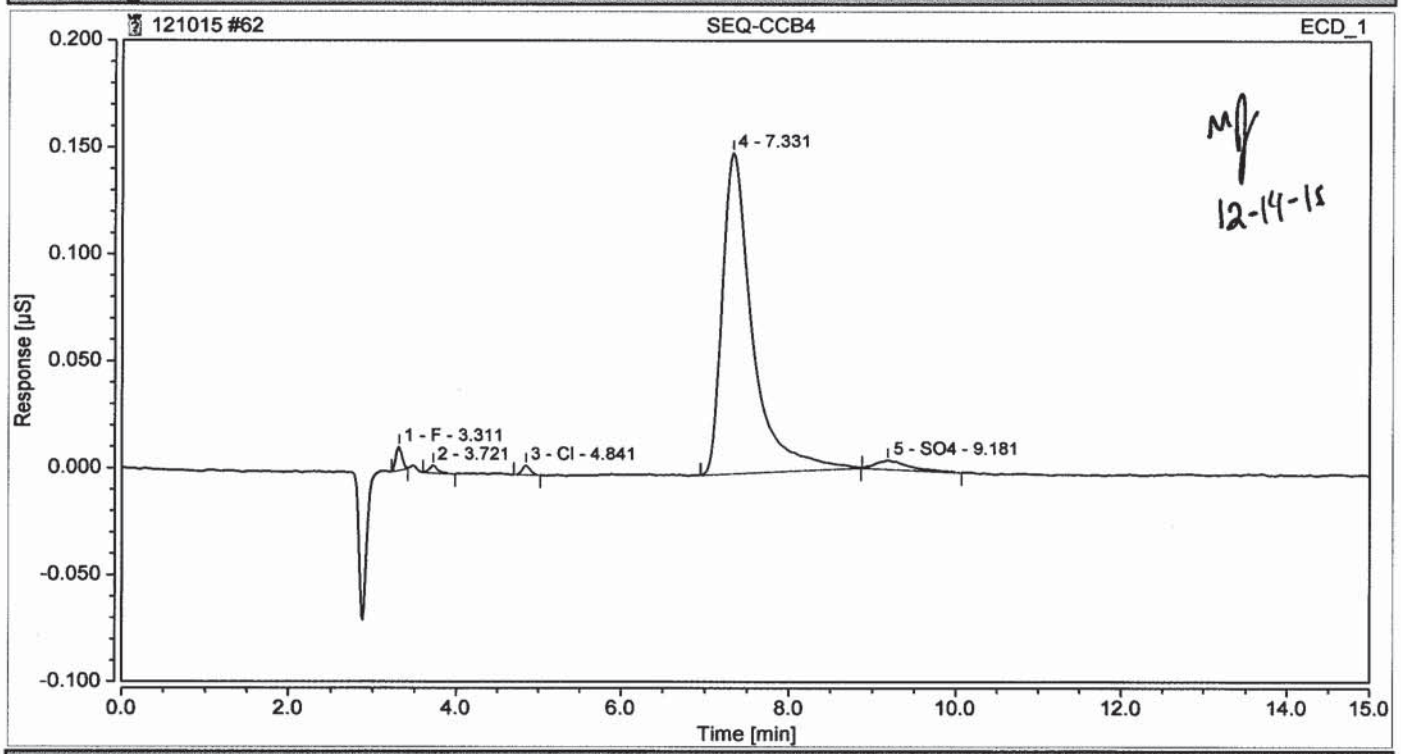
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB4**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/15 02:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0009028	0.011	1.37	6.32	0.0018
2		3.721	0.0003971	0.003	0.60	1.98	n.a.
3	Cl	4.841	0.0005031	0.004	0.77	2.54	0.0017
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.331	0.0620767	0.150	94.53	86.77	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.181	0.0017921	0.004	2.73	2.38	0.0080
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.066**	**0.173**	**100.00**	**100.00**	

12/14/15

PREPARATION BENCH SHEET

5K20011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:07AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511199-13RE1	A	WC_ANIONS_9056A (Short Ho	11/19/2015	5	5						NA	;From 5K19024 by KBG on 11/20/2015;From 5K19024 by KBG on 11/20/2015
1511199-13RE1	A	WC_ANIONS_9056A (Regular)	11/19/2015	5	5						NA	;see versions;see versions
1511199-14RE1	A	WC_ANIONS_9056A (Regular)	11/19/2015	5	5						NA	;see versions;see versions
1511199-14RE1	A	WC_ANIONS_9056A (Short Ho	11/19/2015	5	5						NA	;From 5K19024 by KBG on 11/20/2015;From 5K19024 by KBG on 11/20/2015
1511224-01	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;
1511224-01	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511224-02	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;
1511224-02	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511224-03	A	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5K20011
1511224-03	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	MS/MSD;;
1511224-03	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	MS/MSD;Chloride;Chloride
1511224-03	A	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5K20011
1511224-04	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511224-04	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;
1511224-05	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;
1511224-05	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511224-06	A	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;;

PREPARATION BENCH SHEET

5K20011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:07AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511224-06	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride;Chloride
1511225-01	G	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;Sulfate Only;Sulfate Only
1511225-01	G	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Nitrate;Nitrate
1511225-03	A	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;Sulfate Only;Sulfate Only
1511225-03	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride Only;Chloride Only
1511225-03	A	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Nitrate;Nitrate
1511225-04	A	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;Sulfate Only;Sulfate Only
1511225-04	A	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;Chloride Only;Chloride Only
1511225-04	A	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Nitrate;Nitrate
1511226-01	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-01	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-01RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-02	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-02	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-02RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-03	H	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K20011
1511226-03	H	WC_ANIONS_300.0 (Short Hol	11/20/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K20011

PREPARATION BENCH SHEET

5K20011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:07AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511226-03	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-03	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-03RE1	H	WC_ANIONS_300.0 (Regular)	11/20/2015	5	5						NA	;Added 12/7/2015 by MSJ;Added 12/7/2015 by MSJ
1511226-03RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-04	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-04	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-04RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-05	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-05	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-05RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-06	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-06	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1511226-06RE1	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;Added 12/14/2015 by MSJ;Added 12/14/2015 by MSJ
1511226-07	H	WC_ANIONS_9056A (Regular)	11/20/2015	5	5						NA	;SO4 only!!;SO4 only!!
1511226-07	H	WC_ANIONS_9056A (Short Ho	11/20/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
5K20011-BLK1		QC	11/20/2015	5	5						NA	
5K20011-BS1		QC	11/20/2015	5	5	15K0590			5000		NA	

PREPARATION BENCH SHEET

5K20011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:07AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
5K20011-DUP1		QC	11/20/2015	5	5		1511224-03			NA	
5K20011-DUP2		QC	11/20/2015	5	5		1511226-03			NA	
5K20011-MS1		QC	11/20/2015	22.5	25	15I0318	1511224-03	2500		NA	
5K20011-MS2		QC	11/20/2015	22.5	25	15I0318	1511226-03	2500		NA	
5K20011-MSD1		QC	11/20/2015	22.5	25	15I0318	1511224-03	2500		NA	
5K20011-MSD2		QC	11/20/2015	22.5	25	15I0318	1511226-03	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5K23005

Empirical Laboratories, LLC

Printed: 12/15/2015 9:00:45AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511199-10	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511199-11	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511199-12	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511199-14	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-01	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-02	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-03	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	MS/MSD;;
1511224-04	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-05	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
1511224-06	A	WC_TDS_TOTAL_DISS_SOLIE	11/23/2015	100	100					NA	;;
5K23005-BLK1		QC	11/23/2015	100	100					NA	
5K23005-BS1		QC	11/23/2015	20	20	13L0491		20000		NA	
5K23005-DUP1		QC	11/23/2015	100	100		1511224-03			NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511021-01	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-01RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511021-02	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-02RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511224-04RE1	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;From 5K20011 by KBG on 11/24/2015;RR at 20X
1511224-04RE1	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Chloride;RR at 20X
1511256-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511256-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511258-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-01	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-03	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-03	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-05	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K24008

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-05	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5					NA	;NO3;NO3
1511258-05	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5					NA	;Cl;Cl
1511258-05RE1	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5					NA	;Added 12/9/2015 by MSJ;Added 12/9/2015 by MSJ
5K24008-BLK1		QC	11/24/2015	5	5					NA	
5K24008-BS1		QC	11/24/2015	5	5	15K0679		5000		NA	
5K24008-DUP1		QC	11/24/2015	5	5		1511258-05			NA	
5K24008-MS1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	
5K24008-MSD1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511021-01	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-01RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511021-02	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-02RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511224-04RE1	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;From 5K20011 by KBG on 11/24/2015;RR at 20X
1511224-04RE1	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Chloride;RR at 20X
1511256-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511256-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511258-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-01	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-03	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-03	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-05	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K24008

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-05	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5					NA	;NO3;NO3
1511258-05	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5					NA	;Cl;Cl
1511258-05RE1	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5					NA	;Added 12/9/2015 by MSJ;Added 12/9/2015 by MSJ
5K24008-BLK1		QC	11/24/2015	5	5					NA	
5K24008-BS1		QC	11/24/2015	5	5	15K0679		5000		NA	
5K24008-DUP1		QC	11/24/2015	5	5		1511258-05			NA	
5K24008-MS1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	
5K24008-MSD1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5L06002

Empirical Laboratories, LLC

Printed: 12/15/2015 9:02:08AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511204-08RE1	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 10X for SO4; KBG 11/23/15;RR at 10X for SO4; KBG 11/23/15
1511204-09RE1	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 11/23/15;RR at 20X for SO4; KBG 11/23/15
1511224-06RE1	A	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 10X; KBG 12/4/15;RR at 10X; KBG 12/4/15
1511226-01RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-02RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-03RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-04RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-05RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511226-06RE1	H	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;RR at 20X for SO4; KBG 12/4/15;RR at 20X for SO4; KBG 12/4/15
1511229-01	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-02	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-03	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-04	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-05	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-06	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4
1511229-06	C	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5L06002
1511229-07	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	;Cl ,SO4;Cl ,SO4

PREPARATION BENCH SHEET

5L06002

Empirical Laboratories, LLC

Printed: 12/15/2015 9:02:08AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511229-08	C	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5					NA	;Cl ,SO4;Cl ,SO4
5L06002-BLK1		QC	12/10/2015	5	5					NA	
5L06002-BS1		QC	12/10/2015	5	5	15L0426		5000		NA	
5L06002-DUP1		QC	12/10/2015	5	5		1511229-06			NA	
5L06002-MS1		QC	12/10/2015	22.5	25	15L0284	1511229-06	12500		NA	
5L06002-MSD1		QC	12/10/2015	22.5	25	15L0284	1511229-06	12500		NA	

Reagents Used:

Standard	Description

ANALYTICAL DATA PACKAGE
SDG # 1511258

PROJECT NAME: HOLLOMAN AFB
PROJECT LOCATION: HOLLOMAN AFB, NM
CONTRACT #: FA8903-D-09-D-8580

SUBMITTAL TO:
Mark Lyon
CB&I Federal Services
2440 Louisiana Blvd NE, Suite 300
Albuquerque, New Mexico 87110

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Sonya Gordon
Tel (615)345-1115
Fax (866)417-0548
Email: sgordon@empirlabs.com

Original Report Date: December 15, 2015
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 162

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

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Sample Delivery Group Case Narrative

Receipt Information:

The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:

This is an original submittal of the final report package.

Analytical Information:

All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

Wet Chemistry:

The following continuing calibration verifications exceeded criteria:
5L33615-CCV2 with a positive bias for Nitrate/Nitrite as N; note – the samples were not re-analyzed due to holding time

The following blanks have reported results greater than ½ the LOQ:
5K25005-BLK1 for Total Dissolved Solids; note – the concentrations in the samples are greater than 10x the concentration in the blank

The following matrix spikes exceeded criteria:
5K24008-MS1/MSD1 (1511258-05) with a negative bias for Nitrate as N; note – the associated batch spike is within criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

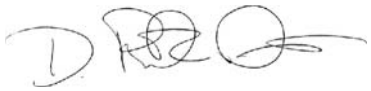
BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.



Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 11/06/2015)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 01/30/2016

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2016

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 11/30/2015

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2015

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of New Jersey, Department of Environmental Protection – NELAP Primary, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 11/30/2015

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-15-11
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Utah, Department of Health – NELAP, Certificate Number: TN0042015-7
- Aqueous
- Non-aqueous
- Expires: 07/31/2016

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 7700, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2015

State of Washington, Department of Ecology – NELAP, Lab ID: C934-15
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2016

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

Septic S 1511258-01 A

CHAIN OF CUSTODY

Ref. Document # 144106-H2015-
151123 1 of 1

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: Empirical
Lab Contact: Sonya Gordon
Lab Phone #: 615-345-1115

SAMPLER: P. MIDDLETON (210)428-7274

Lab Sample Number	Sample Identification	Collection Information Date	Time	G/C	Matrix	# of Bottles	PRESERVATION HCL	NaOH	HNO_3	H2SO4	Ice		Nitrate by 300	Chloride by 9056A	Total Dissolved Soilds by 2540C				Turn Around Time Required
01	OTC530-GW-5301-MW01-151123	11/23/15	0641	G	GW	1					X		X	X	X				ST
02	OTC531A-GW-531A1-MW01-151123	11/23/15	0740	G	GW	1					X		X	X	X				ST
03	OTC531A-GW-531A1-MW01-151123-FD	11/23/15	—	G	GW	1					X		X	X	X				ST
04	OTC531B-GW-531B1-MW01-151123	11/23/15	0824	G	GW	1					X		X	X	X				ST
05	OTC531C-GW-531C1-MW01-151123	11/23/15	0916	G	GW	1					X		X	X	X				ST

Requesting Testing Program

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s): P. MIDDLETON

Relinquished By	Date	Time	Received By	Date	Time
Patrick J. Middleton	11/23/15		[illegible]	11/24/15	0920

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid
SOL = Other Solid GS = Air Sample

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1511258

II. EMPIRICAL LABORATORIES COOLER RECEIPT FORM

1511259

Cooler Received/Opened On 11/24/15 @ 0920 Work Order: ~~1511259~~ TH 11/25/15

1. Tracking # 1Z66V725 0194257 194 (last 4 digits, FedEx)

   Courier: UPS

2. Temperature of rep. sample or temp blank when opened: 1.1 °C + correction factor(+0.4) = 1.5 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 11/24/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence #_____

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) JTG 11/24/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) JTG 11/24/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) JTG 11/24/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) JTG 11/24/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) JTG 11/24/15

C:\Users\jgross\Desktop\QS10_R21_20140729_CRF.doc

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM (Continued)

LIMS Data Entry Second Check

Work order# 1511258

22. Cooler Receipt Form Issues reviewed and communicated to PM? YES...NO...NA
23. Client and Project verified to match the COC/CRF in LIMS Project Screen? YES...NO...NA
24. Following items verified to items verified to match the COC/CRF in LIMS Receipt Screen:
    a. Received Date/Received By YES...NO...NA
    b. TAT (COC specified different?) YES...NO...NA
    c. Shipping Container Temperatures (corrected temps) YES...NO ...NA
    d. Condition Items (seals, intact, labels, preservation, ROI) YES...NO...NA
25. Following LIMS Sample Information verified against COC for each sample:
    a. Name YES...NO...NA
    b. QC Source YES...NO...NA
    c. Matrix YES...NO...NA
    d. Sample Type YES...NO...NA
    e. Sampled Date/Time (Correct Time Zone) YES...NO...NA
    f. Work Analyses/Versions (if applicable) YES...NO...NA
    g. Sample Issues included in comments (limited volume, concentration warnings, etc.)? YES...NO...NA
    h. Unpreserved VOA holding time set to 7 days? YES...NO...NA
26. Containers consistent with tests requested? YES...NO...NA
27. Field data entered and matching COC? YES...NO...NA

I certify that I have verified the LIMS data entry and answered questions 23-27 above (initial/date): TH 11/25/15

Additional Details:

C:\Users\thutchings\Desktop\Cooler Receipt Updated 2014.doc

III. EMPIRICAL LABORATORIES, LLC
DATA ENTRY VERIFICATION FORM – PROJECT MANAGEMENT

Workorder#: 1511258

	Verification Item	Yes	No	NA
1.	**Cooler Receipt Form Issues reviewed and communicated to client**			X
2.	**Element/ Project Screen/items verified to match the COC/CRF:**			
a.	**Client/Project**	X		
b.	Comments requiring laboratory reminder?			X
c.	Client and/or Project Memo requiring laboratory reminder?			X
3.	**Receipt Screen items verified to match the COC/CRF:**			
a.	Received Date/Received By	X		
b.	Workorder Due Date	X		
c.	Package Due Date	X		
d.	TAT	X		
e.	SDG Identifier Populated	X		
4.	**Sample Information verified against COC for each sample:**			
a.	Name	X		
b.	QC Source			X
c.	Matrix	X		
d.	Sample Type	X		
e.	Sampled Date/Time (Correct Time Zone)	X		
f.	Work Analyses/Versions	X		
g.	Sample Issues included in comments			X
h.	Unpreserved VOA holding time set to 7 days			X
5.	**Containers consistent with tests requested**	X		
6.	**Field data entered and matching COC, if applicable**			X
	I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial/date):	SMG 11/25/2015		

C:\Users\sgordon\Desktop\QS10_R21_20140729_CoolerReceiptForm.doc

WORK ORDER

Printed: 11/25/2015 4:39:45PM

1511258

Empirical Laboratories, LLC

Client: CB&I
Project: Holloman AFB

Project Manager: Sonya Gordon
Project Number: CBI_HAFB

Report To:
CB&I
Mark Lyon
P.O. Box 98519
Baton Rouge, LA 70884
Phone: (225) 932-2500
Fax: (225) 932-2661

Invoice To:
CB&I
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Date Due: 12/10/2015 16:00 (10 day TAT)

Received By: Joshua T. Gross
Date Received: 11/24/2015 09:20

Logged In By: Joshua T. Gross
Date Logged In: 11/24/2015 09:37

Samples Received at: **1.5°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	No		

Analysis	Due	TAT	Expires	Comments
1511258-01 OTC530-GW-5301-MW01-151123 [Water] Sampled 11/23/2015 06:41 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 07:41	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 07:41	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 07:41	NO3
1511258-02 OTC531A-GW-531A1-MW01-151123 [Water] Sampled 11/23/2015 07:40 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 08:40	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 08:40	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 08:40	NO3
1511258-03 OTC531A-GW-531A1-MW01-151123-FD [Water] Sampled 11/23/2015 00:00 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 01:00	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 01:00	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 01:00	NO3
1511258-04 OTC531B-GW-531B1-MW01-151123 [Water] Sampled 11/23/2015 08:24 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 09:24	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 09:24	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 09:24	NO3

1511258

Empirical Laboratories, LLC

Client:	**CB&I**	**Project Manager:**	**Sonya Gordon**
Project:	**Holloman AFB**	**Project Number:**	**CBI_HAFB**

Analysis	Due	TAT	Expires	Comments
1511258-05 OTC531C-GW-531C1-MW01-151123 [Water] Sampled 11/23/2015 09:16 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 10:16	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 10:16	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 10:16	NO3

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Holloman AFB
SDG #: 1511258

QC LEVEL: Level IV
Report Due: 12/10/2015
Client Sample Count: 4

Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	E300.0	SM2540C	SW9056A
Client Sample	11/23/2015	11/24/2015	1511258-01	OTC530-GW-5301-MW01-151123	Water	X	X	X
Client Sample	11/23/2015	11/24/2015	1511258-02	OTC531A-GW-531A1-MW01-151123	Water	X	X	X
Field Duplicate	11/23/2015	11/24/2015	1511258-03	OTC531A-GW-531A1-MW01-151123-FD	Water	X	X	X
Client Sample	11/23/2015	11/24/2015	1511258-04	OTC531B-GW-531B1-MW01-151123	Water	X	X	X
Client Sample	11/23/2015	11/24/2015	1511258-05	OTC531C-GW-531C1-MW01-151123	Water	X	X	X

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511258-01 [OTC530-GW-5301-MW01-151123]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15
1511258-02 [OTC531A-GW-531A1-MW01-151123]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15
1511258-03 [OTC531A-GW-531A1-MW01-151123-FD]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15
1511258-04 [OTC531B-GW-531B1-MW01-151123]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15
1511258-05 [OTC531C-GW-531C1-MW01-151123]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511258-01 [OTC530-GW-5301-MW01-151123]	5K25005	100.00/100.00	100	100	1.00			11/25/15
1511258-02 [OTC531A-GW-531A1-MW01-151123]	5K25005	100.00/100.00	100	100	1.00			11/25/15
1511258-03 [OTC531A-GW-531A1-MW01-151123-FD]	5K25005	100.00/100.00	100	100	1.00			11/25/15
1511258-04 [OTC531B-GW-531B1-MW01-151123]	5K25005	100.00/100.00	100	100	1.00			11/25/15
1511258-05 [OTC531C-GW-531C1-MW01-151123]	5K25005	100.00/100.00	100	100	1.00			11/25/15

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511258-02RE1 [OTC531A-GW-531A1-MW01-151123]	5L08019	5.00/5.00	5.00	5.00	5.00			12/08/15
1511258-03RE1 [OTC531A-GW-531A1-MW01-151123-FD]	5L08019	5.00/5.00	5.00	5.00	5.00			12/08/15
1511258-04RE1 [OTC531B-GW-531B1-MW01-151123]	5L08019	5.00/5.00	5.00	5.00	50.00			12/08/15
1511258-05RE1 [OTC531C-GW-531C1-MW01-151123]	5L08019	5.00/5.00	5.00	5.00	50.00			12/08/15

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511258-01RE1 [OTC530-GW-5301-MW01-151123]	5L10011	5.00/5.00	5.00	5.00	10.00			12/10/15

ANALYSIS DATA SHEET

OTC530-GW-5301-MW01-151123

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-01
Sampled:	11/23/15 06:41	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**4270**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**919**	**1.70**	3.30	5.00	10	D	SW9056A	5L10011	12/10/15 22:09
14797-55-8	Nitrate as N	**16.7**	**0.0330**	0.100	0.250	1	X	E300.0	5K24008	11/24/15 13:47

ANALYSIS DATA SHEET

OTC531A-GW-531A1-MW01-151123

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-02
Sampled:	11/23/15 07:40	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**4050**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**467**	**0.850**	1.65	2.50	5	D	SW9056A	5L08019	12/08/15 19:06
14797-55-8	Nitrate as N	**0.121**	**0.0330**	0.100	0.250	1	JX	E300.0	5K24008	11/24/15 14:05

ANALYSIS DATA SHEET

OTC531A-GW-531A1-MW01-151123-FD

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-03
Sampled:	11/23/15 00:00	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**4050**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**460**	**0.850**	1.65	2.50	5	D	SW9056A	5L08019	12/08/15 19:24
14797-55-8	Nitrate as N	**0.0935**	**0.0330**	0.100	0.250	1	JX	E300.0	5K24008	11/24/15 14:23

ANALYSIS DATA SHEET

OTC531B-GW-531B1-MW01-151123

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-04
Sampled:	11/23/15 08:24	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**21500**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**4140**	**8.50**	16.5	25.0	50	D	SW9056A	5L08019	12/08/15 20:18
14797-55-8	Nitrate as N		0.0330	0.100	0.250	1	UX	E300.0	5K24008	11/24/15 14:41

ANALYSIS DATA SHEET

OTC531C-GW-531C1-MW01-151123

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-05
Sampled:	11/23/15 09:16	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**12300**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**2290**	**8.50**	16.5	25.0	50	D	SW9056A	5L08019	12/08/15 20:35
14797-55-8	Nitrate as N	**5.14**	**0.0330**	0.100	0.250	1	NX	E300.0	5K24008	11/24/15 14:59

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K24008-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	UX	E300.0	5K24008	11/24/15 12:18

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5K24008-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**2.342**	**0.0330**	0.100	0.250	1	X	E300.0	5K24008	11/24/15 12:36

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K24008-DUP1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**5.138**	**0.0330**	0.100	0.250	1		E300.0	5K24008	11/24/15 15:52

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K24008-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**7.255**	**0.0367**	0.111	0.278	1	X	E300.0	5K24008	11/24/15 15:17

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K24008-MSD1
% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**7.201**	**0.0367**	0.111	0.278	1	X	E300.0	5K24008	11/24/15 15:34

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K25005-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**36.0**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5K25005-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1155**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5K25005-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**12140**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5L08019-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5L08019	12/08/15 15:14

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5L08019-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.11**	**0.170**	0.330	0.500	1		SW9056A	5L08019	12/08/15 15:32

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L10011-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5L10011	12/10/15 12:03

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5L10011-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.37**	**0.170**	0.330	0.500	1		SW9056A	5L10011	12/10/15 12:20

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Nitrate as N	3.164	2.881	91.1	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Chloride	4.200	4.093	97.5	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33615-CCV1	Nitrate as N	2.500	2.337	93.5	mg/L	+/- 10.00%
5L33615-CCV2	**Nitrate as N**	**2.500**	**3.080**	**123**	**mg/L**	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L34303

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L34303-CCV1	Chloride	25.00	25.05	100	mg/L	+/- 10.00%
5L34303-CCV2	Chloride	25.00	25.11	100	mg/L	+/- 10.00%
5L34303-CCV3	Chloride	25.00	25.21	101	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L34802

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L34802-CCV1	Chloride	25.00	25.33	101	mg/L	+/- 10.00%
5L34802-CCV2	Chloride	25.00	25.34	101	mg/L	+/- 10.00%
5L34802-CCV3	Chloride	25.00	25.37	101	mg/L	+/- 10.00%
5L34802-CCV4	Chloride	25.00	25.32	101	mg/L	+/- 10.00%

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33615-CRL2	Nitrate as N	0.1000	0.07290	72.9	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L34303

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L34303-CRL1	Chloride	0.5000	0.4705	94.1	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L34802

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L34802-CRL1	Chloride	0.5000	0.4473	89.5	mg/L	50 - 150

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Batch: 5K24008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K24008-BLK1	Nitrate as N	0.000400	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Batch: 5K25005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K25005-BLK1	Total Dissolved Solids	36.0	20.0	20.0	mg/L		SM2540C

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Batch: 5L08019

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L08019-BLK1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Batch: 5L10011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L10011-BLK1	Chloride	0.00150	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Nitrate as N	0.001700	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Chloride	0.03020	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5L33615
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33615-CCB1	Nitrate as N	0.00120	0.0330	0.250	mg/L	U	E300.0
5L33615-CCB2	Nitrate as N	0.00640	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5L34303
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L34303-CCB1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34303-CCB2	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34303-CCB3	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5L34802
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L34802-CCB1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB2	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB3	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB4	Chloride	0.00170	0.170	0.500	mg/L	U	SW9056A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E300.0

OTC531C-GW-531C1-MW01-151123

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5K24008

% Solids:

Source Sample Name: **1511258-05**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate as N	2.778	5.138	7.255	76.2	N	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Nitrate as N	2.778	7.201	74.2	0.753	N	15	80 - 120

DUPLICATES

E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K24008-DUP1
Batch: 5K24008
Lab Source ID: 1511258-05
Preparation: WC_PREP_ANIONS_W
Initial/Final: 5 mL / 5 mL
Source Sample Name: OTC531C-GW-531C1-MW01-151123
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Nitrate as N	10	5.14	5.138	0.0156		E300.0

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K25005-DUP1
Batch: 5K25005
Lab Source ID: 1511258-05
Preparation: pNone
Initial/Final: 100 mL / 100 mL
Source Sample Name: OTC531C-GW-531C1-MW01-151123
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	12300 B	12140 B	0.959		SM2540C

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K24008	Laboratory ID:	5K24008-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.342	93.7	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K25005	Laboratory ID:	5K25005-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	988.0	1155	117	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L08019	Laboratory ID:	5L08019-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.11	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L10011	Laboratory ID:	5L10011-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.37	101	80 - 120

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Batch: 5K24008 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC530-GW-5301-MW01-151123	1511258-01	11/24/15 09:48	5.00	5.00
OTC531A-GW-531A1-MW01-151123	1511258-02	11/24/15 09:48	5.00	5.00
OTC531A-GW-531A1-MW01-151123-FD	1511258-03	11/24/15 09:48	5.00	5.00
OTC531B-GW-531B1-MW01-151123	1511258-04	11/24/15 09:48	5.00	5.00
OTC531C-GW-531C1-MW01-151123	1511258-05	11/24/15 09:48	5.00	5.00
Blank	5K24008-BLK1	11/24/15 09:48	5.00	5.00
LCS	5K24008-BS1	11/24/15 09:48	5.00	5.00
OTC531C-GW-531C1-MW01-151123	5K24008-DUP1	11/24/15 09:48	5.00	5.00
OTC531C-GW-531C1-MW01-151123	5K24008-MS1	11/24/15 09:48	22.50	25.00
OTC531C-GW-531C1-MW01-151123	5K24008-MSD1	11/24/15 09:48	22.50	25.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Batch: 5K25005 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC530-GW-5301-MW01-151123	1511258-01	11/25/15 07:36	100.00	100.00
OTC531A-GW-531A1-MW01-151123	1511258-02	11/25/15 07:36	100.00	100.00
OTC531A-GW-531A1-MW01-151123-FD	1511258-03	11/25/15 07:36	100.00	100.00
OTC531B-GW-531B1-MW01-151123	1511258-04	11/25/15 07:36	100.00	100.00
OTC531C-GW-531C1-MW01-151123	1511258-05	11/25/15 07:36	100.00	100.00
Blank	5K25005-BLK1	11/25/15 07:36	100.00	100.00
LCS	5K25005-BS1	11/25/15 07:36	20.00	20.00
OTC531C-GW-531C1-MW01-151123	5K25005-DUP1	11/25/15 07:36	100.00	100.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Batch: 5L08019 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC531A-GW-531A1-MW01-151123	1511258-02RE1	12/08/15 14:25	5.00	5.00
OTC531A-GW-531A1-MW01-151123-FD	1511258-03RE1	12/08/15 14:25	5.00	5.00
OTC531B-GW-531B1-MW01-151123	1511258-04RE1	12/08/15 14:25	5.00	5.00
OTC531C-GW-531C1-MW01-151123	1511258-05RE1	12/08/15 14:25	5.00	5.00
Blank	5L08019-BLK1	12/08/15 14:07	5.00	5.00
LCS	5L08019-BS1	12/08/15 14:07	5.00	5.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Batch: 5L10011 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC530-GW-5301-MW01-151123	1511258-01RE1	12/10/15 12:00	5.00	5.00
Blank	5L10011-BLK1	12/10/15 12:00	5.00	5.00
LCS	5L10011-BS1	12/10/15 12:00	5.00	5.00

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	5K25005-BS1	112515-002	11/25/15 16:00
OTC531C-GW-531C1-MW01-15112	5K25005-DUP1	112515-003	11/25/15 16:00
Blank	5K25005-BLK1	112515-001	11/25/15 16:00

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33615	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33615-CCV1	SEQ-CCV1_Integration	11/24/15 10:49
Calibration Blank	5L33615-CCB1	SEQ-CCB1_Integration	11/24/15 11:07
Instrument RL Check	5L33615-CRL2	SEQ-CRL2_Integration	11/24/15 11:42
Blank	5K24008-BLK1	5K24008-BLK1_Integration	11/24/15 12:18
LCS	5K24008-BS1	5K24008-BS1_Integration	11/24/15 12:36
OTC530-GW-5301-MW01-151123	1511258-01	1511258-01_Integration	11/24/15 13:47
OTC531A-GW-531A1-MW01-15112	1511258-02	1511258-02_Integration	11/24/15 14:05
OTC531A-GW-531A1-MW01-15112	1511258-03	1511258-03_Integration	11/24/15 14:23
OTC531B-GW-531B1-MW01-15112	1511258-04	1511258-04_Integration	11/24/15 14:41
OTC531C-GW-531C1-MW01-15112	1511258-05	1511258-05_Integration	11/24/15 14:59
OTC531C-GW-531C1-MW01-15112	5K24008-MS1	5K24008-MS1_Integration	11/24/15 15:17
OTC531C-GW-531C1-MW01-15112	5K24008-MSD1	5K24008-MSD1_Integration	11/24/15 15:34
OTC531C-GW-531C1-MW01-15112	5K24008-DUP1	5K24008-DUP1_Integration	11/24/15 15:52
Calibration Check	5L33615-CCV2	SEQ-CCV2_Integration	11/24/15 16:10
Calibration Blank	5L33615-CCB2	SEQ-CCB2_Integration	11/24/15 16:28

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L34303	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L34303-CCV1	SEQ-CCV1_Integration	12/08/15 13:42
Calibration Blank	5L34303-CCB1	SEQ-CCB1_Integration	12/08/15 14:03
Instrument RL Check	5L34303-CRL1	SEQ-CRL1_Integration	12/08/15 14:21
Blank	5L08019-BLK1	5L08019-BLK1_Integration	12/08/15 15:14
LCS	5L08019-BS1	5L08019-BS1_Integration	12/08/15 15:32
OTC531A-GW-531A1-MW01-15112	1511258-02RE1	511258-02RE1@5X_Integratio	12/08/15 19:06
OTC531A-GW-531A1-MW01-15112	1511258-03RE1	511258-03RE1@5X_Integratio	12/08/15 19:24
Calibration Check	5L34303-CCV2	SEQ-CCV2_Integration	12/08/15 19:42
Calibration Blank	5L34303-CCB2	SEQ-CCB2_Integration	12/08/15 20:00
OTC531B-GW-531B1-MW01-15112	1511258-04RE1	11258-04RE1@50X_Integratio	12/08/15 20:18
OTC531C-GW-531C1-MW01-15112	1511258-05RE1	11258-05RE1@50X_Integratio	12/08/15 20:35
Calibration Check	5L34303-CCV3	SEQ-CCV3_Integration	12/08/15 23:34
Calibration Blank	5L34303-CCB3	SEQ-CCB3_Integration	12/08/15 23:52

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L34802	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L34802-CCV1	SEQ-CCV1_Integration	12/10/15 10:33
Calibration Blank	5L34802-CCB1	SEQ-CCB1_Integration	12/10/15 10:51
Instrument RL Check	5L34802-CRL1	SEQ-CRL1_Integration	12/10/15 11:09
Blank	5L10011-BLK1	5L10011-BLK1_Integration	12/10/15 12:03
LCS	5L10011-BS1	5L10011-BS1_Integration	12/10/15 12:20
Calibration Check	5L34802-CCV2	SEQ-CCV2_Integration	12/10/15 17:24
Calibration Blank	5L34802-CCB2	SEQ-CCB2_Integration	12/10/15 17:42
Calibration Check	5L34802-CCV3	SEQ-CCV3_Integration	12/10/15 20:58
Calibration Blank	5L34802-CCB3	SEQ-CCB3_Integration	12/10/15 21:16
OTC530-GW-5301-MW01-151123	1511258-01RE1	511258-01RE1@10_Integratio	12/10/15 22:09
Calibration Check	5L34802-CCV4	SEQ-CCV4_Integration	12/11/15 02:01
Calibration Blank	5L34802-CCB4	SEQ-CCB4_Integration	12/11/15 02:19

INITIAL CALIBRATION DATA

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Calibration:	5323007	Instrument:	WC-IC2
Matrix:	Water	Calibration Dates:	11/17/15 7:54 11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Calibration:	5323007	Instrument:	WC-IC2
Matrix:	Water	Calibration Dates:	11/17/15 7:54 11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	0.126	0.1032627	0.252	0.1055079	0.63	0.1077229	1.26	0.114327	6.3	0.1233052	12.6	0.12778
Chloride	0.5	0.2720276	1	0.287169	2.5	0.294335	5	0.3032684	25	0.3014536	50	0.3060892
Fluoride	0.05	0.44033	0.1	0.461829	0.25	0.4932644	0.5	0.50716	2.5	0.5010368	5	0.4944214
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552
Sulfate as SO4	0.5	0.2256678	1	0.2202215	2.5	0.2180314	5	0.2202646	25	0.2174918	50	0.2208332

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	31.5	0.1254725	50.4	0.1305396	63	~~0.1261554~~						
Chloride	125	0.3061993	200	0.3057162	250	0.3029497						
Fluoride	12.5	~~0.4610045~~	20	~~0.4356024~~	25	~~0.4186656~~						
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						
Sulfate as SO4	125	0.2174702	200	0.2259882	250	0.22377						

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Bromide	0.1172397	9.257594	8.14375	0.8992098	0.9994942		0.995	
Chloride	0.2976898	3.86824	4.845667	0.2683757	0.9999608		0.995	
Fluoride	0.4830069	5.409777	3.326	0.1833613	0.9999443		0.995	
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	
Sulfate as SO4	0.2210821	1.508986	8.729111	3.18872	0.9997657		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC530-GW-5301-MW01-151123	11/23/15 06:41	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 13:47	1.25	2.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 07:40	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 14:05	1.23	2.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 00:00	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 14:23	1.56	2.00	
OTC531B-GW-531B1-MW01-15112	11/23/15 08:24	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 14:41	1.22	2.00	
OTC531C-GW-531C1-MW01-15112	11/23/15 09:16	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 14:59	1.20	2.00	

HOLDING TIME SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC530-GW-5301-MW01-151123	11/23/15 06:41	11/24/15 09:20	11/25/15 07:36	2.00	7.00	11/25/15 16:00	0.35	7.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 07:40	11/24/15 09:20	11/25/15 07:36	1.96	7.00	11/25/15 16:00	0.35	7.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 00:00	11/24/15 09:20	11/25/15 07:36	2.28	7.00	11/25/15 16:00	0.35	7.00	
OTC531B-GW-531B1-MW01-15112	11/23/15 08:24	11/24/15 09:20	11/25/15 07:36	1.93	7.00	11/25/15 16:00	0.35	7.00	
OTC531C-GW-531C1-MW01-15112	11/23/15 09:16	11/24/15 09:20	11/25/15 07:36	1.89	7.00	11/25/15 16:00	0.35	7.00	

HOLDING TIME SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC530-GW-5301-MW01-151123	11/23/15 06:41	11/24/15 09:20	12/10/15 12:00	N/A	28.00	12/10/15 22:09	17.60	28.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 07:40	11/24/15 09:20	12/08/15 14:25	N/A	28.00	12/08/15 19:06	15.43	28.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 00:00	11/24/15 09:20	12/08/15 14:25	N/A	28.00	12/08/15 19:24	15.77	28.00	
OTC531B-GW-531B1-MW01-15112	11/23/15 08:24	11/24/15 09:20	12/08/15 14:25	N/A	28.00	12/08/15 20:18	15.45	28.00	
OTC531C-GW-531C1-MW01-15112	11/23/15 09:16	11/24/15 09:20	12/08/15 14:25	N/A	28.00	12/08/15 20:35	15.43	28.00	

Data for Wet Chemistry
Supporting Raw Data / Logs

Solids, Total Dissolved
TDS

Empirical Laboratories

Client(s): CB&I

Date on: 11/25/2015
Time on: 16:00
Temp on: 100C

Date off: 11/29/2015
Time off: 12:05
Temp off: 105C

MDL = 2 mg/L
MDL of 2 mg/L assumes a volume of 1L. Adjust the MDL to be proportional to the volume used.

QC Criteria
Method Blank < MDL
LCS = ±20% of True Value

Analyst(s): TSF
Historical Data Checked: Y
Analyst Authorization: TSF
Method Reference: SM2540C/160.1
Method Type: Gravimetric
Oven Temp. 180 C +/- 2 C?(Y/N): Y
Balance calibration verified?(Y/N): Y
Batch: 5K25005

Crucible ID	Sample Type	Lab ID	Client	Field ID	True Value (mg/L)	Sample Volume (ml)	Crucible Tare Weight (g)	Crucible Dried Weight #1 (g)	Crucible Dried Weight #2 (g)	Crucible Dried Weight #3 (g)	Crucible Dried Weight #4 (g)	Crucible Dried Weight #5 (g)	*TDS (mg/L)*	*Recovery or RPD (%)*	Control Limit, Lower (%)	Control Limit, Upper (%)	Comments
yes	QC	5K25005-BLK1	QC	DIWater	0	100	68.0286	68.0328	68.0321	68.0322			36		-20 mg/L	+20 mg/L	
bug	QC	5K25005-BS1	QC	13L0491	988	20	68.6615	68.6845	68.6846				1155	116.9	80	120	
fine	QC	5K25005-DUP1				100	66.2393	67.5505	67.5036	67.4879	67.4538	67.4533	12140				
Robin		1511258-01				100	65.7958	66.2513	66.2442	66.2250	66.2234	66.2229	4271				
21		1511258-02				100	67.5705	67.9976	67.9893	67.9875	67.9762	67.9757	4052				
Colleen		1511258-03				100	67.2363	67.6615	67.6507	67.6535	67.6410	67.6415	4052				
EM		1511258-04				100	67.0564	69.3470	69.2585	69.2415	69.2027	69.2030	21466				
Gum		1511258-05				100	67.0734	68.4052	68.3516	68.3367	68.2988	68.2991	12257				

Comments:

Temp on (°C):	100°C	185	185	190	180	185
Temp off (°C):	105	185	190	184	180	180
Date/Time on:	11/25/2015 16:00	11/29/2015 13:41	11/29/2015 16:45	11/29/2015 19:29	12/3/2015 13:11	12/3/2015 17:35
Date/Time off :	11/29/2015 12:05	11/29/2015 15:15	11/29/2015 18:20	12/3/2015 11:30	12/3/2015 16:00	12/3/2015 18:40

2nd ✓BLQ
12/8/15

SOP186_R09_20140730_TDS_Blank.xls

Sequence Overview

Sequence Details

Name:	**111715**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**17/Nov/15 12:51:49**
No. of Injections:	**14**	*Updated By:*	**NSH-IONC2**

Injection Details

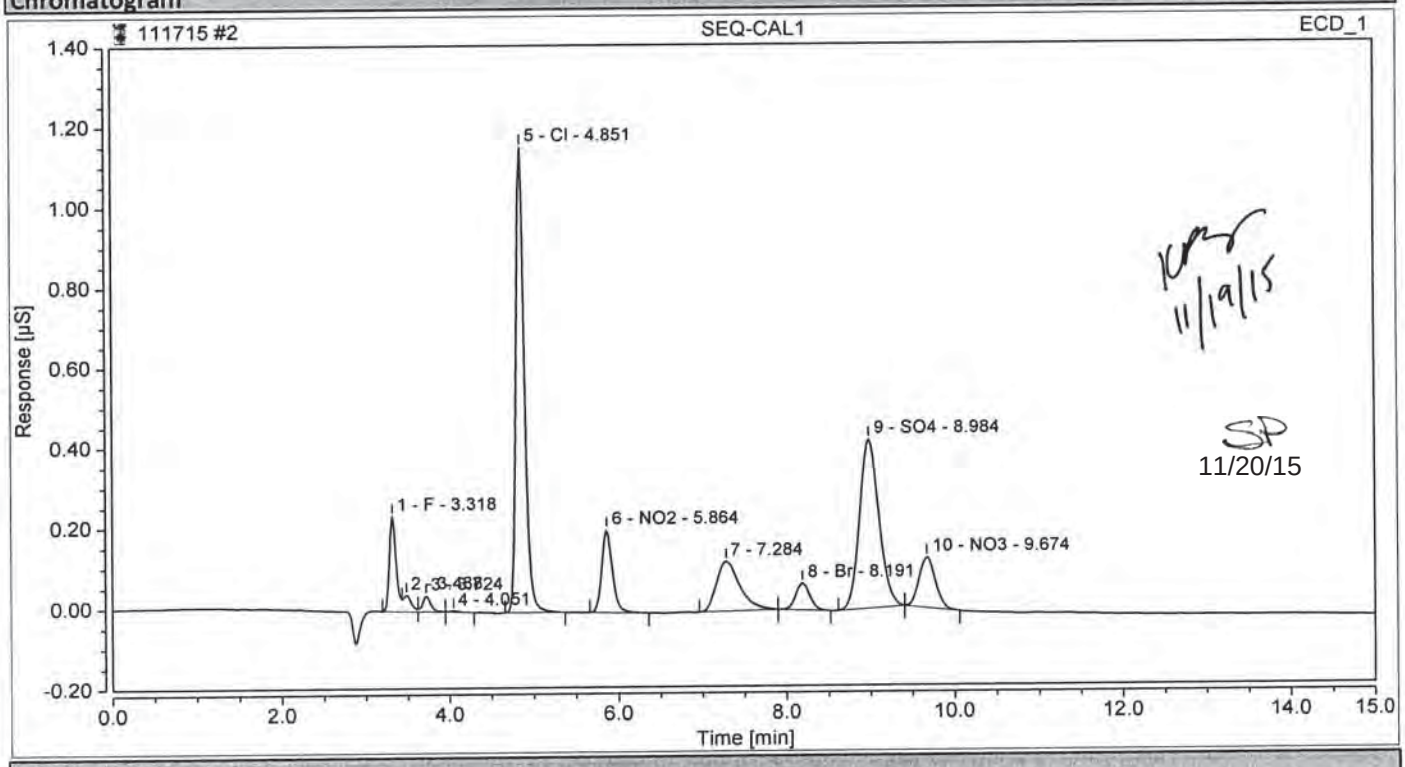
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		17/Nov/15 07:37:12	Finished
2	SEQ-CAL1	2	Calibration Standard	01	17/Nov/15 07:54:59	Finished
3	SEQ-CAL2	3	Calibration Standard	02	17/Nov/15 08:12:50	Finished
4	SEQ-CAL3	4	Calibration Standard	03	17/Nov/15 08:30:40	Finished
5	SEQ-CAL4	5	Calibration Standard	04	17/Nov/15 08:48:31	Finished
6	SEQ-CAL5	6	Calibration Standard	05	17/Nov/15 09:06:21	Finished
7	SEQ-CAL6	7	Calibration Standard	06	17/Nov/15 09:24:11	Finished
8	SEQ-CAL7	8	Calibration Standard	07	17/Nov/15 09:42:01	Finished
9	SEQ-CAL8	9	Calibration Standard	08	17/Nov/15 09:59:51	Finished
10	SEQ-CAL9	10	Calibration Standard	09	17/Nov/15 10:17:41	Finished
11	SEQ-ICV1	11	Unknown		17/Nov/15 10:35:31	Finished
12	SEQ-ICB1	12	Unknown		17/Nov/15 10:53:21	Finished
13	CCV TEST	13	Unknown		17/Nov/15 11:11:11	Finished
14	BLANK	14	Unknown		17/Nov/15 11:29:01	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**01**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 07:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

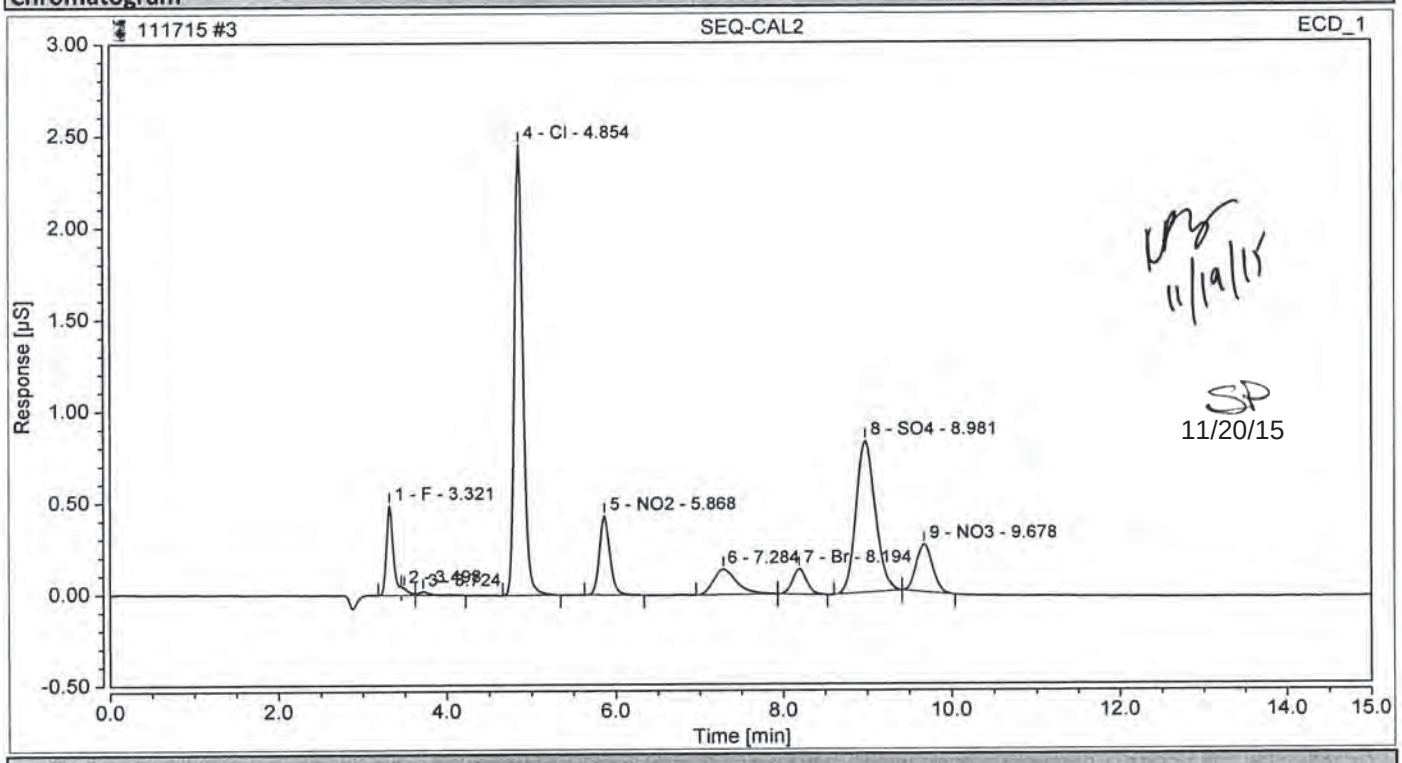
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0220165	0.236	5.61	9.74	0.0444
2		3.488	0.0046279	0.041	1.18	1.69	n.a.
3		3.724	0.0045613	0.040	1.16	1.64	n.a.
4		4.051	0.0004082	0.003	0.10	0.12	n.a.
5	Cl	4.851	0.1360138	1.160	34.67	47.89	0.4469
6	NO2	5.864	0.0301038	0.206	7.67	8.48	0.0529
7		7.284	0.0402353	0.124	10.26	5.12	n.a.
8	Br	8.191	0.0130111	0.067	3.32	2.75	0.1009
9	SO4	8.984	0.1128339	0.421	28.76	17.37	0.5046
10	NO3	9.674	0.0284874	0.126	7.26	5.21	0.0369
Total:			**0.392**	**2.423**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL2**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**02**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

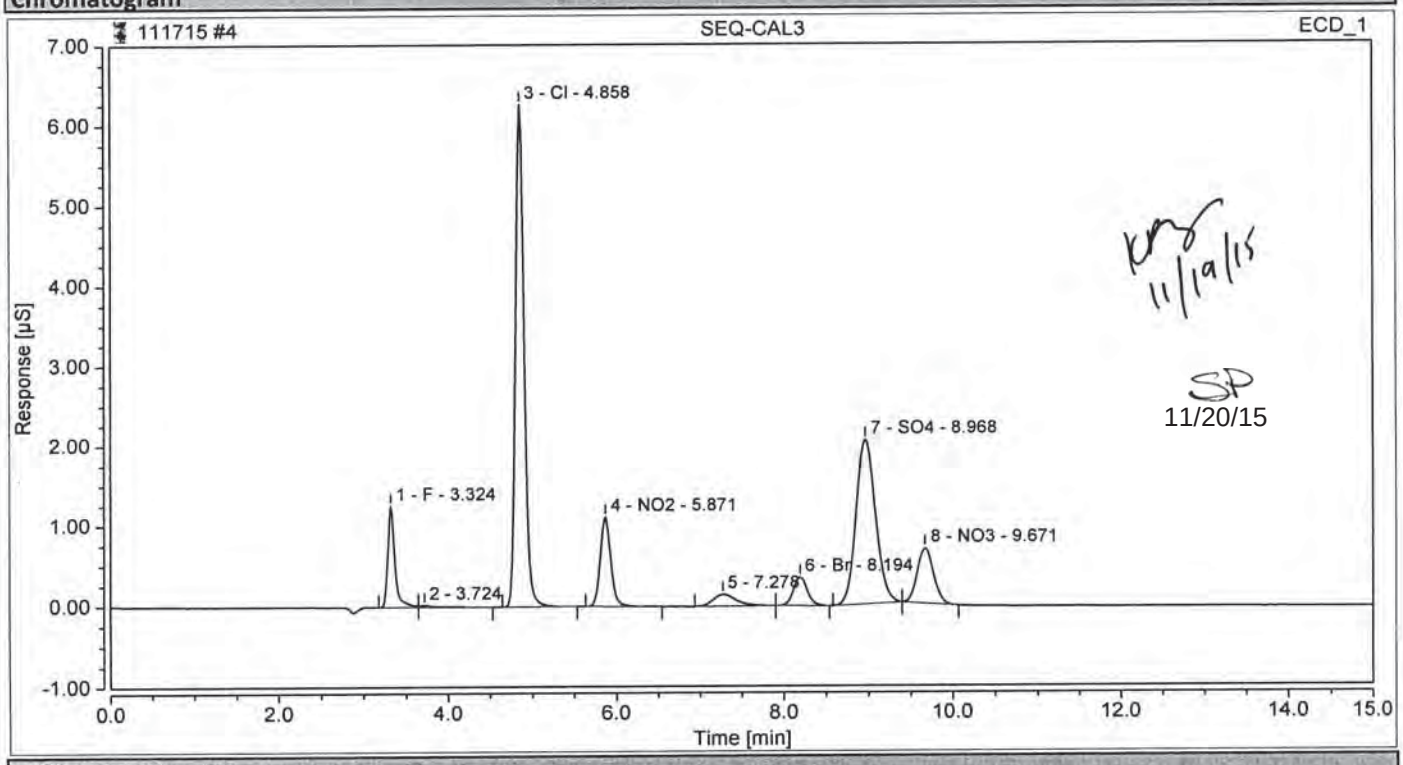
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0461829	0.490	6.14	10.21	0.0931
2		3.498	0.0038392	0.037	0.51	0.78	n.a.
3		3.724	0.0031064	0.019	0.41	0.40	n.a.
4	Cl	4.854	0.2871690	2.458	38.17	51.18	0.9436
5	NO2	5.868	0.0623479	0.433	8.29	9.01	0.1096
6		7.284	0.0446872	0.139	5.94	2.89	n.a.
7	Br	8.194	0.0265880	0.137	3.53	2.86	0.2061
8	SO4	8.981	0.2202215	0.829	29.27	17.25	0.9849
9	NO3	9.678	0.0581981	0.260	7.74	5.42	0.0754
Total:			**0.752**	**4.803**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL3**	*Run Time (min):*	**15.00**
Vial Number:	**4**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**03**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

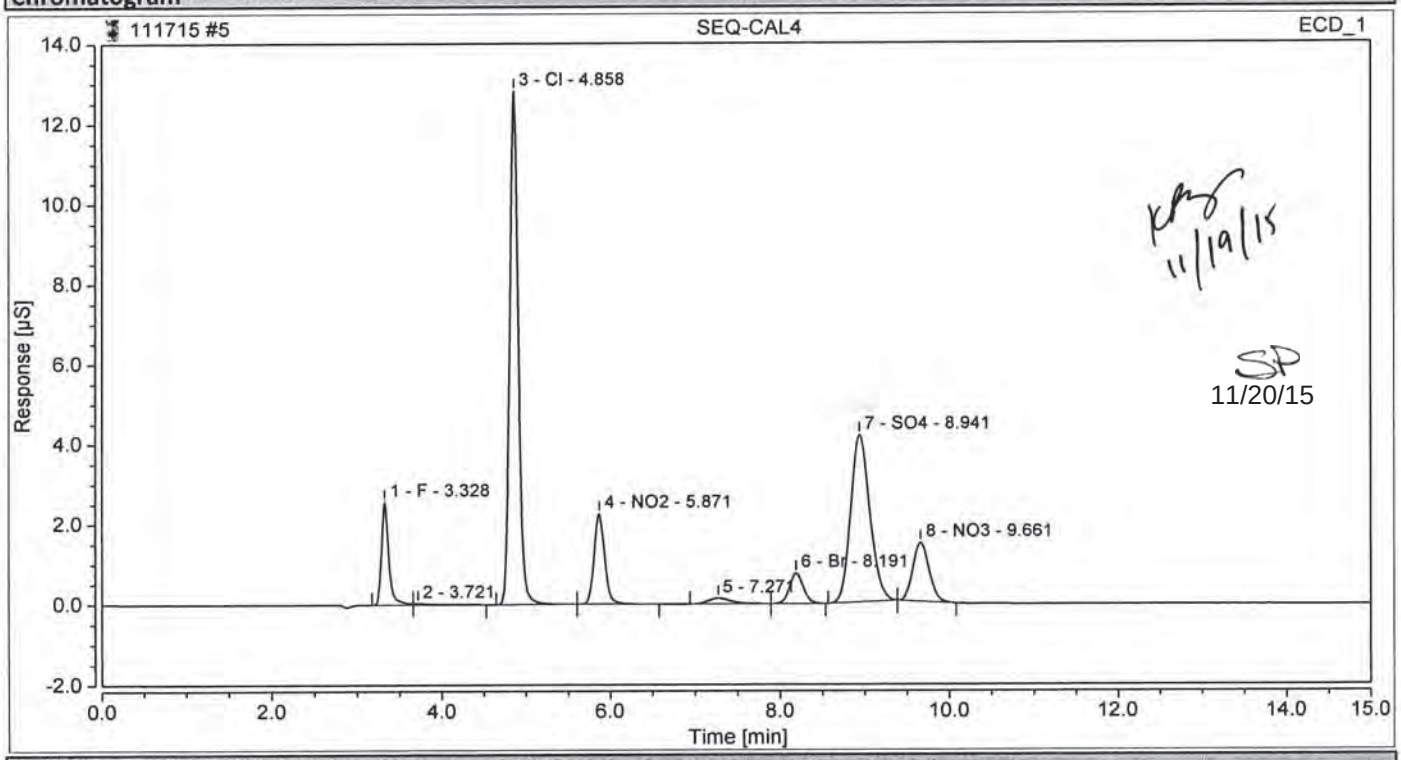
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.1233161	1.257	6.71	10.57	0.2487
2		3.724	0.0046231	0.023	0.25	0.19	n.a.
3	Cl	4.858	0.7358376	6.264	40.05	52.66	2.4178
4	NO2	5.871	0.1596659	1.114	8.69	9.36	0.2806
5		7.278	0.0473937	0.148	2.58	1.25	n.a.
6	Br	8.194	0.0678654	0.355	3.69	2.99	0.5261
7	SO4	8.968	0.5450785	2.048	29.67	17.21	2.4378
8	NO3	9.671	0.1536592	0.687	8.36	5.77	0.1989
Total:			**1.837**	**11.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL4**	*Run Time (min):*	**15.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**04**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

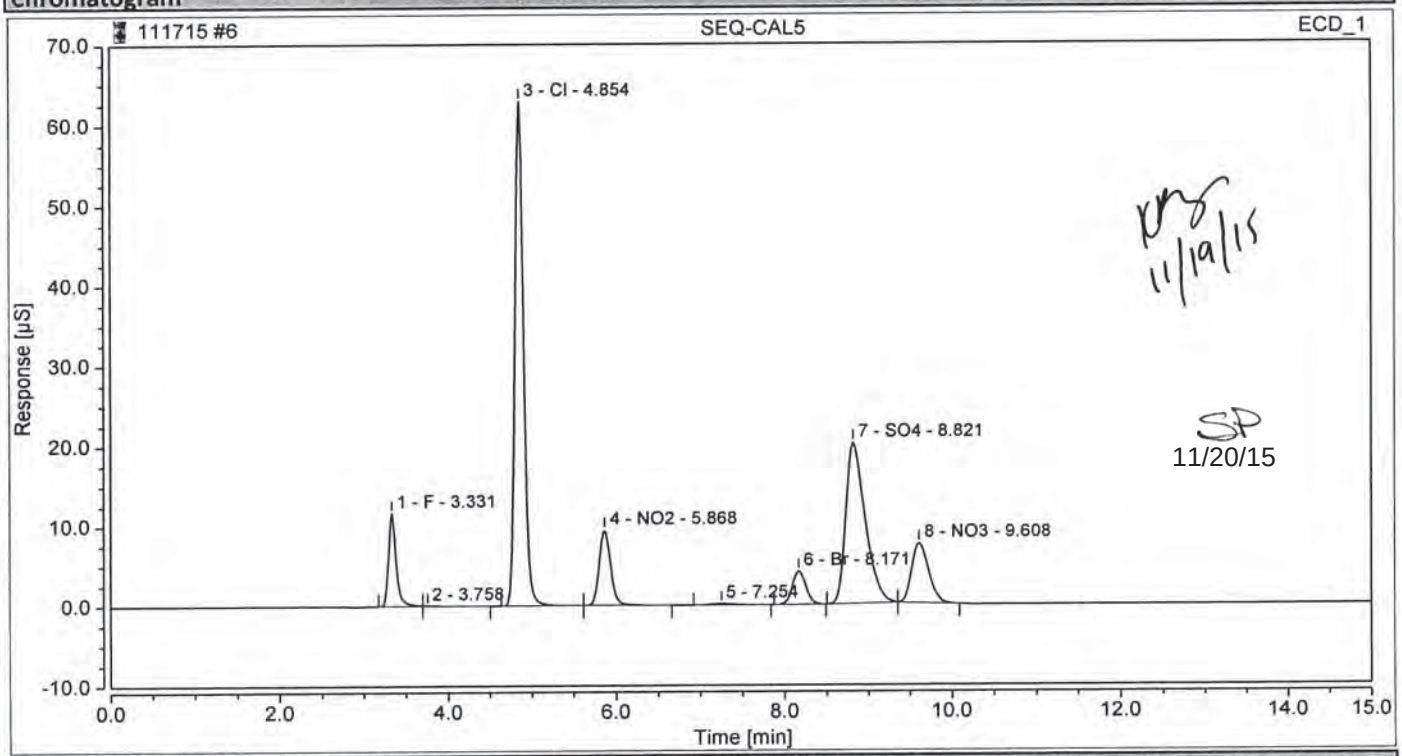
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	0.2535800	2.569	6.80	10.60	0.5114
2		3.721	0.0075683	0.032	0.20	0.13	n.a.
3	Cl	4.858	1.5163418	12.815	40.69	52.90	4.9824
4	NO2	5.871	0.3282896	2.259	8.81	9.33	0.5769
5		7.271	0.0453793	0.144	1.22	0.59	n.a.
6	Br	8.191	0.1440520	0.762	3.87	3.15	1.1168
7	SO4	8.941	1.1013233	4.174	29.55	17.23	4.9255
8	NO3	9.661	0.3300388	1.472	8.86	6.07	0.4273
Total:			**3.727**	**24.227**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL5**	*Run Time (min):*	**15.00**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**05**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

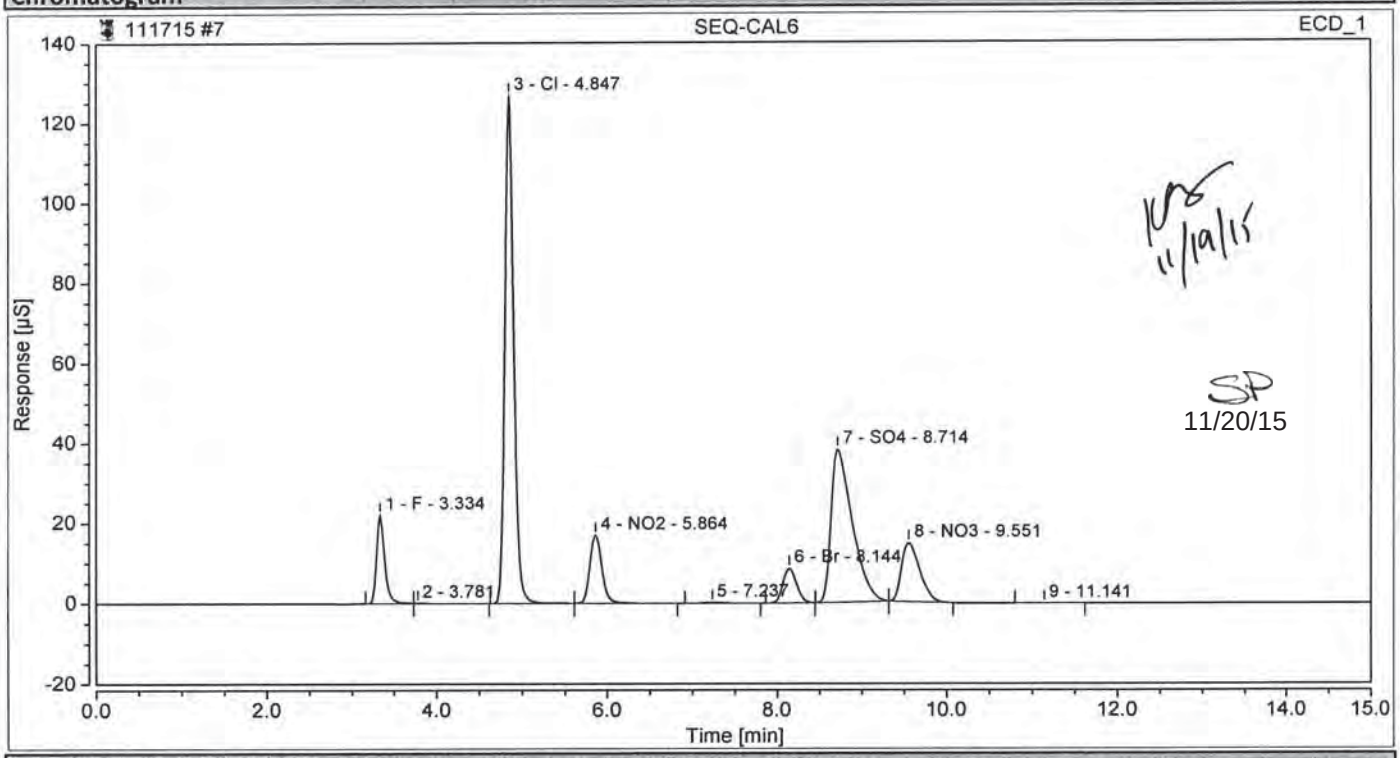
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.2525921	11.699	6.84	10.08	2.5263
2		3.758	0.0190090	0.072	0.10	0.06	n.a.
3	Cl	4.854	7.5363404	62.882	41.14	54.21	24.7631
4	NO2	5.868	1.4836250	9.448	8.10	8.14	2.6073
5		7.254	0.0485316	0.160	0.26	0.14	n.a.
6	Br	8.171	0.7768228	4.164	4.24	3.59	6.0224
7	SO4	8.821	5.4372952	20.102	29.68	17.33	24.3175
8	NO3	9.608	1.7660024	7.478	9.64	6.45	2.2865
Total:			**18.320**	**116.005**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL6**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	% R
1	F	3.334	2.4721069	22.141	6.69	9.72	4.9859	99.718
2		3.781	0.0322715	0.113	0.09	0.05	n.a.	
3	Cl	4.847	15.3044626	126.800	41.40	55.68	50.2878	
4	NO2	5.864	2.8092761	16.969	7.60	7.45	4.9369	98.738
5		7.237	0.0504916	0.173	0.14	0.08	n.a.	
6	Br	8.144	1.6100283	8.683	4.36	3.81	12.4819	
7	SO4	8.714	11.0416639	38.155	29.87	16.76	49.3822	
8	NO3	9.551	3.6425462	14.675	9.85	6.44	4.7162	
9		11.141	0.0027315	0.007	0.01	0.00	n.a.	
Total:			**36.966**	**227.715**	**100.00**	**100.00**		

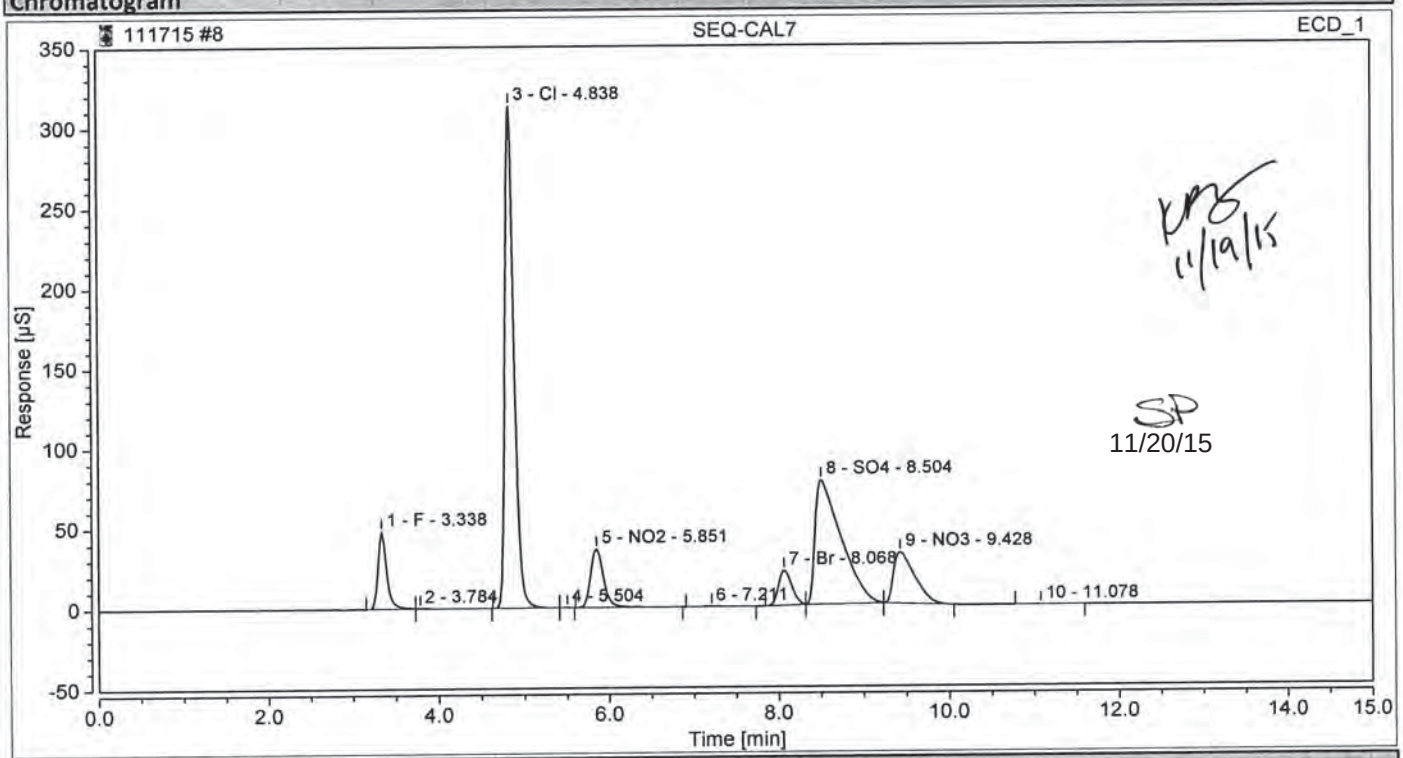
12/8/2015

Chromatogram and Results

Injection Details

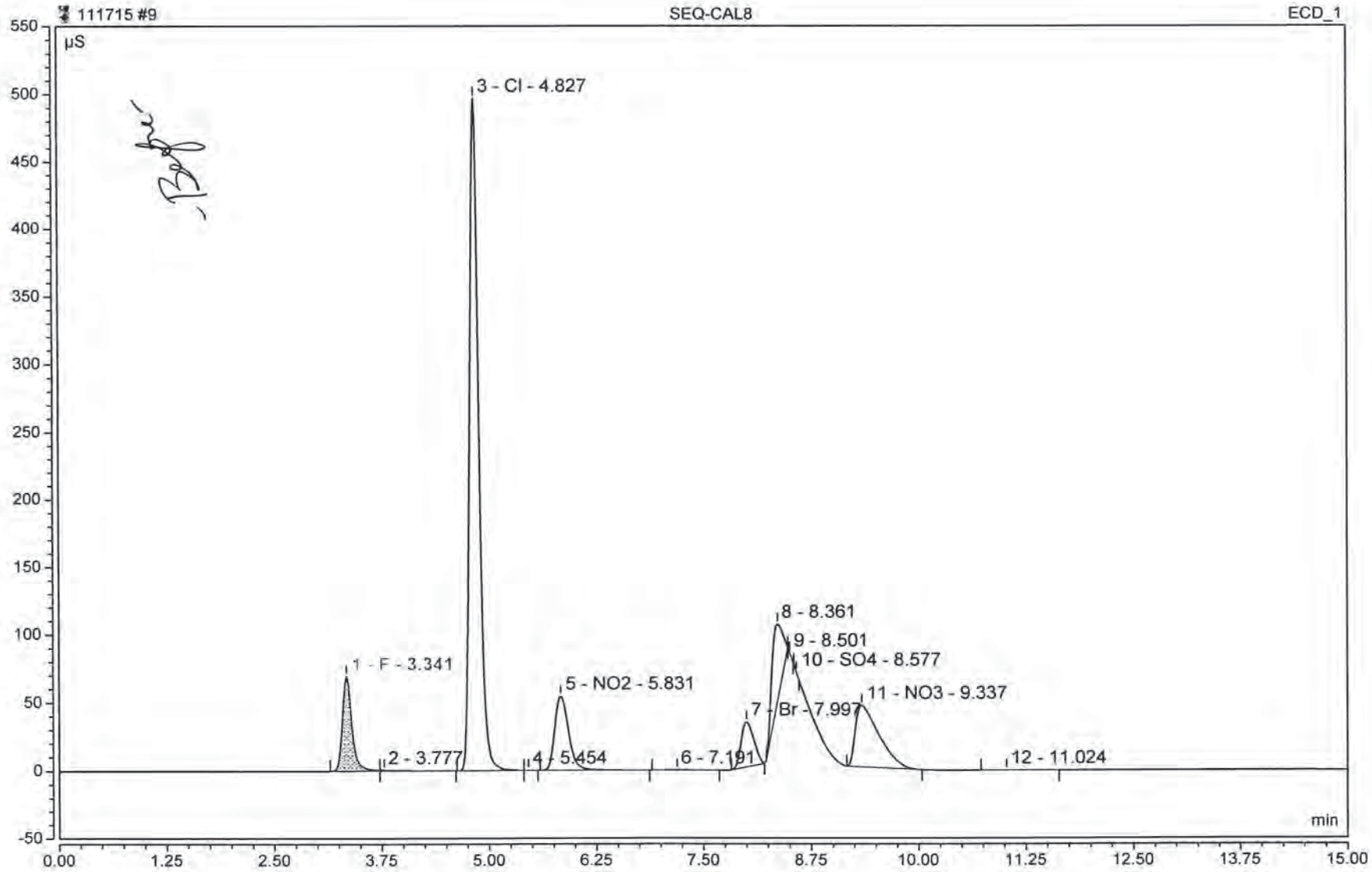
Injection Name:	**SEQ-CAL7**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**07**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.338	5.7625559	48.349	6.34	9.12	11.6224
2		3.784	0.0854296	0.296	0.09	0.06	n.a.
3	Cl	4.838	38.2749054	313.315	42.10	59.13	125.7648
4		5.504	0.0002744	0.002	0.00	0.00	n.a.
5	NO2	5.851	6.4639480	36.442	7.11	6.88	11.3595
6		7.211	0.0579694	0.208	0.06	0.04	n.a.
7	Br	8.068	3.9523854	21.796	4.35	4.11	30.6414
8	SO4	8.504	27.1837844	77.489	29.90	14.62	121.5754
9	NO3	9.428	9.1270172	31.979	10.04	6.04	11.8171
10		11.078	0.0042754	0.011	0.00	0.00	n.a.
Total:			**90.913**	**529.888**	**100.00**	**100.00**	

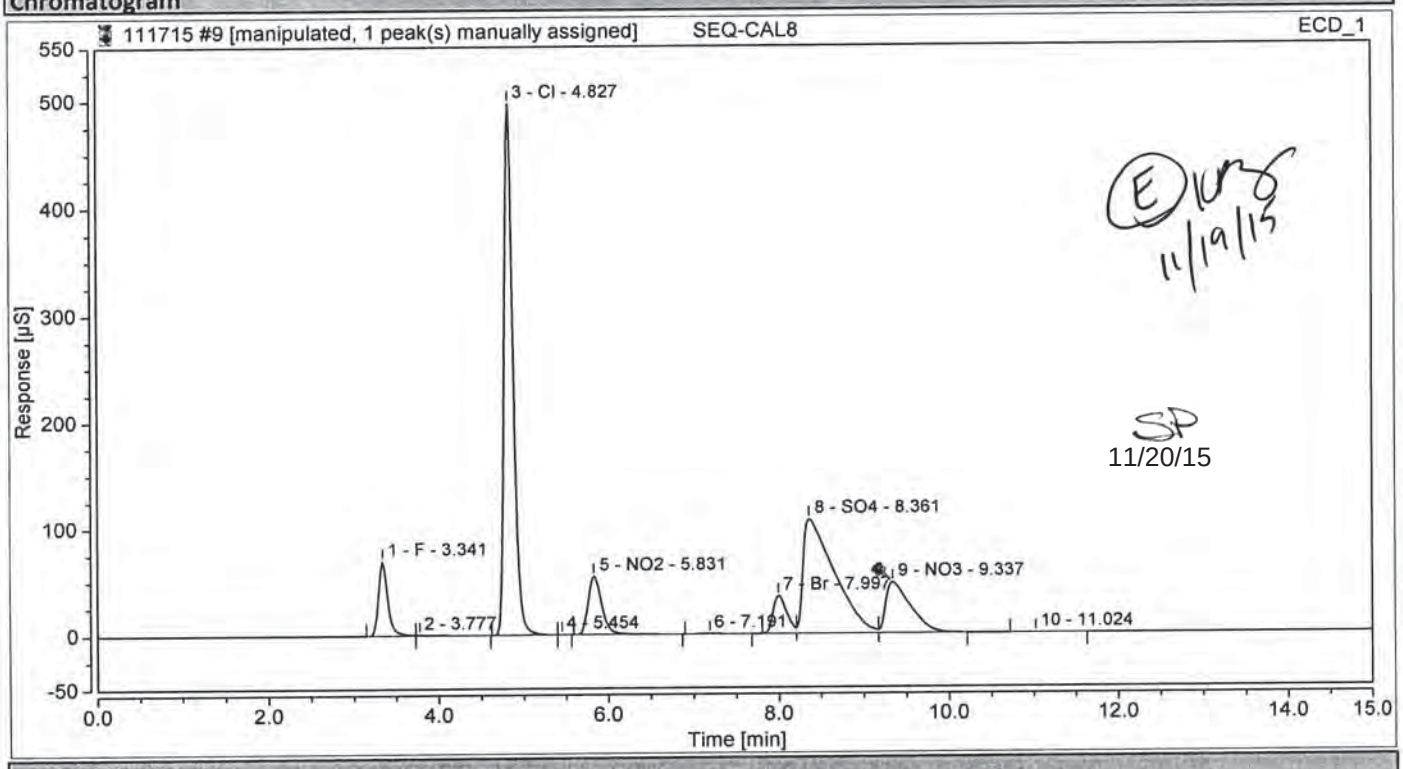

111715 #9
SEQ-CAL8
ECD_1
µS
3 - Cl - 4.827
1 - F - 3.341
2 - 3.777
5 - NO2 - 5.831
4 - 5.454
6 - 7.191
7 - Br - 7.997
8 - 8.361
9 - 8.501
10 - SO4 - 8.577
11 - NO3 - 9.337
12 - 11.024
min
550
500
450
400
350
300
250
200
150
100
50
0
-50
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL8**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**08**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:59**	*Sample Weight:*	**1.0000**

Chromatogram

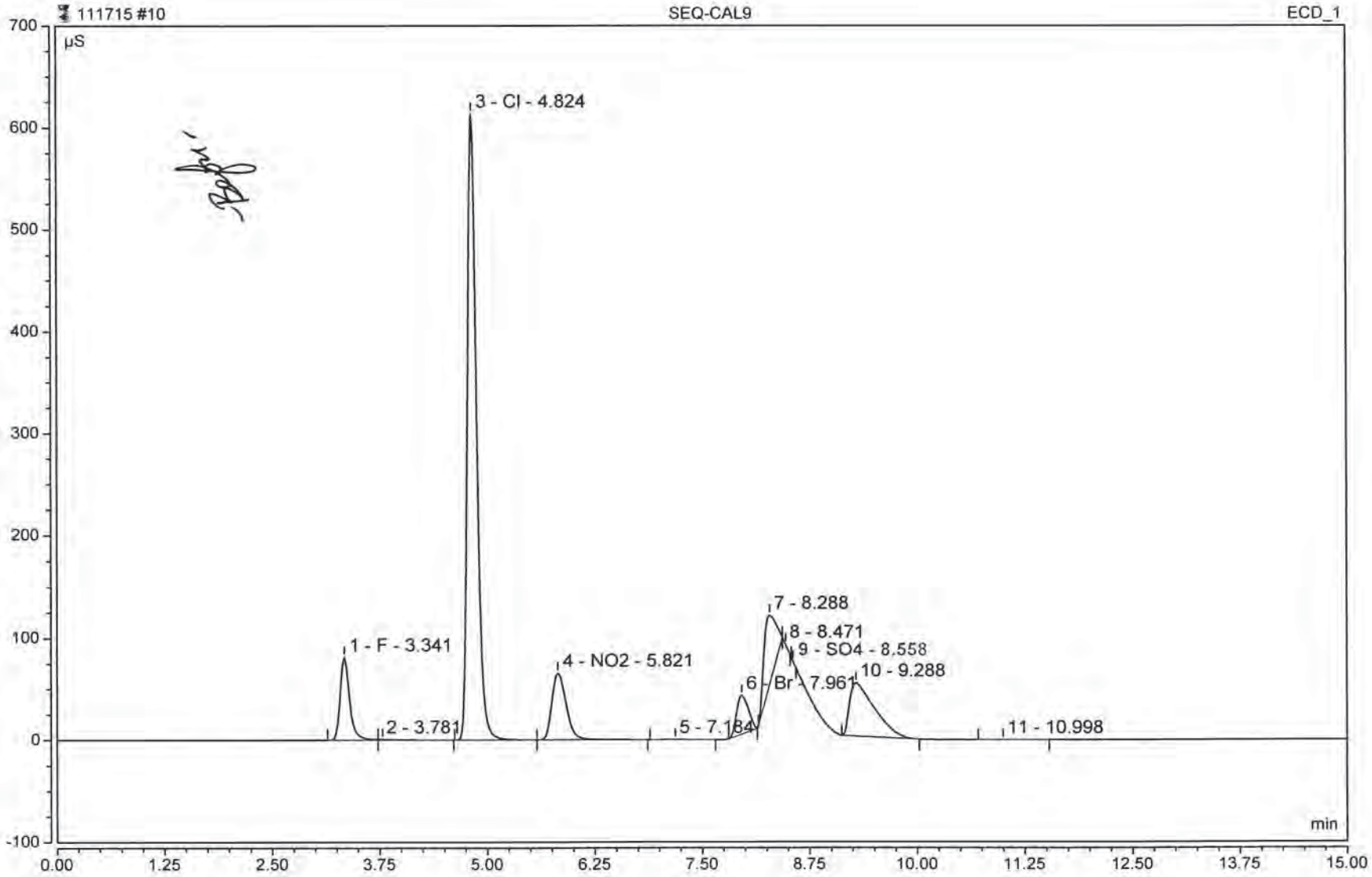


Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.341	8.7120474	69.634	5.90	8.58	17.5712
2		3.777	0.1512737	0.528	0.10	0.07	n.a.
3	Cl	4.827	61.1432401	496.862	41.39	61.23	200.9062
4		5.454	0.0003503	0.004	0.00	0.00	n.a.
5	NO2	5.831	10.1145387	54.420	6.85	6.71	17.7749
6		7.191	0.0645880	0.237	0.04	0.03	n.a.
7	Br	7.997	6.5791969	35.218	4.45	4.34	51.0060
8	SO4	8.361	45.1976399	107.066	30.60	13.19	202.1397
9	NO3	9.337	15.7421504	47.503	10.66	5.85	20.3820
10		11.024	0.0056704	0.014	0.00	0.00	n.a.
Total:			**147.711**	**811.485**	**100.00**	**100.00**	

101.202%

12/8/2015

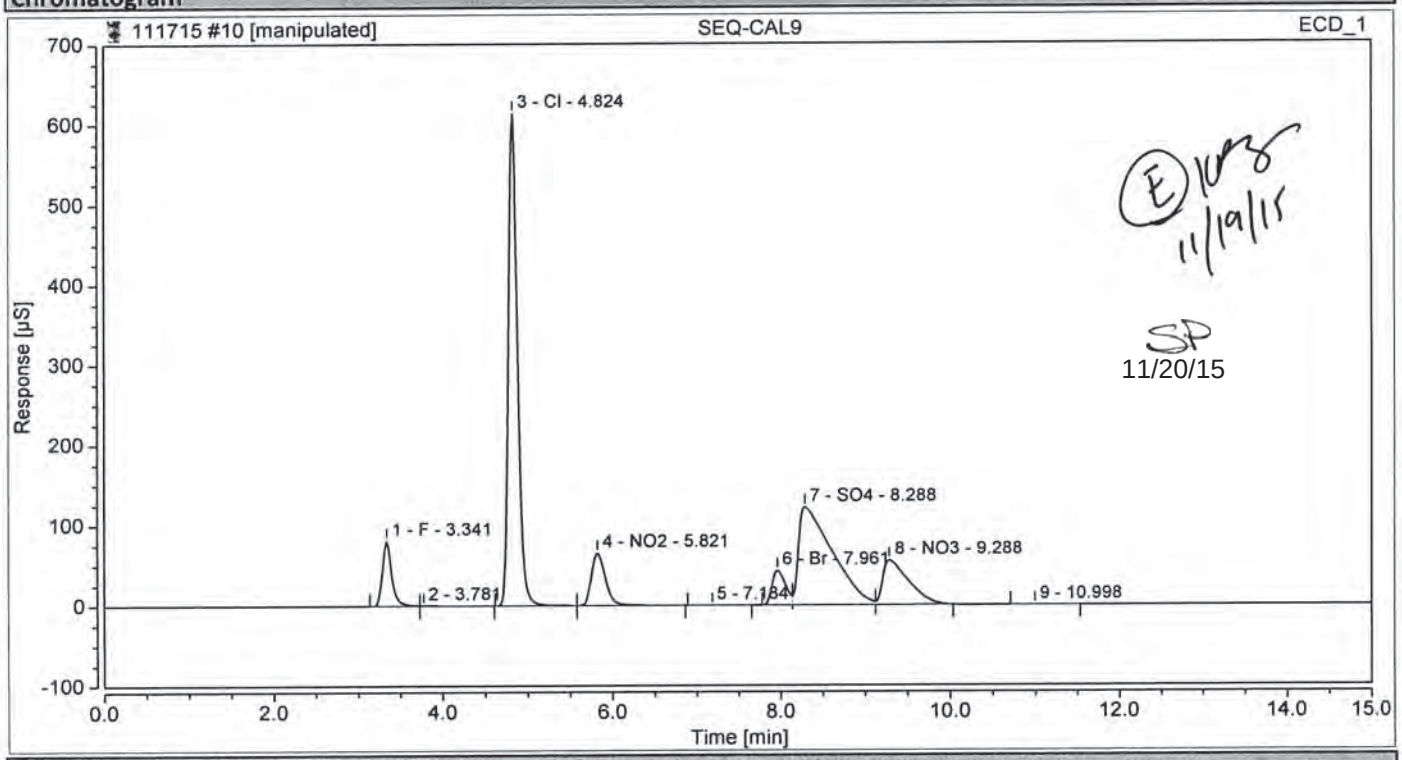

111715 #10
SEQ-CAL9
ECD_1
µS
700
600
500
400
300
200
100
0
-100
1 - F - 3.341
2 - 3.781
3 - Cl - 4.824
4 - NO2 - 5.821
5 - 7.184
6 - Br - 7.961
7 - 8.288
8 - 8.471
9 - SO4 - 8.558
10 - 9.288
11 - 10.998
min
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL9**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**09**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



E 11/19/15

SP
11/20/15

Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	
1	F	3.341	10.4666430	81.281	5.74	8.28	21.1100	
2		3.781	0.1907167	0.659	0.10	0.07	n.a.	
3	Cl	4.824	75.7374228	613.482	41.56	62.51	248.8602	99.54%
4	NO2	5.821	12.4914856	65.434	6.85	6.67	21.9521	
5		7.184	0.0690776	0.255	0.04	0.03	n.a.	
6	Br	7.961	7.9477879	43.168	4.36	4.40	61.6162	
7	SO4	8.288	55.9424901	121.640	30.70	12.39	250.1945	100.08%
8	NO3	9.288	19.3985090	55.441	10.64	5.65	25.1160	100.46%
9		10.998	0.0065839	0.016	0.00	0.00	n.a.	
Total:			**182.251**	**981.376**	**100.00**	**100.00**		

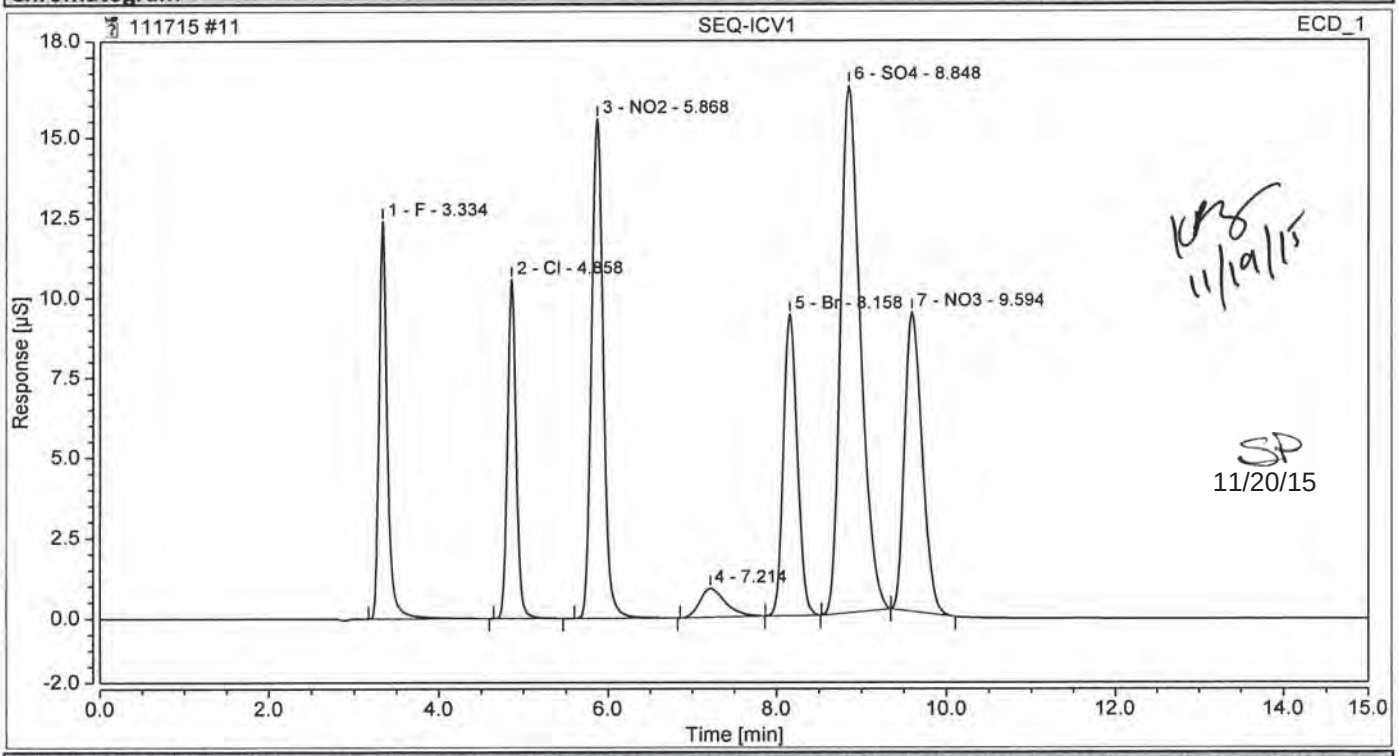
Maria 12/8/2015

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICV1**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

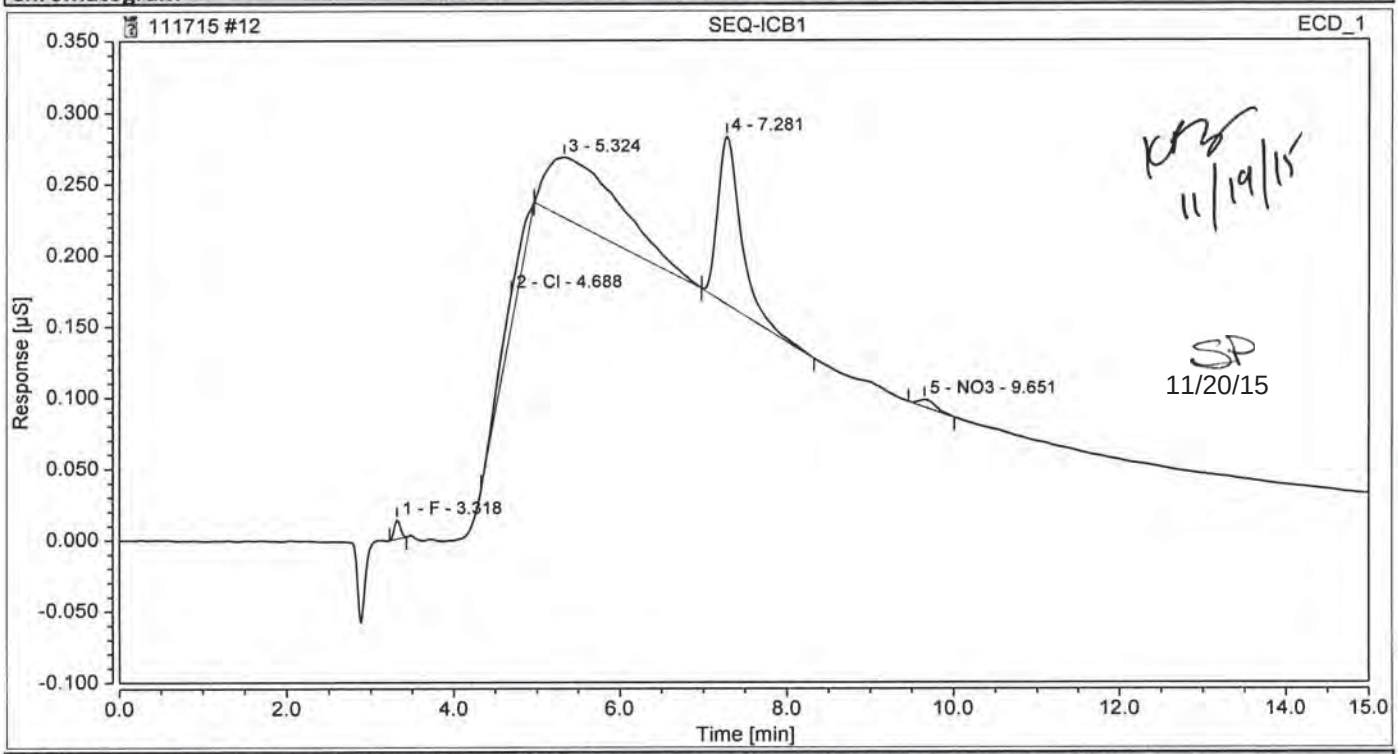
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.334	1.3903067	12.395	9.97	16.62	2.8041
2	Cl	4.858	1.2457670	10.572	8.93	14.18	4.0934
3	NO2	5.868	2.5129040	15.562	18.02	20.87	4.4161
4		7.214	0.3185593	0.899	2.28	1.20	n.a.
5	Br	8.158	1.7875226	9.386	12.82	12.58	13.8580
6	SO4	8.848	4.4654223	16.435	32.02	22.04	19.9709
7	NO3	9.594	2.2250539	9.334	15.96	12.51	2.8809
Total:			**13.946**	**74.583**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICB1**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0011415	0.014	1.17	6.70	0.0023
2	Cl	4.688	0.0091828	0.023	9.40	11.50	0.0302
3		5.324	0.0478564	0.042	49.00	20.91	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.281	0.0381807	0.118	39.09	58.31	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NO3	9.651	0.0013022	0.005	1.33	2.58	0.0017
Total:			**0.098**	**0.202**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**112415**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Nov/15 08:06:59**
No. of Injections:	**28**	*Updated By:*	**NSH-IONC2**

Injection Details

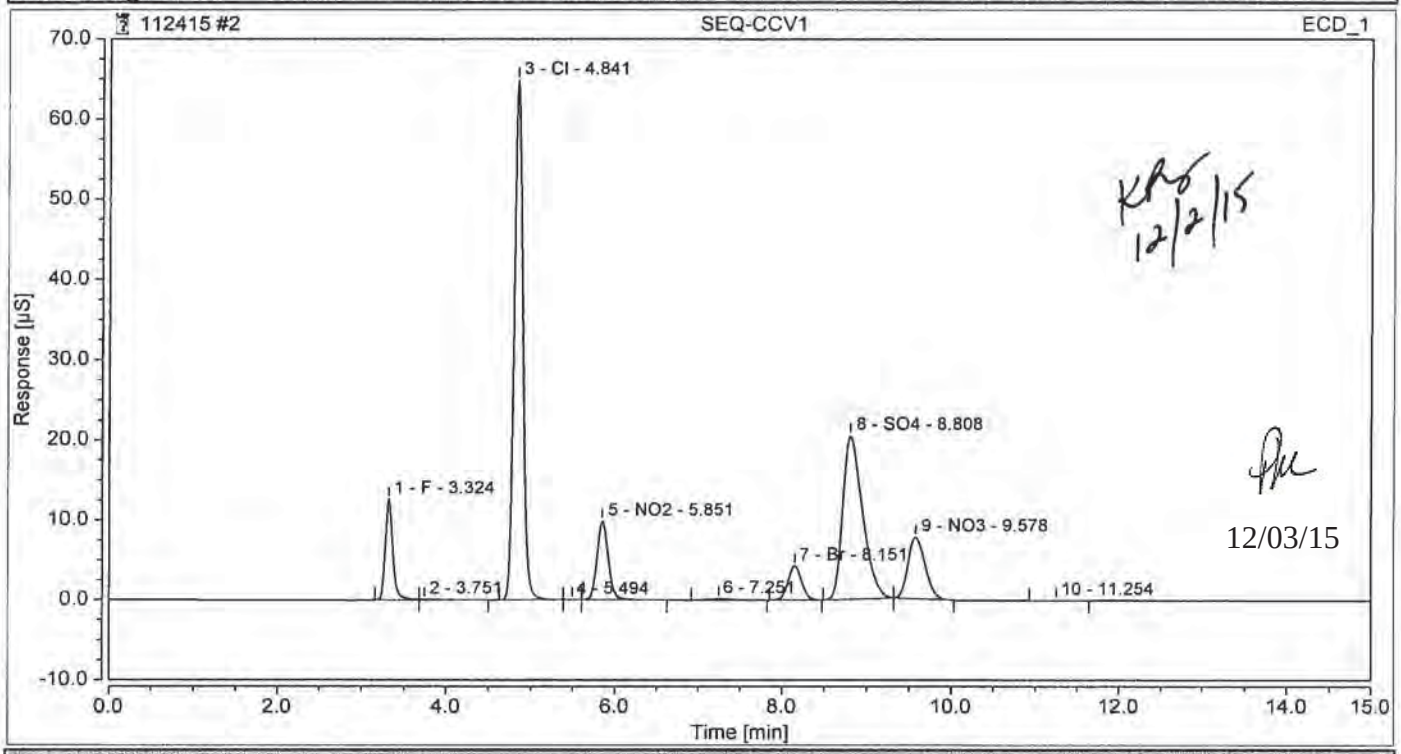
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		24/Nov/15 10:31:35	Finished
2	SEQ-CCV1	2	Unknown		24/Nov/15 10:49:27	Finished
3	SEQ-CCB1	3	Unknown		24/Nov/15 11:07:17	Finished
4	SEQ-CRL1	4	Unknown		24/Nov/15 11:25:08	Finished
5	SEQ-CRL2	5	Unknown		24/Nov/15 11:42:58	Finished
6	SEQ-CRL3	6	Unknown		24/Nov/15 12:00:48	Finished
7	5K24008-BLK1	7	Unknown		24/Nov/15 12:18:40	Finished
8	5K24008-BS1	8	Unknown		24/Nov/15 12:36:30	Finished
9	1511256-01	9	Unknown		24/Nov/15 12:54:21	Finished
10	1511256-02	10	Unknown		24/Nov/15 13:12:12	Finished
11	1511224-04RE1@20	11	Unknown		24/Nov/15 13:30:03	Finished
12	1511258-01	12	Unknown		24/Nov/15 13:47:53	Finished
13	1511258-02	13	Unknown		24/Nov/15 14:05:43	Finished
14	1511258-03	14	Unknown		24/Nov/15 14:23:34	Finished
15	1511258-04	15	Unknown		24/Nov/15 14:41:24	Finished
16	1511258-05	16	Unknown		24/Nov/15 14:59:15	Finished
17	5K24008-MS1	17	Unknown		24/Nov/15 15:17:05	Finished
18	5K24008-MSD1	18	Unknown		24/Nov/15 15:34:55	Finished
19	5K24008-DUP1	19	Unknown		24/Nov/15 15:52:46	Finished
20	SEQ-CCV2	20	Unknown		24/Nov/15 16:10:36	Finished
21	SEQ-CCB2	21	Unknown		24/Nov/15 16:28:26	Finished
22	1511021-01@10X	22	Unknown		24/Nov/15 16:46:17	Finished
23	1511021-01RE1@10	23	Unknown		24/Nov/15 17:04:07	Finished
24	1511021-02@10X	24	Unknown		24/Nov/15 17:21:57	Finished
25	1511021-02RE1@10	25	Unknown		24/Nov/15 17:39:48	Finished
26	SEQ-CCV3	26	Unknown		24/Nov/15 17:57:38	Finished
27	SEQ-CCB3	27	Unknown		24/Nov/15 18:15:29	Finished
28	BLANK	28	Unknown		24/Nov/15 18:33:19	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

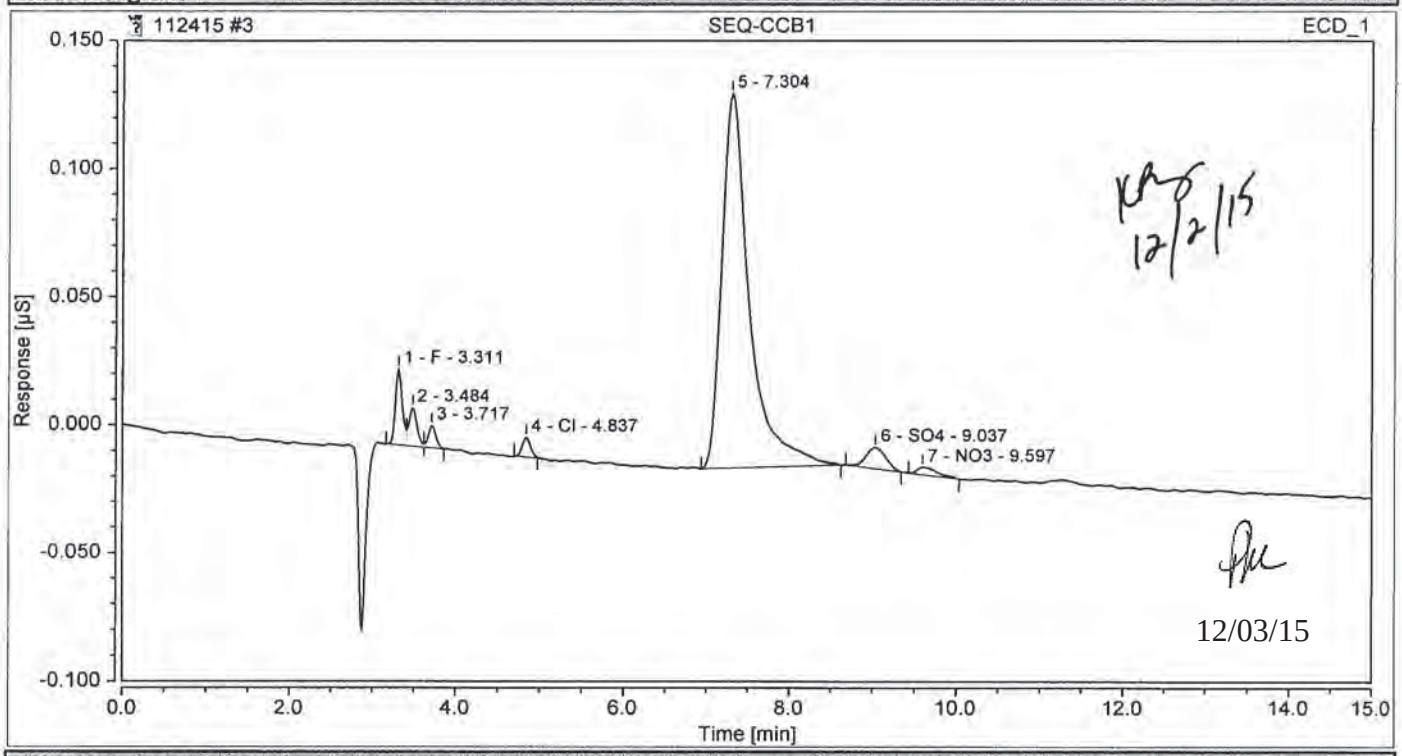
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2705989	12.614	6.79	10.51	2.5626
2		3.751	0.0165799	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7019628	64.849	41.18	54.04	25.3073
4		5.494	0.0004901	0.004	0.00	0.00	n.a.
5	NO2	5.851	1.5240646	9.858	8.15	8.21	2.6783
6		7.251	0.0484673	0.161	0.26	0.13	n.a.
7	Br	8.151	0.7982884	4.298	4.27	3.58	6.1888
8	SO4	8.808	5.5356306	20.443	29.60	17.03	24.7573
9	NO3	9.578	1.8052042	7.718	9.65	6.43	2.3373
10		11.254	0.0013871	0.004	0.01	0.00	n.a.
Total:			**18.703**	**120.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

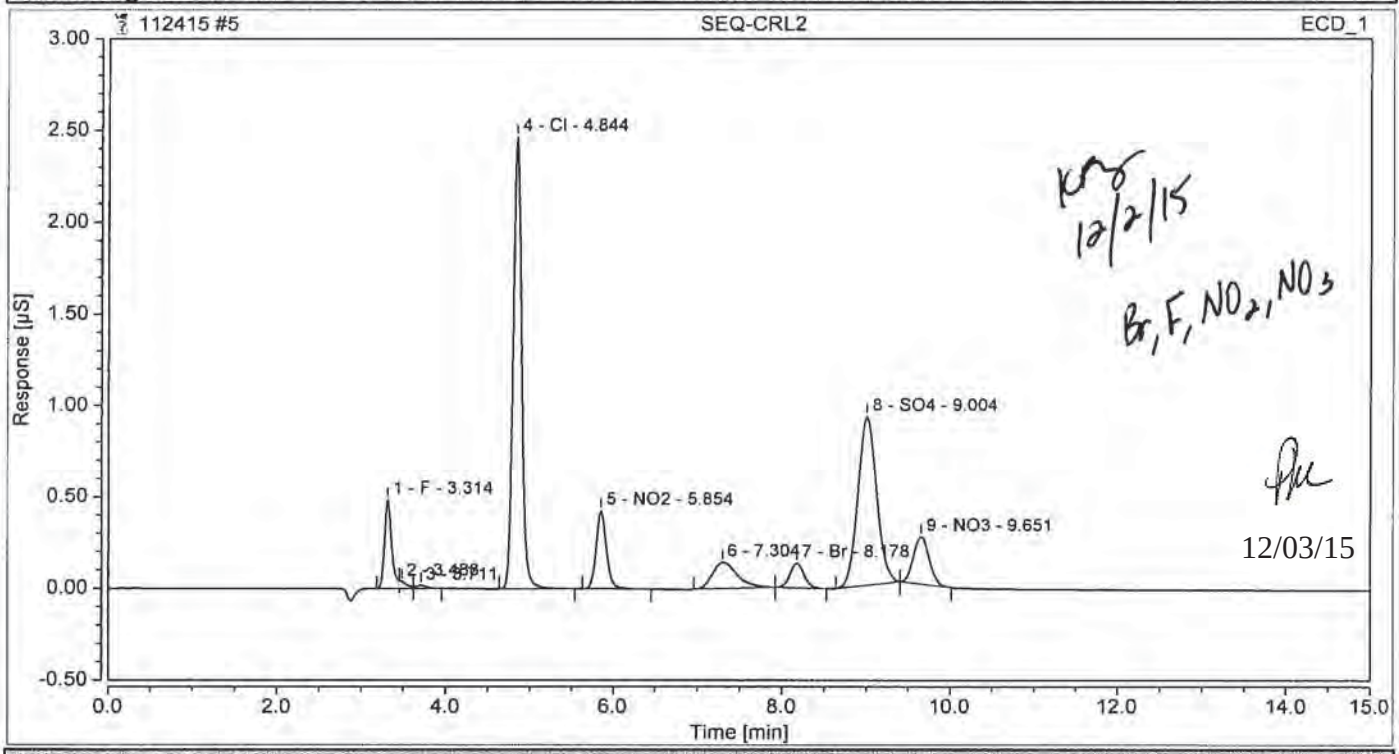
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0028367	0.030	4.30	13.58	0.0057
2		3.484	0.0016975	0.015	2.57	6.95	n.a.
3		3.717	0.0009154	0.009	1.39	4.01	n.a.
4	Cl	4.837	0.0008656	0.008	1.31	3.53	0.0028
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.304	0.0564475	0.146	85.58	66.68	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	9.037	0.0022898	0.008	3.47	3.85	0.0102
7	NO3	9.597	0.0009099	0.003	1.38	1.39	0.0012
Total:			**0.066**	**0.219**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL2**	*Run Time (min):*	**15.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

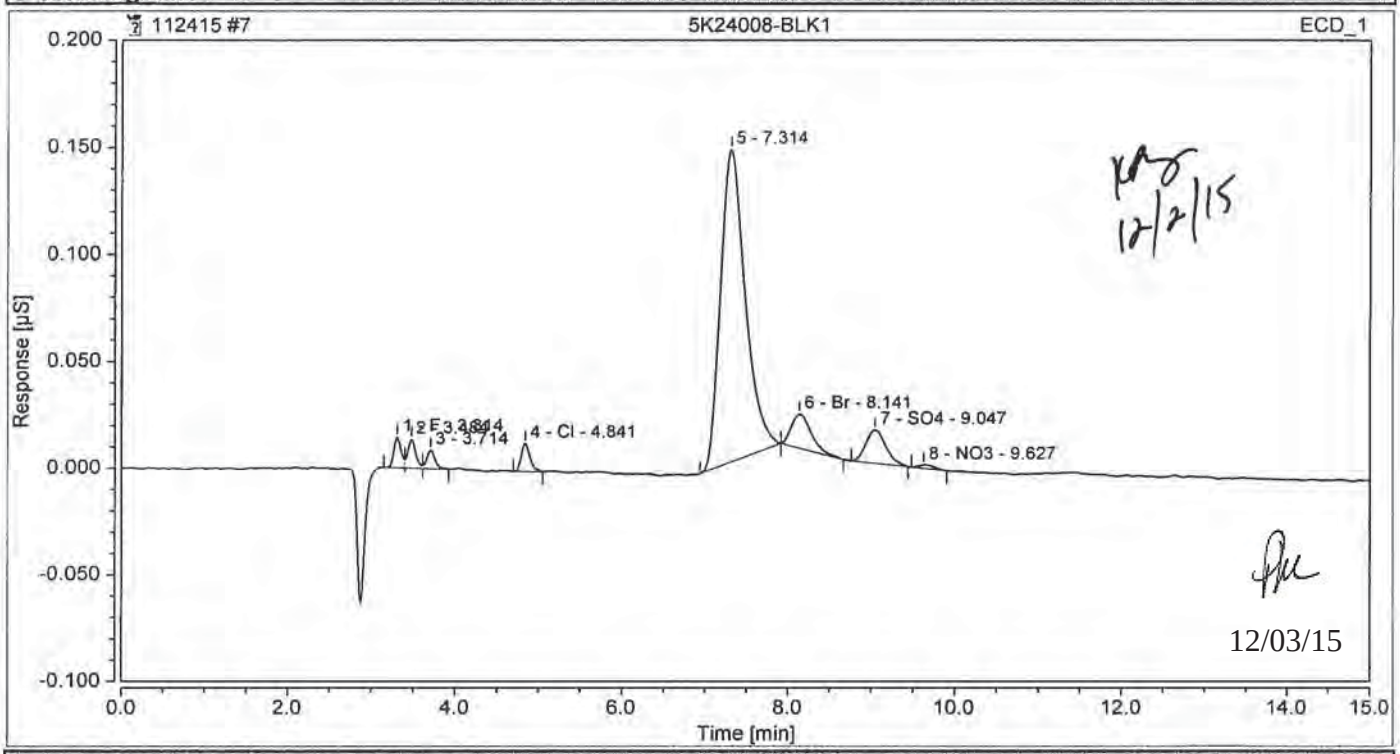
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0463111	0.486	6.02	9.93	0.0934
2		3.488	0.0040702	0.038	0.53	0.78	n.a.
3		3.711	0.0022268	0.016	0.29	0.34	n.a.
4	Cl	4.844	0.2867254	2.467	37.25	50.39	0.9421
5	NO2	5.854	0.0617777	0.429	8.03	8.76	0.1086
6		7.304	0.0487962	0.144	6.34	2.94	n.a.
7	Br	8.178	0.0260488	0.136	3.38	2.77	0.2019
8	SO4	9.004	0.2374141	0.921	30.85	18.82	1.0618
9	NO3	9.651	0.0563100	0.258	7.32	5.26	0.0729
Total:			**0.770**	**4.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K24008-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

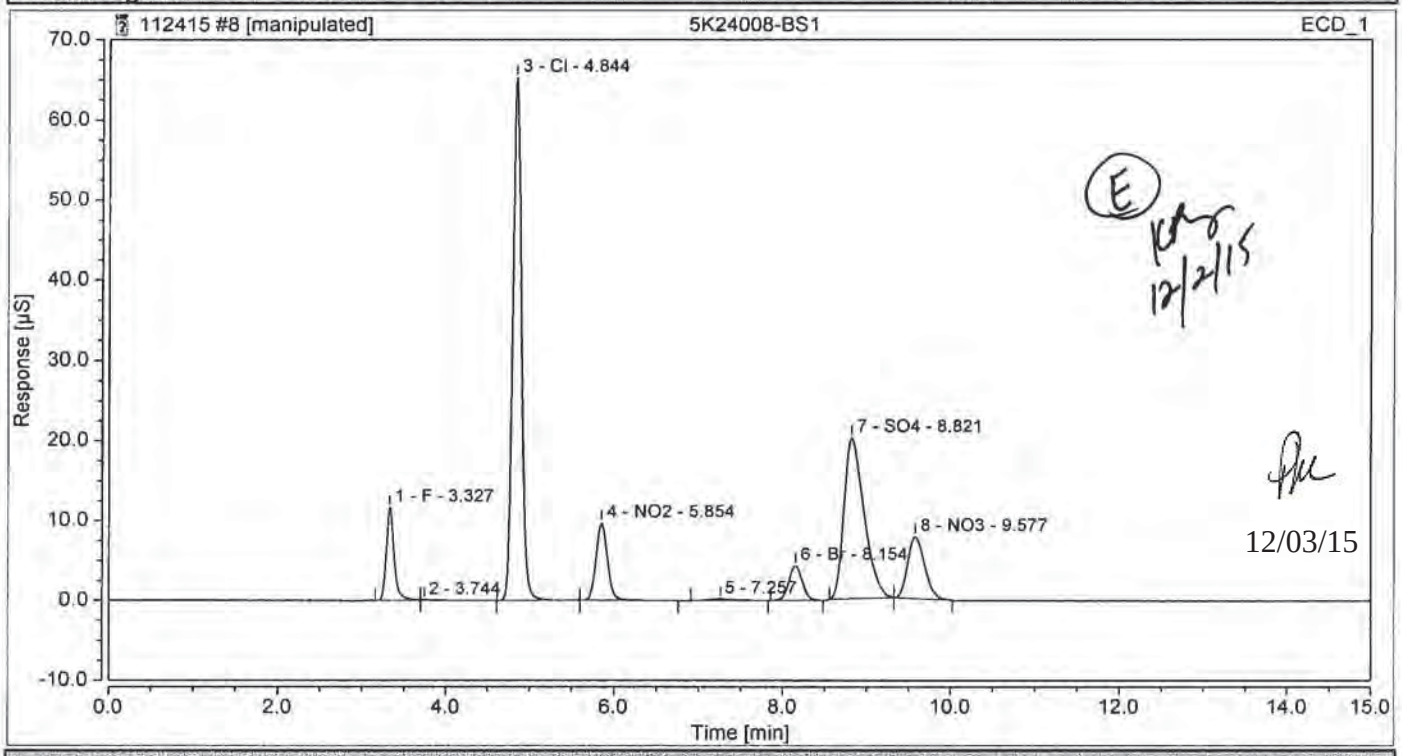
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0014124	0.014	2.17	6.30	0.0028
2		3.484	0.0015164	0.014	2.33	5.94	n.a.
3		3.714	0.0009678	0.009	1.49	3.78	n.a.
4	Cl	4.841	0.0016419	0.013	2.52	5.82	0.0054
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.314	0.0503585	0.146	77.33	63.65	n.a.
6	Br	8.141	0.0045066	0.016	6.92	6.99	0.0349
7	SO4	9.047	0.0043776	0.016	6.72	6.85	0.0196
8	NO3	9.627	0.0003436	0.002	0.53	0.67	0.0004
Total:			**0.065**	**0.230**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

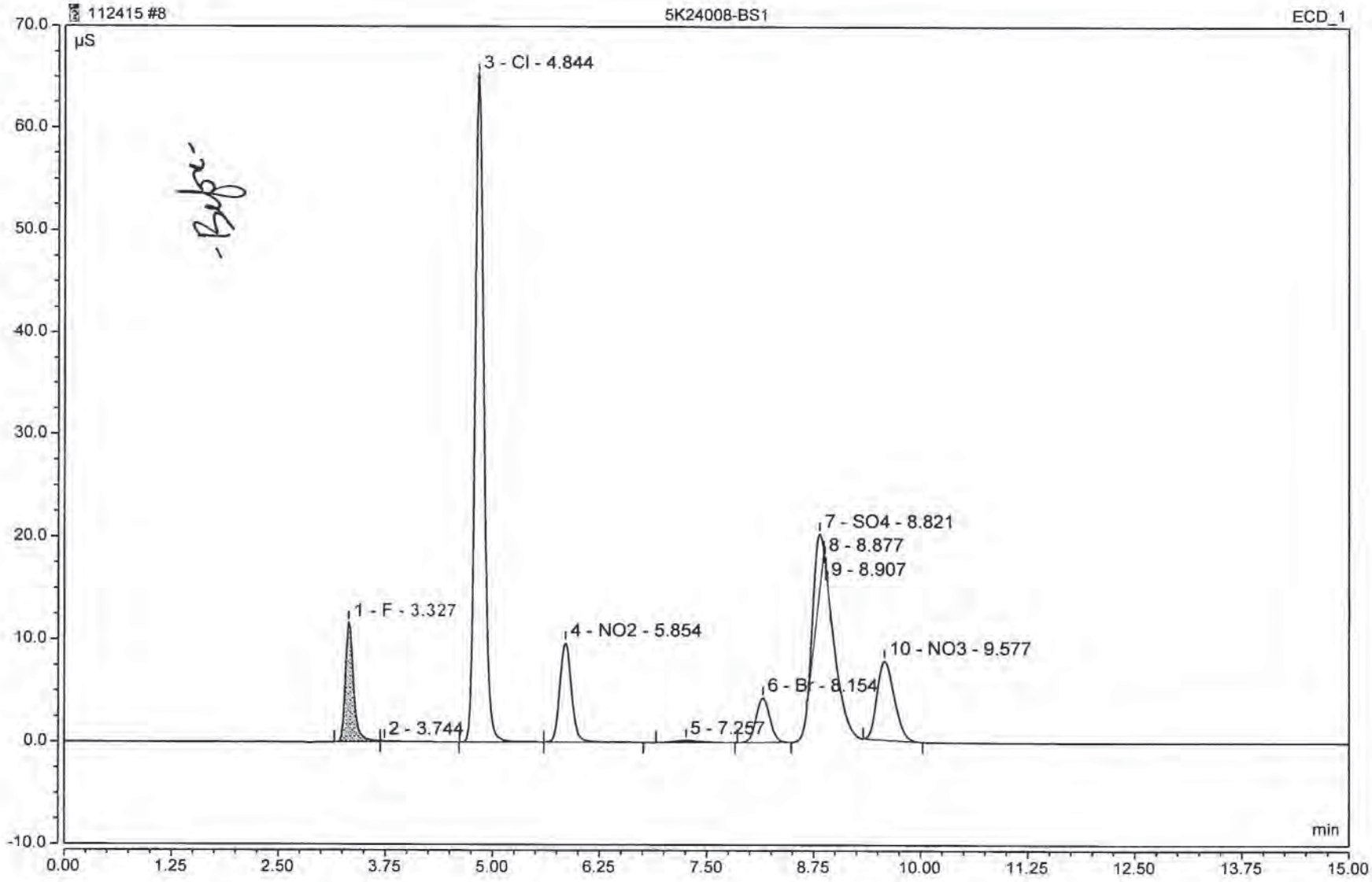
Injection Name:	**5K24008-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2791783	11.655	6.80	9.79	2.5800
2		3.744	0.0246001	0.086	0.13	0.07	n.a.
3	Cl	4.844	7.7768016	65.251	41.32	54.79	25.5532
4	NO2	5.854	1.5205323	9.693	8.08	8.14	2.6721
5		7.257	0.0613635	0.193	0.33	0.16	n.a.
6	Br	8.154	0.8100872	4.347	4.30	3.65	6.2803
7	SO4	8.821	5.5401456	20.145	29.43	16.91	24.7775
8	NO3	9.577	1.8090172	7.729	9.61	6.49	2.3422
Total:			**18.822**	**119.098**	**100.00**	**100.00**	



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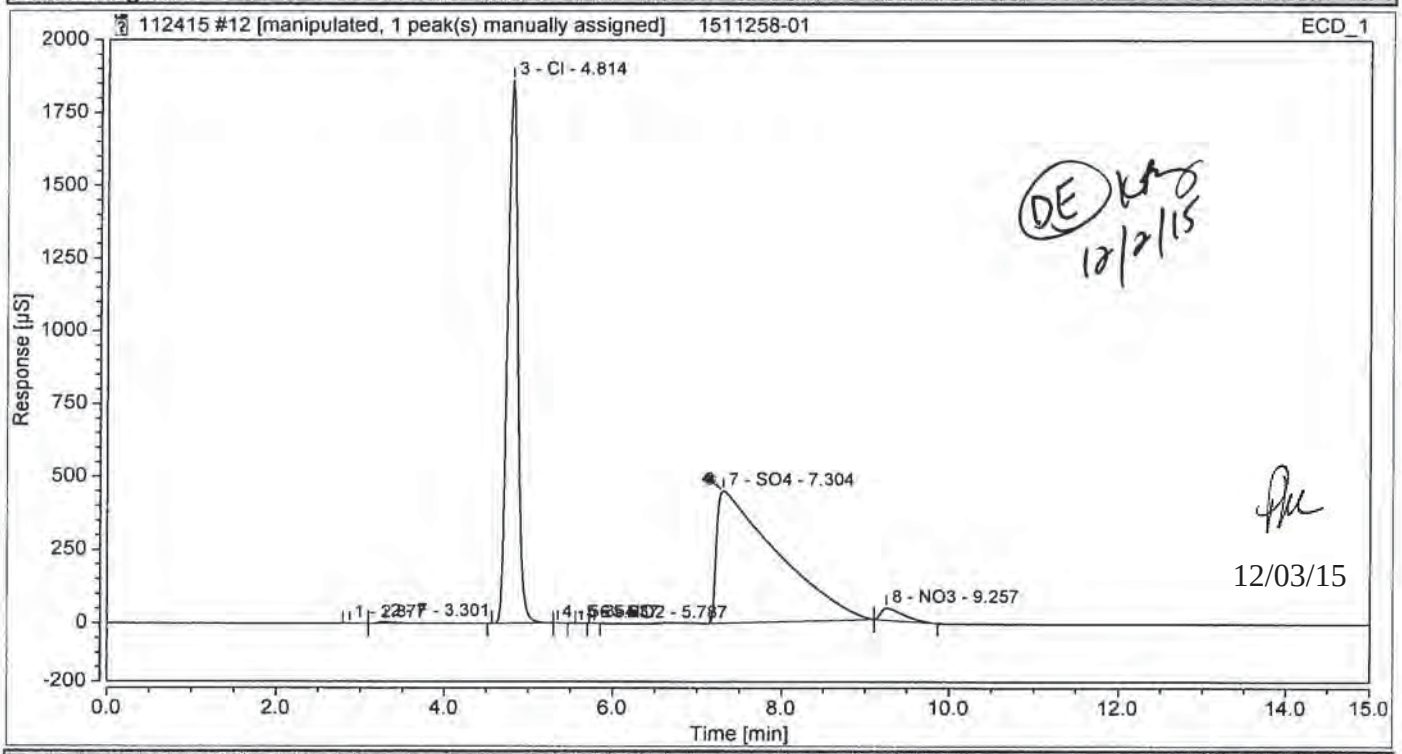
1511258

Chromatogram and Results

Injection Details

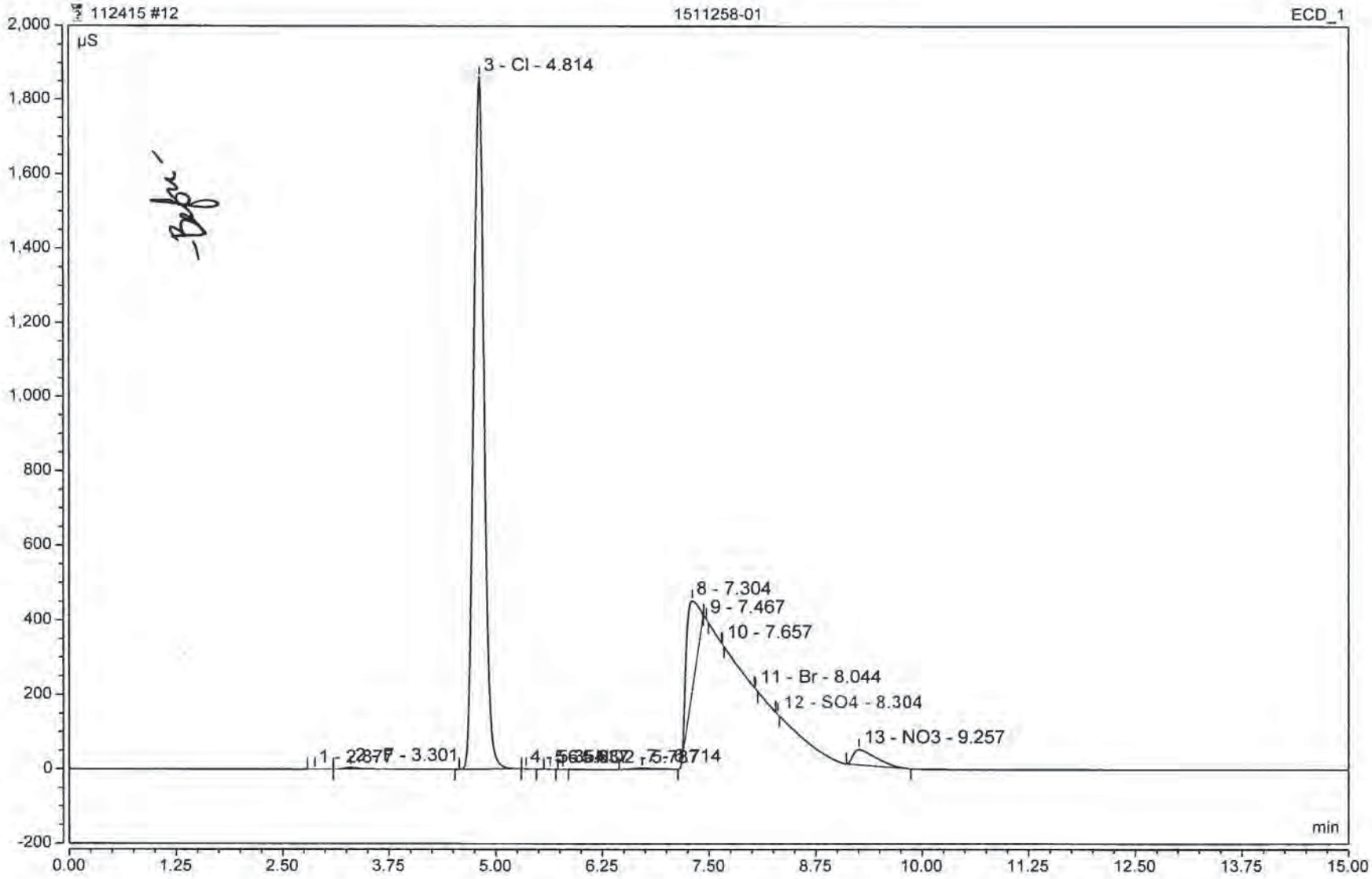
Injection Name:	**1511258-01**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.877	0.0086285	0.069	0.00	0.00	n.a.
2	F	3.301	0.8655185	4.973	0.13	0.21	1.7456
3	Cl	4.814	266.5940254	1861.256	40.82	78.93	875.9824
4		5.354	0.0016354	0.019	0.00	0.00	n.a.
5		5.637	0.0002650	0.003	0.00	0.00	n.a.
6	NO2	5.787	0.0002848	0.004	0.00	0.00	0.0005
7	SO4	7.304	372.7302122	450.303	57.07	19.10	1666.9805
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.257	12.9065054	41.538	1.98	1.76	16.7106
Total:			**653.107**	**2358.166**	**100.00**	**100.00**	



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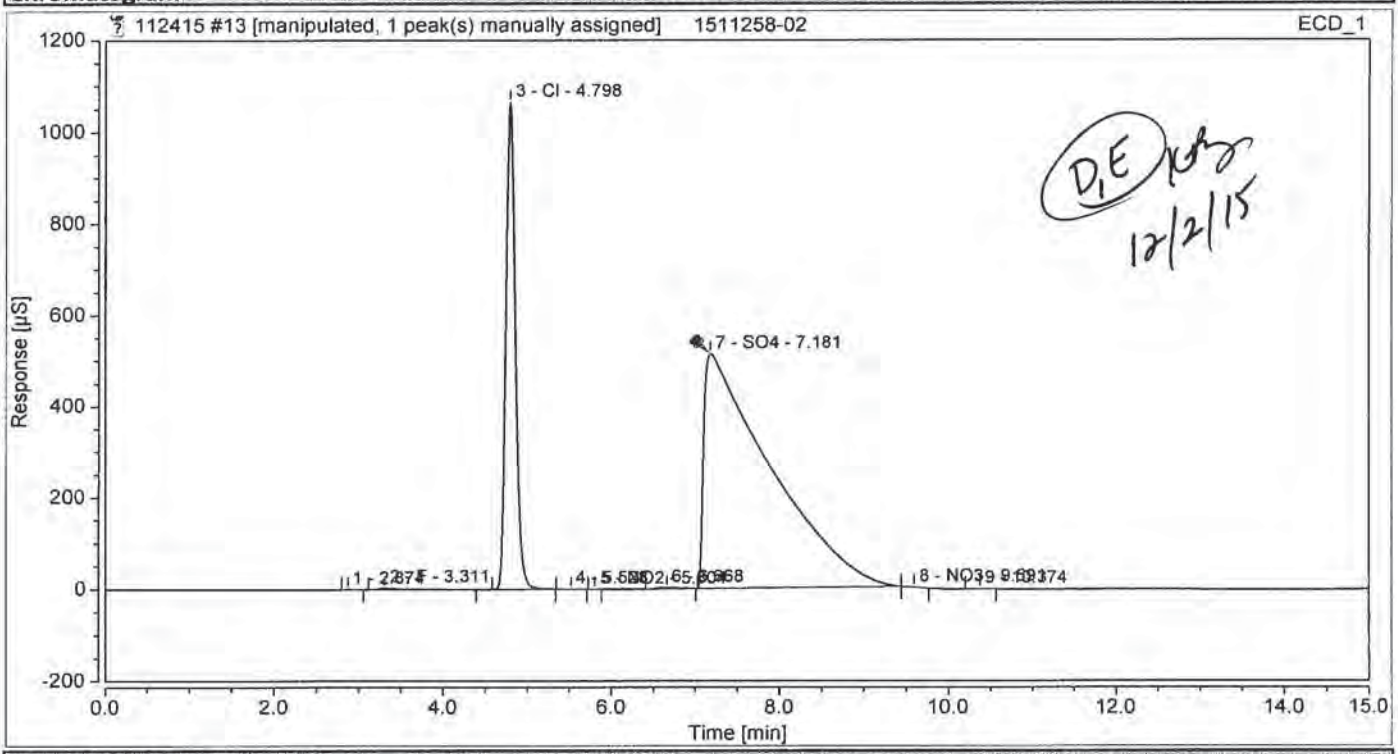
1511258

Chromatogram and Results

Injection Details

Injection Name:	**1511258-02**	*Run Time (min):*	**15.00**
Vial Number:	**13**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 14:05**	*Sample Weight:*	**1.0000**

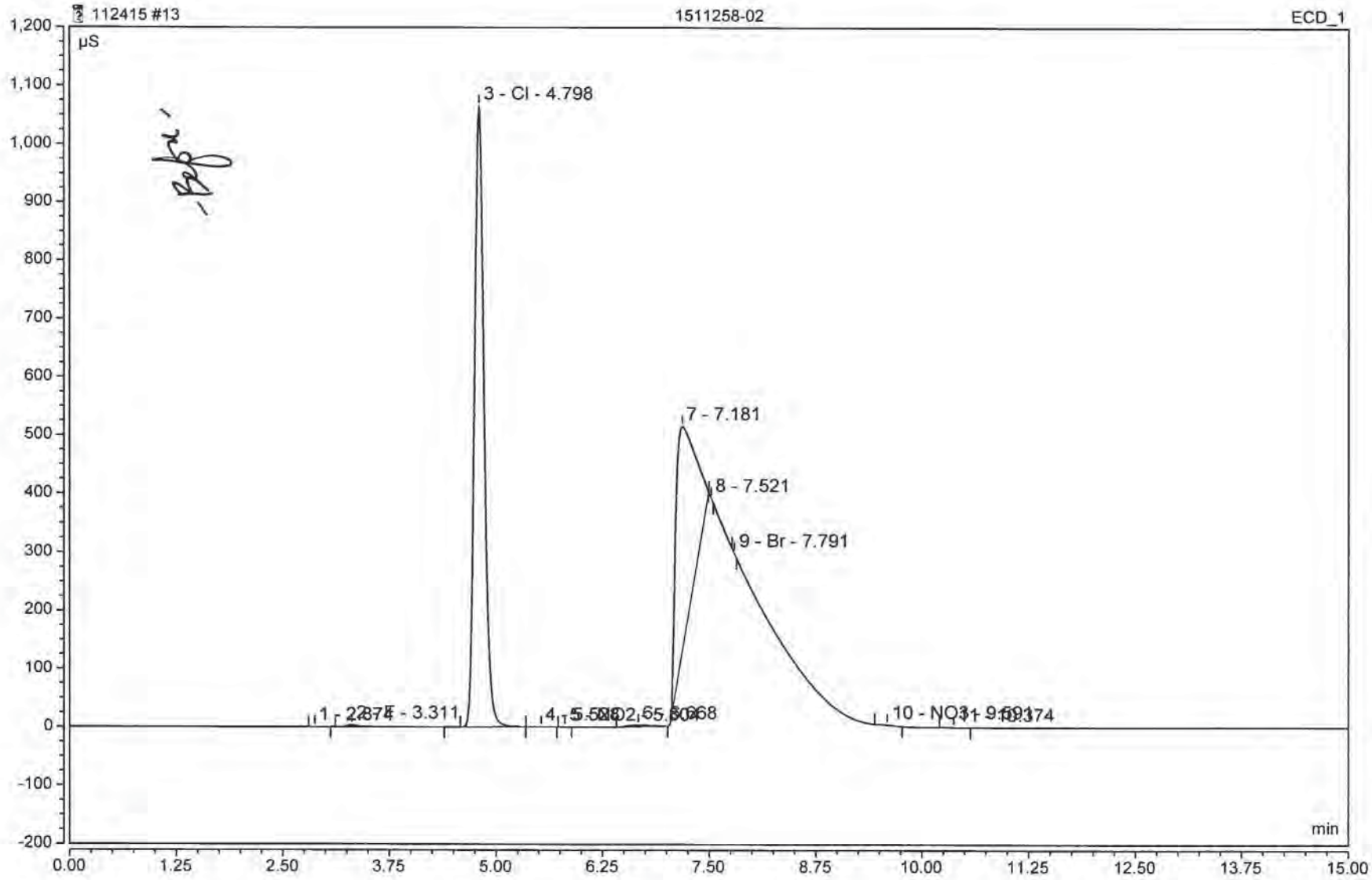
Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.874	0.0048435	0.044	0.00	0.00	n.a.
2	F	3.311	0.5584586	3.200	0.09	0.20	1.1263
3	Cl	4.798	137.9824230	1064.648	22.82	67.19	453.3867
4		5.528	0.0053154	0.024	0.00	0.00	n.a.
5	NO2	5.804	0.0008879	0.010	0.00	0.00	0.0016
6		6.668	0.8742887	2.647	0.14	0.17	n.a.
7	SO4	7.181	465.0775563	513.441	76.92	32.40	2079.9903
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.591	0.0933618	0.598	0.02	0.04	0.1209
9		10.374	0.0067952	0.036	0.00	0.00	n.a.
Total:			**604.604**	**1584.649**	**100.00**	**100.00**	

12/03/15

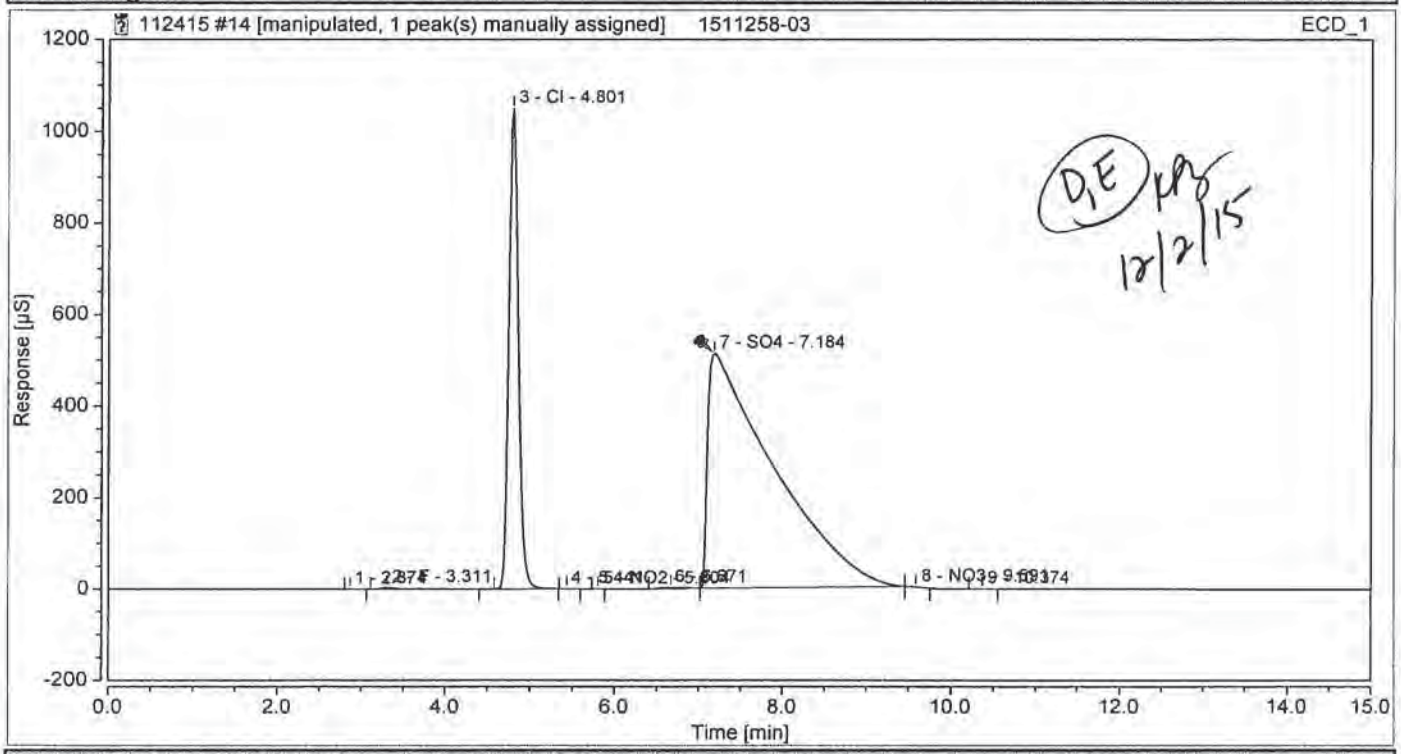

112415 #13
1511258-02
ECD_1
µS
3 - Cl - 4.798
7 - 7.181
8 - 7.521
9 - Br - 7.791
1 - 2.874 - 3.311
10 - NO3 - 9.591
min
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
-100
-200
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**1511258-03**	*Run Time (min):*	**15.00**
Vial Number:	**14**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



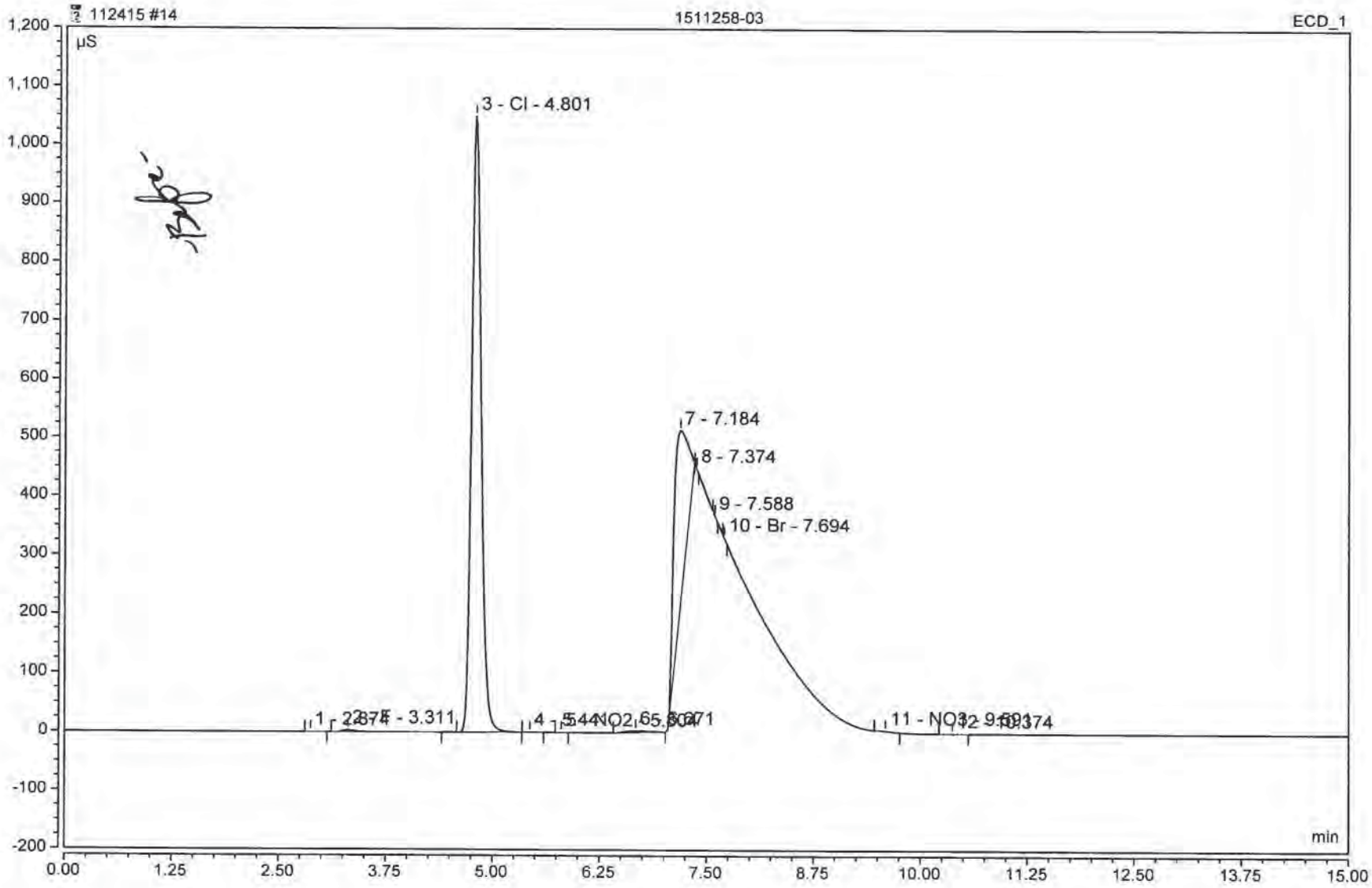
Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.874	0.0044278	0.042	0.00	0.00	n.a.
2	F	3.311	0.5489773	3.097	0.09	0.20	1.1072
3	Cl	4.801	136.3311892	1049.368	22.61	66.92	447.9610
4		5.441	0.0029355	0.022	0.00	0.00	n.a.
5	NO2	5.804	0.0006916	0.009	0.00	0.00	0.0012
6		6.671	0.8765623	2.644	0.15	0.17	n.a.
7	SO4	7.184	465.1333903	512.484	77.14	32.68	2080.2400
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.591	0.0722487	0.480	0.01	0.03	0.0935
9		10.374	0.0058598	0.033	0.00	0.00	n.a.
Total:			**602.976**	**1568.179**	**100.00**	**100.00**	

12/03/15

$NO_3 = 0.0722487 / \cancel{0.7713}\ 0.7723554 = 0.0935 \times 5mL/5mL = 0.0935\ mg/L$

12/2/15


112415 #14
1511258-03
ECD_1
µS
3 - Cl - 4.801
7 - 7.184
8 - 7.374
9 - 7.588
10 - Br - 7.694
1 - 2.874
3.311
4 - 5.44
NO2
11 - NO3
min
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
-100
-200
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

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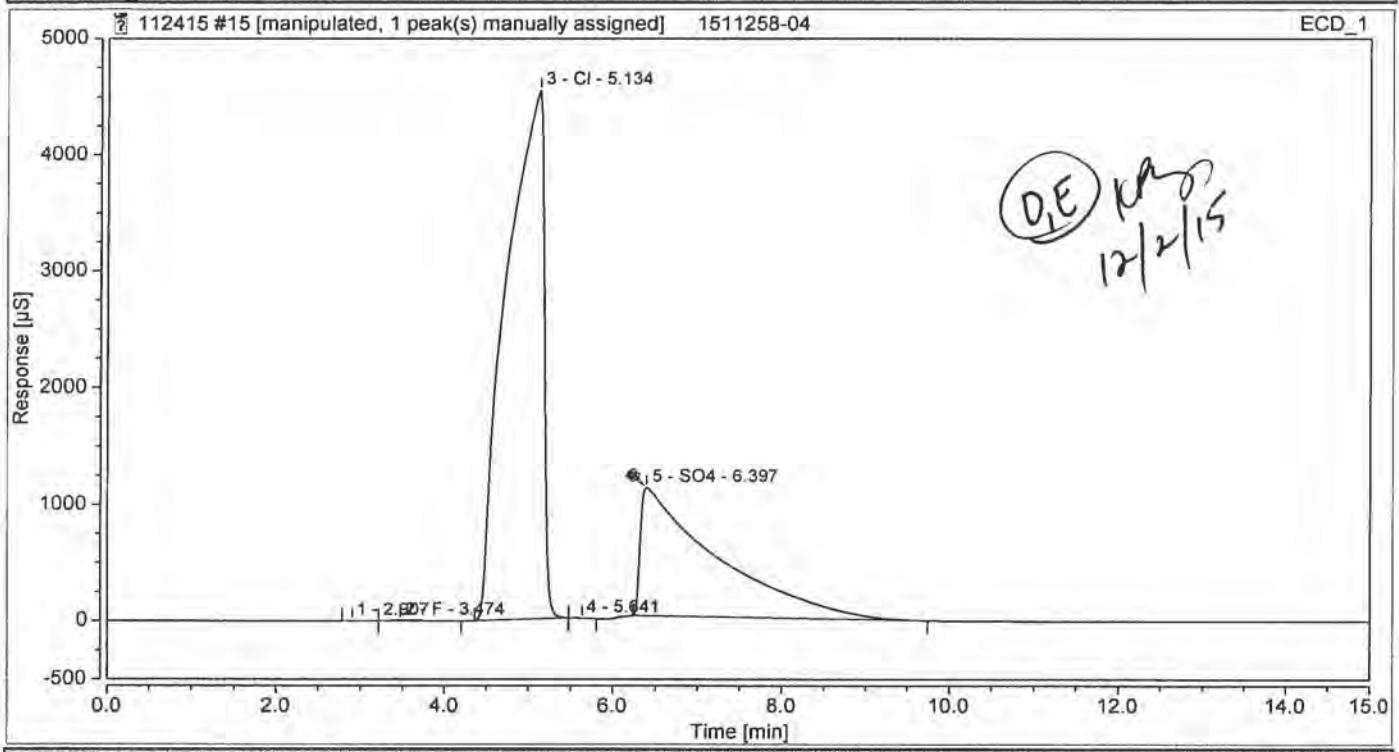
1511258

Chromatogram and Results

Injection Details

Injection Name:	**1511258-04**	*Run Time (min):*	**15.00**
Vial Number:	**15**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.907	0.1365171	0.828	0.00	0.01	n.a.
2	F	3.474	1.0718560	4.341	0.03	0.08	2.1618
3	Cl	5.134	2331.1835176	4537.832	67.22	80.37	7659.8707
4		5.641	0.2340855	1.289	0.01	0.02	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	6.397	1135.3221403	1101.566	32.74	19.51	5077.5596
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3467.948**	**5645.856**	**100.00**	**100.00**	

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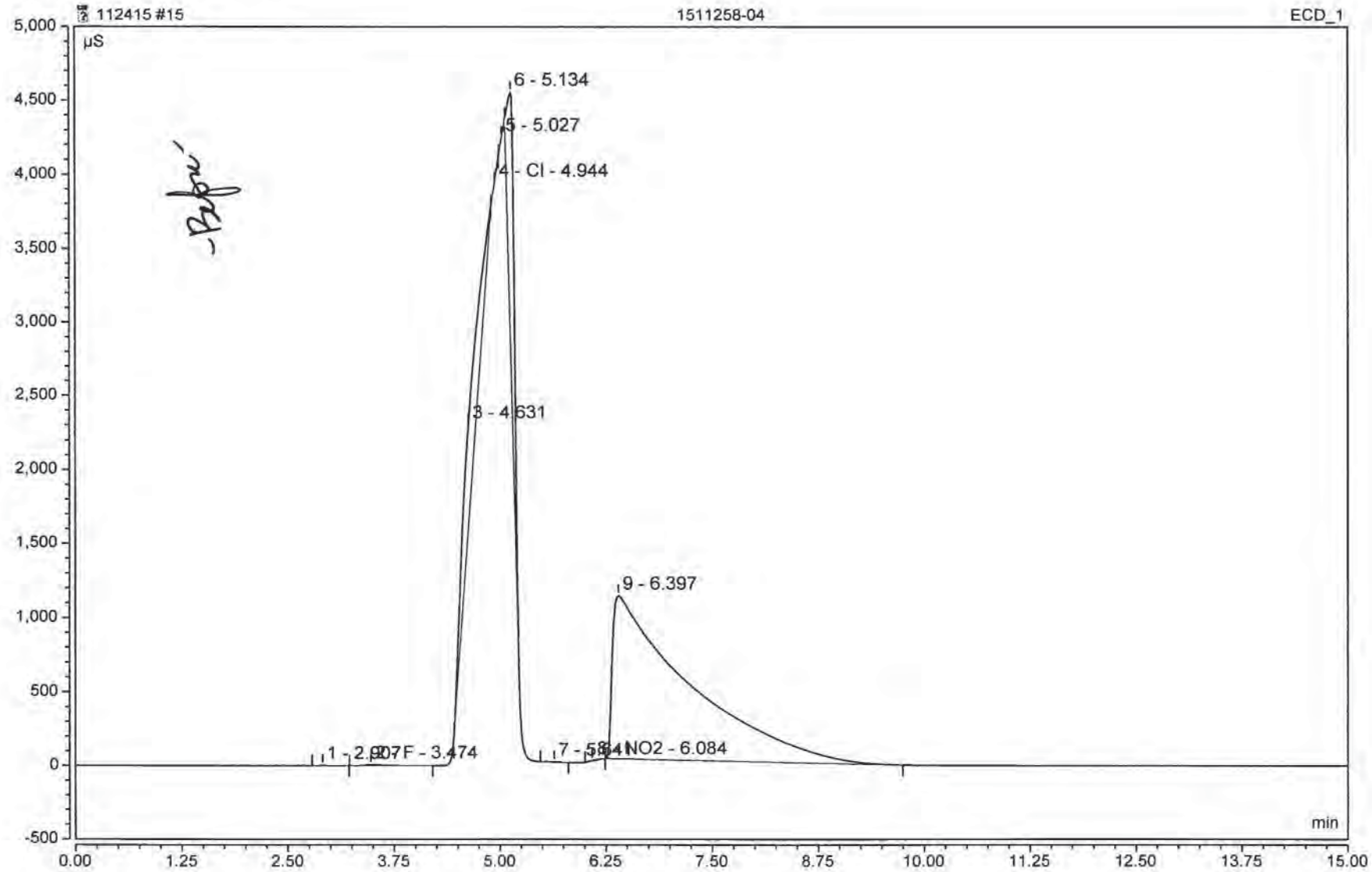
112415 #15
1511258-04
ECD_1
µS
6 - 5.134
5 - 5.027
4 - Cl - 4.944
3 - 4.631
9 - 6.397
1 - 2.907
F - 3.474
7 - 5.864
NO2 - 6.084
min
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
-500
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

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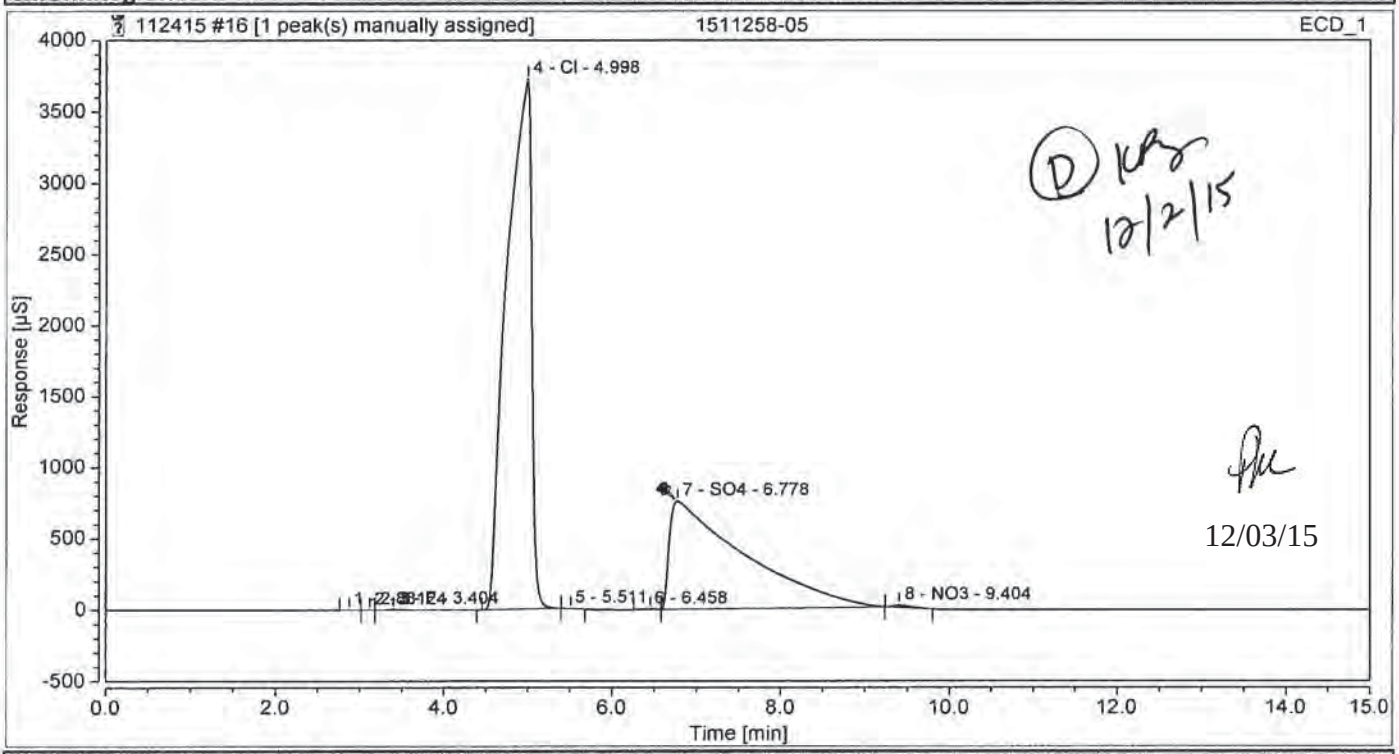
1511258

Chromatogram and Results

Injection Details

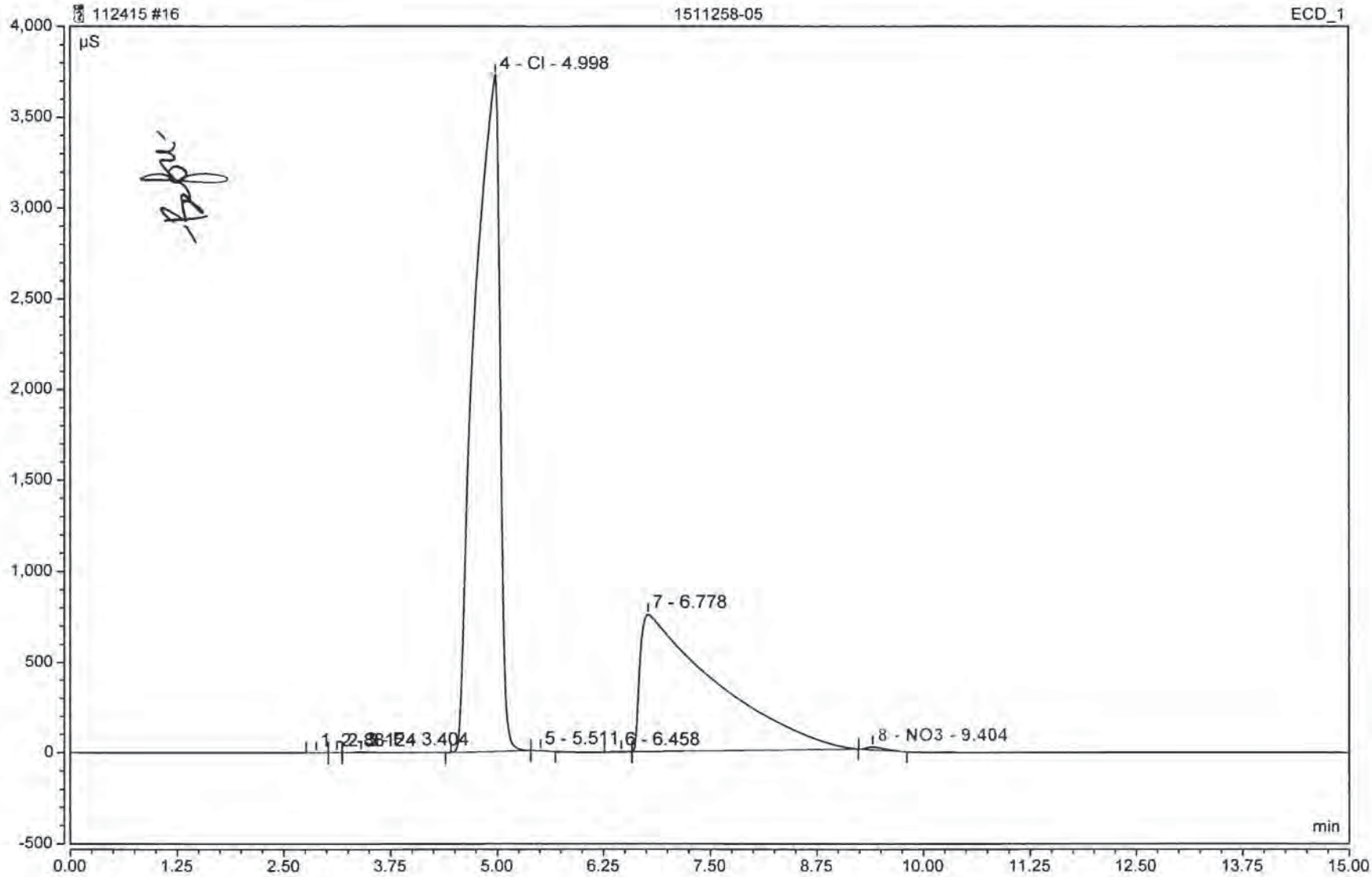
Injection Name:	**1511258-05**	*Run Time (min):*	**15.00**
Vial Number:	**16**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.881	0.0629508	0.511	0.00	0.01	n.a.
2		3.124	0.0346647	0.257	0.00	0.01	n.a.
3	F	3.404	1.0017904	4.107	0.05	0.09	2.0205
4	Cl	4.998	1271.3723997	3723.709	62.17	82.66	4177.5125
5		5.511	0.1288513	0.843	0.01	0.02	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		6.458	0.3578116	1.620	0.02	0.04	n.a.
7	SO4	6.778	768.1650153	757.653	37.56	16.82	3435.5039
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.404	3.9687016	15.974	0.19	0.35	5.1384
Total:			**2045.092**	**4504.674**	**100.00**	**100.00**	

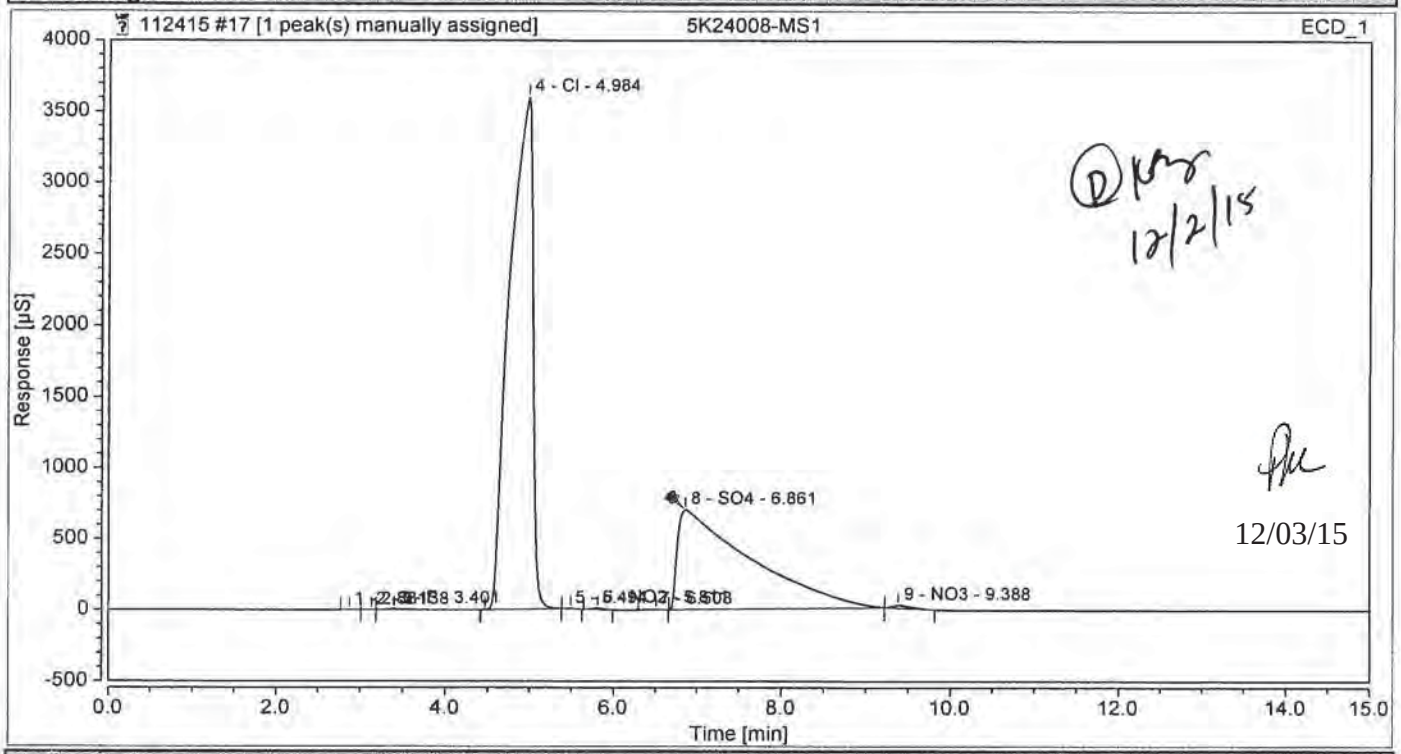

112415 #16
1511258-05
ECD_1
µS
4 - Cl - 4.998
7 - 6.778
5 - 5.511
6 - 6.458
8 - NO3 - 9.404
3.404
min
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
-500
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**5K24008-MS1**	*Run Time (min):*	**15.00**
Vial Number:	**17**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 15:17**	*Sample Weight:*	**1.0000**

Chromatogram

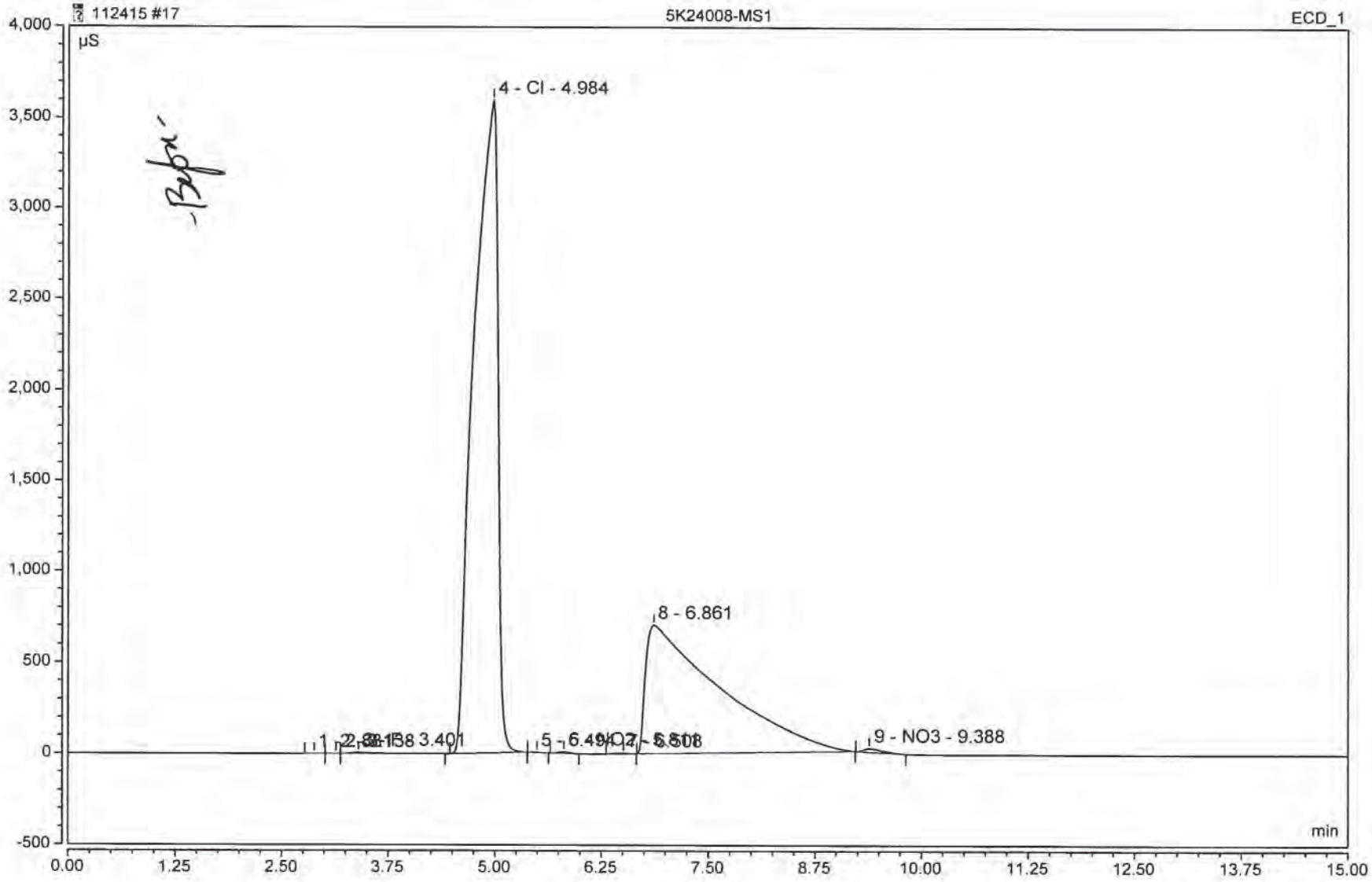


Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.881	0.0471112	0.416	0.00	0.01	n.a.
2		3.138	0.0562714	0.464	0.00	0.01	n.a.
3	F	3.401	1.7026785	6.915	0.09	0.16	3.4341
4	Cl	4.984	1153.9851674	3595.328	61.95	82.91	3791.7981
5		5.494	0.0961529	0.703	0.01	0.02	n.a.
6	NO2	5.811	1.1681143	8.573	0.06	0.20	2.0528
7		6.508	0.4073350	1.780	0.02	0.04	n.a.
8	SO4	6.861	700.2051110	702.443	37.59	16.20	3131.5633
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9	NO3	9.388	5.0431135	19.642	0.27	0.45	6.5295
Total:			**1862.711**	**4336.263**	**100.00**	**100.00**	

Sequence: 112415
Injection #17: 5K24008-MS1

Chromatogram



Chromeleon 7,
Version 7.2.0.3765, Thermo Fisher Scientific

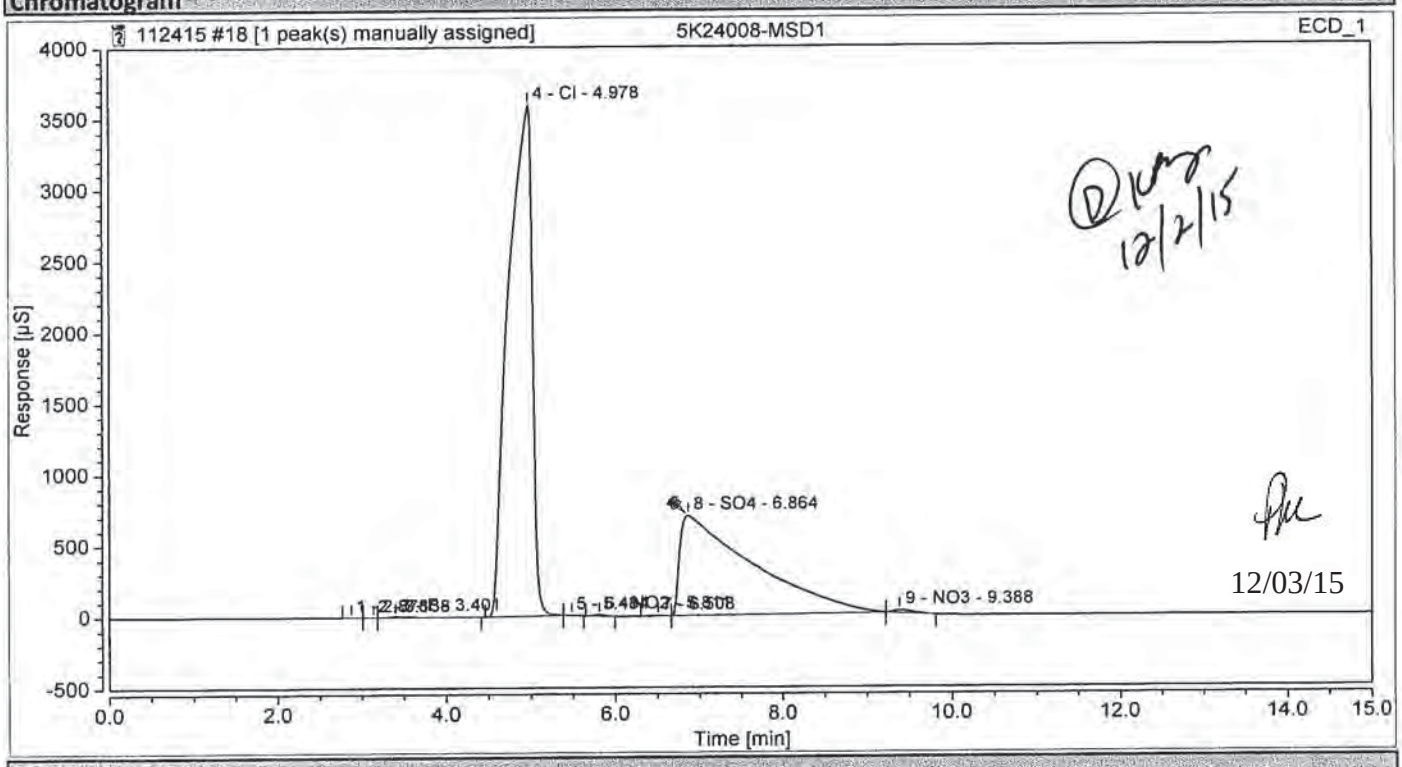
Printed by NSH-IONC2
25/11/15 08:02

Chromatogram and Results

Injection Details

Injection Name:	**5K24008-MSD1**	*Run Time (min):*	**15.00**
Vial Number:	**18**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 15:34**	*Sample Weight:*	**1.0000**

Chromatogram

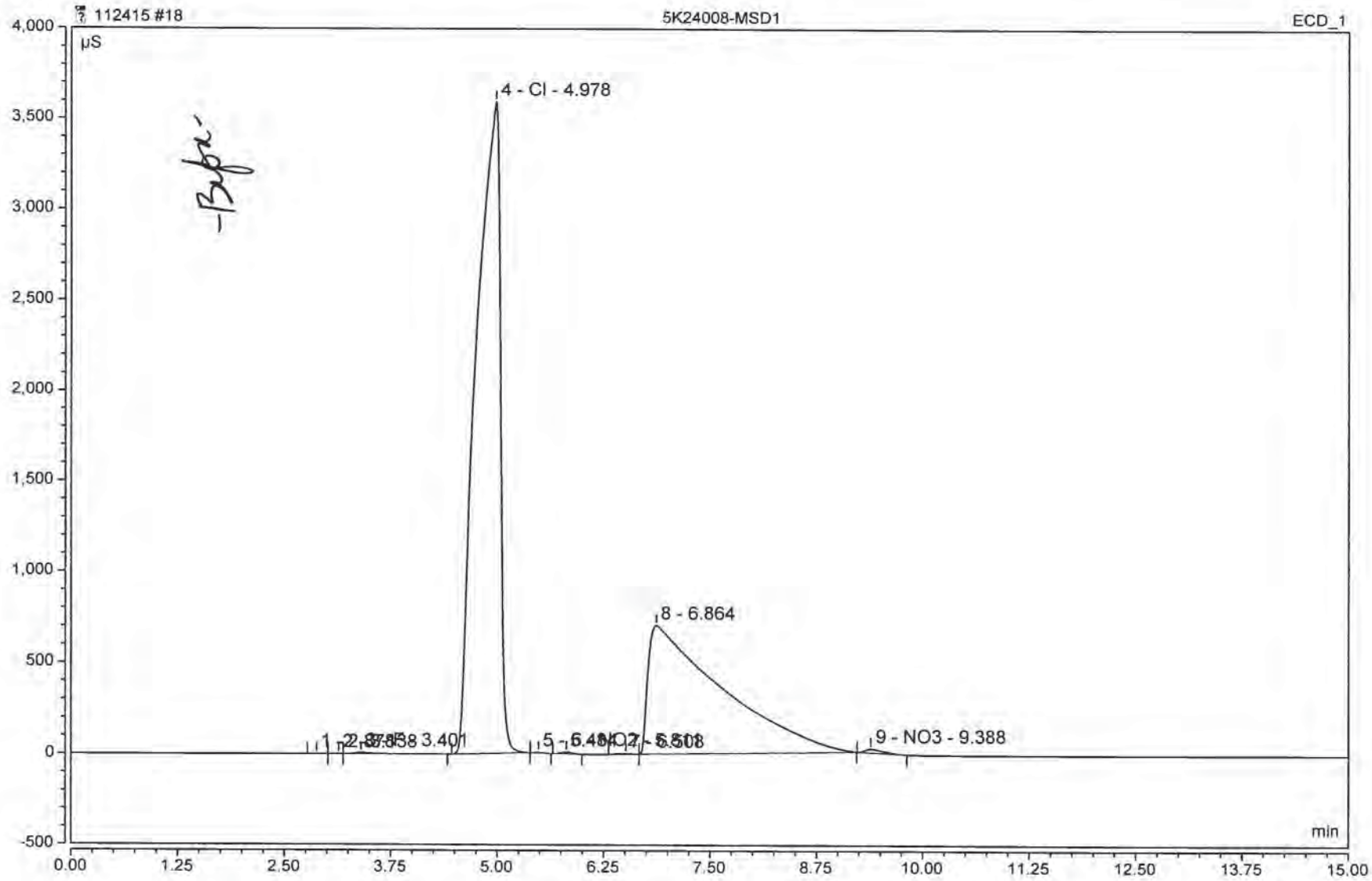


Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.878	0.0451805	0.400	0.00	0.01	n.a.
2		3.138	0.0515169	0.423	0.00	0.01	n.a.
3	F	3.401	1.6861814	6.944	0.09	0.16	3.4008
4	Cl	4.978	1153.3383726	3588.961	61.96	82.89	3789.6728
5		5.484	0.1139499	0.844	0.01	0.02	n.a.
6	NO2	5.811	1.1876840	8.666	0.06	0.20	2.0872
7		6.508	0.4144324	1.799	0.02	0.04	n.a.
8	SO4	6.864	699.6909383	701.950	37.59	16.21	3129.2637
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9	NO3	9.388	5.0052216	19.565	0.27	0.45	6.4805
Total:			**1861.533**	**4329.552**	**100.00**	**100.00**	

Sequence: 112415
Injection #18: 5K24008-MSD1

Chromatogram



-Bobi

Chromeleon 7,
Version 7.2.0.3765, Thermo Fisher Scientific

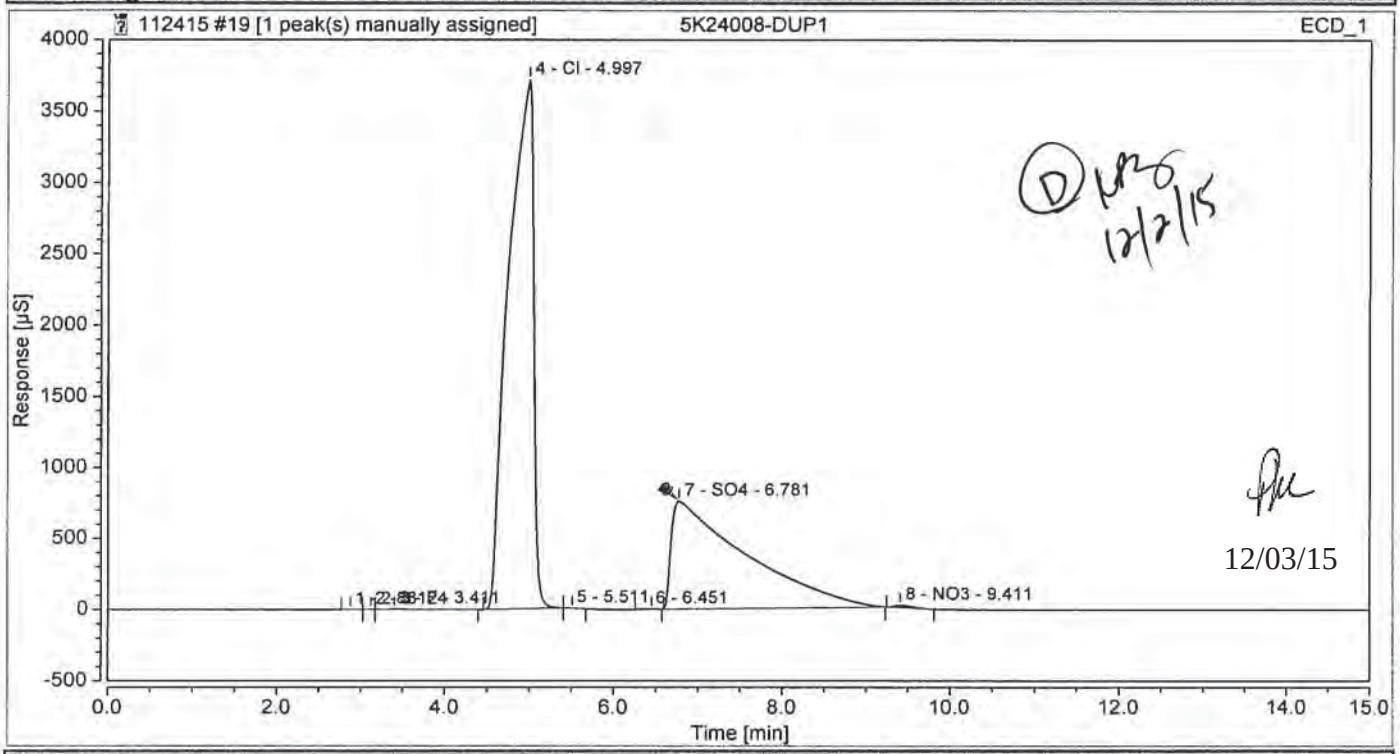
Printed by NSH-IONC2
25/11/15 08:02

Chromatogram and Results

Injection Details

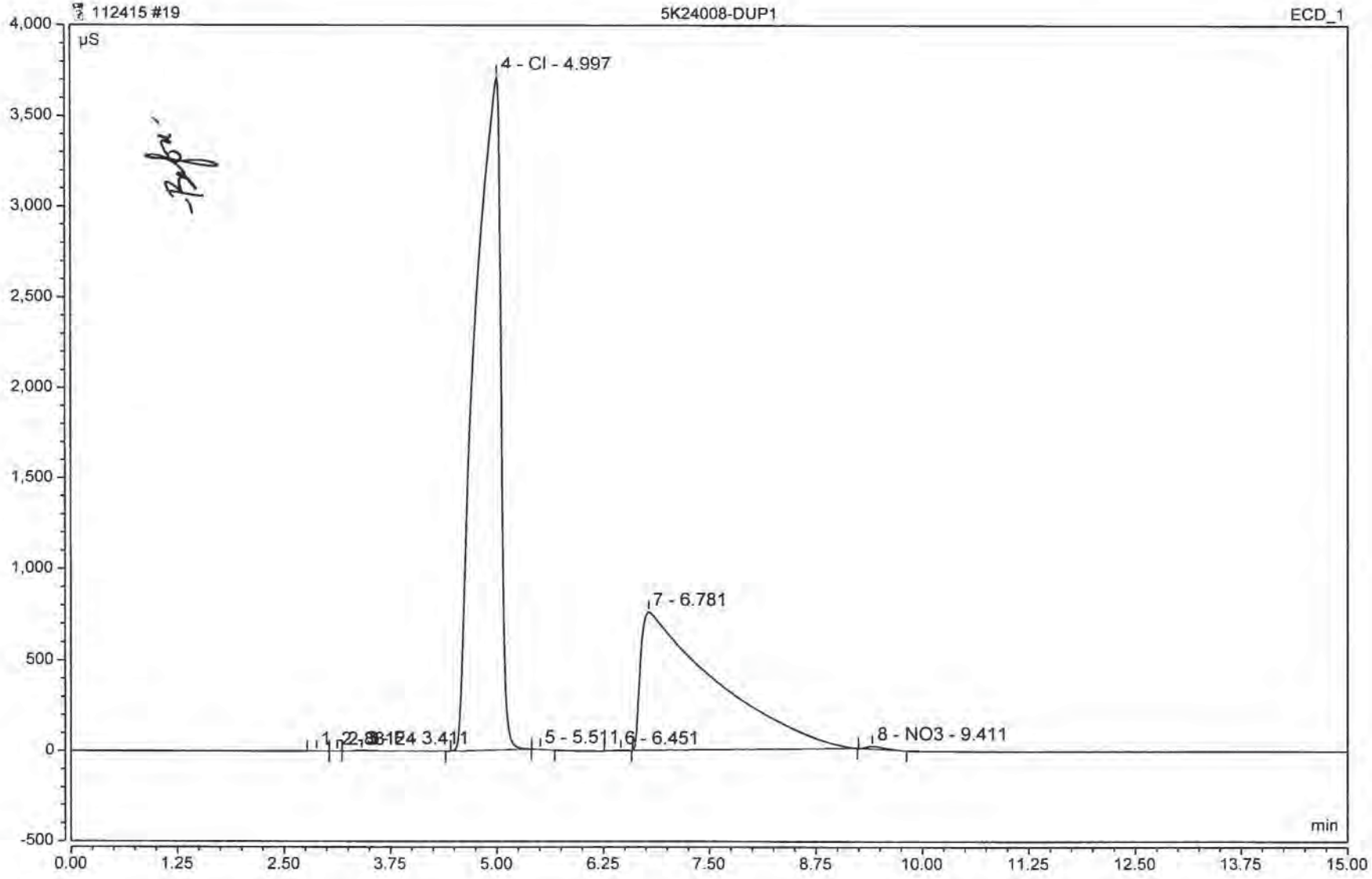
Injection Name:	**5K24008-DUP1**	*Run Time (min):*	**15.00**
Vial Number:	**19**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 15:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.881	0.0538875	0.452	0.00	0.01	n.a.
2		3.124	0.0229991	0.183	0.00	0.00	n.a.
3	F	3.411	0.9759394	4.160	0.05	0.09	1.9684
4	Cl	4.997	1272.4316343	3714.767	62.14	82.61	4180.9929
5		5.511	0.1025326	0.688	0.01	0.02	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		6.451	0.3630656	1.677	0.02	0.04	n.a.
7	SO4	6.781	769.8887367	758.968	37.60	16.88	3443.2130
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.411	3.9680716	15.895	0.19	0.35	5.1376
Total:			**2047.807**	**4496.789**	**100.00**	**100.00**	


112415 #19
5K24008-DUP1
ECD_1
µS
4 - Cl - 4.997
7 - 6.781
5 - 5.511
6 - 6.451
8 - NO3 - 9.411
min
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
-500
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

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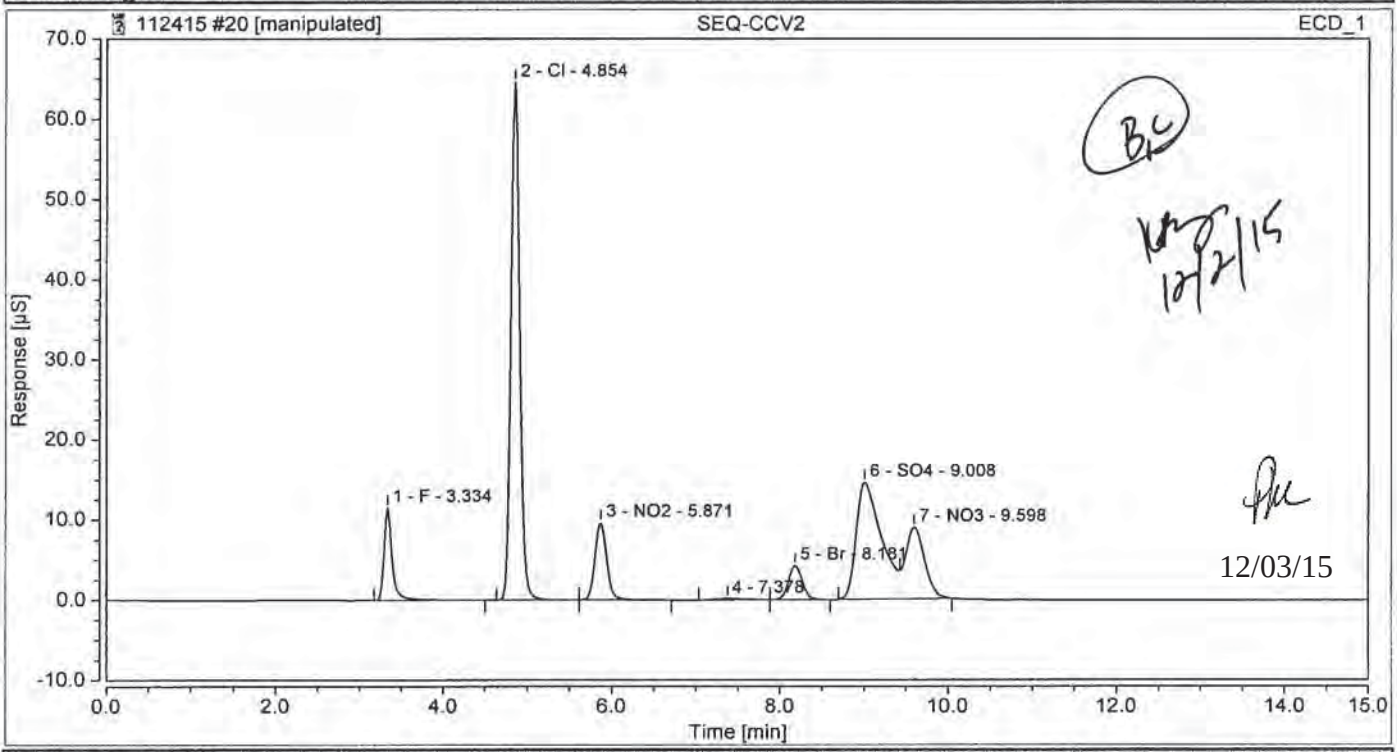
Chromatogram and Results

Injection Details

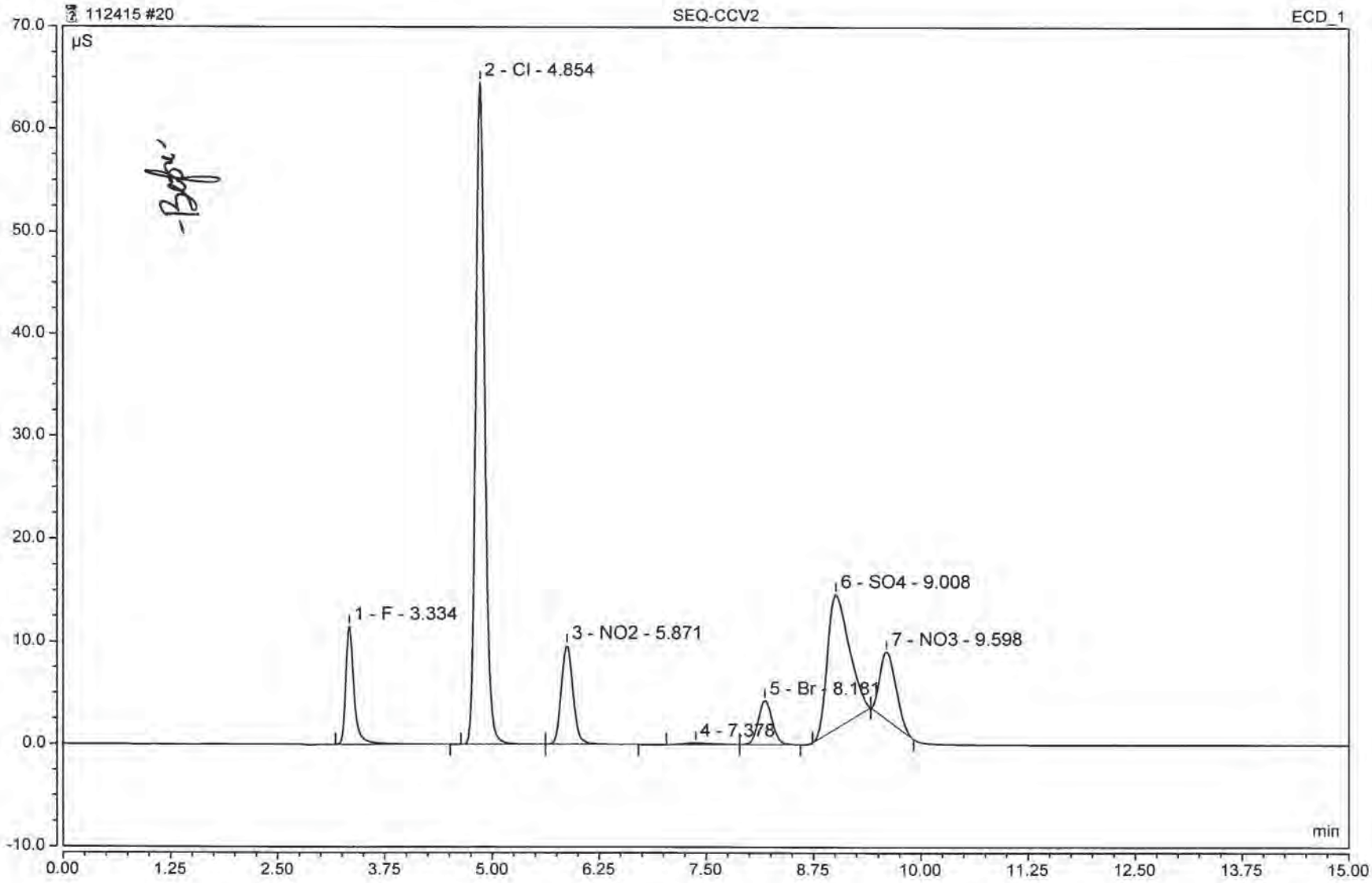
Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**20**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.334	1.2929585	11.531	6.80	10.13	2.6077
2	Cl	4.854	7.8091157	64.592	41.08	56.76	25.6594
3	NO2	5.871	1.5302191	9.658	8.05	8.49	2.6892
4		7.378	0.0588162	0.167	0.31	0.15	n.a.
5	Br	8.181	0.8118993	4.266	4.27	3.75	6.2943
6	SO4	9.008	5.1280134	14.611	26.98	12.84	22.9343
7	NO3	9.598	2.3790218	8.964	12.51	7.88	3.0802
Total:			**19.010**	**113.789**	**100.00**	**100.00**	


112415 #20
SEQ-CCV2
ECD_1
µS
2 - Cl - 4.854
1 - F - 3.334
3 - NO2 - 5.871
4 - 7.378
5 - Br - 8.181
6 - SO4 - 9.008
7 - NO3 - 9.598
min
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

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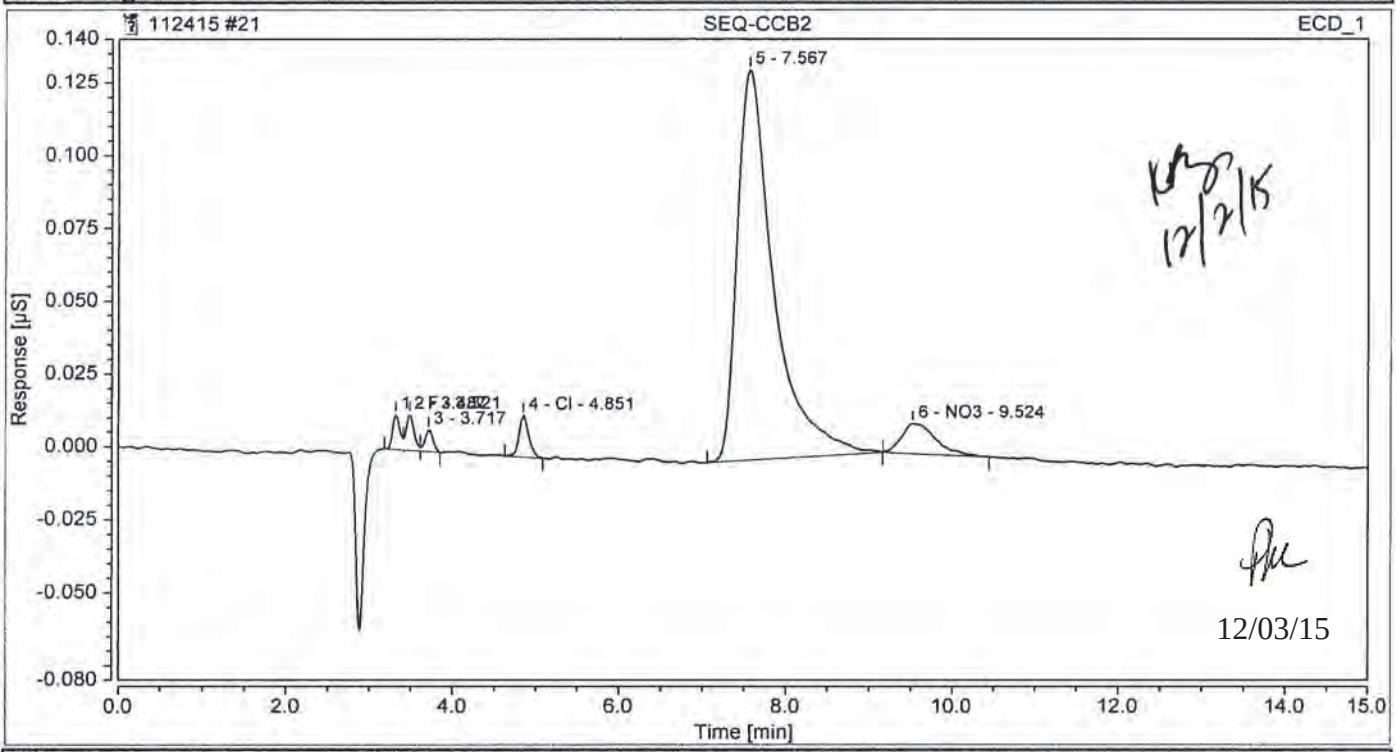
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**21**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 16:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0011899	0.012	1.53	6.33	0.0024
2		3.487	0.0013890	0.012	1.78	6.52	n.a.
3		3.717	0.0008291	0.008	1.06	3.96	n.a.
4	Cl	4.851	0.0019656	0.014	2.52	7.53	0.0065
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.567	0.0676114	0.134	86.73	70.23	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NO3	9.524	0.0049676	0.010	6.37	5.43	0.0064
Total:			**0.078**	**0.191**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**120815**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Dec2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Dec/15 07:29:39**
No. of Injections:	**47**	*Updated By:*	**NSH-IONC2**

Injection Details

No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		08/Dec/15 08:34:46	Finished
2	TESTV	2	Unknown		08/Dec/15 08:52:31	Finished
3	BLANK	3	Unknown		08/Dec/15 09:10:22	Finished
4	PRIMER	4	Unknown		08/Dec/15 09:35:56	Finished
5	PRIMER	5	Unknown		08/Dec/15 09:54:06	Finished
6	BLANK	6	Unknown		08/Dec/15 10:11:58	Finished
7	TESTV	7	Unknown		08/Dec/15 10:29:48	Finished
8	BLANK	8	Unknown		08/Dec/15 10:47:38	Finished
9	BLANK	9	Unknown		08/Dec/15 12:15:35	Finished
10	TESTV	10	Unknown		08/Dec/15 12:33:52	Finished
11	BLANK	11	Unknown		08/Dec/15 13:25:02	Finished
12	SEQ-CCV1	12	Unknown		08/Dec/15 13:42:53	Finished
13	SEQ-CCB1	13	Unknown		08/Dec/15 14:03:28	Finished
14	SEQ-CRL1	14	Unknown		08/Dec/15 14:21:19	Finished
15	SEQ-CRL2	15	Unknown		08/Dec/15 14:39:09	Finished
16	SEQ-CRL3	16	Unknown		08/Dec/15 14:56:59	Finished
17	5L08019-BLK1	17	Unknown		08/Dec/15 15:14:49	Finished
18	5L08019-BS1	18	Unknown		08/Dec/15 15:32:40	Finished
19	1512072-01	19	Unknown		08/Dec/15 15:50:30	Finished
20	1512072-02	20	Unknown		08/Dec/15 16:08:20	Finished
21	1511204-01RE1@10	21	Unknown		08/Dec/15 16:26:11	Finished
22	1511204-02RE1@10	22	Unknown		08/Dec/15 16:44:28	Finished
23	1511204-03RE1@20	23	Unknown		08/Dec/15 17:01:49	Finished
24	1511204-04RE1@50	24	Unknown		08/Dec/15 17:19:39	Finished
25	1511204-05RE1@20	25	Unknown		08/Dec/15 17:37:30	Finished
26	1511204-06RE1@20	26	Unknown		08/Dec/15 17:55:20	Finished
27	5L08019-MS1@20X	27	Unknown		08/Dec/15 18:13:09	Finished
28	5L08019-MSD1@20X	28	Unknown		08/Dec/15 18:30:59	Finished
29	5L08019-DUP1@20X	29	Unknown		08/Dec/15 18:48:49	Finished
30	1511258-02RE1@5X	30	Unknown		08/Dec/15 19:06:40	Finished
31	1511258-03RE1@5X	31	Unknown		08/Dec/15 19:24:30	Finished
32	SEQ-CCV2	32	Unknown		08/Dec/15 19:42:21	Finished
33	SEQ-CCB2	33	Unknown		08/Dec/15 20:00:10	Finished
34	1511258-04RE1@50	34	Unknown		08/Dec/15 20:18:01	Finished
35	1511258-05RE1@50	35	Unknown		08/Dec/15 20:35:50	Finished
36	1512078-01	36	Unknown		08/Dec/15 20:53:40	Finished
37	1512078-02	37	Unknown		08/Dec/15 21:11:31	Finished
38	1512078-04	38	Unknown		08/Dec/15 21:29:21	Finished
39	1512078-05	39	Unknown		08/Dec/15 21:47:12	Finished
40	1512078-06	40	Unknown		08/Dec/15 22:05:02	Finished
41	5L08019-MS2	41	Unknown		08/Dec/15 22:22:52	Finished
42	5L08019-MSD2	42	Unknown		08/Dec/15 22:40:43	Finished

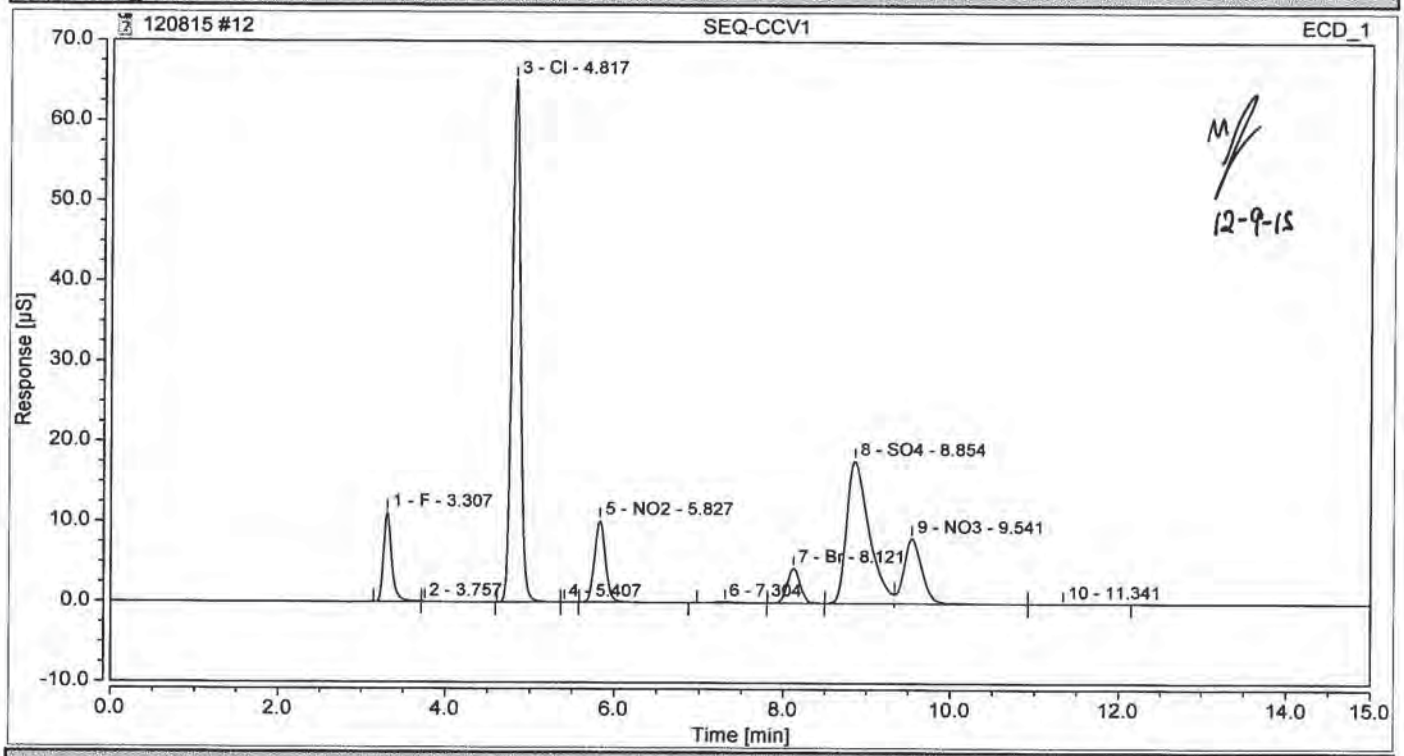
43	5L08019-DUP2	43	Unknown		08/Dec/15 22:58:33	Finished
44	1512078-07	44	Unknown		08/Dec/15 23:16:23	Finished
45	SEQ-CCV3	45	Unknown		08/Dec/15 23:34:14	Finished
46	SEQ-CCB3	46	Unknown		08/Dec/15 23:52:04	Finished
47	BLANK	47	Unknown		09/Dec/15 00:09:55	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.307	1.2519179	11.175	6.62	9.53	2.5250
2		3.757	0.0200440	0.071	0.11	0.06	n.a.
3	Cl	4.817	7.6246548	65.255	40.34	55.67	25.0533
4		5.407	0.0003079	0.002	0.00	0.00	n.a.
5	NO2	5.827	1.5513428	10.249	8.21	8.74	2.7263
6		7.304	0.0383193	0.123	0.20	0.10	n.a.
7	Br	8.121	0.8045584	4.387	4.26	3.74	6.2374
8	SO4	8.854	5.5764204	17.794	29.51	15.18	24.9397
9	NO3	9.541	2.0261075	8.142	10.72	6.95	2.6233
10		11.341	0.0054898	0.012	0.03	0.01	n.a.
Total:			**18.899**	**117.210**	**100.00**	**100.00**	

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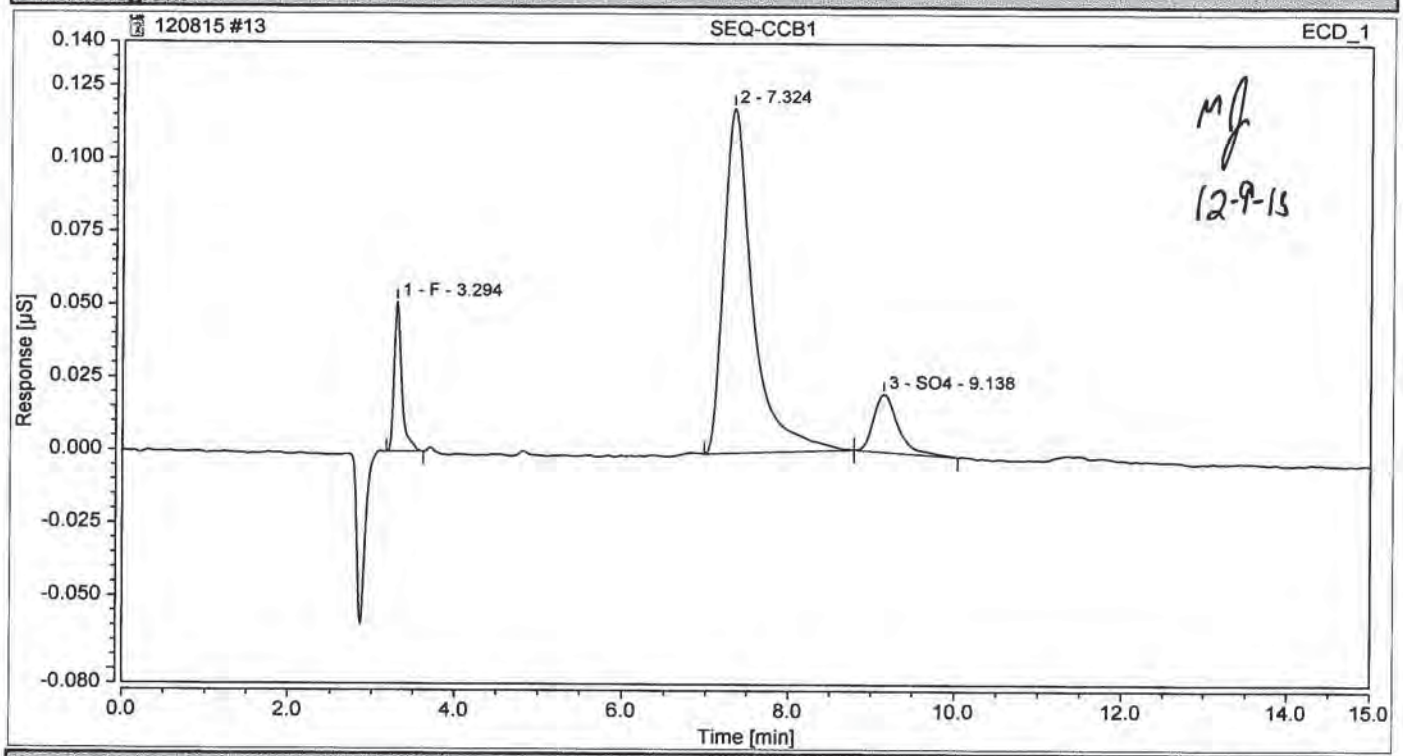
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**13**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.294	0.0053625	0.051	8.86	27.11	0.0108
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		7.324	0.0482683	0.118	79.79	62.37	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SO4	9.138	0.0068665	0.020	11.35	10.52	0.0307
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.060**	**0.190**	**100.00**	**100.00**	

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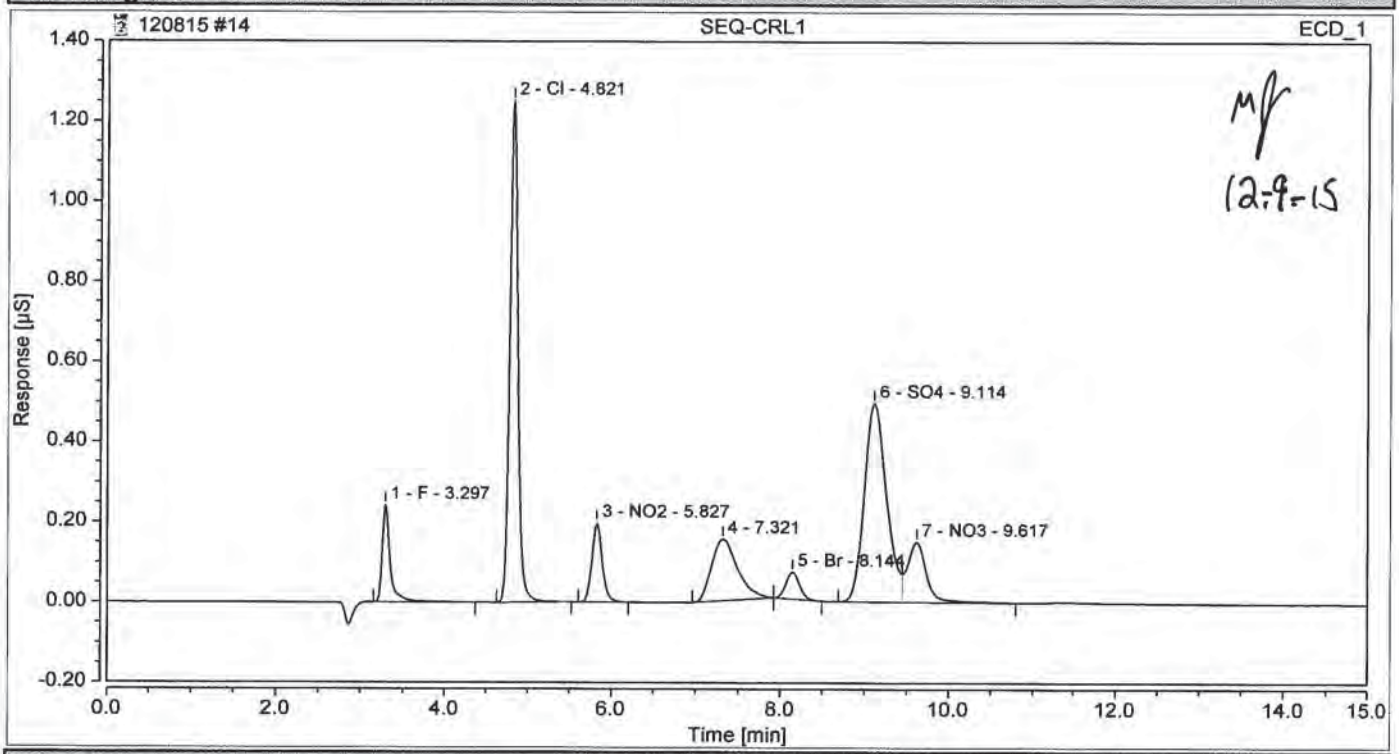
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL1**	*Run Time (min):*	**15.00**
Vial Number:	**14**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 14:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.297	0.0261970	0.242	5.74	9.45	0.0528
2	Cl	4.821	0.1431925	1.253	31.38	48.92	0.4705
3	NO2	5.827	0.0279861	0.198	6.13	7.73	0.0492
4		7.321	0.0546710	0.154	11.98	6.02	n.a.
5	Br	8.144	0.0126878	0.068	2.78	2.65	0.0984
6	SO4	9.114	0.1516493	0.496	33.23	19.35	0.6782
7	NO3	9.617	0.0399933	0.151	8.76	5.88	0.0518
Total:			**0.456**	**2.561**	**100.00**	**100.00**	

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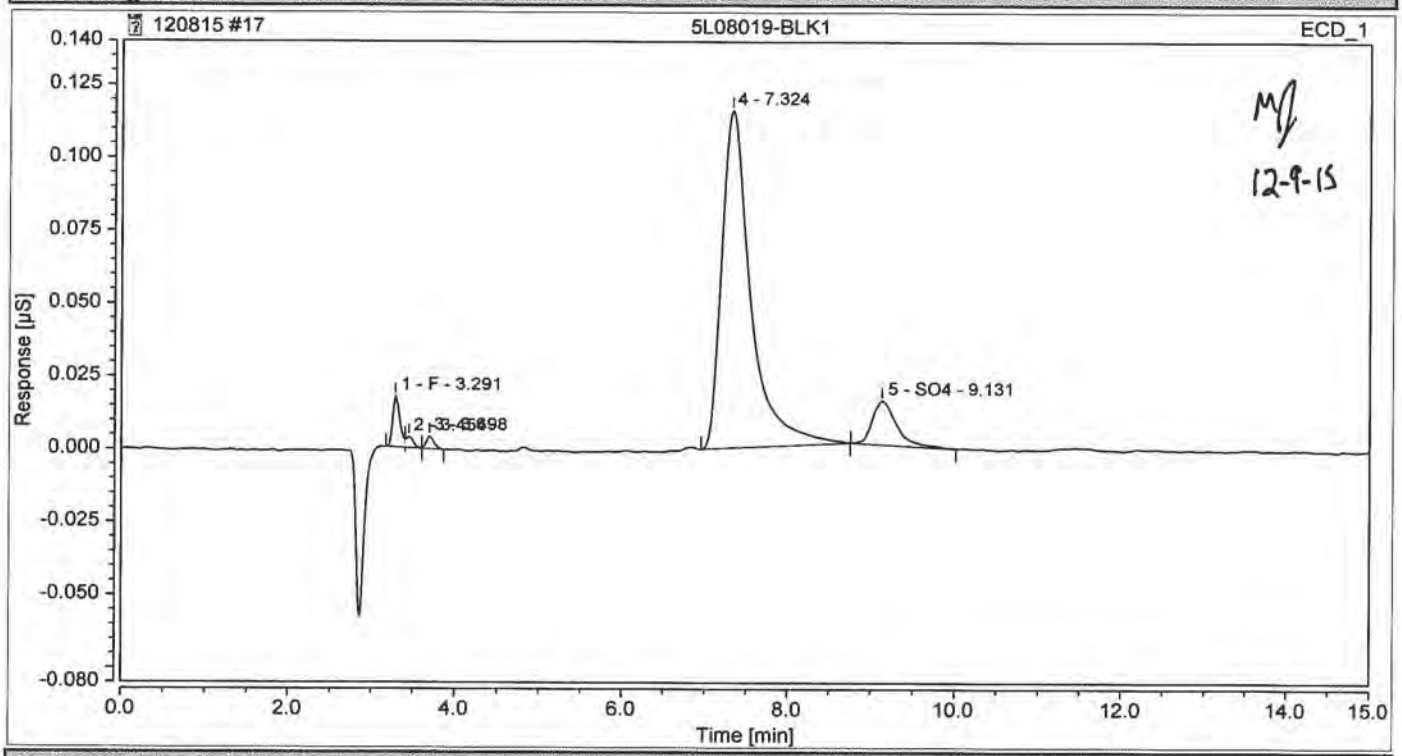
Chromatogram and Results

Injection Details

Injection Name:	**5L08019-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**17**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.291	0.0017184	0.018	3.15	11.22	0.0035
2		3.454	0.0003973	0.004	0.73	2.44	n.a.
3		3.698	0.0004538	0.004	0.83	2.81	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.324	0.0469829	0.116	86.02	73.88	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.131	0.0050633	0.015	9.27	9.65	0.0226
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.055**	**0.157**	**100.00**	**100.00**	

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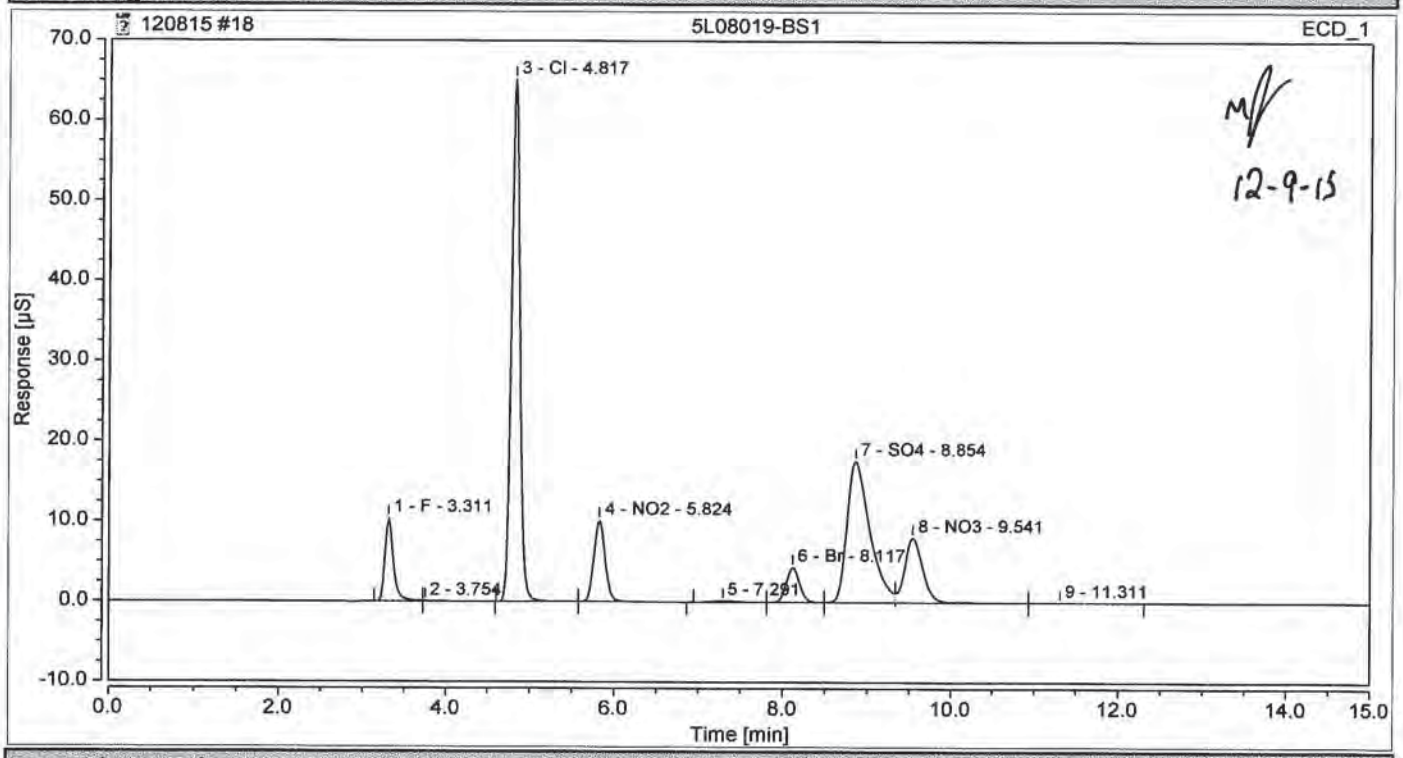
Chromatogram and Results

Injection Details

Injection Name:	**5L08019-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**18**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	1.2400979	10.432	6.56	8.98	2.5011
2		3.754	0.0217576	0.082	0.12	0.07	n.a.
3	Cl	4.817	7.6408068	65.149	40.41	56.09	25.1064
4	NO2	5.824	1.5480085	10.163	8.19	8.75	2.7204
5		7.291	0.0501941	0.159	0.27	0.14	n.a.
6	Br	8.117	0.8047162	4.380	4.26	3.77	6.2387
7	SO4	8.854	5.5690247	17.656	29.45	15.20	24.9066
8	NO3	9.541	2.0301518	8.112	10.74	6.98	2.6285
9		11.311	0.0046367	0.010	0.02	0.01	n.a.
Total:			**18.909**	**116.142**	**100.00**	**100.00**	

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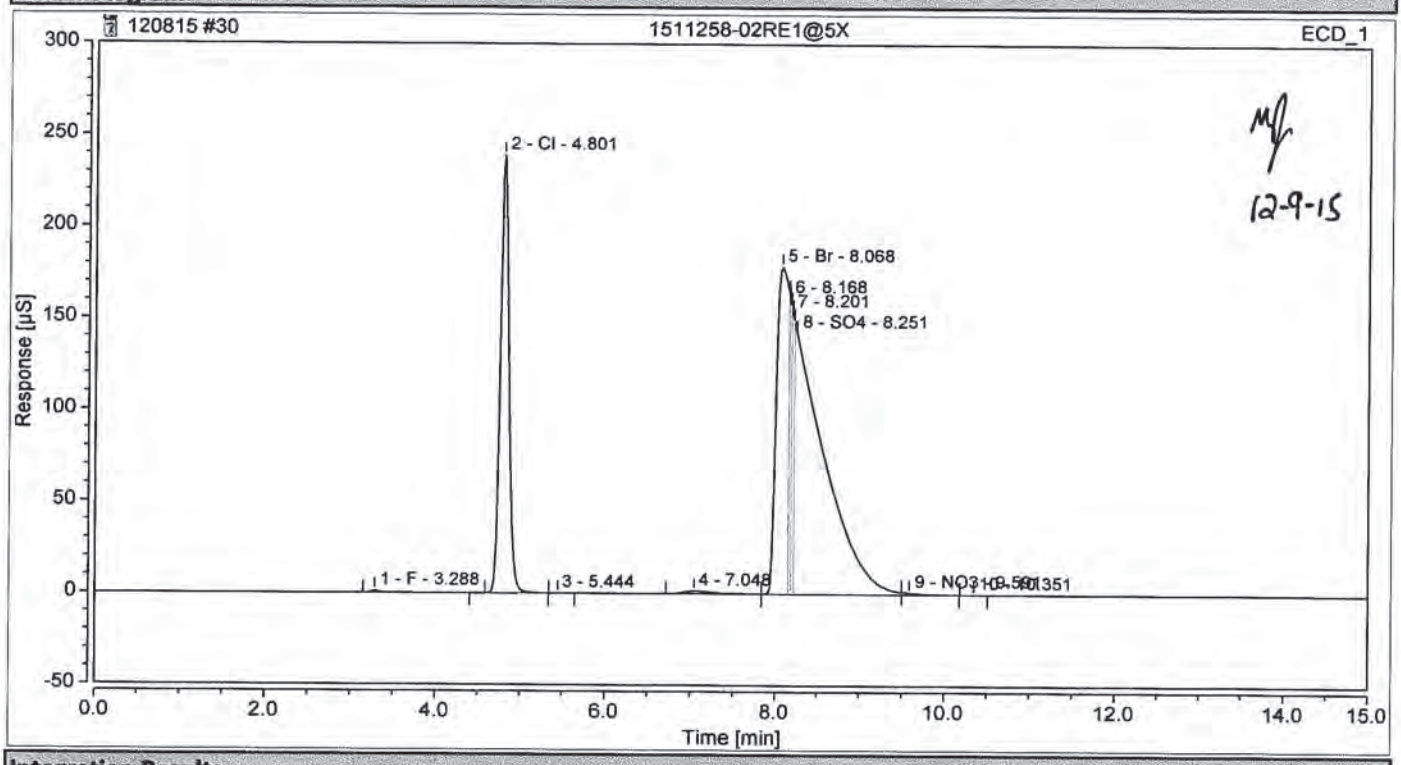
Chromatogram and Results

Injection Details

Injection Name:	**1511258-02RE1@5X**	*Run Time (min):*	**15.00**
Vial Number:	**30**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.288	0.1180302	1.076	0.09	0.12	0.2381
2	Cl	4.801	28.4174869	238.992	21.98	27.18	93.3750
3		5.444	0.0008034	0.005	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.048	0.5725255	1.537	0.44	0.17	n.a.
5	Br	8.068	28.8221953	178.647	22.29	20.32	223.4476
6		8.168	4.8332235	161.493	3.74	18.37	n.a.
7		8.201	5.6305638	153.953	4.35	17.51	n.a.
8	SO4	8.251	60.6730029	142.537	46.93	16.21	271.3510
9	NO3	9.591	0.2264684	0.944	0.18	0.11	0.2932
10		10.351	0.0011125	0.006	0.00	0.00	n.a.
Total:			**129.295**	**879.189**	**100.00**	**100.00**	

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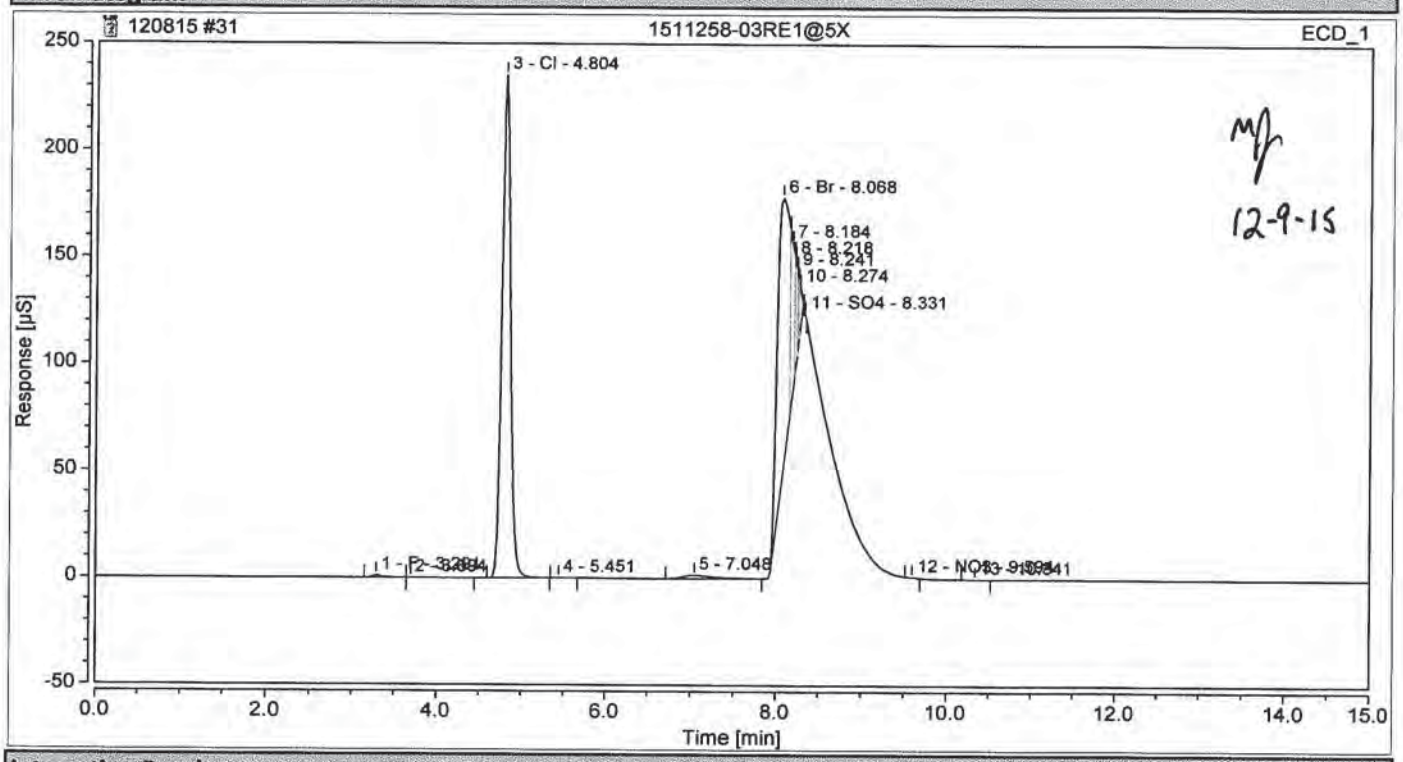
Chromatogram and Results

Injection Details

Injection Name:	**1511258-03RE1@5X**	*Run Time (min):*	**15.00**
Vial Number:	**31**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.291	0.1141461	1.077	0.21	0.20	0.2302
2		3.694	0.0031420	0.013	0.01	0.00	n.a.
3	Cl	4.804	27.9827743	235.368	50.57	42.86	91.9466
4		5.451	0.0012181	0.007	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.048	0.5710961	1.537	1.03	0.28	n.a.
6	Br	8.068	19.8948528	130.685	35.95	23.80	154.2373
7		8.184	3.8595728	70.510	6.97	12.84	n.a.
8		8.218	1.4663716	51.712	2.65	9.42	n.a.
9		8.241	0.7884785	38.508	1.42	7.01	n.a.
10		8.274	0.6545557	19.656	1.18	3.58	n.a.
11	SO4	8.331	0.0003311	0.019	0.00	0.00	0.0015
12	NO3	9.594	0.0024011	0.026	0.00	0.00	0.0031
13		10.341	0.0010776	0.006	0.00	0.00	n.a.
Total:			**55.340**	**549.123**	**100.00**	**100.00**	

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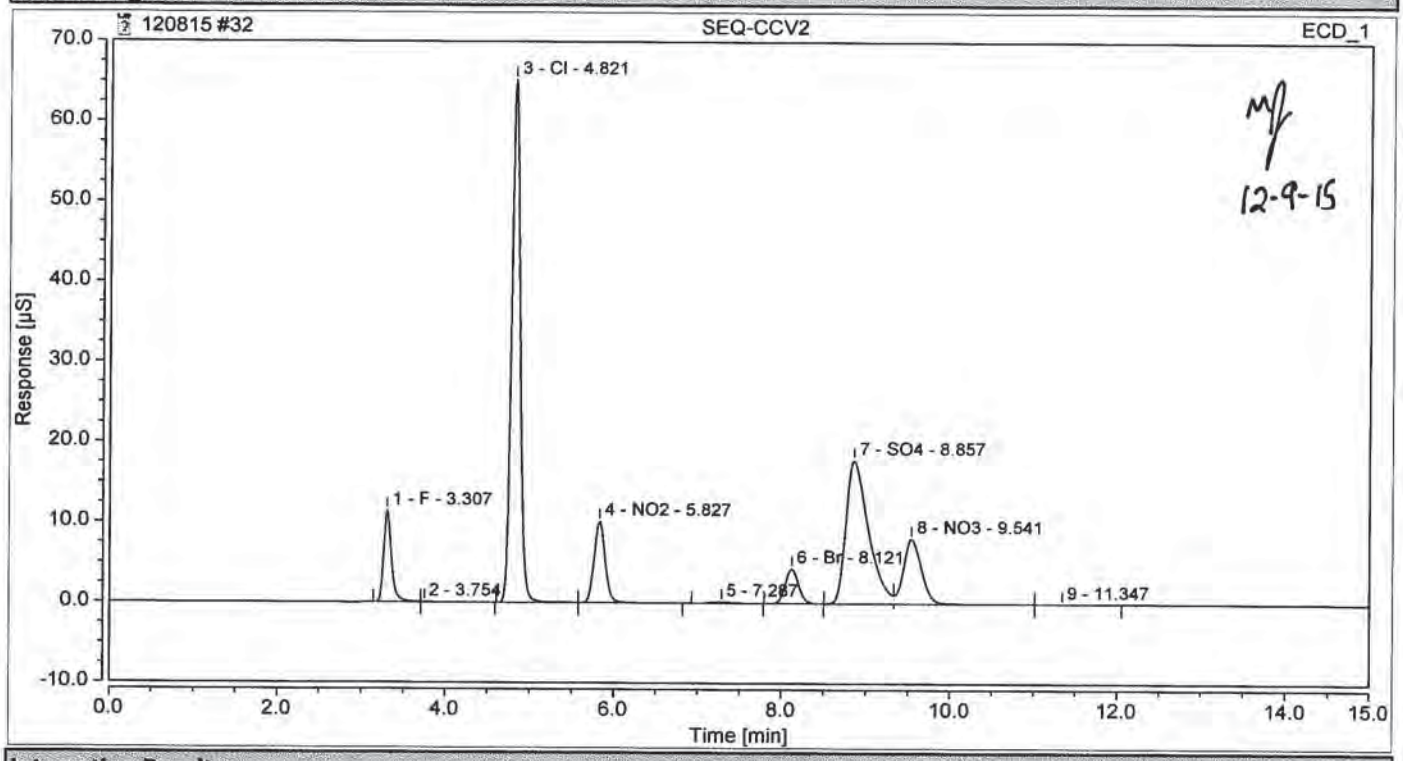
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.307	1.2413949	11.423	6.59	9.72	2.5037
2		3.754	0.0172317	0.063	0.09	0.05	n.a.
3	Cl	4.821	7.6411117	65.233	40.54	55.52	25.1074
4	NO2	5.827	1.5503895	10.198	8.23	8.68	2.7246
5		7.287	0.0500890	0.174	0.27	0.15	n.a.
6	Br	8.121	0.8029269	4.369	4.26	3.72	6.2248
7	SO4	8.857	5.5269149	17.902	29.33	15.24	24.7183
8	NO3	9.541	2.0146534	8.131	10.69	6.92	2.6085
9		11.347	0.0020430	0.004	0.01	0.00	n.a.
Total:			**18.847**	**117.497**	**100.00**	**100.00**	

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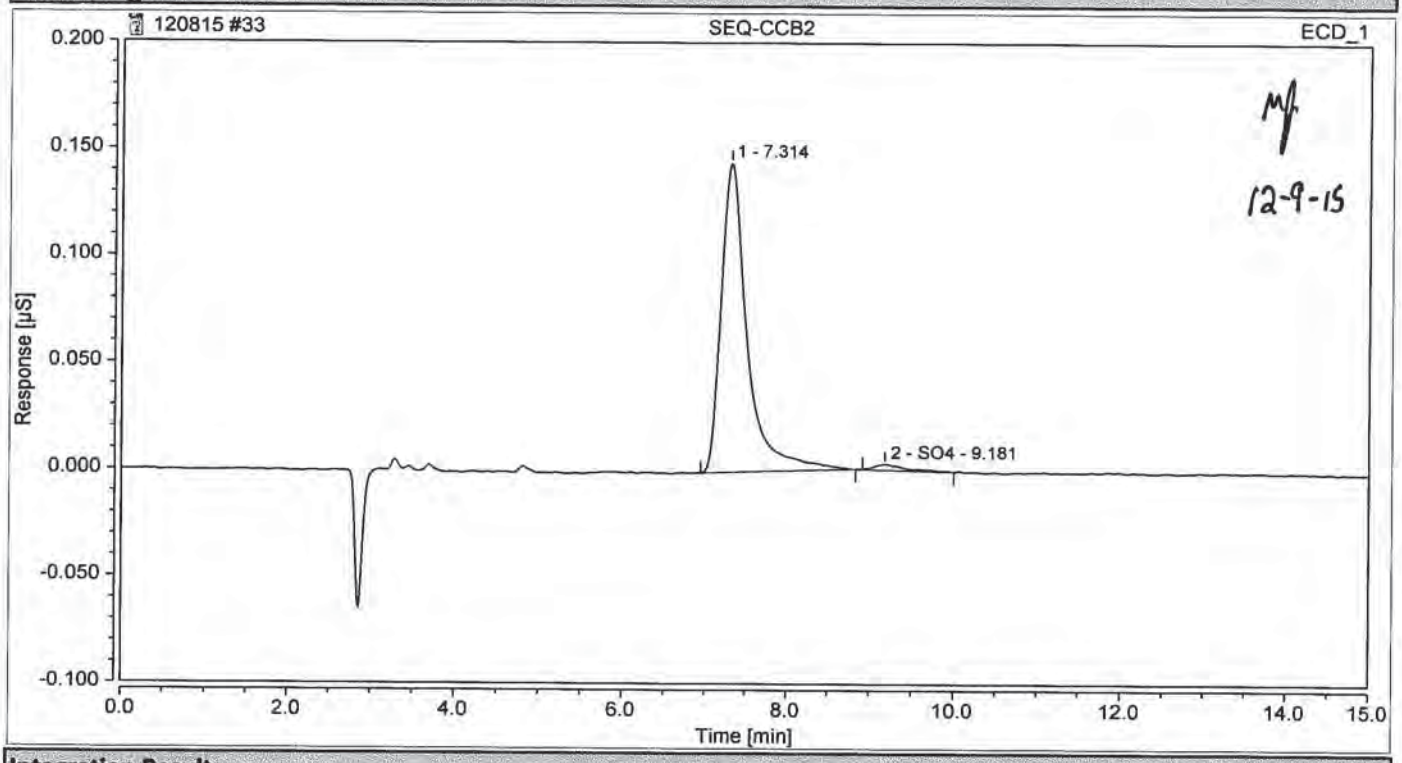
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**33**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 20:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	F	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.314	0.0538644	0.145	97.92	98.09	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	SO4	9.181	0.0011441	0.003	2.08	1.91	0.0051
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.055**	**0.147**	**100.00**	**100.00**	

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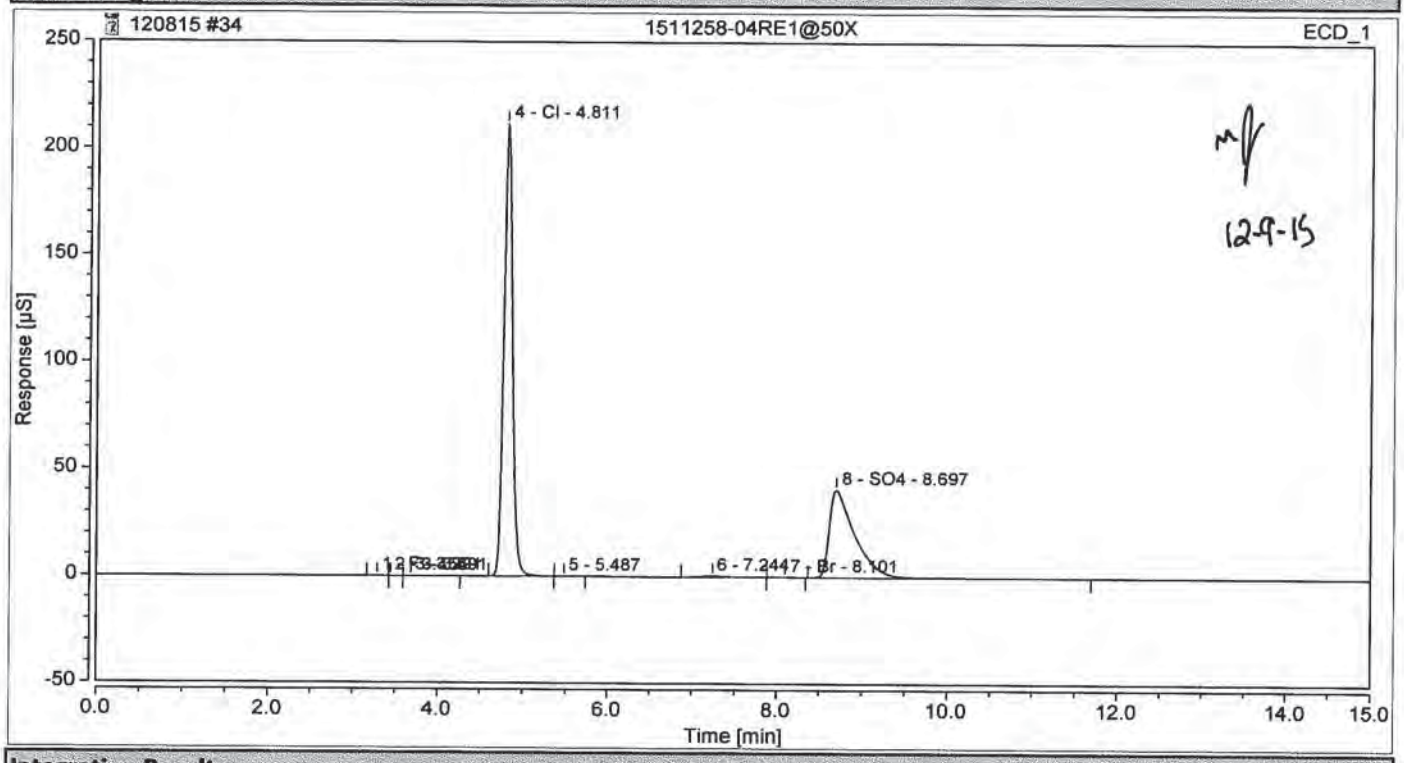
Chromatogram and Results

Injection Details

Injection Name:	**1511258-04RE1@50X**	*Run Time (min):*	**15.00**
Vial Number:	**34**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 20:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.291	0.0160877	0.163	0.04	0.06	0.0324
2		3.454	0.0015918	0.016	0.00	0.01	n.a.
3		3.691	0.0016982	0.010	0.00	0.00	n.a.
4	Cl	4.811	25.1695474	211.794	63.96	83.54	82.7028
5		5.487	0.0008258	0.005	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		7.244	0.1714753	0.517	0.44	0.20	n.a.
7	Br	8.101	0.0040754	0.020	0.01	0.01	0.0316
8	SO4	8.697	13.9885151	41.008	35.55	16.17	62.5616
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**39.354**	**253.533**	**100.00**	**100.00**	

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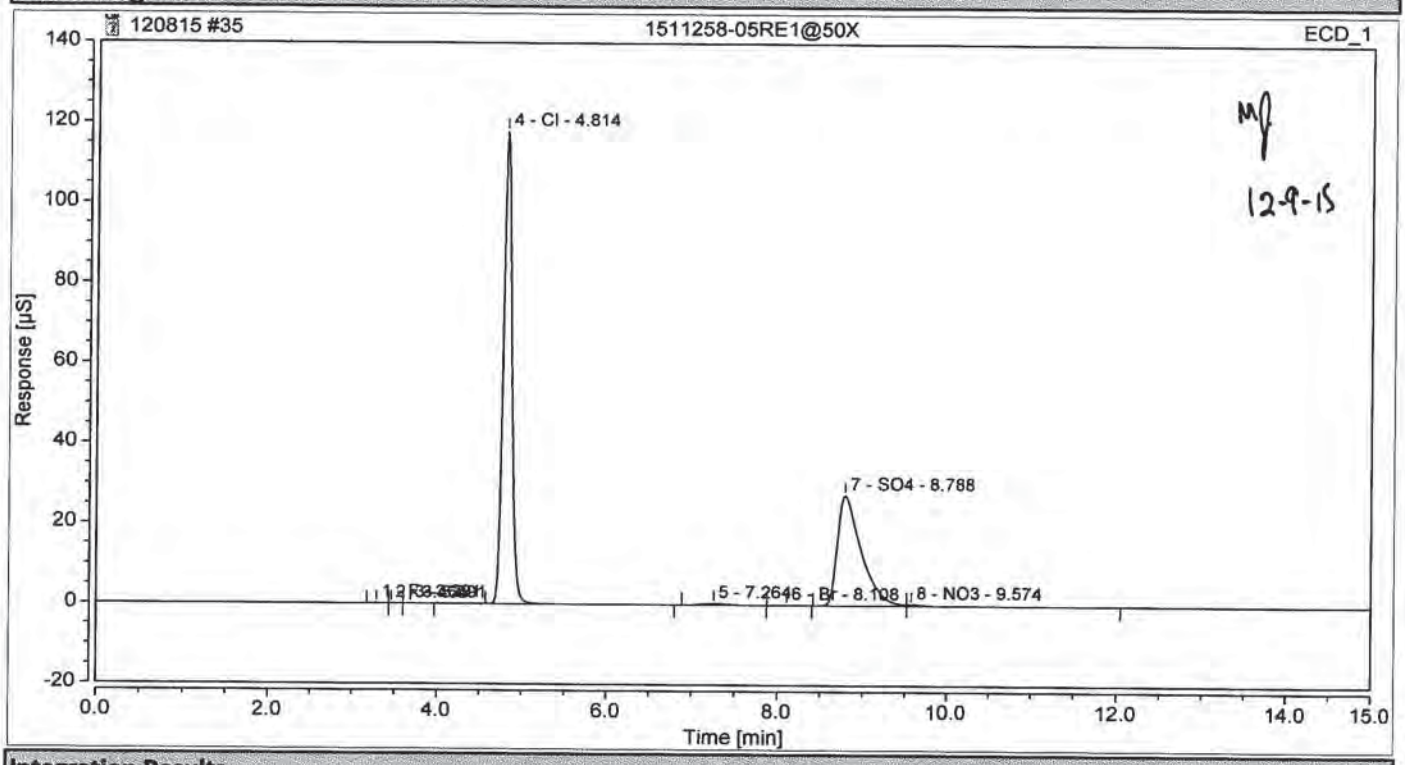
Chromatogram and Results

Injection Details

Injection Name:	**1511258-05RE1@50X**	*Run Time (min):*	**15.00**
Vial Number:	**35**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 20:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.291	0.0128425	0.131	0.06	0.09	0.0259
2		3.464	0.0009955	0.010	0.00	0.01	n.a.
3		3.691	0.0005621	0.005	0.00	0.00	n.a.
4	Cl	4.814	13.9498014	117.935	60.31	80.55	45.8367
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.264	0.1268578	0.390	0.55	0.27	n.a.
6	Br	8.108	0.0032613	0.015	0.01	0.01	0.0253
7	SO4	8.788	8.9412756	27.572	38.66	18.83	39.9885
8	NO3	9.574	0.0948147	0.362	0.41	0.25	0.1228
Total:			**23.130**	**146.419**	**100.00**	**100.00**	

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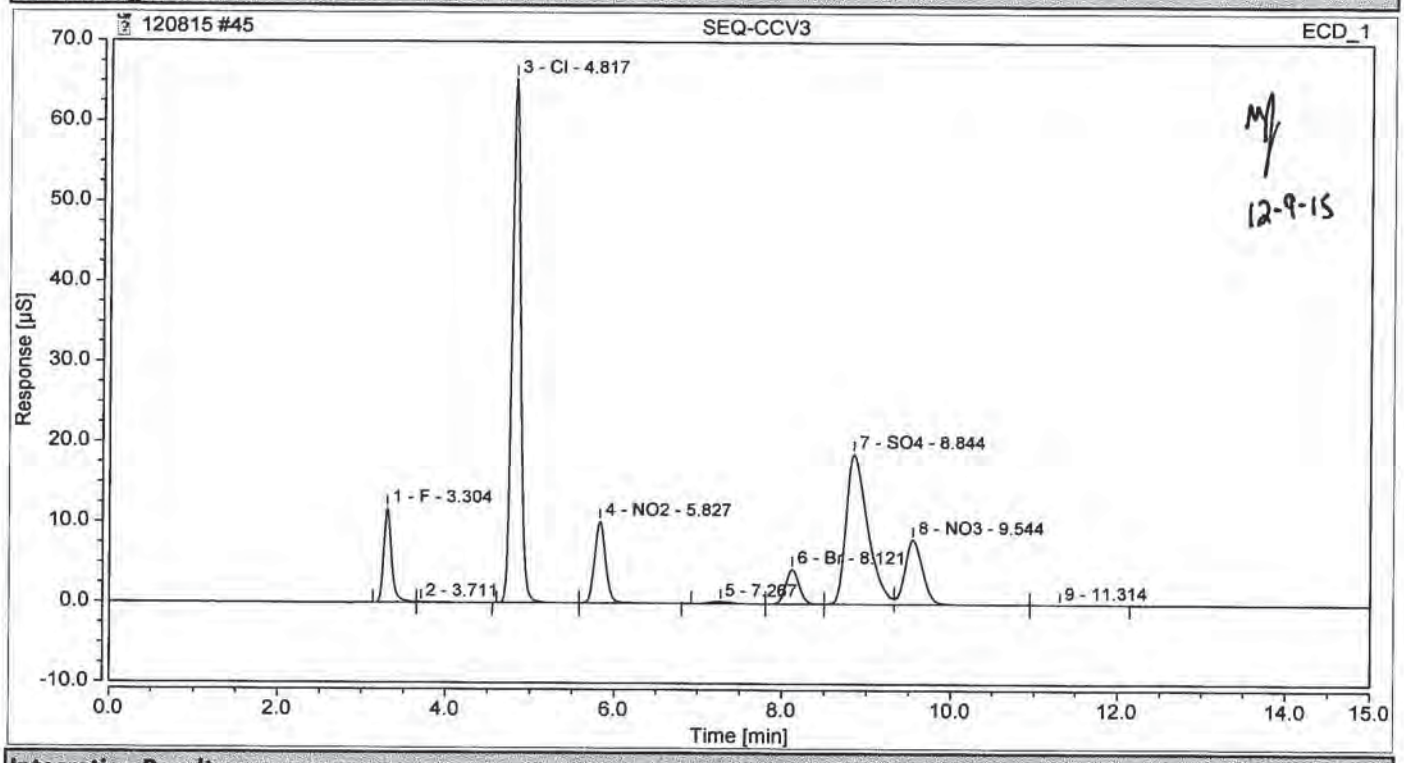
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV3**	*Run Time (min):*	**15.00**
Vial Number:	**45**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 23:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.304	1.2483510	11.742	6.61	9.87	2.5178
2		3.711	0.0203256	0.075	0.11	0.06	n.a.
3	Cl	4.817	7.6710631	65.403	40.60	54.99	25.2058
4	NO2	5.827	1.5541949	10.228	8.23	8.60	2.7313
5		7.267	0.0727572	0.241	0.39	0.20	n.a.
6	Br	8.121	0.7996794	4.363	4.23	3.67	6.1996
7	SO4	8.844	5.5610272	18.770	29.43	15.78	24.8709
8	NO3	9.544	1.9659294	8.113	10.40	6.82	2.5454
9		11.314	0.0025718	0.006	0.01	0.00	n.a.
Total:			**18.896**	**118.941**	**100.00**	**100.00**	

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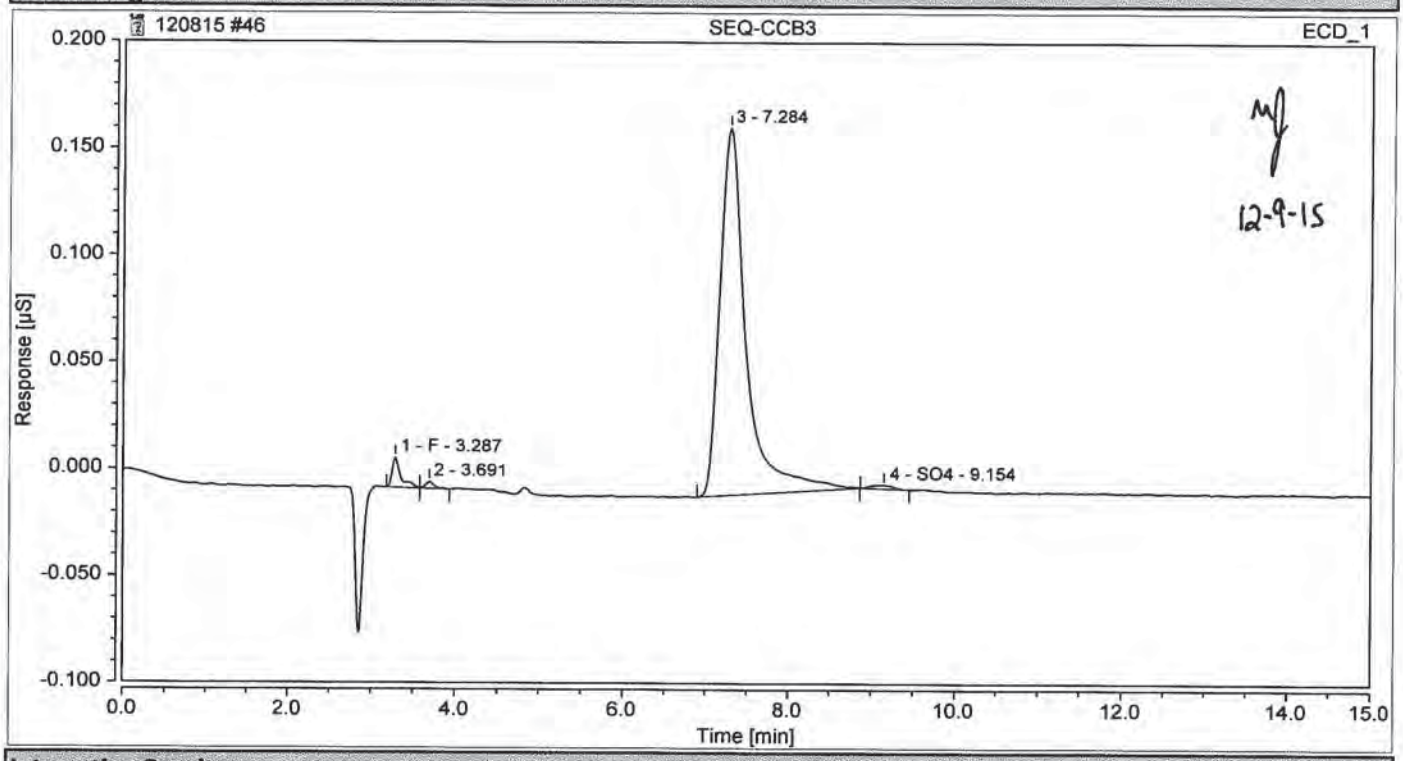
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB3**	*Run Time (min):*	**15.00**
Vial Number:	**46**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 23:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.287	0.0016474	0.014	2.50	7.35	0.0033
2		3.691	0.0004062	0.003	0.62	1.72	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3		7.284	0.0633096	0.172	96.04	90.01	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SO4	9.154	0.0005592	0.002	0.85	0.92	0.0025
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.066**	**0.191**	**100.00**	**100.00**	

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Sequence Overview

Sequence Details

Name:	**121015**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Dec2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/Dec/15 07:58:58**
No. of Injections:	**63**	*Updated By:*	**NSH-IONC2**

Injection Details

No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		10/Dec/15 07:57:12	Finished
2	BLANK	2	Unknown		10/Dec/15 08:15:18	Finished
3	BLANK	3	Unknown		10/Dec/15 08:33:08	Finished
4	SEQ-CCV1	4	Unknown		10/Dec/15 08:51:22	Finished
5	BLANK	5	Unknown		10/Dec/15 09:11:38	Finished
6	BLANK	6	Unknown		10/Dec/15 09:29:34	Finished
7	BLANK	7	Unknown		10/Dec/15 09:47:24	Finished
8	BLANK	8	Unknown		10/Dec/15 10:05:14	Finished
9	SEQ-CCV1	9	Unknown		10/Dec/15 10:33:50	Finished
10	SEQ-CCB1	10	Unknown		10/Dec/15 10:51:48	Finished
11	SEQ-CRL1	11	Unknown		10/Dec/15 11:09:38	Finished
12	SEQ-CRL2	12	Unknown		10/Dec/15 11:27:29	Finished
13	SEQ-CRL3	13	Unknown		10/Dec/15 11:45:19	Finished
14	5L10011-BLK1	14	Unknown		10/Dec/15 12:03:09	Finished
15	5L10011-BS1	15	Unknown		10/Dec/15 12:20:59	Finished
16	1512101-01@10	16	Unknown		10/Dec/15 12:38:49	Finished
17	1512101-02@10	17	Unknown		10/Dec/15 12:56:53	Finished
18	1512101-03@10	18	Unknown		10/Dec/15 13:14:43	Finished
19	1512101-04@10	19	Unknown		10/Dec/15 13:32:33	Finished
20	1512101-05@10	20	Unknown		10/Dec/15 13:50:24	Finished
21	1512101-06@10	21	Unknown		10/Dec/15 14:08:14	Finished
22	1512101-08@10	22	Unknown		10/Dec/15 14:26:04	Finished
23	5L10011-MS1@10	23	Unknown		10/Dec/15 14:43:55	Finished
24	5L10011-MSD1@10	24	Unknown		10/Dec/15 15:01:46	Finished
25	5L10011-DUP1@10	25	Unknown		10/Dec/15 15:19:36	Finished
26	1512103-03	26	Unknown		10/Dec/15 15:37:26	Finished
27	1512105-01	27	Unknown		10/Dec/15 15:55:16	Finished
28	1512105-03	28	Unknown		10/Dec/15 16:13:06	Finished
29	5L10011-MS2	29	Unknown		10/Dec/15 16:30:57	Finished
30	5L10011-MSD2	30	Unknown		10/Dec/15 16:48:47	Finished
31	5L10011-DUP2	31	Unknown		10/Dec/15 17:06:37	Finished
32	SEQ-CCV2	32	Unknown		10/Dec/15 17:24:27	Finished
33	SEQ-CCB2	33	Unknown		10/Dec/15 17:42:18	Finished
34	1511229-07@20	34	Unknown		10/Dec/15 18:00:08	Finished
35	1511204-08RE1@10	35	Unknown		10/Dec/15 18:17:58	Finished
36	1511204-09RE1@20	36	Unknown		10/Dec/15 18:35:48	Finished
37	1511224-06RE1@10	37	Unknown		10/Dec/15 18:53:38	Finished
38	1511226-01RE1@20	38	Unknown		10/Dec/15 19:11:29	Finished
39	1511226-02RE1@20	39	Unknown		10/Dec/15 19:29:19	Finished
40	1511226-03RE1@20	40	Unknown		10/Dec/15 19:47:09	Finished
41	1511226-04RE1@20	41	Unknown		10/Dec/15 20:04:59	Finished
42	1511226-05RE1@20	42	Unknown		10/Dec/15 20:22:50	Finished

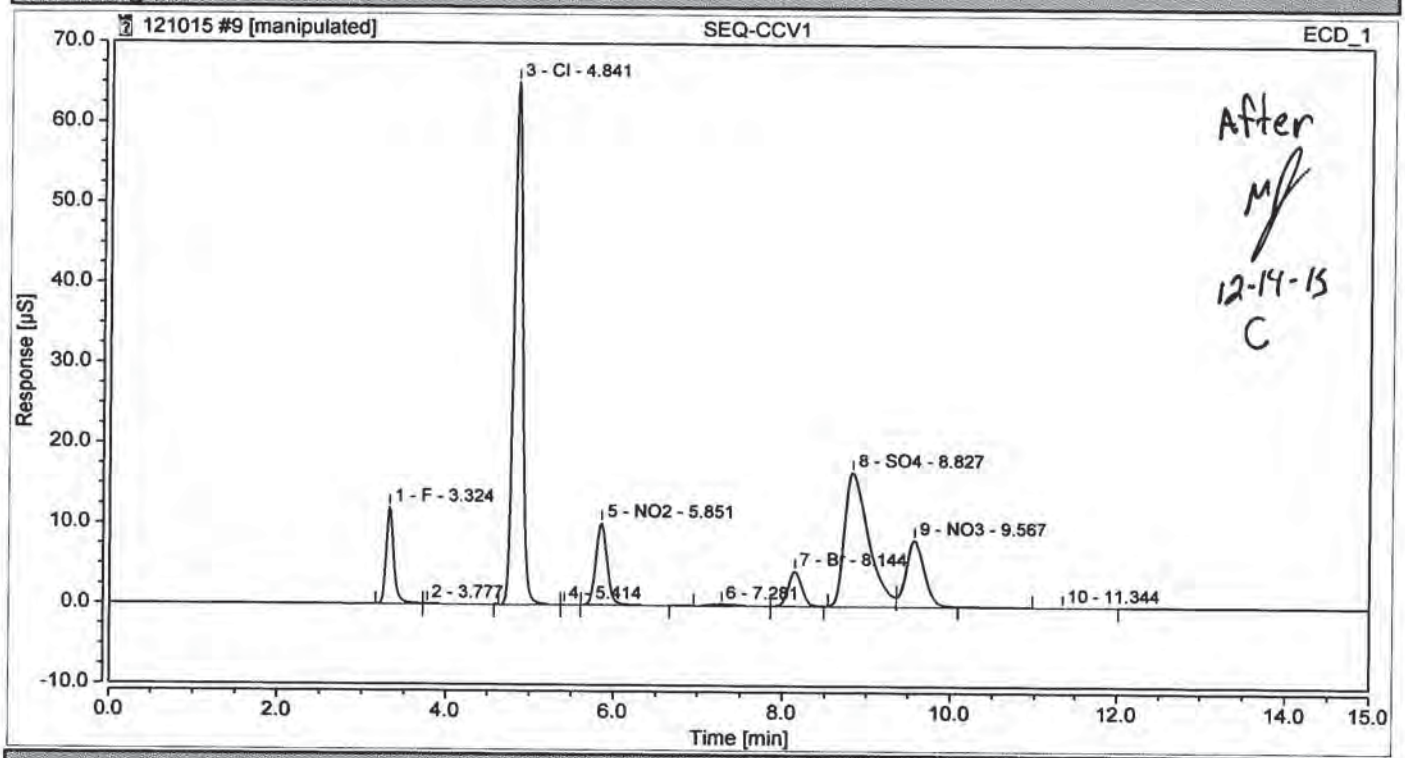
43	1511226-06RE1@20	43	Unknown		10/Dec/15 20:40:40	Finished
44	SEQ-CCV3	44	Unknown		10/Dec/15 20:58:30	Finished
45	SEQ-CCB3	45	Unknown		10/Dec/15 21:16:20	Finished
46	5L06002-BLK1	46	Unknown		10/Dec/15 21:34:10	Finished
47	5L06002-BS1	47	Unknown		10/Dec/15 21:52:01	Finished
48	1511258-01RE1@10	48	Unknown		10/Dec/15 22:09:51	Finished
~~49~~	~~1511226-07RE1@20~~	49	Unknown		10/Dec/15 22:27:41	Finished
50	1511229-01@5X	50	Unknown		10/Dec/15 22:45:31	Finished
51	1511229-02@5X	1	Unknown		10/Dec/15 23:03:22	Finished
52	1511229-03@5X	2	Unknown		10/Dec/15 23:21:12	Finished
53	1511229-04@5X	3	Unknown		10/Dec/15 23:39:02	Finished
54	1511229-05@5X	4	Unknown		10/Dec/15 23:56:53	Finished
55	1511229-06@5X	5	Unknown		11/Dec/15 00:14:43	Finished
56	5L06002-MS1@5X	6	Unknown		11/Dec/15 00:32:33	Finished
57	5L06002-MSD1@5X	7	Unknown		11/Dec/15 00:50:23	Finished
58	5L06002-DUP1@5X	8	Unknown		11/Dec/15 01:08:14	Finished
59	~~1511204-07@5X~~	9	Unknown		11/Dec/15 01:26:04	Finished
60	1511229-08@5X	10	Unknown		11/Dec/15 01:43:54	Finished
61	SEQ-CCV4	11	Unknown		11/Dec/15 02:01:44	Finished
62	SEQ-CCB4	12	Unknown		11/Dec/15 02:19:34	Finished
63	BLANK	13	Unknown		11/Dec/15 02:37:25	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2681993	12.059	6.64	10.30	2.5578
2		3.777	0.0179633	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7098321	65.155	40.39	55.65	25.3332
4		5.414	0.0004088	0.002	0.00	0.00	n.a.
5	NO2	5.851	1.5671010	10.216	8.21	8.73	2.7540
6		7.281	0.0628324	0.185	0.33	0.16	n.a.
7	Br	8.144	0.8036017	4.363	4.21	3.73	6.2300
8	SO4	8.827	5.5518366	16.724	29.08	14.28	24.8298
9	NO3	9.567	2.1027054	8.307	11.02	7.09	2.7225
10		11.344	0.0043632	0.010	0.02	0.01	n.a.
Total:			**19.089**	**117.083**	**100.00**	**100.00**	

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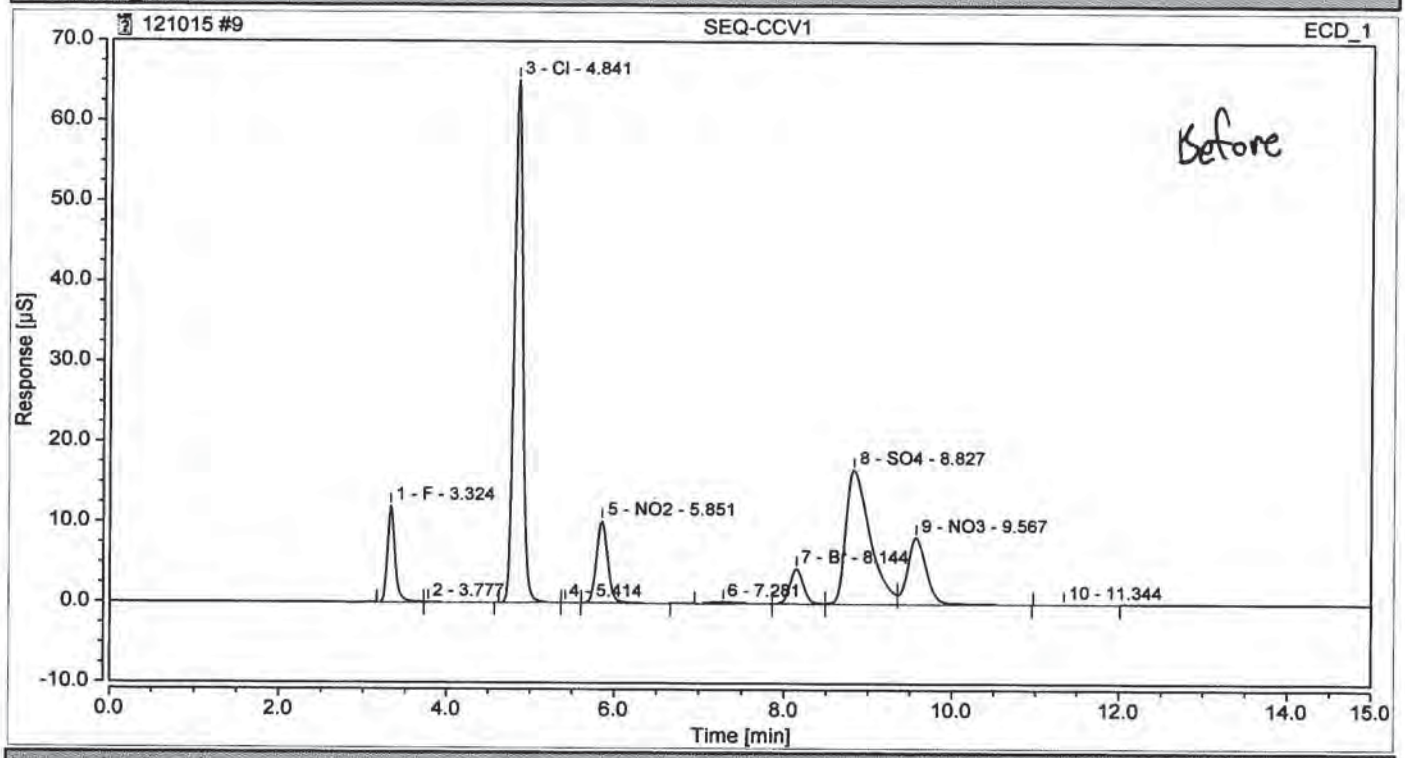
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

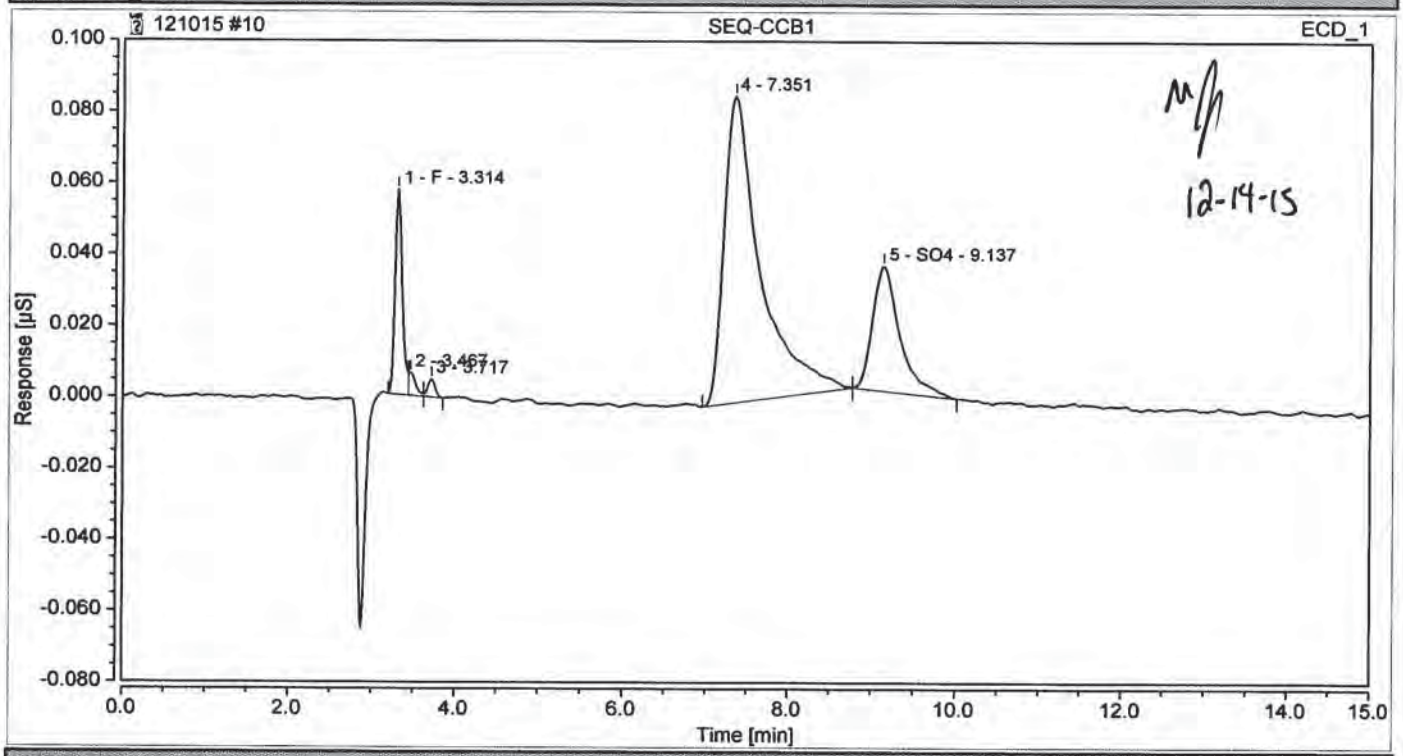
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2681993	12.059	6.64	10.30	2.5578
2		3.777	0.0179633	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7098321	65.155	40.35	55.65	25.3332
4		5.414	0.0004088	0.002	0.00	0.00	n.a.
5	NO2	5.851	1.5671010	10.216	8.20	8.73	2.7540
6		7.281	0.0628324	0.185	0.33	0.16	n.a.
7	Br	8.144	0.8036017	4.363	4.21	3.73	6.2300
8	SO4	8.827	5.5448251	16.724	29.02	14.28	24.7984
9	NO3	9.567	2.1274326	8.307	11.13	7.09	2.7545
10		11.344	0.0043632	0.010	0.02	0.01	n.a.
Total:			**19.107**	**117.083**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0056482	0.058	8.89	30.29	0.0114
2		3.467	0.0006010	0.006	0.95	3.35	n.a.
3		3.717	0.0004926	0.005	0.78	2.65	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.351	0.0437036	0.086	68.79	45.27	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.137	0.0130869	0.035	20.60	18.44	0.0585
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.064**	**0.190**	**100.00**	**100.00**	

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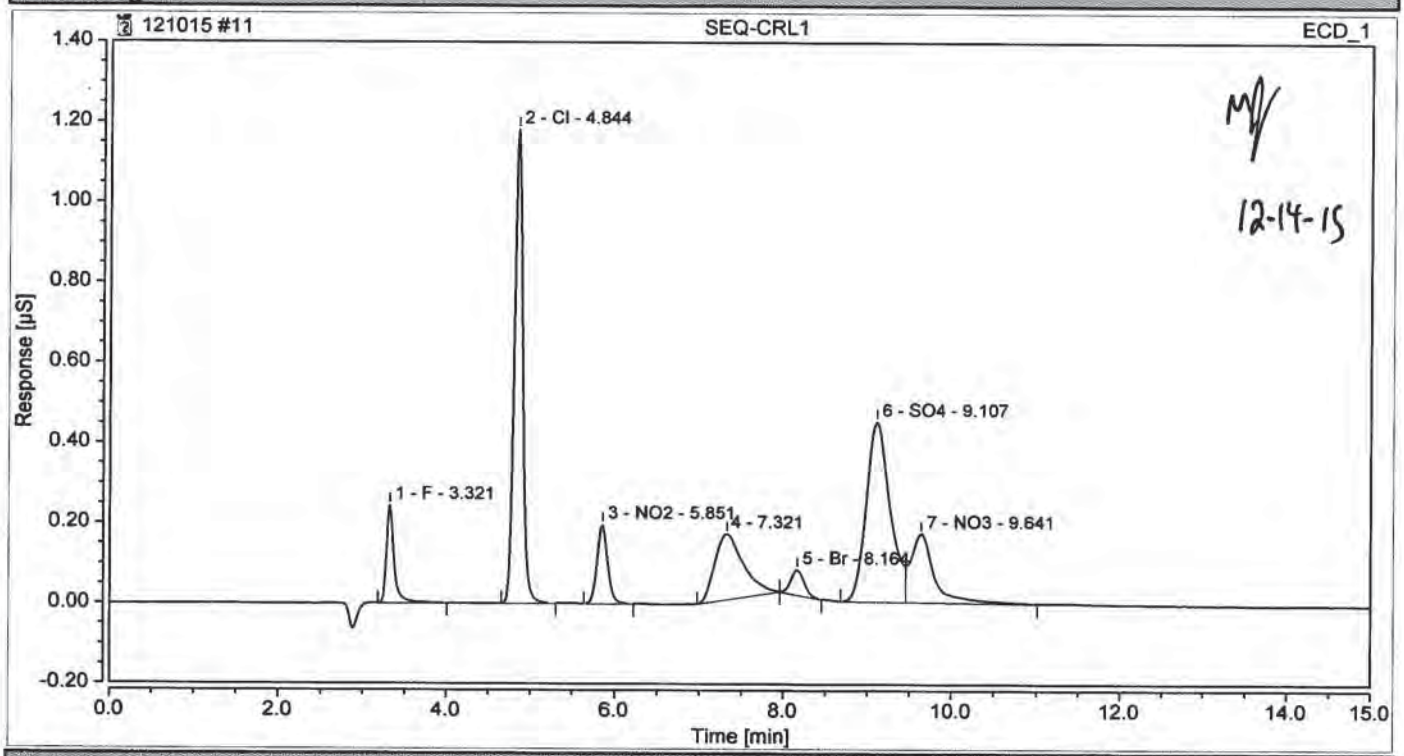
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL1**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0257931	0.245	5.49	9.90	0.0520
2	Cl	4.844	0.1361275	1.182	28.98	47.82	0.4473
3	NO2	5.851	0.0283737	0.198	6.04	8.00	0.0499
4		7.321	0.0643525	0.164	13.70	6.63	n.a.
5	Br	8.164	0.0114553	0.063	2.44	2.54	0.0888
6	SO4	9.107	0.1488035	0.449	31.67	18.18	0.6655
7	NO3	9.641	0.0548869	0.171	11.68	6.93	0.0711
Total:			**0.470**	**2.471**	**100.00**	**100.00**	

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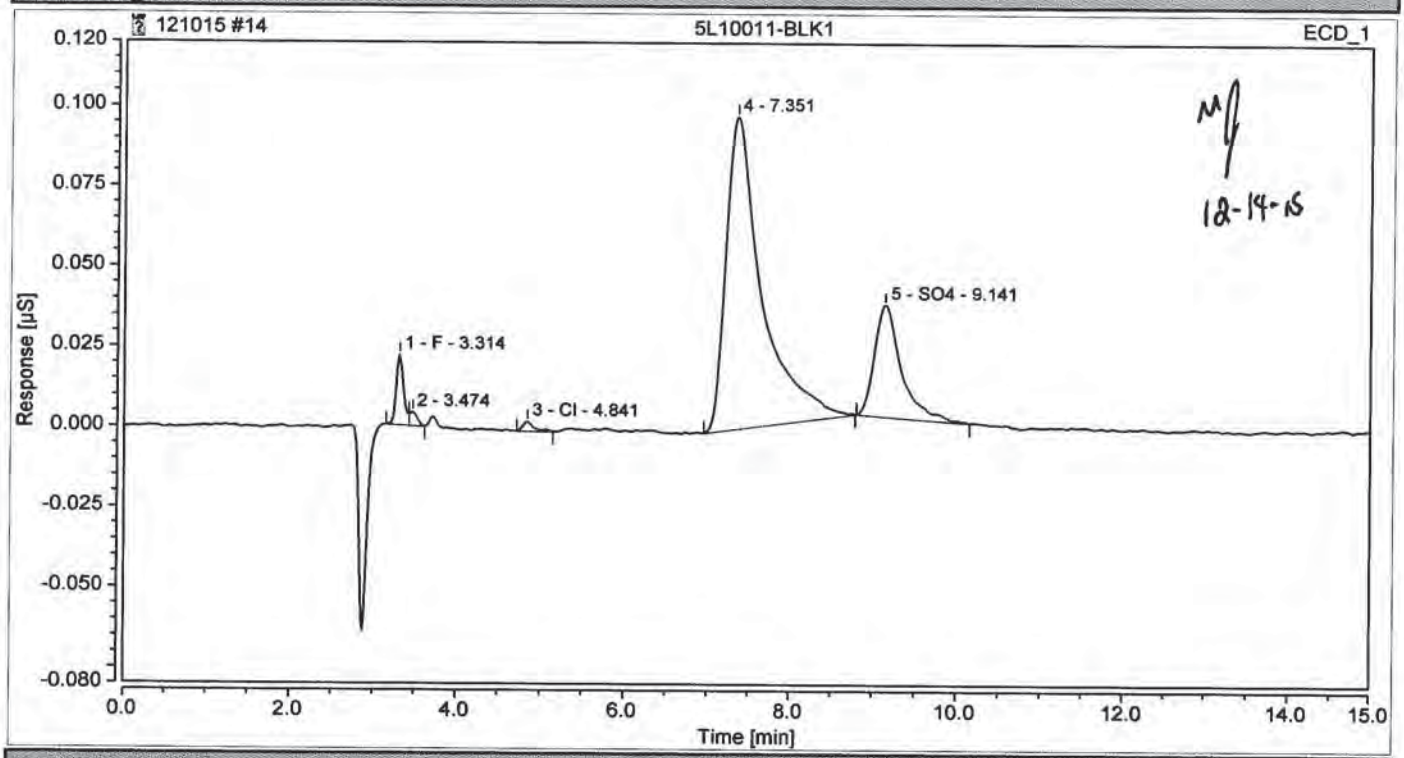
Chromatogram and Results

Injection Details

Injection Name:	**5L10011-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**14**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0021789	0.022	3.35	13.55	0.0044
2		3.474	0.0004303	0.004	0.66	2.62	n.a.
3	Cl	4.841	0.0004549	0.003	0.70	1.86	0.0015
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.351	0.0488705	0.097	75.23	60.36	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.141	0.0130295	0.035	20.06	21.61	0.0583
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.065**	**0.161**	**100.00**	**100.00**	

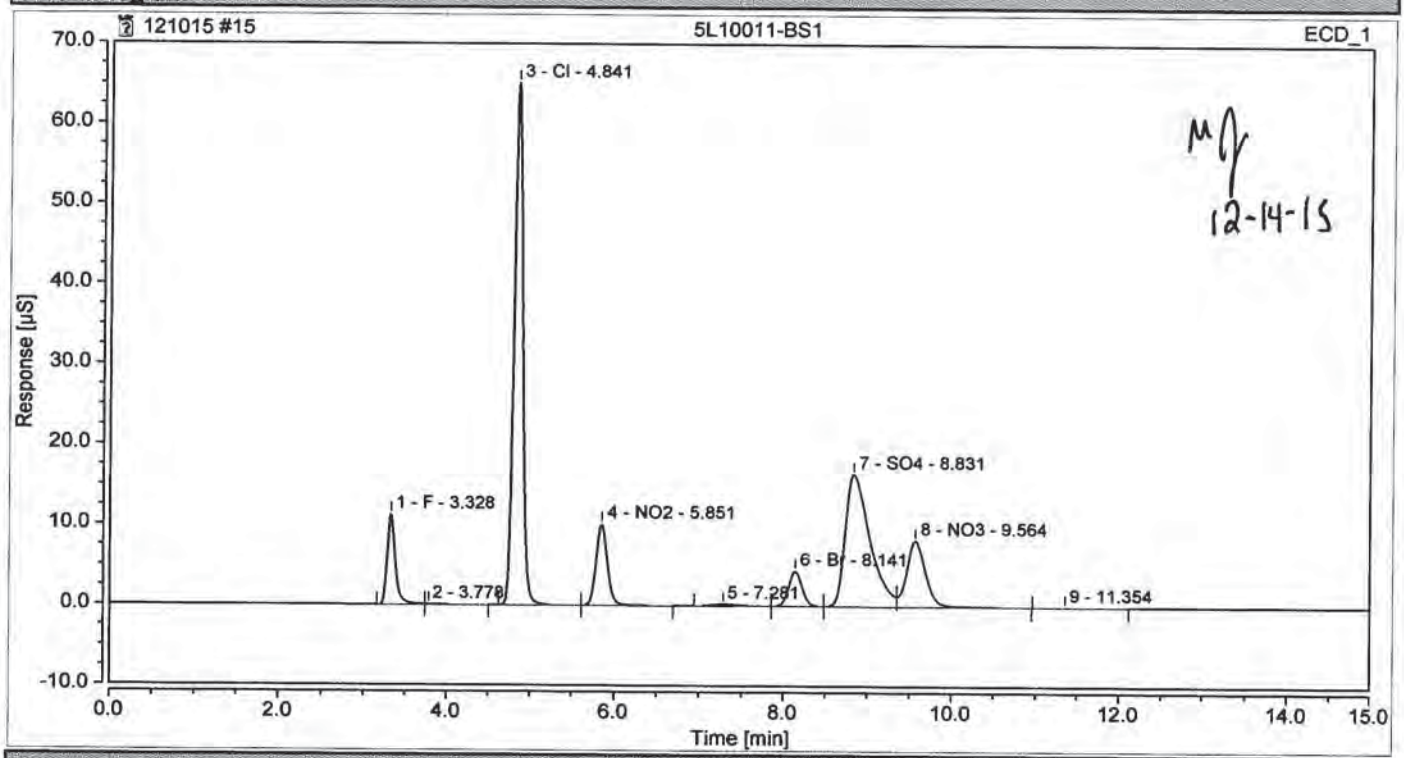
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**5L10011-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**15**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 12:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	1.2659467	11.245	6.62	9.70	2.5533
2		3.778	0.0199359	0.074	0.10	0.06	n.a.
3	Cl	4.841	7.7209916	65.104	40.35	56.18	25.3699
4	NO2	5.851	1.5593141	10.148	8.15	8.76	2.7403
5		7.281	0.0687834	0.200	0.36	0.17	n.a.
6	Br	8.141	0.8025821	4.364	4.19	3.77	6.2221
7	SO4	8.831	5.5739142	16.485	29.13	14.23	24.9285
8	NO3	9.564	2.1195043	8.250	11.08	7.12	2.7442
9		11.354	0.0046011	0.010	0.02	0.01	n.a.
Total:			**19.136**	**115.880**	**100.00**	**100.00**	

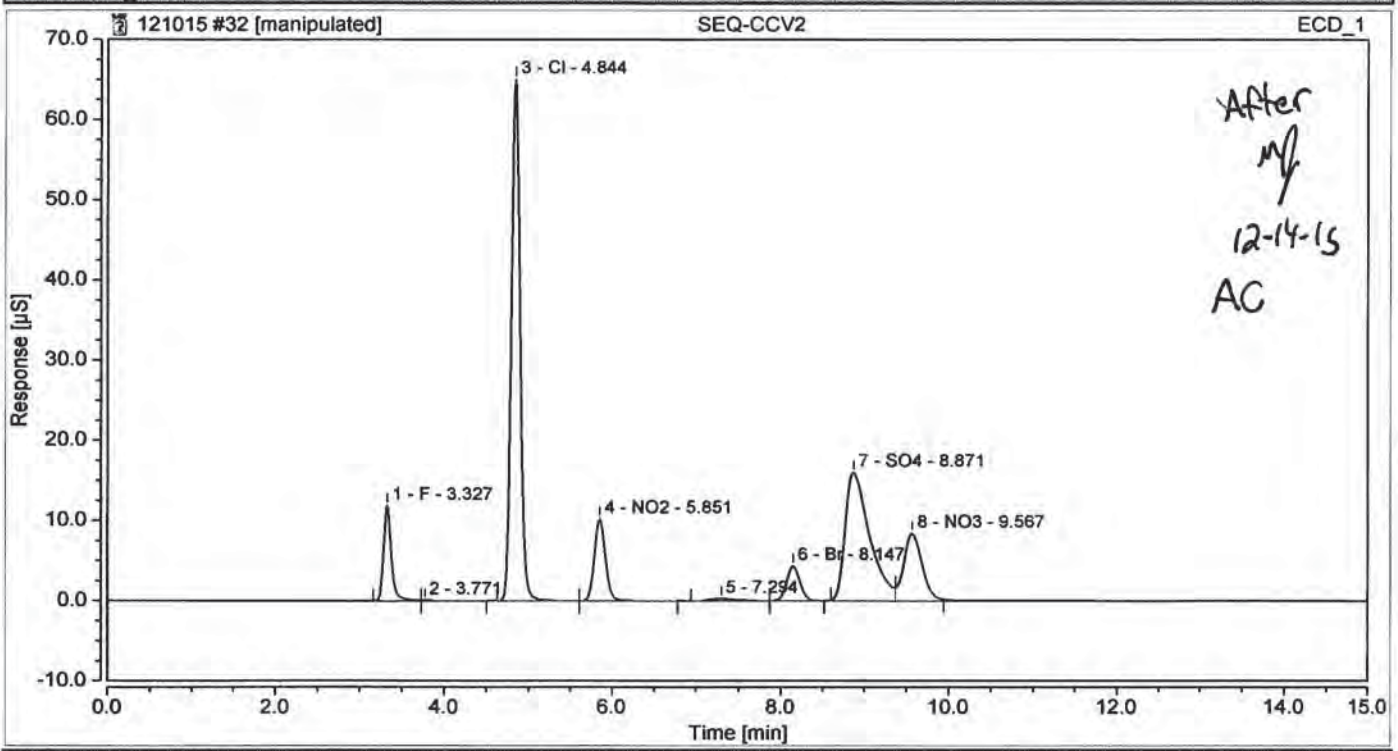
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2625268	11.885	6.64	10.22	2.5464
2		3.771	0.0155769	0.060	0.08	0.05	n.a.
3	Cl	4.844	7.7121553	65.071	40.54	55.94	25.3408
4	NO2	5.851	1.5652284	10.227	8.23	8.79	2.7507
5		7.294	0.0951732	0.270	0.50	0.23	n.a.
6	Br	8.147	0.8003201	4.350	4.21	3.74	6.2046
7	SO4	8.871	5.4467566	16.025	28.63	13.78	24.3598
8	NO3	9.567	2.1241073	8.429	11.17	7.25	2.7502
Total:			**19.022**	**116.318**	**100.00**	**100.00**	

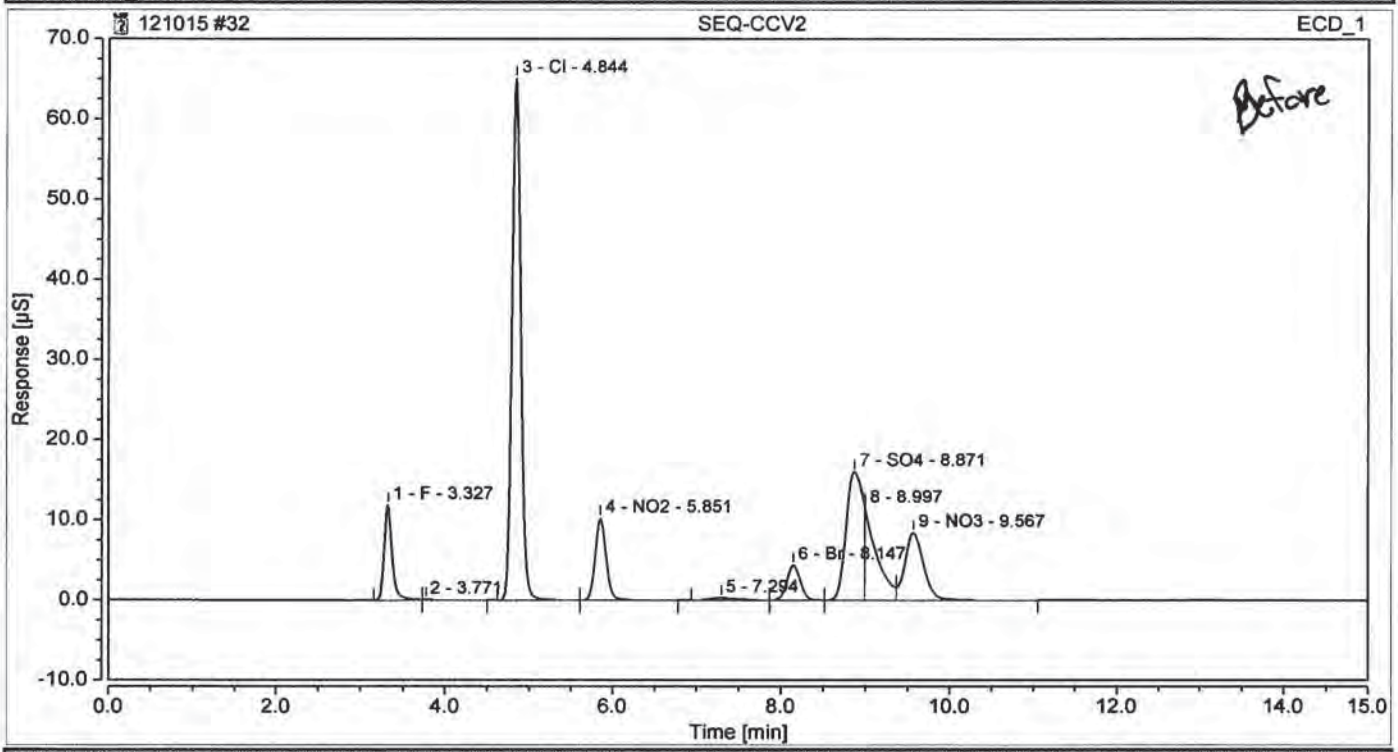
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

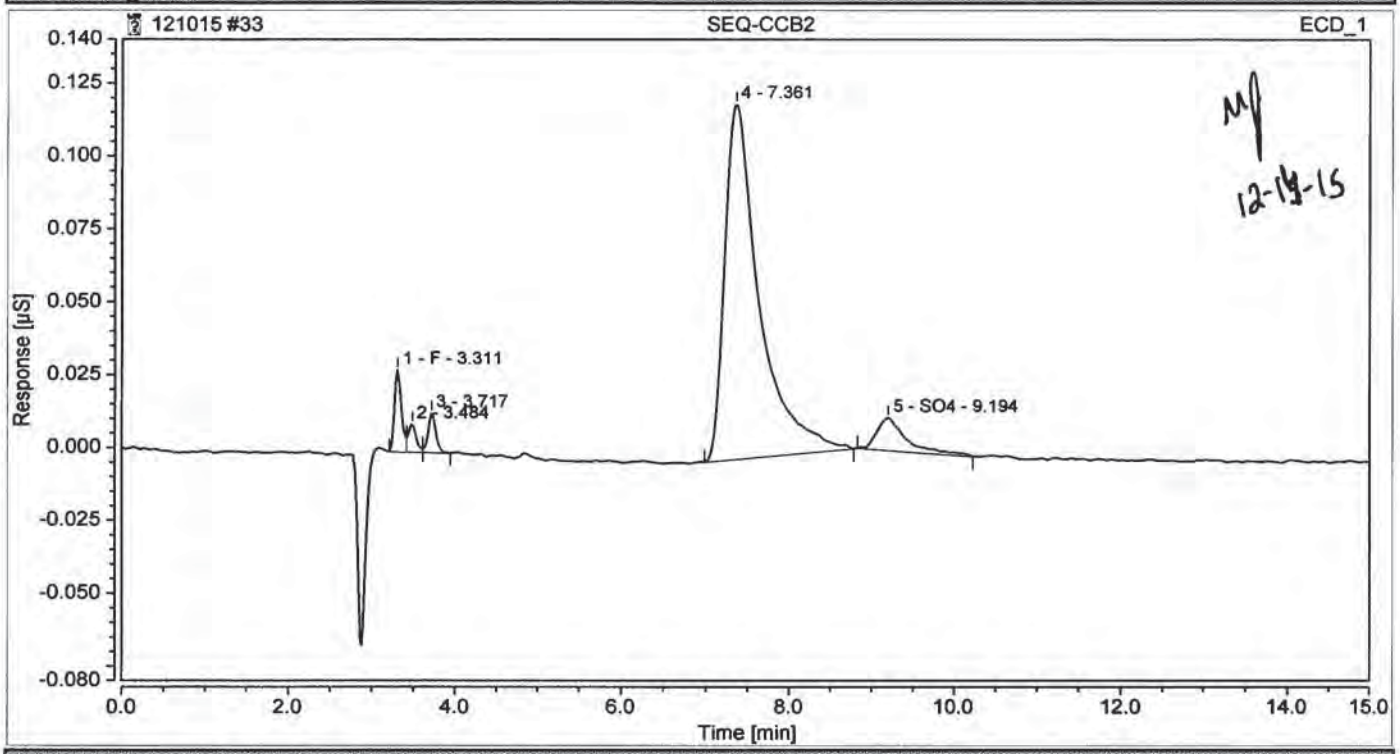
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2625268	11.885	6.63	9.30	2.5464
2		3.771	0.0155769	0.060	0.08	0.05	n.a.
3	Cl	4.844	7.7121553	65.071	40.47	50.92	25.3408
4	NO2	5.851	1.5652284	10.227	8.21	8.00	2.7507
5		7.294	0.0951732	0.270	0.50	0.21	n.a.
6	Br	8.147	0.8003201	4.350	4.20	3.40	6.2046
7	SO4	8.871	3.5511240	16.025	18.63	12.54	15.8819
8		8.997	1.8866960	11.464	9.90	8.97	n.a.
9	NO3	9.567	2.1677431	8.429	11.38	6.60	2.8067
Total:			**19.057**	**127.782**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**33**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0026251	0.028	3.85	15.20	0.0053
2		3.484	0.0010540	0.010	1.55	5.20	n.a.
3		3.717	0.0014490	0.014	2.13	7.34	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.361	0.0583515	0.122	85.68	66.20	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.194	0.0046222	0.011	6.79	6.07	0.0207
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.068**	**0.184**	**100.00**	**100.00**	

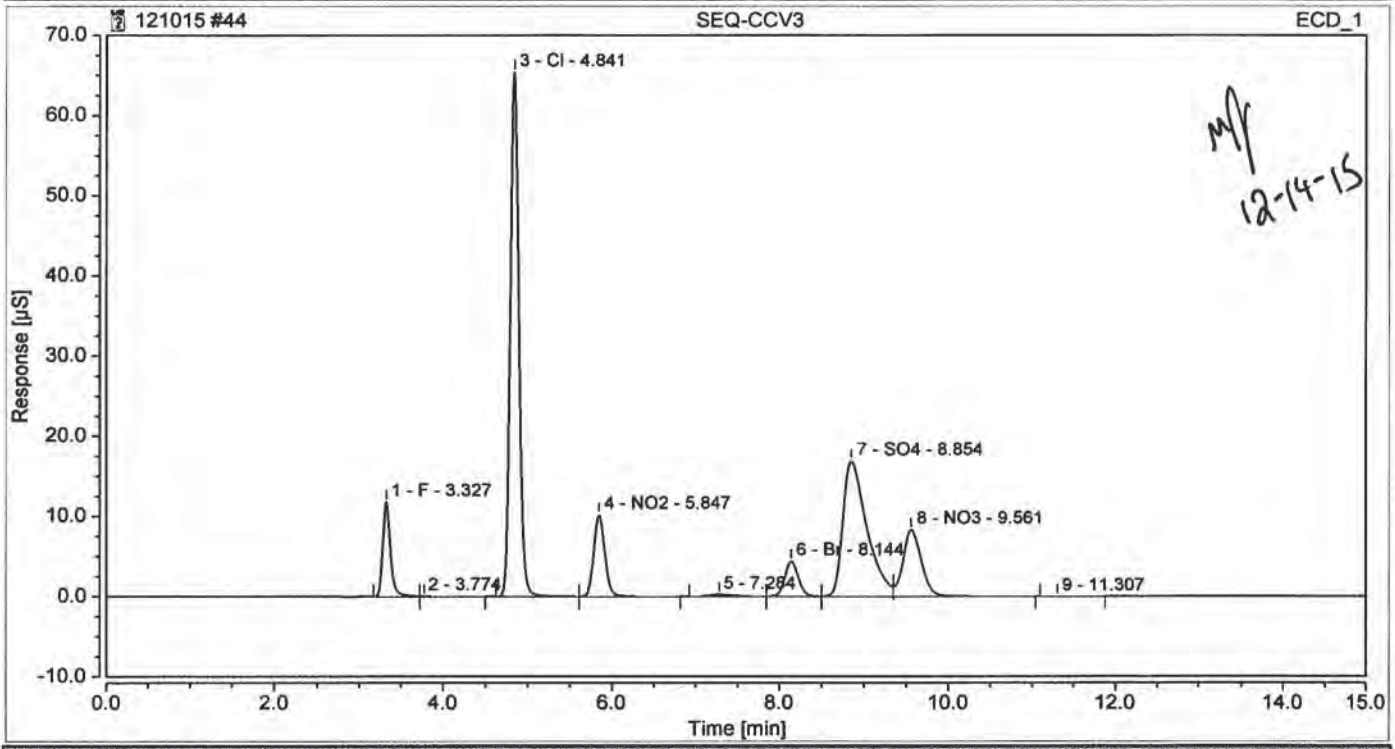
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV3**	*Run Time (min):*	**15.00**
Vial Number:	**44**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2602441	11.818	6.62	10.07	2.5418
2		3.774	0.0148951	0.057	0.08	0.05	n.a.
3	Cl	4.841	7.7213399	65.408	40.55	55.74	25.3710
4	NO2	5.847	1.5609618	10.206	8.20	8.70	2.7432
5		7.284	0.0762463	0.231	0.40	0.20	n.a.
6	Br	8.144	0.8060314	4.384	4.23	3.74	6.2489
7	SO4	8.854	5.5118054	16.914	28.95	14.41	24.6507
8	NO3	9.561	2.0877079	8.331	10.96	7.10	2.7030
9		11.307	0.0010550	0.003	0.01	0.00	n.a.
Total:			**19.040**	**117.353**	**100.00**	**100.00**	

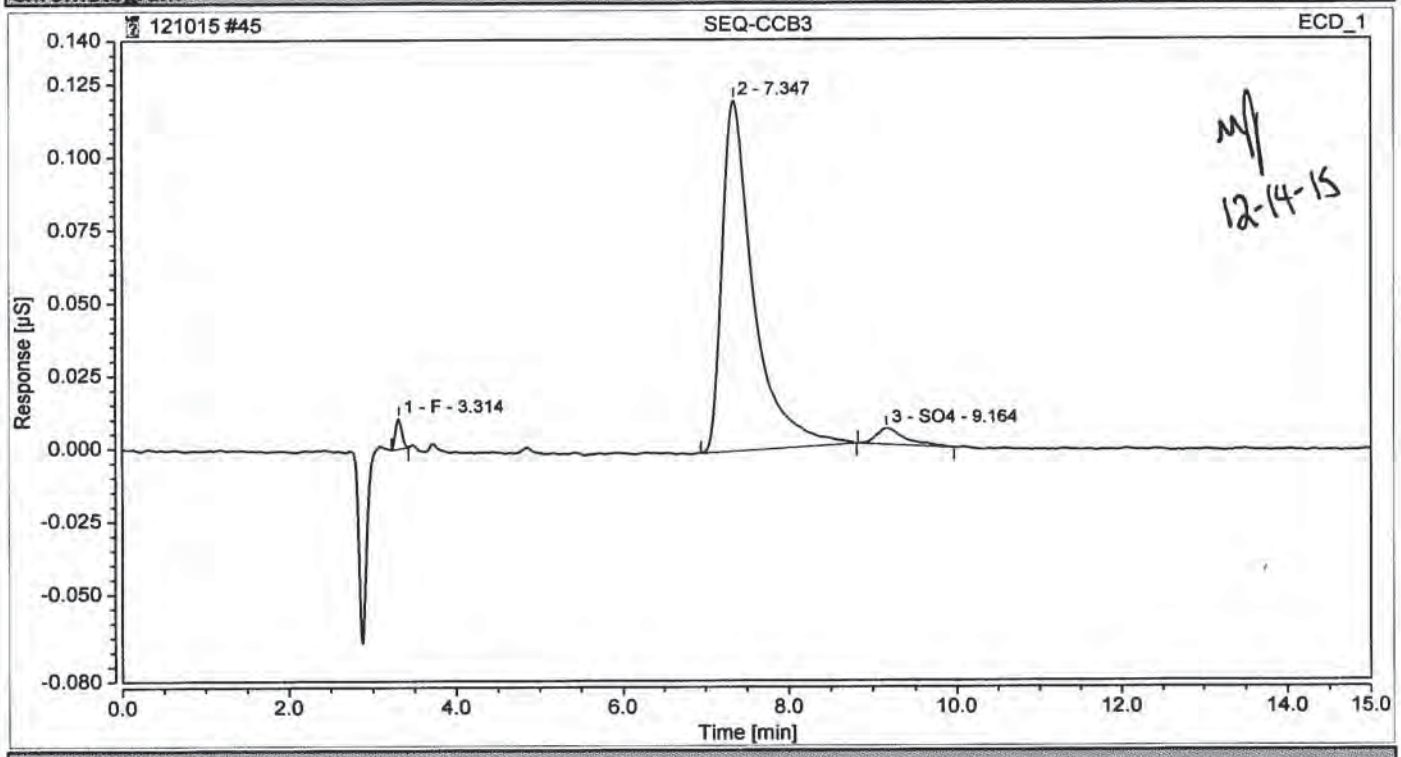
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB3**	*Run Time (min):*	**15.00**
Vial Number:	**45**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 21:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0008938	0.010	1.60	7.64	0.0018
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		7.347	0.0528401	0.120	94.55	88.39	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SO4	9.164	0.0021532	0.005	3.85	3.97	0.0096
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.056**	**0.136**	**100.00**	**100.00**	

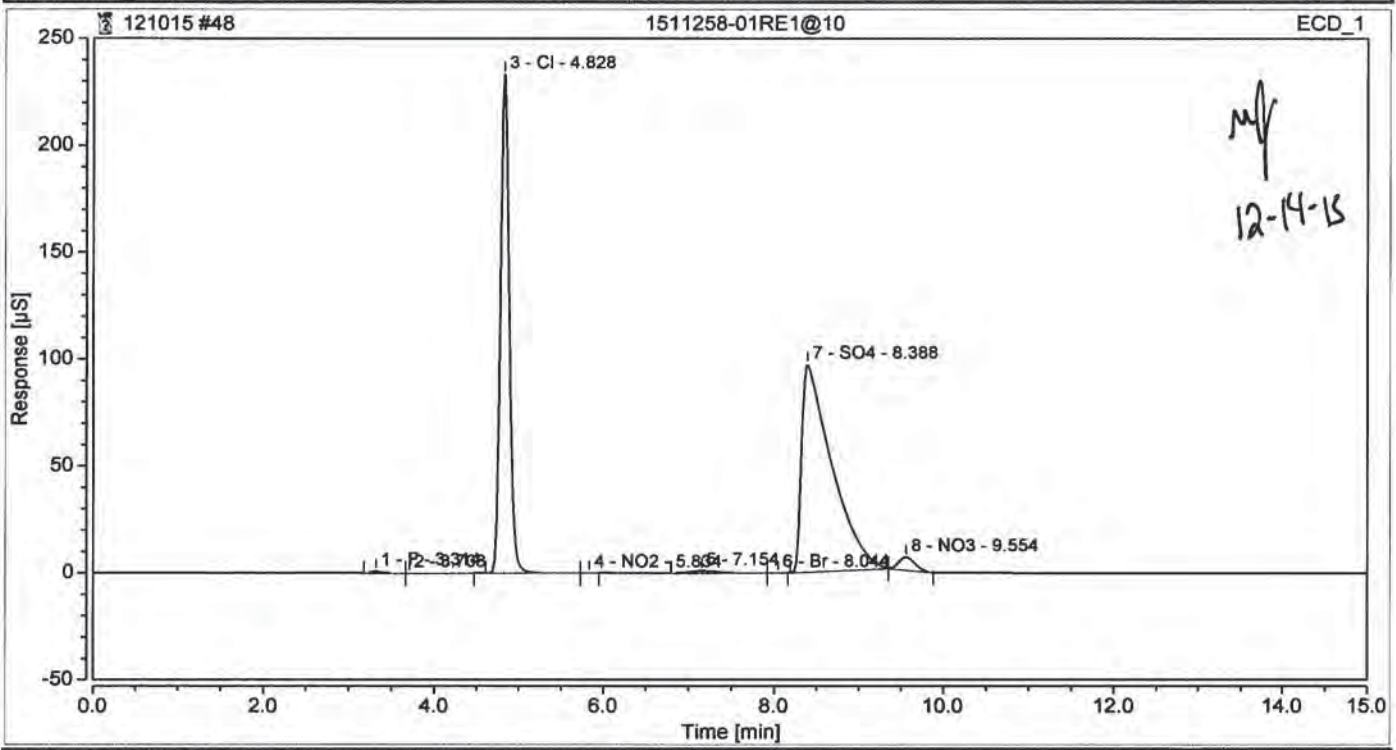
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**1511258-01RE1@10**	*Run Time (min):*	**15.00**
Vial Number:	**48**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 22:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0885308	0.875	0.13	0.26	0.1786
2		3.708	0.0025319	0.010	0.00	0.00	n.a.
3	Cl	4.828	27.9706905	233.265	40.00	68.92	91.9069
4	NO2	5.834	0.0004779	0.005	0.00	0.00	0.0008
5		7.154	0.3460103	0.970	0.49	0.29	n.a.
6	Br	8.044	0.0014642	0.011	0.00	0.00	0.0114
7	SO4	8.388	40.2076468	97.314	57.50	28.75	179.8227
8	NO3	9.554	1.3075634	5.997	1.87	1.77	1.6930
Total:			**69.925**	**338.446**	**100.00**	**100.00**	

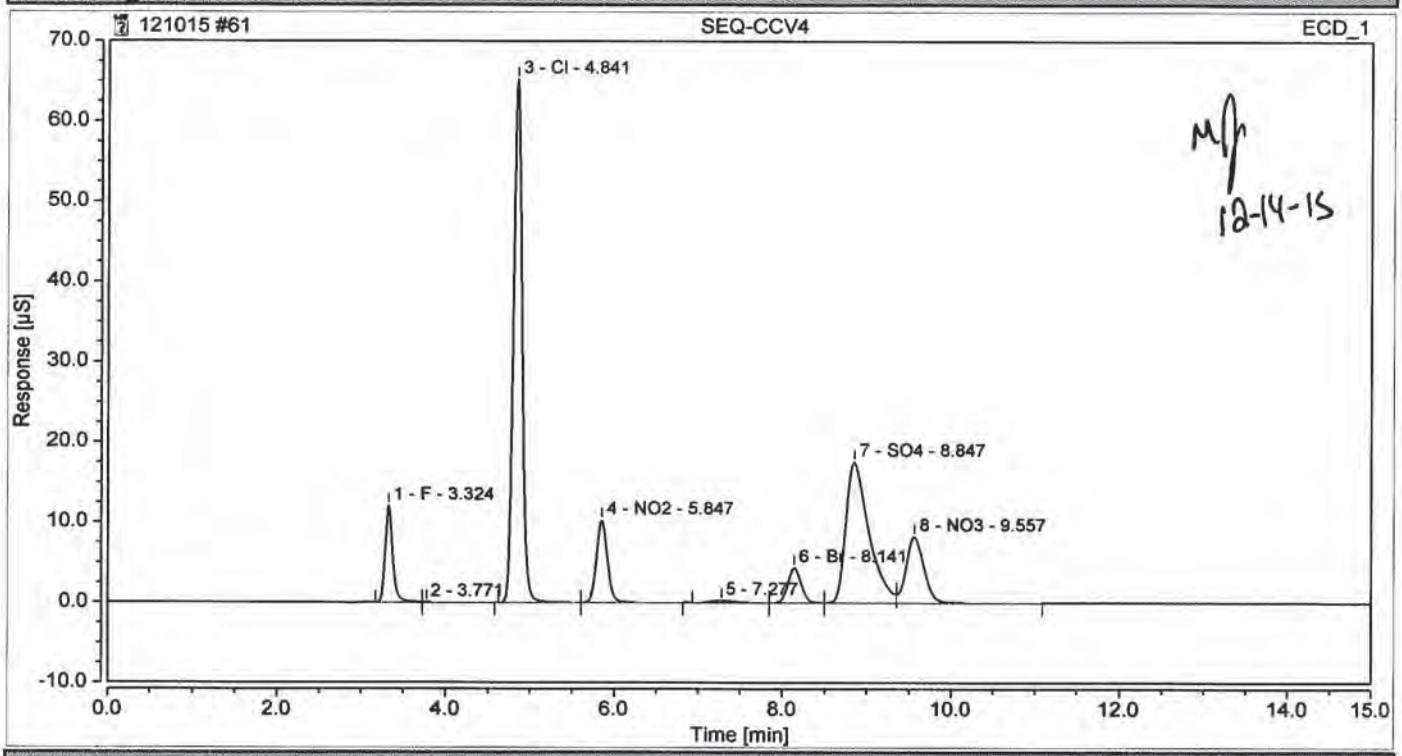
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV4**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/15 02:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2611086	12.069	6.63	10.22	2.5435
2		3.771	0.0146019	0.053	0.08	0.04	n.a.
3	Cl	4.841	7.7055191	65.246	40.50	55.24	25.3190
4	NO2	5.847	1.5682448	10.294	8.24	8.72	2.7560
5		7.277	0.0808172	0.254	0.42	0.22	n.a.
6	Br	8.141	0.8031753	4.367	4.22	3.70	6.2267
7	SO4	8.847	5.5510650	17.573	29.18	14.88	24.8263
8	NO3	9.557	2.0405153	8.253	10.73	6.99	2.6419
Total:			**19.025**	**118.108**	**100.00**	**100.00**	

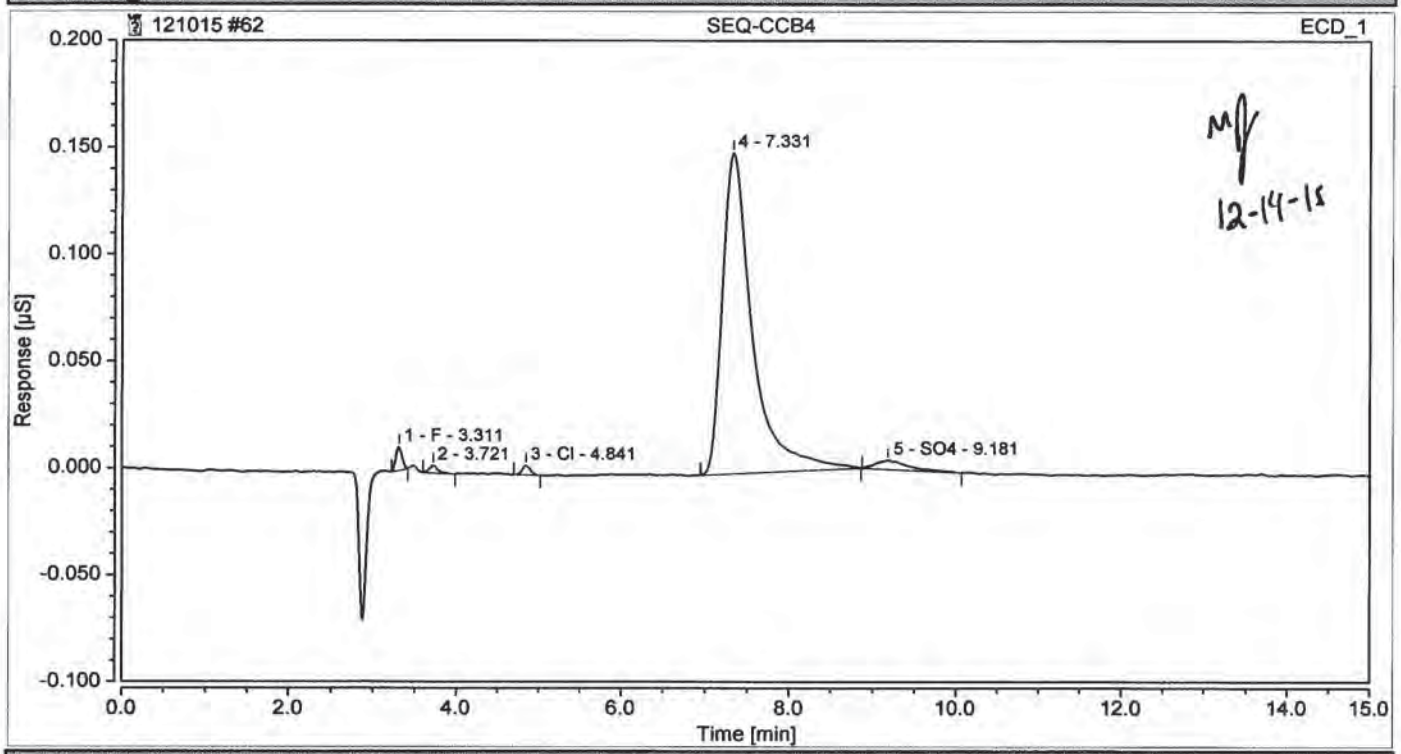
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB4**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/15 02:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0009028	0.011	1.37	6.32	0.0018
2		3.721	0.0003971	0.003	0.60	1.98	n.a.
3	Cl	4.841	0.0005031	0.004	0.77	2.54	0.0017
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.331	0.0620767	0.150	94.53	86.77	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.181	0.0017921	0.004	2.73	2.38	0.0080
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.066**	**0.173**	**100.00**	**100.00**	

12/14/15

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511021-01	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-01RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511021-02	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-02RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511224-04RE1	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;From 5K20011 by KBG on 11/24/2015;RR at 20X
1511224-04RE1	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Chloride;RR at 20X
1511256-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511256-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511258-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-01	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-03	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-03	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-05	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K24008

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-05	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5					NA	;NO3;NO3
1511258-05	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5					NA	;Cl;Cl
1511258-05RE1	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5					NA	;Added 12/9/2015 by MSJ;Added 12/9/2015 by MSJ
5K24008-BLK1		QC	11/24/2015	5	5					NA	
5K24008-BS1		QC	11/24/2015	5	5	15K0679		5000		NA	
5K24008-DUP1		QC	11/24/2015	5	5		1511258-05			NA	
5K24008-MS1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	
5K24008-MSD1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5K25005

Empirical Laboratories, LLC

Printed: 12/15/2015 9:40:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-01	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
1511258-02	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
1511258-03	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
1511258-04	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
1511258-05	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
5K25005-BLK1		QC	11/25/2015	100	100					NA	
5K25005-BS1		QC	11/25/2015	20	20	13L0491		20000		NA	
5K25005-DUP1		QC	11/25/2015	100	100		1511258-05			NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5L08019

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:03AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511204-01RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 10X for SO4; KBG 11/23/15;RR at 10X for SO4; KBG 11/23/15
1511204-02RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 10X for SO4; KBG 11/23/15;RR at 10X for SO4; KBG 11/23/15
1511204-03RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 20X for SO4; KBG 11/23/15;RR at 20X for SO4; KBG 11/23/15
1511204-04RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 50X for SO4; KBG 11/23/15;RR at 50X for SO4; KBG 11/23/15
1511204-05RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 20X for SO4; KBG 11/23/15;RR at 20X for SO4; KBG 11/23/15
1511204-06RE1	S	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	MS/MSD;RR at 20X for SO4; KBG 11/23/15;RR at 20X for SO4; KBG 11/23/15
1511204-06RE1	S	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L08019
1511204-06RE1	S	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L08019
1511204-06RE1	S	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L08019
1511258-02RE1	A	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 5X for Cl; KBG 12/2/15;RR at 5X for Cl; KBG 12/2/15
1511258-03RE1	A	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 5X for Cl; KBG 12/2/15;RR at 5X for Cl; KBG 12/2/15
1511258-04RE1	A	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 50X for Cl; KBG 12/2/15;RR at 50X for Cl; KBG 12/2/15
1511258-05RE1	A	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 50X for Cl; KBG 12/2/15;RR at 50X for Cl; KBG 12/2/15
1512072-01	A	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	;see versions;see versions
1512072-02	A	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	;see versions;see versions
1512078-01	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5						NA	;QSM5. SO4;QSM5. SO4
1512078-01	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3

PREPARATION BENCH SHEET

5L08019

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:03AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1512078-02	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3
1512078-02	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512078-04	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512078-04	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3
1512078-05	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512078-05	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3
1512078-06	K	WC_ANIONS_9056A (Regular)	12/08/2015	5	5					NA	MS/MSD VOC only;BatchQC;Added for BatchQC in: 5L08019
1512078-06	K	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	MS/MSD VOC only;QSM5. SO4;QSM5. SO4
1512078-06	K	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	MS/MSD VOC only;BatchQC;Added for BatchQC in: 5L08019
1512078-06	K	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	MS/MSD VOC only;QSM5. NO2 & NO3;QSM5. NO2 & NO3
1512078-07	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512078-07	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3
5L08019-BLK1		QC	12/08/2015	5	5					NA	
5L08019-BS1		QC	12/08/2015	5	5	15L0102		5000		NA	
5L08019-DUP1		QC	12/08/2015	5	5		1511204-06RE1			NA	
5L08019-DUP2		QC	12/08/2015	5	5		1512078-06			NA	
5L08019-MS1		QC	12/08/2015	22.5	25	15L0284	1511204-06RE1	50000		NA	

PREPARATION BENCH SHEET

5L08019

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:03AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
5L08019-MS2		QC	12/08/2015	22.5	25	15L0284	1512078-06	2500		NA	
5L08019-MSD1		QC	12/08/2015	22.5	25	15L0284	1511204-06RE1	50000		NA	
5L08019-MSD2		QC	12/08/2015	22.5	25	15L0284	1512078-06	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5L10011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:33AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-01RE1	A	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Added 12/14/2015 by MSJ;From 5K24008 by MSJ on 12/14/2015
1512101-01	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-01	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-02	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-02	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-03	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-03	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-04	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-04	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-05	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	low volume on VOC;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-05	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	low volume on VOC;Cl, SO4;See versions
1512101-06	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-06	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-08	M	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	MS/MSD VOC ONLY;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-08	M	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	MS/MSD VOC ONLY;BatchQC;Added for BatchQC in: 5L10011
1512101-08	M	WC_ANIONS_300.0 (Regular)_	12/10/2015	5	5						NA	MS/MSD VOC ONLY;BatchQC;Added for BatchQC in: 5L10011
1512101-08	M	WC_ANIONS_300.0 (Short Hol	12/10/2015	5	5						NA	MS/MSD VOC ONLY;BatchQC;Added for BatchQC in: 5L10011

PREPARATION BENCH SHEET

5L10011

Empirical Laboratories, LLC **Printed: 12/15/2015 9:41:33AM**

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1512101-08	M	WC_ANIONS_9056A (Regular)	12/10/2015	5	5					NA	MS/MSD VOC ONLY;Cl, SO4;See versions
1512103-03	H	WC_ANIONS_300.0 (Regular)_	12/10/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512103-03	H	WC_ANIONS_300.0 (Short Hol	12/10/2015	5	5					NA	;QSM5. NO3;QSM5. NO3
1512105-01	F	WC_ANIONS_300.0 (Regular)_	12/10/2015	5	5					NA	;QSM5;QSM5
1512105-01	F	WC_ANIONS_300.0 (Short Hol	12/10/2015	5	5					NA	;QSM5;QSM5
1512105-03	F	WC_ANIONS_9056A (Regular)	12/10/2015	5	5					NA	MS/MSD on Metals Only!;BatchQC;Added for BatchQC in: 5L10011
1512105-03	F	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5					NA	MS/MSD on Metals Only!;BatchQC;Added for BatchQC in: 5L10011
1512105-03	F	WC_ANIONS_300.0 (Short Hol	12/10/2015	5	5					NA	MS/MSD on Metals Only!;QSM5;QSM5
1512105-03	F	WC_ANIONS_300.0 (Regular)_	12/10/2015	5	5					NA	MS/MSD on Metals Only!;QSM5;QSM5
1512105-03	F	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5					NA	MS/MSD on Metals Only!;BatchQC;Added for BatchQC in: 5L10011
5L10011-BLK1		QC	12/10/2015	5	5					NA	
5L10011-BS1		QC	12/10/2015	5	5	15L0426		5000		NA	
5L10011-DUP1		QC	12/10/2015	5	5		1512101-08			NA	
5L10011-DUP2		QC	12/10/2015	5	5		1512105-03			NA	
5L10011-MS1		QC	12/10/2015	22.5	25	15L0284	1512101-08	25000		NA	
5L10011-MS2		QC	12/10/2015	22.5	25	15L0284	1512105-03	2500		NA	
5L10011-MSD1		QC	12/10/2015	22.5	25	15L0284	1512101-08	25000		NA	

PREPARATION BENCH SHEET

5L10011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:33AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
5L10011-MSD2		QC	12/10/2015	22.5	25	15L0284	1512105-03	2500		NA	

Reagents Used:

Standard	Description

ANALYTICAL DATA PACKAGE
SDG # 1511258

PROJECT NAME: HOLLOMAN AFB
PROJECT LOCATION: HOLLOMAN AFB, NM
CONTRACT #: FA8903-D-09-D-8580

SUBMITTAL TO:
Mark Lyon
CB&I Federal Services
2440 Louisiana Blvd NE, Suite 300
Albuquerque, New Mexico 87110

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:
Project Manager: Sonya Gordon
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Email: sgordon@empirlabs.com

Original Report Date: December 15, 2015
Report Revision #: 01
Revision Date: January 6, 2016
Total # of Pages: 162

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. *This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.*

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Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
Revision 01: The package was revised to add a note to the narrative regarding dilutions.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

Wet Chemistry:
Note – Samples 1511258-01, -02, -03, -04, and -05 were re-analyzed as 1511258-01RE1 (10x), -02RE1 (5x), -03RE1 (5x), -04RE1 (50x), and -05RE1 (50x) for Chloride to due over linear range concentrations in the lower analyses.

The following continuing calibration verifications exceeded criteria:
5L33615-CCV2 with a positive bias for Nitrate/Nitrite as N; note – the samples were not re-analyzed due to holding time

The following blanks have reported results greater than ½ the LOQ:
5K25005-BLK1 for Total Dissolved Solids; note – the concentrations in the samples are greater than 10x the concentration in the blank

The following matrix spikes exceeded criteria:
5K24008-MS1/MSD1 (1511258-05) with a negative bias for Nitrate as N; note – the associated batch spike is within criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

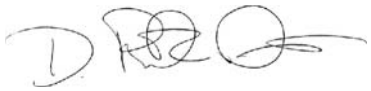
BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.



Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 11/06/2015)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 01/30/2016

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2016

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 11/30/2015

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2015

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of New Jersey, Department of Environmental Protection – NELAP Primary, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 11/30/2015

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-15-11
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Utah, Department of Health – NELAP, Certificate Number: TN0042015-7
- Aqueous
- Non-aqueous
- Expires: 07/31/2016

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 7700, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2015

State of Washington, Department of Ecology – NELAP, Lab ID: C934-15
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2016

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

Septic S 1511258-01 A

CHAIN OF CUSTODY

Ref. Document # 144106-H2015-
151123 1 of 1

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: Empirical
Lab Contact: Sonya Gordon
Lab Phone #: 615-345-1115

SAMPLER: P. MIDDLETON (210)428-7274

Lab Sample Number	Sample Identification	Collection Information Date	Time	G/C	Matrix	# of Bottles	PRESERVATION HCL	NaOH	HNO_3	H2SO4	Ice		Nitrate by 300	Chloride by 9056A	Total Dissolved Soilds by 2540C				Turn Around Time Required
01	OTC530-GW-5301-MW01-151123	11/23/15	0641	G	GW	1					X		X	X	X				ST
02	OTC531A-GW-531A1-MW01-151123	11/23/15	0740	G	GW	1					X		X	X	X				ST
03	OTC531A-GW-531A1-MW01-151123-FD	11/23/15	—	G	GW	1					X		X	X	X				ST
04	OTC531B-GW-531B1-MW01-151123	11/23/15	0824	G	GW	1					X		X	X	X				ST
05	OTC531C-GW-531C1-MW01-151123	11/23/15	0916	G	GW	1					X		X	X	X				ST

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s): P. MIDDLETON

Relinquished By	Date	Time	Received By	Date	Time
Patrick J. Middleton	11/23/15		[illegible]	11/24/15	0920

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid
SOL = Other Solid GS = Air Sample

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1511258

II. EMPIRICAL LABORATORIES COOLER RECEIPT FORM

1511259

Cooler Received/Opened On 11/24/15 @ 0920 Work Order: ~~1511259~~ TH 11/25/15

1. Tracking # 1Z66V725 0194257 194 (last 4 digits, FedEx)

   Courier: UPS

2. Temperature of rep. sample or temp blank when opened: 1.1 °C + correction factor(+0.4) = 1.5 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 11/24/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence #_____

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) JTG 11/24/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) JTG 11/24/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) JTG 11/24/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) JTG 11/24/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) JTG 11/24/15

C:\Users\jgross\Desktop\QS10_R21_20140729_CRF.doc

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM (Continued)

LIMS Data Entry Second Check

Work order# 1511258

22. Cooler Receipt Form Issues reviewed and communicated to PM? YES...NO...NA
23. Client and Project verified to match the COC/CRF in LIMS Project Screen? YES...NO...NA
24. Following items verified to items verified to match the COC/CRF in LIMS Receipt Screen:
    a. Received Date/Received By YES...NO...NA
    b. TAT (COC specified different?) YES...NO...NA
    c. Shipping Container Temperatures (corrected temps) YES...NO ...NA
    d. Condition Items (seals, intact, labels, preservation, ROI) YES...NO...NA
25. Following LIMS Sample Information verified against COC for each sample:
    a. Name YES...NO...NA
    b. QC Source YES...NO...NA
    c. Matrix YES...NO...NA
    d. Sample Type YES...NO...NA
    e. Sampled Date/Time (Correct Time Zone) YES...NO...NA
    f. Work Analyses/Versions (if applicable) YES...NO...NA
    g. Sample Issues included in comments (limited volume, concentration warnings, etc.)? YES...NO...NA
    h. Unpreserved VOA holding time set to 7 days? YES...NO...NA
26. Containers consistent with tests requested? YES...NO...NA
27. Field data entered and matching COC? YES...NO...NA

I certify that I have verified the LIMS data entry and answered questions 23-27 above (initial/date): TH 11/25/15

Additional Details:

C:\Users\thutchings\Desktop\Cooler Receipt Updated 2014.doc

III. EMPIRICAL LABORATORIES, LLC
DATA ENTRY VERIFICATION FORM – PROJECT MANAGEMENT

Workorder#: 1511258

	Verification Item	Yes	No	NA
1.	**Cooler Receipt Form Issues reviewed and communicated to client**			X
2.	**Element/ Project Screen/items verified to match the COC/CRF:**			
a.	**Client/Project**	X		
b.	Comments requiring laboratory reminder?			X
c.	Client and/or Project Memo requiring laboratory reminder?			X
3.	**Receipt Screen items verified to match the COC/CRF:**			
a.	Received Date/Received By	X		
b.	Workorder Due Date	X		
c.	Package Due Date	X		
d.	TAT	X		
e.	SDG Identifier Populated	X		
4.	**Sample Information verified against COC for each sample:**			
a.	Name	X		
b.	QC Source			X
c.	Matrix	X		
d.	Sample Type	X		
e.	Sampled Date/Time (Correct Time Zone)	X		
f.	Work Analyses/Versions	X		
g.	Sample Issues included in comments			X
h.	Unpreserved VOA holding time set to 7 days			X
5.	**Containers consistent with tests requested**	X		
6.	**Field data entered and matching COC, if applicable**			X
	I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial/date):	SMG 11/25/2015		

C:\Users\sgordon\Desktop\QS10_R21_20140729_CoolerReceiptForm.doc

WORK ORDER

Printed: 11/25/2015 4:39:45PM

1511258

Empirical Laboratories, LLC

Client: CB&I
Project: Holloman AFB

Project Manager: Sonya Gordon
Project Number: CBI_HAFB

Report To:
CB&I
Mark Lyon
P.O. Box 98519
Baton Rouge, LA 70884
Phone: (225) 932-2500
Fax: (225) 932-2661

Invoice To:
CB&I
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Date Due: 12/10/2015 16:00 (10 day TAT)

Received By: Joshua T. Gross
Date Received: 11/24/2015 09:20

Logged In By: Joshua T. Gross
Date Logged In: 11/24/2015 09:37

Samples Received at: **1.5°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	No		

Analysis	Due	TAT	Expires	Comments
1511258-01 OTC530-GW-5301-MW01-151123 [Water] Sampled 11/23/2015 06:41 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 07:41	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 07:41	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 07:41	NO3
1511258-02 OTC531A-GW-531A1-MW01-151123 [Water] Sampled 11/23/2015 07:40 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 08:40	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 08:40	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 08:40	NO3
1511258-03 OTC531A-GW-531A1-MW01-151123-FD [Water] Sampled 11/23/2015 00:00 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 01:00	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 01:00	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 01:00	NO3
1511258-04 OTC531B-GW-531B1-MW01-151123 [Water] Sampled 11/23/2015 08:24 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 09:24	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 09:24	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 09:24	NO3

1511258

Empirical Laboratories, LLC

Client:	**CB&I**	**Project Manager:**	**Sonya Gordon**
Project:	**Holloman AFB**	**Project Number:**	**CBI_HAFB**

Analysis	Due	TAT	Expires	Comments
1511258-05 OTC531C-GW-531C1-MW01-151123 [Water] Sampled 11/23/2015 09:16 (GMT-07:00) Mountain Time (US				
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/07/2015 16:00	10	11/30/2015 10:16	
WC_ANIONS_9056A (Regular)	12/07/2015 16:00	10	12/21/2015 10:16	Cl
WC_ANIONS_300.0 (Short Hold)	12/07/2015 16:00	10	11/25/2015 10:16	NO3

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Holloman AFB
SDG #: 1511258

QC LEVEL: Level IV
Report Due: 12/10/2015
Client Sample Count: 4

Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	E300.0	SM2540C	SW9056A
Client Sample	11/23/2015	11/24/2015	1511258-01	OTC530-GW-5301-MW01-151123	Water	X	X	X
Client Sample	11/23/2015	11/24/2015	1511258-02	OTC531A-GW-531A1-MW01-151123	Water	X	X	X
Field Duplicate	11/23/2015	11/24/2015	1511258-03	OTC531A-GW-531A1-MW01-151123-FD	Water	X	X	X
Client Sample	11/23/2015	11/24/2015	1511258-04	OTC531B-GW-531B1-MW01-151123	Water	X	X	X
Client Sample	11/23/2015	11/24/2015	1511258-05	OTC531C-GW-531C1-MW01-151123	Water	X	X	X

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511258-01 [OTC530-GW-5301-MW01-151123]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15
1511258-02 [OTC531A-GW-531A1-MW01-151123]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15
1511258-03 [OTC531A-GW-531A1-MW01-151123-FD]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15
1511258-04 [OTC531B-GW-531B1-MW01-151123]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15
1511258-05 [OTC531C-GW-531C1-MW01-151123]	5K24008	5.00/5.00	5.00	5.00	1.00			11/24/15

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511258-01 [OTC530-GW-5301-MW01-151123]	5K25005	100.00/100.00	100	100	1.00			11/25/15
1511258-02 [OTC531A-GW-531A1-MW01-151123]	5K25005	100.00/100.00	100	100	1.00			11/25/15
1511258-03 [OTC531A-GW-531A1-MW01-151123-FD]	5K25005	100.00/100.00	100	100	1.00			11/25/15
1511258-04 [OTC531B-GW-531B1-MW01-151123]	5K25005	100.00/100.00	100	100	1.00			11/25/15
1511258-05 [OTC531C-GW-531C1-MW01-151123]	5K25005	100.00/100.00	100	100	1.00			11/25/15

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511258-02RE1 [OTC531A-GW-531A1-MW01-151123]	5L08019	5.00/5.00	5.00	5.00	5.00			12/08/15
1511258-03RE1 [OTC531A-GW-531A1-MW01-151123-FD]	5L08019	5.00/5.00	5.00	5.00	5.00			12/08/15
1511258-04RE1 [OTC531B-GW-531B1-MW01-151123]	5L08019	5.00/5.00	5.00	5.00	50.00			12/08/15
1511258-05RE1 [OTC531C-GW-531C1-MW01-151123]	5L08019	5.00/5.00	5.00	5.00	50.00			12/08/15

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511258-01RE1 [OTC530-GW-5301-MW01-151123]	5L10011	5.00/5.00	5.00	5.00	10.00			12/10/15

ANALYSIS DATA SHEET

OTC530-GW-5301-MW01-151123

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-01
Sampled:	11/23/15 06:41	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**4270**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**919**	**1.70**	3.30	5.00	10	D	SW9056A	5L10011	12/10/15 22:09
14797-55-8	Nitrate as N	**16.7**	**0.0330**	0.100	0.250	1	X	E300.0	5K24008	11/24/15 13:47

ANALYSIS DATA SHEET

OTC531A-GW-531A1-MW01-151123

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-02
Sampled:	11/23/15 07:40	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**4050**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**467**	**0.850**	1.65	2.50	5	D	SW9056A	5L08019	12/08/15 19:06
14797-55-8	Nitrate as N	**0.121**	**0.0330**	0.100	0.250	1	JX	E300.0	5K24008	11/24/15 14:05

ANALYSIS DATA SHEET

OTC531A-GW-531A1-MW01-151123-FD

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-03
Sampled:	11/23/15 00:00	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**4050**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**460**	**0.850**	1.65	2.50	5	D	SW9056A	5L08019	12/08/15 19:24
14797-55-8	Nitrate as N	**0.0935**	**0.0330**	0.100	0.250	1	JX	E300.0	5K24008	11/24/15 14:23

ANALYSIS DATA SHEET

OTC531B-GW-531B1-MW01-151123

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-04
Sampled:	11/23/15 08:24	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**21500**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**4140**	**8.50**	16.5	25.0	50	D	SW9056A	5L08019	12/08/15 20:18
14797-55-8	Nitrate as N		0.0330	0.100	0.250	1	UX	E300.0	5K24008	11/24/15 14:41

ANALYSIS DATA SHEET

OTC531C-GW-531C1-MW01-151123

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1511258-05
Sampled:	11/23/15 09:16	Received:	11/24/15 09:20

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**12300**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00
16887-00-6	Chloride	**2290**	**8.50**	16.5	25.0	50	D	SW9056A	5L08019	12/08/15 20:35
14797-55-8	Nitrate as N	**5.14**	**0.0330**	0.100	0.250	1	NX	E300.0	5K24008	11/24/15 14:59

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K24008-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	UX	E300.0	5K24008	11/24/15 12:18

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5K24008-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**2.342**	**0.0330**	0.100	0.250	1	X	E300.0	5K24008	11/24/15 12:36

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K24008-DUP1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**5.138**	**0.0330**	0.100	0.250	1		E300.0	5K24008	11/24/15 15:52

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K24008-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**7.255**	**0.0367**	0.111	0.278	1	X	E300.0	5K24008	11/24/15 15:17

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K24008-MSD1
% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**7.201**	**0.0367**	0.111	0.278	1	X	E300.0	5K24008	11/24/15 15:34

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5K25005-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**36.0**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5K25005-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1155**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5K25005-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**12140**	**20.0**	20.0	20.0	1		SM2540C	5K25005	11/25/15 16:00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5L08019-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5L08019	12/08/15 15:14

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5L08019-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.11**	**0.170**	0.330	0.500	1		SW9056A	5L08019	12/08/15 15:32

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L10011-BLK1

% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5L10011	12/10/15 12:03

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1511258

Project: Holloman AFB

Laboratory ID: 5L10011-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**25.37**	**0.170**	0.330	0.500	1		SW9056A	5L10011	12/10/15 12:20

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Nitrate as N	3.164	2.881	91.1	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Chloride	4.200	4.093	97.5	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L33615-CCV1	Nitrate as N	2.500	2.337	93.5	mg/L	+/- 10.00%
5L33615-CCV2	**Nitrate as N**	**2.500**	**3.080**	**123**	**mg/L**	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L34303

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L34303-CCV1	Chloride	25.00	25.05	100	mg/L	+/- 10.00%
5L34303-CCV2	Chloride	25.00	25.11	100	mg/L	+/- 10.00%
5L34303-CCV3	Chloride	25.00	25.21	101	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1511258
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L34802

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L34802-CCV1	Chloride	25.00	25.33	101	mg/L	+/- 10.00%
5L34802-CCV2	Chloride	25.00	25.34	101	mg/L	+/- 10.00%
5L34802-CCV3	Chloride	25.00	25.37	101	mg/L	+/- 10.00%
5L34802-CCV4	Chloride	25.00	25.32	101	mg/L	+/- 10.00%

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L33615

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L33615-CRL2	Nitrate as N	0.1000	0.07290	72.9	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L34303

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L34303-CRL1	Chloride	0.5000	0.4705	94.1	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L34802

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L34802-CRL1	Chloride	0.5000	0.4473	89.5	mg/L	50 - 150

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Batch: 5K24008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K24008-BLK1	Nitrate as N	0.000400	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Batch: 5K25005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K25005-BLK1	Total Dissolved Solids	36.0	20.0	20.0	mg/L		SM2540C

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Batch: 5L08019

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L08019-BLK1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Batch: 5L10011

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L10011-BLK1	Chloride	0.00150	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Nitrate as N	0.001700	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Chloride	0.03020	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5L33615
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L33615-CCB1	Nitrate as N	0.00120	0.0330	0.250	mg/L	U	E300.0
5L33615-CCB2	Nitrate as N	0.00640	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5L34303
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L34303-CCB1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34303-CCB2	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34303-CCB3	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Sequence: 5L34802
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L34802-CCB1	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB2	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB3	Chloride	0.00	0.170	0.500	mg/L	U	SW9056A
5L34802-CCB4	Chloride	0.00170	0.170	0.500	mg/L	U	SW9056A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E300.0

OTC531C-GW-531C1-MW01-151123

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5K24008

% Solids:

Source Sample Name: **1511258-05**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate as N	2.778	5.138	7.255	76.2	N	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Nitrate as N	2.778	7.201	74.2	0.753	N	15	80 - 120

DUPLICATES

E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K24008-DUP1
Batch: 5K24008
Lab Source ID: 1511258-05
Preparation: WC_PREP_ANIONS_W
Initial/Final: 5 mL / 5 mL
Source Sample Name: OTC531C-GW-531C1-MW01-151123
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Nitrate as N	10	5.14	5.138	0.0156		E300.0

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: 1511258
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5K25005-DUP1
Batch: 5K25005
Lab Source ID: 1511258-05
Preparation: pNone
Initial/Final: 100 mL / 100 mL
Source Sample Name: OTC531C-GW-531C1-MW01-151123
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	12300 B	12140 B	0.959		SM2540C

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K24008	Laboratory ID:	5K24008-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.342	93.7	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5K25005	Laboratory ID:	5K25005-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	988.0	1155	117	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L08019	Laboratory ID:	5L08019-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.11	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L10011	Laboratory ID:	5L10011-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	25.37	101	80 - 120

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Batch: 5K24008 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC530-GW-5301-MW01-151123	1511258-01	11/24/15 09:48	5.00	5.00
OTC531A-GW-531A1-MW01-151123	1511258-02	11/24/15 09:48	5.00	5.00
OTC531A-GW-531A1-MW01-151123-FD	1511258-03	11/24/15 09:48	5.00	5.00
OTC531B-GW-531B1-MW01-151123	1511258-04	11/24/15 09:48	5.00	5.00
OTC531C-GW-531C1-MW01-151123	1511258-05	11/24/15 09:48	5.00	5.00
Blank	5K24008-BLK1	11/24/15 09:48	5.00	5.00
LCS	5K24008-BS1	11/24/15 09:48	5.00	5.00
OTC531C-GW-531C1-MW01-151123	5K24008-DUP1	11/24/15 09:48	5.00	5.00
OTC531C-GW-531C1-MW01-151123	5K24008-MS1	11/24/15 09:48	22.50	25.00
OTC531C-GW-531C1-MW01-151123	5K24008-MSD1	11/24/15 09:48	22.50	25.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Batch: 5K25005 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC530-GW-5301-MW01-151123	1511258-01	11/25/15 07:36	100.00	100.00
OTC531A-GW-531A1-MW01-151123	1511258-02	11/25/15 07:36	100.00	100.00
OTC531A-GW-531A1-MW01-151123-FD	1511258-03	11/25/15 07:36	100.00	100.00
OTC531B-GW-531B1-MW01-151123	1511258-04	11/25/15 07:36	100.00	100.00
OTC531C-GW-531C1-MW01-151123	1511258-05	11/25/15 07:36	100.00	100.00
Blank	5K25005-BLK1	11/25/15 07:36	100.00	100.00
LCS	5K25005-BS1	11/25/15 07:36	20.00	20.00
OTC531C-GW-531C1-MW01-151123	5K25005-DUP1	11/25/15 07:36	100.00	100.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Batch: 5L08019 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC531A-GW-531A1-MW01-151123	1511258-02RE1	12/08/15 14:25	5.00	5.00
OTC531A-GW-531A1-MW01-151123-FD	1511258-03RE1	12/08/15 14:25	5.00	5.00
OTC531B-GW-531B1-MW01-151123	1511258-04RE1	12/08/15 14:25	5.00	5.00
OTC531C-GW-531C1-MW01-151123	1511258-05RE1	12/08/15 14:25	5.00	5.00
Blank	5L08019-BLK1	12/08/15 14:07	5.00	5.00
LCS	5L08019-BS1	12/08/15 14:07	5.00	5.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Batch: 5L10011 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC530-GW-5301-MW01-151123	1511258-01RE1	12/10/15 12:00	5.00	5.00
Blank	5L10011-BLK1	12/10/15 12:00	5.00	5.00
LCS	5L10011-BS1	12/10/15 12:00	5.00	5.00

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: 1511258

Client: CB&I

Project: Holloman AFB

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	5K25005-BS1	112515-002	11/25/15 16:00
OTC531C-GW-531C1-MW01-15112	5K25005-DUP1	112515-003	11/25/15 16:00
Blank	5K25005-BLK1	112515-001	11/25/15 16:00

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L33615	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L33615-CCV1	SEQ-CCV1_Integration	11/24/15 10:49
Calibration Blank	5L33615-CCB1	SEQ-CCB1_Integration	11/24/15 11:07
Instrument RL Check	5L33615-CRL2	SEQ-CRL2_Integration	11/24/15 11:42
Blank	5K24008-BLK1	5K24008-BLK1_Integration	11/24/15 12:18
LCS	5K24008-BS1	5K24008-BS1_Integration	11/24/15 12:36
OTC530-GW-5301-MW01-151123	1511258-01	1511258-01_Integration	11/24/15 13:47
OTC531A-GW-531A1-MW01-15112	1511258-02	1511258-02_Integration	11/24/15 14:05
OTC531A-GW-531A1-MW01-15112	1511258-03	1511258-03_Integration	11/24/15 14:23
OTC531B-GW-531B1-MW01-15112	1511258-04	1511258-04_Integration	11/24/15 14:41
OTC531C-GW-531C1-MW01-15112	1511258-05	1511258-05_Integration	11/24/15 14:59
OTC531C-GW-531C1-MW01-15112	5K24008-MS1	5K24008-MS1_Integration	11/24/15 15:17
OTC531C-GW-531C1-MW01-15112	5K24008-MSD1	5K24008-MSD1_Integration	11/24/15 15:34
OTC531C-GW-531C1-MW01-15112	5K24008-DUP1	5K24008-DUP1_Integration	11/24/15 15:52
Calibration Check	5L33615-CCV2	SEQ-CCV2_Integration	11/24/15 16:10
Calibration Blank	5L33615-CCB2	SEQ-CCB2_Integration	11/24/15 16:28

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L34303	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L34303-CCV1	SEQ-CCV1_Integration	12/08/15 13:42
Calibration Blank	5L34303-CCB1	SEQ-CCB1_Integration	12/08/15 14:03
Instrument RL Check	5L34303-CRL1	SEQ-CRL1_Integration	12/08/15 14:21
Blank	5L08019-BLK1	5L08019-BLK1_Integration	12/08/15 15:14
LCS	5L08019-BS1	5L08019-BS1_Integration	12/08/15 15:32
OTC531A-GW-531A1-MW01-15112	1511258-02RE1	511258-02RE1@5X_Integratio	12/08/15 19:06
OTC531A-GW-531A1-MW01-15112	1511258-03RE1	511258-03RE1@5X_Integratio	12/08/15 19:24
Calibration Check	5L34303-CCV2	SEQ-CCV2_Integration	12/08/15 19:42
Calibration Blank	5L34303-CCB2	SEQ-CCB2_Integration	12/08/15 20:00
OTC531B-GW-531B1-MW01-15112	1511258-04RE1	11258-04RE1@50X_Integratio	12/08/15 20:18
OTC531C-GW-531C1-MW01-15112	1511258-05RE1	11258-05RE1@50X_Integratio	12/08/15 20:35
Calibration Check	5L34303-CCV3	SEQ-CCV3_Integration	12/08/15 23:34
Calibration Blank	5L34303-CCB3	SEQ-CCB3_Integration	12/08/15 23:52

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L34802	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L34802-CCV1	SEQ-CCV1_Integration	12/10/15 10:33
Calibration Blank	5L34802-CCB1	SEQ-CCB1_Integration	12/10/15 10:51
Instrument RL Check	5L34802-CRL1	SEQ-CRL1_Integration	12/10/15 11:09
Blank	5L10011-BLK1	5L10011-BLK1_Integration	12/10/15 12:03
LCS	5L10011-BS1	5L10011-BS1_Integration	12/10/15 12:20
Calibration Check	5L34802-CCV2	SEQ-CCV2_Integration	12/10/15 17:24
Calibration Blank	5L34802-CCB2	SEQ-CCB2_Integration	12/10/15 17:42
Calibration Check	5L34802-CCV3	SEQ-CCV3_Integration	12/10/15 20:58
Calibration Blank	5L34802-CCB3	SEQ-CCB3_Integration	12/10/15 21:16
OTC530-GW-5301-MW01-151123	1511258-01RE1	511258-01RE1@10_Integratio	12/10/15 22:09
Calibration Check	5L34802-CCV4	SEQ-CCV4_Integration	12/11/15 02:01
Calibration Blank	5L34802-CCB4	SEQ-CCB4_Integration	12/11/15 02:19

INITIAL CALIBRATION DATA

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Calibration:	5323007	Instrument:	WC-IC2
Matrix:	Water	Calibration Dates:	11/17/15 7:54 11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258
Client:	CB&I	Project:	Holloman AFB
Calibration:	5323007	Instrument:	WC-IC2
Matrix:	Water	Calibration Dates:	11/17/15 7:54 11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	0.126	0.1032627	0.252	0.1055079	0.63	0.1077229	1.26	0.114327	6.3	0.1233052	12.6	0.12778
Chloride	0.5	0.2720276	1	0.287169	2.5	0.294335	5	0.3032684	25	0.3014536	50	0.3060892
Fluoride	0.05	0.44033	0.1	0.461829	0.25	0.4932644	0.5	0.50716	2.5	0.5010368	5	0.4944214
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552
Sulfate as SO4	0.5	0.2256678	1	0.2202215	2.5	0.2180314	5	0.2202646	25	0.2174918	50	0.2208332

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	31.5	0.1254725	50.4	0.1305396	63	~~0.1261554~~						
Chloride	125	0.3061993	200	0.3057162	250	0.3029497						
Fluoride	12.5	~~0.4610045~~	20	~~0.4356024~~	25	~~0.4186656~~						
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						
Sulfate as SO4	125	0.2174702	200	0.2259882	250	0.22377						

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1511258	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Bromide	0.1172397	9.257594	8.14375	0.8992098	0.9994942		0.995	
Chloride	0.2976898	3.86824	4.845667	0.2683757	0.9999608		0.995	
Fluoride	0.4830069	5.409777	3.326	0.1833613	0.9999443		0.995	
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	
Sulfate as SO4	0.2210821	1.508986	8.729111	3.18872	0.9997657		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC530-GW-5301-MW01-151123	11/23/15 06:41	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 13:47	1.25	2.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 07:40	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 14:05	1.23	2.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 00:00	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 14:23	1.56	2.00	
OTC531B-GW-531B1-MW01-15112	11/23/15 08:24	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 14:41	1.22	2.00	
OTC531C-GW-531C1-MW01-15112	11/23/15 09:16	11/24/15 09:20	11/24/15 09:48	N/A	2.00	11/24/15 14:59	1.20	2.00	

HOLDING TIME SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC530-GW-5301-MW01-151123	11/23/15 06:41	11/24/15 09:20	11/25/15 07:36	2.00	7.00	11/25/15 16:00	0.35	7.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 07:40	11/24/15 09:20	11/25/15 07:36	1.96	7.00	11/25/15 16:00	0.35	7.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 00:00	11/24/15 09:20	11/25/15 07:36	2.28	7.00	11/25/15 16:00	0.35	7.00	
OTC531B-GW-531B1-MW01-15112	11/23/15 08:24	11/24/15 09:20	11/25/15 07:36	1.93	7.00	11/25/15 16:00	0.35	7.00	
OTC531C-GW-531C1-MW01-15112	11/23/15 09:16	11/24/15 09:20	11/25/15 07:36	1.89	7.00	11/25/15 16:00	0.35	7.00	

HOLDING TIME SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1511258

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC530-GW-5301-MW01-151123	11/23/15 06:41	11/24/15 09:20	12/10/15 12:00	N/A	28.00	12/10/15 22:09	17.60	28.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 07:40	11/24/15 09:20	12/08/15 14:25	N/A	28.00	12/08/15 19:06	15.43	28.00	
OTC531A-GW-531A1-MW01-15112	11/23/15 00:00	11/24/15 09:20	12/08/15 14:25	N/A	28.00	12/08/15 19:24	15.77	28.00	
OTC531B-GW-531B1-MW01-15112	11/23/15 08:24	11/24/15 09:20	12/08/15 14:25	N/A	28.00	12/08/15 20:18	15.45	28.00	
OTC531C-GW-531C1-MW01-15112	11/23/15 09:16	11/24/15 09:20	12/08/15 14:25	N/A	28.00	12/08/15 20:35	15.43	28.00	

Data for Wet Chemistry
Supporting Raw Data / Logs

Solids, Total Dissolved
TDS

Empirical Laboratories

Client(s): CB&I

Date on: 11/25/2015
Time on: 16:00
Temp on: 100C

Date off: 11/29/2015
Time off: 12:05
Temp off: 105C

MDL = 2 mg/L
MDL of 2 mg/L assumes a volume of 1L. Adjust the MDL to be proportional to the volume used.

QC Criteria
Method Blank < MDL
LCS = ±20% of True Value

Analyst(s): TSF
Historical Data Checked: Y
Analyst Authorization: TSF
Method Reference: SM2540C/160.1
Method Type: Gravimetric
Oven Temp. 180 C +/- 2 C?(Y/N): Y
Balance calibration verified?(Y/N): Y
Batch: 5K25005

Crucible ID	Sample Type	Lab ID	Client	Field ID	True Value (mg/L)	Sample Volume (ml)	Crucible Tare Weight (g)	Crucible Dried Weight #1 (g)	Crucible Dried Weight #2 (g)	Crucible Dried Weight #3 (g)	Crucible Dried Weight #4 (g)	Crucible Dried Weight #5 (g)	*TDS (mg/L)*	*Recovery or RPD (%)*	Control Limit, Lower (%)	Control Limit, Upper (%)	Comments
yes	QC	5K25005-BLK1	QC	DIWater	0	100	68.0286	68.0328	68.0321	68.0322			36		-20 mg/L	+20 mg/L	
bug	QC	5K25005-BS1	QC	13L0491	988	20	68.6615	68.6845	68.6846				1155	116.9	80	120	
fine	QC	5K25005-DUP1				100	66.2393	67.5505	67.5036	67.4879	67.4538	67.4533	12140				
Robin		1511258-01				100	65.7958	66.2513	66.2442	66.2250	66.2234	66.2229	4271				
21		1511258-02				100	67.5705	67.9976	67.9893	67.9875	67.9762	67.9757	4052				
Colleen		1511258-03				100	67.2363	67.6615	67.6507	67.6535	67.6410	67.6415	4052				
EM		1511258-04				100	67.0564	69.3470	69.2585	69.2415	69.2027	69.2030	21466				
Gum		1511258-05				100	67.0734	68.4052	68.3516	68.3367	68.2988	68.2991	12257				

Comments:

Temp on (°C):	100°C	185	185	190	180	185
Temp off (°C):	105	185	190	184	180	180
Date/Time on:	11/25/2015 16:00	11/29/2015 13:41	11/29/2015 16:45	11/29/2015 19:29	12/3/2015 13:11	12/3/2015 17:35
Date/Time off :	11/29/2015 12:05	11/29/2015 15:15	11/29/2015 18:20	12/3/2015 11:30	12/3/2015 16:00	12/3/2015 18:40

2nd ✓BLQ
12/8/15

SOP186_R09_20140730_TDS_Blank.xls

Sequence Overview

Sequence Details

Name:	**111715**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**17/Nov/15 12:51:49**
No. of Injections:	**14**	*Updated By:*	**NSH-IONC2**

Injection Details

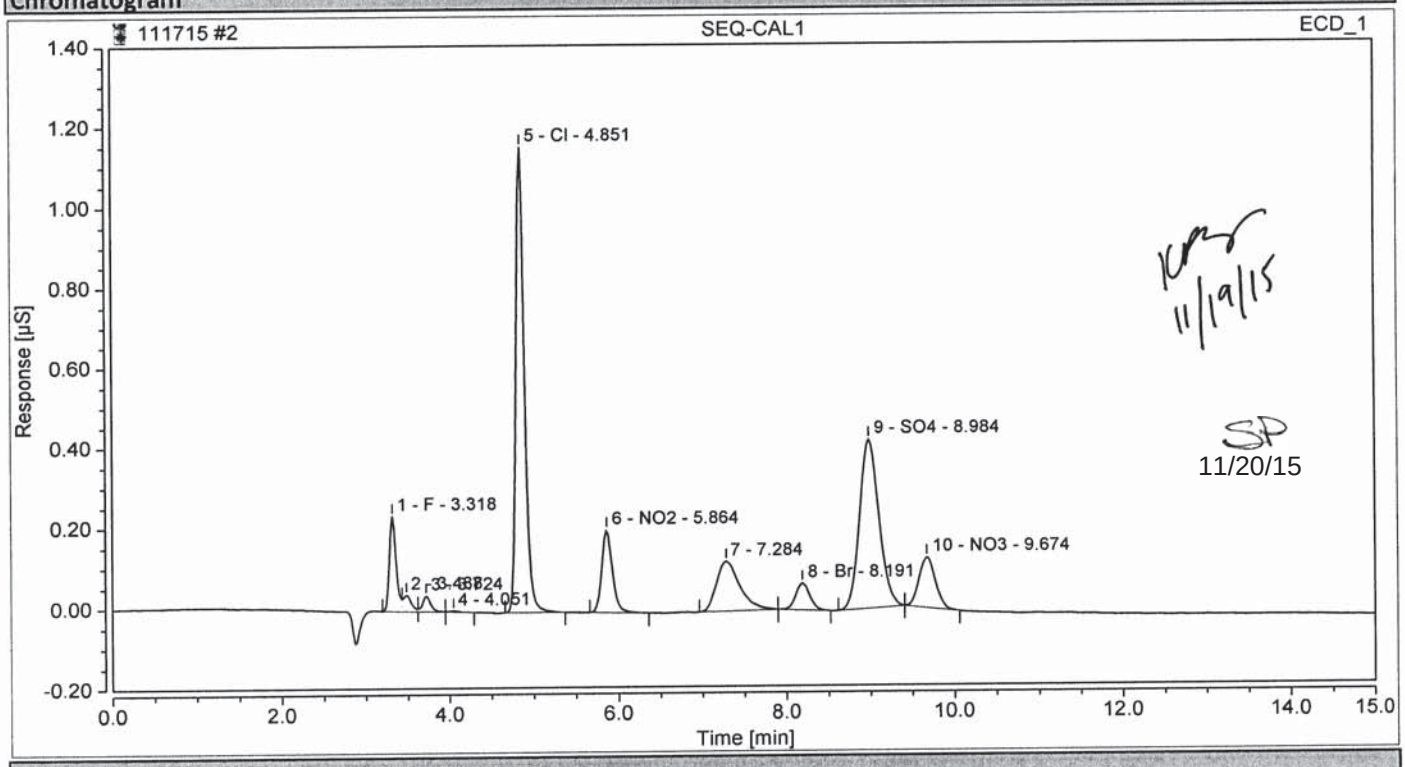
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		17/Nov/15 07:37:12	Finished
2	SEQ-CAL1	2	Calibration Standard	01	17/Nov/15 07:54:59	Finished
3	SEQ-CAL2	3	Calibration Standard	02	17/Nov/15 08:12:50	Finished
4	SEQ-CAL3	4	Calibration Standard	03	17/Nov/15 08:30:40	Finished
5	SEQ-CAL4	5	Calibration Standard	04	17/Nov/15 08:48:31	Finished
6	SEQ-CAL5	6	Calibration Standard	05	17/Nov/15 09:06:21	Finished
7	SEQ-CAL6	7	Calibration Standard	06	17/Nov/15 09:24:11	Finished
8	SEQ-CAL7	8	Calibration Standard	07	17/Nov/15 09:42:01	Finished
9	SEQ-CAL8	9	Calibration Standard	08	17/Nov/15 09:59:51	Finished
10	SEQ-CAL9	10	Calibration Standard	09	17/Nov/15 10:17:41	Finished
11	SEQ-ICV1	11	Unknown		17/Nov/15 10:35:31	Finished
12	SEQ-ICB1	12	Unknown		17/Nov/15 10:53:21	Finished
13	CCV TEST	13	Unknown		17/Nov/15 11:11:11	Finished
14	BLANK	14	Unknown		17/Nov/15 11:29:01	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**01**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 07:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

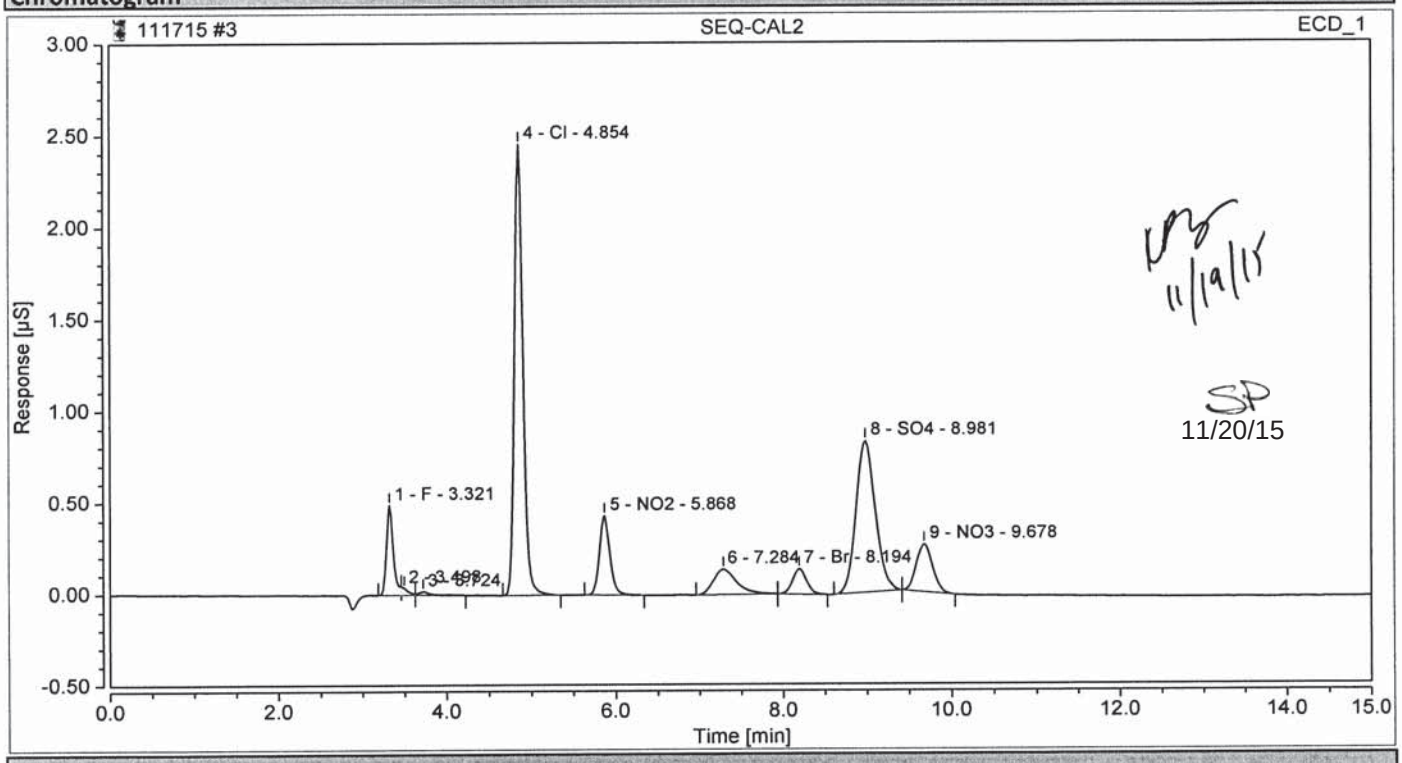
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0220165	0.236	5.61	9.74	0.0444
2		3.488	0.0046279	0.041	1.18	1.69	n.a.
3		3.724	0.0045613	0.040	1.16	1.64	n.a.
4		4.051	0.0004082	0.003	0.10	0.12	n.a.
5	Cl	4.851	0.1360138	1.160	34.67	47.89	0.4469
6	NO2	5.864	0.0301038	0.206	7.67	8.48	0.0529
7		7.284	0.0402353	0.124	10.26	5.12	n.a.
8	Br	8.191	0.0130111	0.067	3.32	2.75	0.1009
9	SO4	8.984	0.1128339	0.421	28.76	17.37	0.5046
10	NO3	9.674	0.0284874	0.126	7.26	5.21	0.0369
Total:			**0.392**	**2.423**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL2**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**02**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

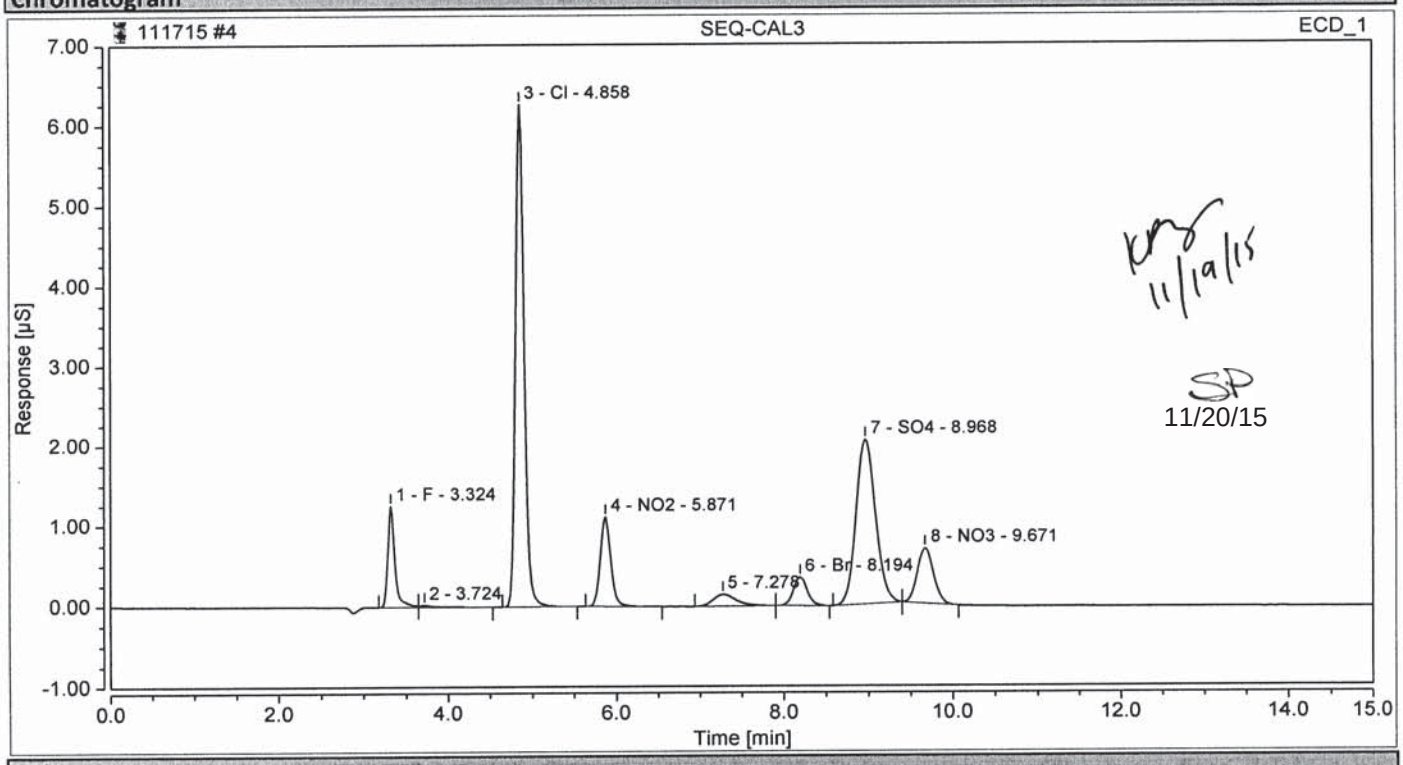
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0461829	0.490	6.14	10.21	0.0931
2		3.498	0.0038392	0.037	0.51	0.78	n.a.
3		3.724	0.0031064	0.019	0.41	0.40	n.a.
4	Cl	4.854	0.2871690	2.458	38.17	51.18	0.9436
5	NO2	5.868	0.0623479	0.433	8.29	9.01	0.1096
6		7.284	0.0446872	0.139	5.94	2.89	n.a.
7	Br	8.194	0.0265880	0.137	3.53	2.86	0.2061
8	SO4	8.981	0.2202215	0.829	29.27	17.25	0.9849
9	NO3	9.678	0.0581981	0.260	7.74	5.42	0.0754
Total:			**0.752**	**4.803**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL3**	*Run Time (min):*	**15.00**
Vial Number:	**4**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**03**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

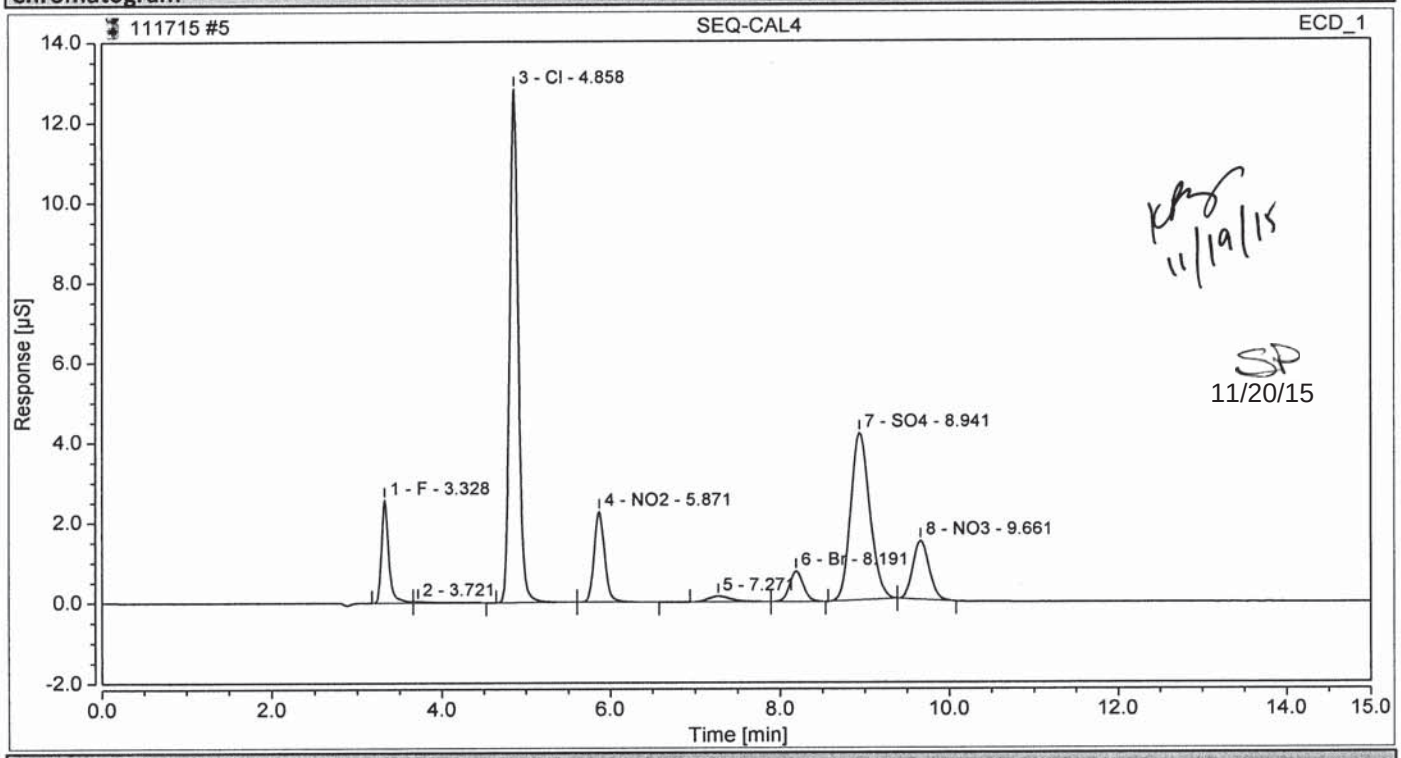
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.1233161	1.257	6.71	10.57	0.2487
2		3.724	0.0046231	0.023	0.25	0.19	n.a.
3	Cl	4.858	0.7358376	6.264	40.05	52.66	2.4178
4	NO2	5.871	0.1596659	1.114	8.69	9.36	0.2806
5		7.278	0.0473937	0.148	2.58	1.25	n.a.
6	Br	8.194	0.0678654	0.355	3.69	2.99	0.5261
7	SO4	8.968	0.5450785	2.048	29.67	17.21	2.4378
8	NO3	9.671	0.1536592	0.687	8.36	5.77	0.1989
Total:			**1.837**	**11.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL4**	*Run Time (min):*	**15.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**04**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

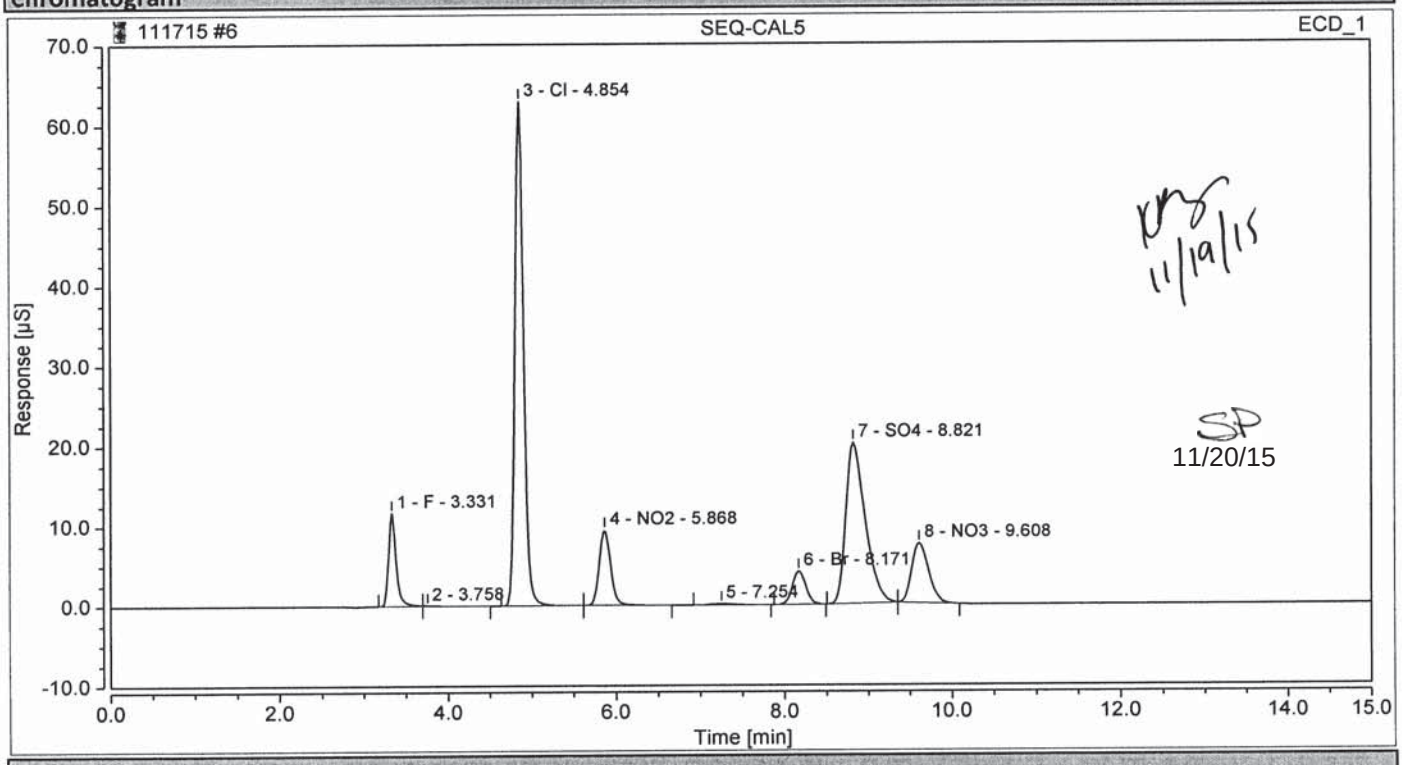
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	0.2535800	2.569	6.80	10.60	0.5114
2		3.721	0.0075683	0.032	0.20	0.13	n.a.
3	Cl	4.858	1.5163418	12.815	40.69	52.90	4.9824
4	NO2	5.871	0.3282896	2.259	8.81	9.33	0.5769
5		7.271	0.0453793	0.144	1.22	0.59	n.a.
6	Br	8.191	0.1440520	0.762	3.87	3.15	1.1168
7	SO4	8.941	1.1013233	4.174	29.55	17.23	4.9255
8	NO3	9.661	0.3300388	1.472	8.86	6.07	0.4273
Total:			**3.727**	**24.227**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL5**	*Run Time (min):*	**15.00**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**05**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

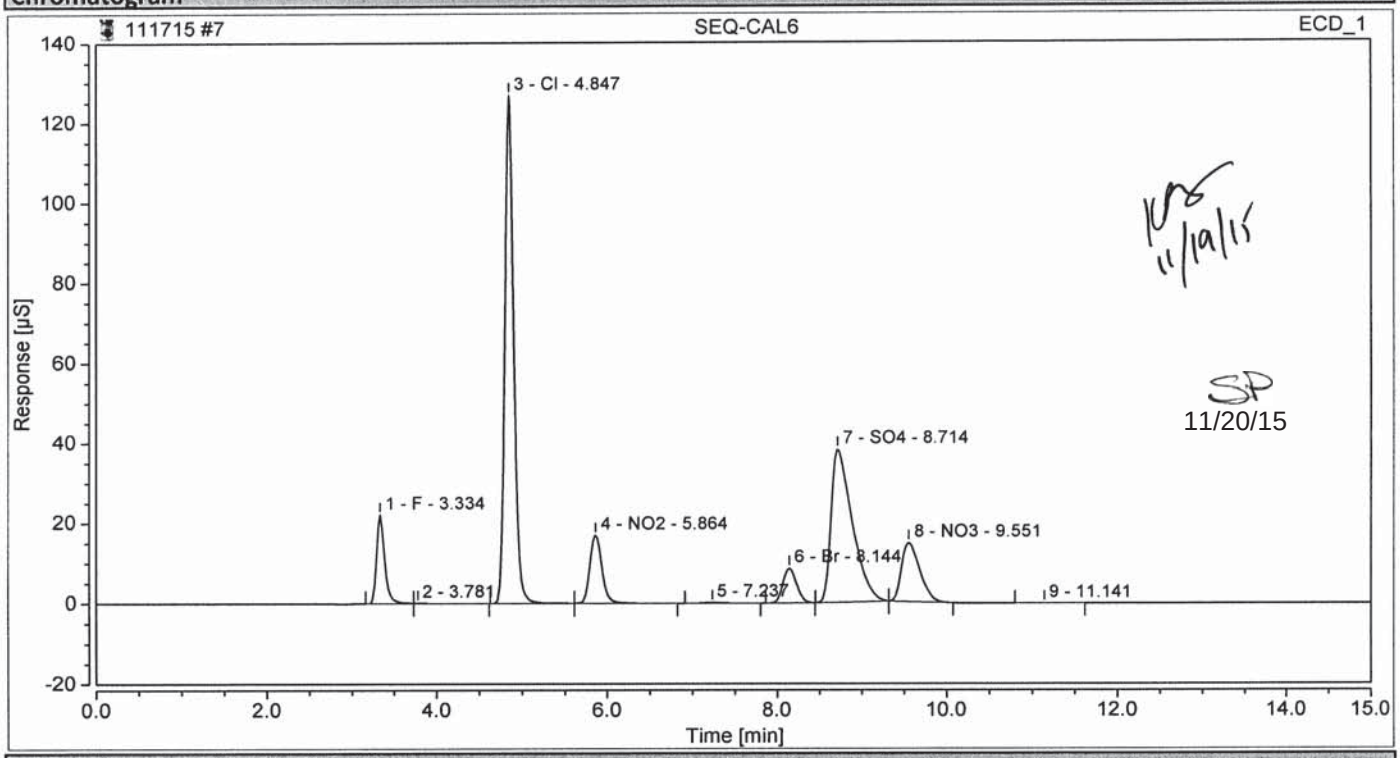
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.2525921	11.699	6.84	10.08	2.5263
2		3.758	0.0190090	0.072	0.10	0.06	n.a.
3	Cl	4.854	7.5363404	62.882	41.14	54.21	24.7631
4	NO2	5.868	1.4836250	9.448	8.10	8.14	2.6073
5		7.254	0.0485316	0.160	0.26	0.14	n.a.
6	Br	8.171	0.7768228	4.164	4.24	3.59	6.0224
7	SO4	8.821	5.4372952	20.102	29.68	17.33	24.3175
8	NO3	9.608	1.7660024	7.478	9.64	6.45	2.2865
Total:			**18.320**	**116.005**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL6**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	% R
1	F	3.334	2.4721069	22.141	6.69	9.72	4.9859	99.718
2		3.781	0.0322715	0.113	0.09	0.05	n.a.	
3	Cl	4.847	15.3044626	126.800	41.40	55.68	50.2878	
4	NO2	5.864	2.8092761	16.969	7.60	7.45	4.9369	98.738
5		7.237	0.0504916	0.173	0.14	0.08	n.a.	
6	Br	8.144	1.6100283	8.683	4.36	3.81	12.4819	
7	SO4	8.714	11.0416639	38.155	29.87	16.76	49.3822	
8	NO3	9.551	3.6425462	14.675	9.85	6.44	4.7162	
9		11.141	0.0027315	0.007	0.01	0.00	n.a.	
Total:			**36.966**	**227.715**	**100.00**	**100.00**		

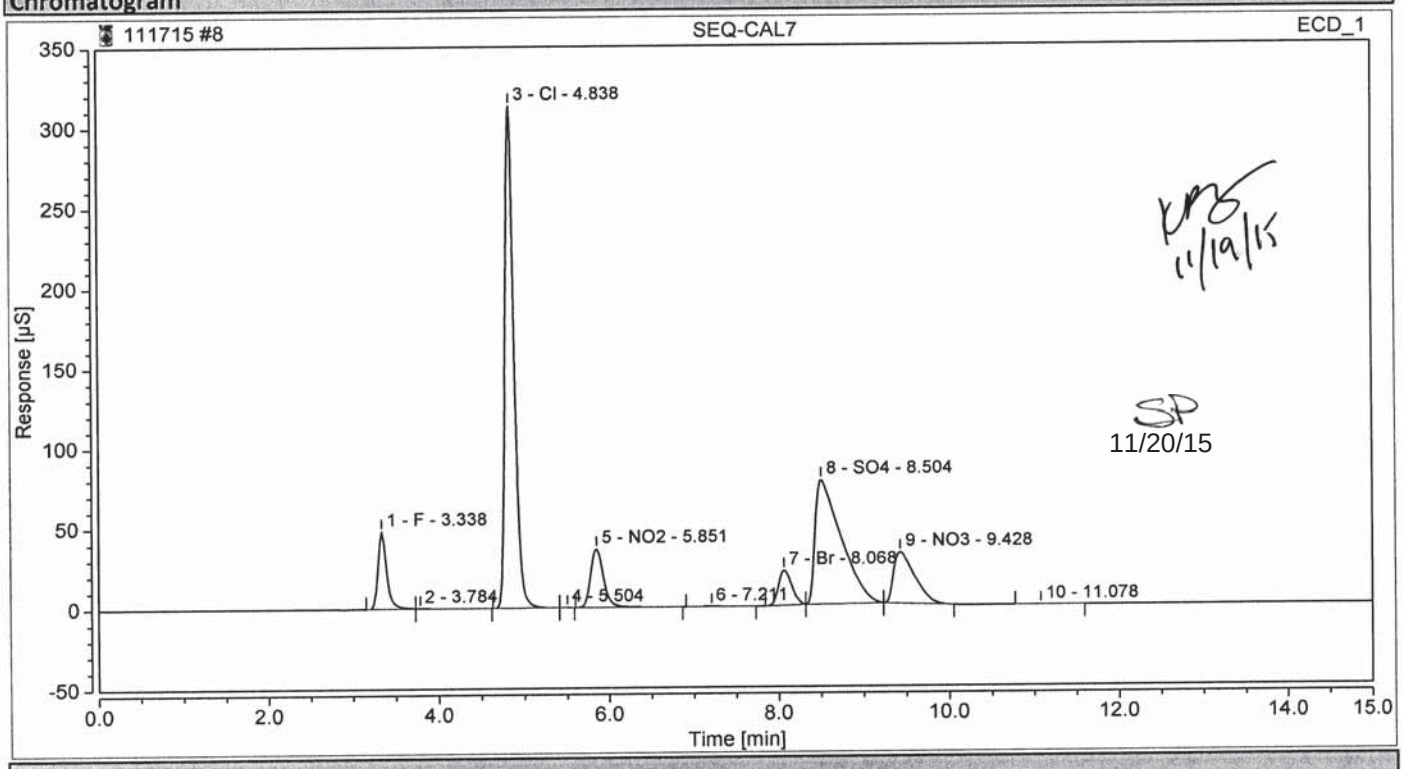
Marcia 12/8/2015

Chromatogram and Results

Injection Details

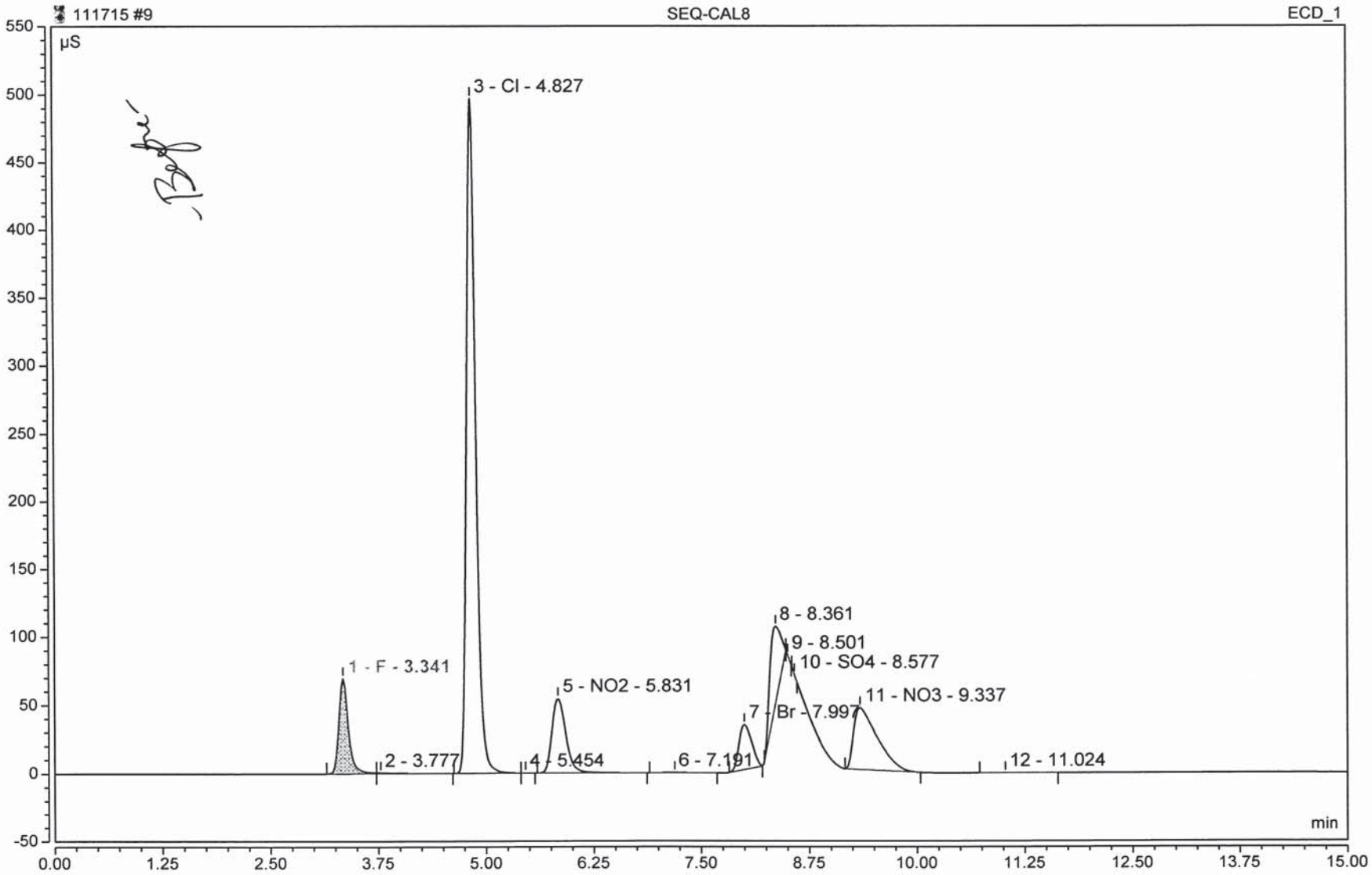
Injection Name:	**SEQ-CAL7**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**07**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.338	5.7625559	48.349	6.34	9.12	11.6224
2		3.784	0.0854296	0.296	0.09	0.06	n.a.
3	Cl	4.838	38.2749054	313.315	42.10	59.13	125.7648
4		5.504	0.0002744	0.002	0.00	0.00	n.a.
5	NO2	5.851	6.4639480	36.442	7.11	6.88	11.3595
6		7.211	0.0579694	0.208	0.06	0.04	n.a.
7	Br	8.068	3.9523854	21.796	4.35	4.11	30.6414
8	SO4	8.504	27.1837844	77.489	29.90	14.62	121.5754
9	NO3	9.428	9.1270172	31.979	10.04	6.04	11.8171
10		11.078	0.0042754	0.011	0.00	0.00	n.a.
Total:			**90.913**	**529.888**	**100.00**	**100.00**	

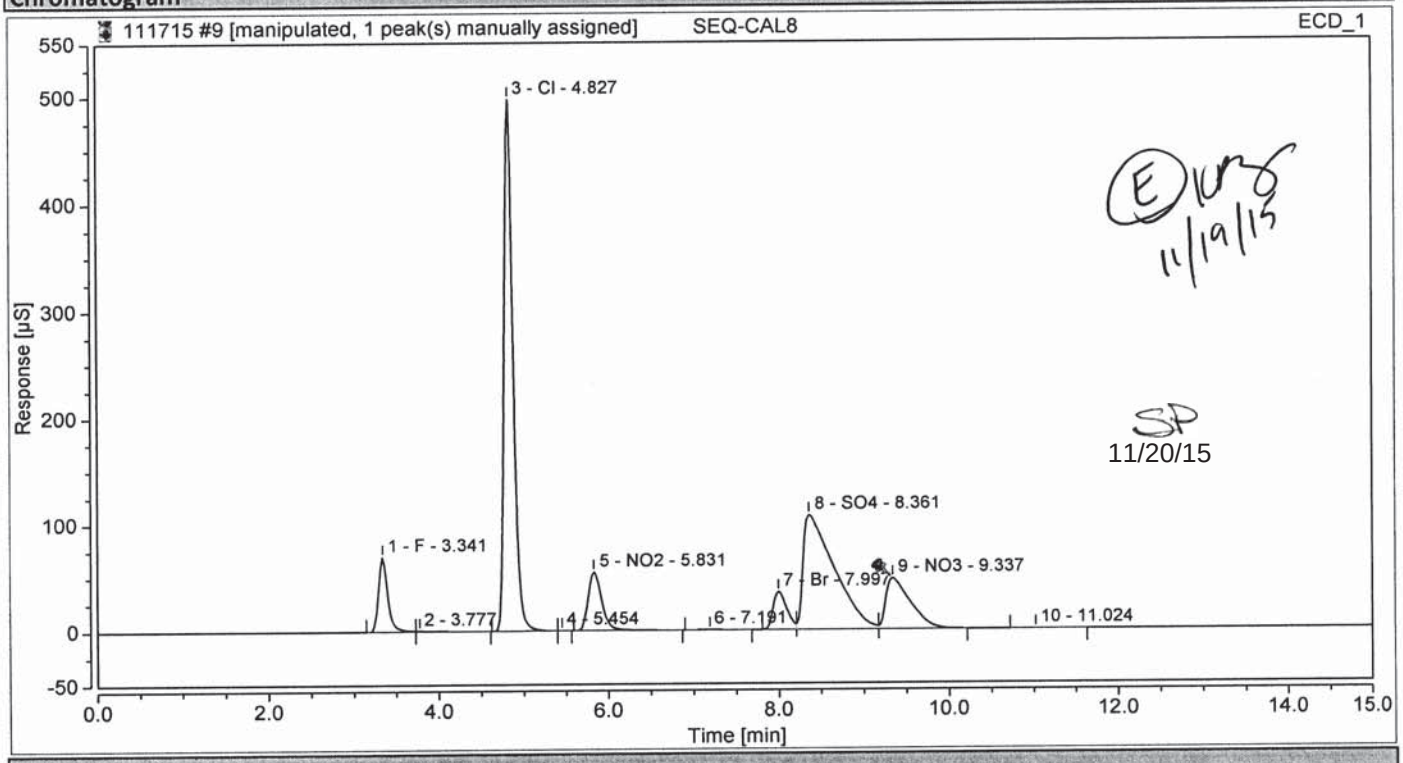

111715 #9
SEQ-CAL8
ECD_1
µS
3 - Cl - 4.827
1 - F - 3.341
2 - 3.777
5 - NO2 - 5.831
4 - 5.454
6 - 7.191
7 - Br - 7.997
8 - 8.361
9 - 8.501
10 - SO4 - 8.577
11 - NO3 - 9.337
12 - 11.024
min
550
500
450
400
350
300
250
200
150
100
50
0
-50
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL8**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**08**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:59**	*Sample Weight:*	**1.0000**

Chromatogram

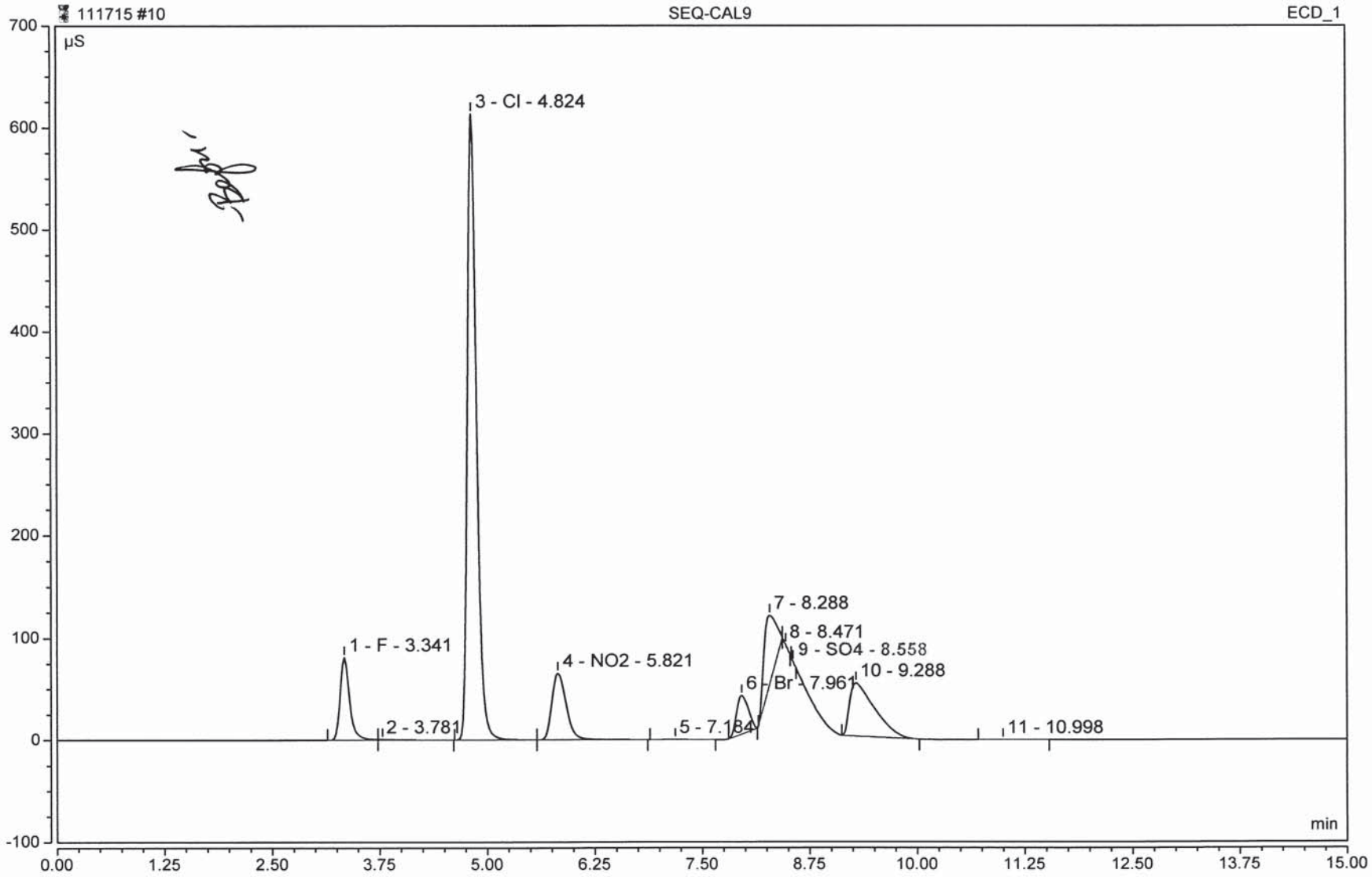


Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.341	8.7120474	69.634	5.90	8.58	17.5712
2		3.777	0.1512737	0.528	0.10	0.07	n.a.
3	Cl	4.827	61.1432401	496.862	41.39	61.23	200.9062
4		5.454	0.0003503	0.004	0.00	0.00	n.a.
5	NO2	5.831	10.1145387	54.420	6.85	6.71	17.7749
6		7.191	0.0645880	0.237	0.04	0.03	n.a.
7	Br	7.997	6.5791969	35.218	4.45	4.34	51.0060
8	SO4	8.361	45.1976399	107.066	30.60	13.19	202.1397
9	NO3	9.337	15.7421504	47.503	10.66	5.85	20.3820
10		11.024	0.0056704	0.014	0.00	0.00	n.a.
Total:			**147.711**	**811.485**	**100.00**	**100.00**	

101.202%

12/8/2015

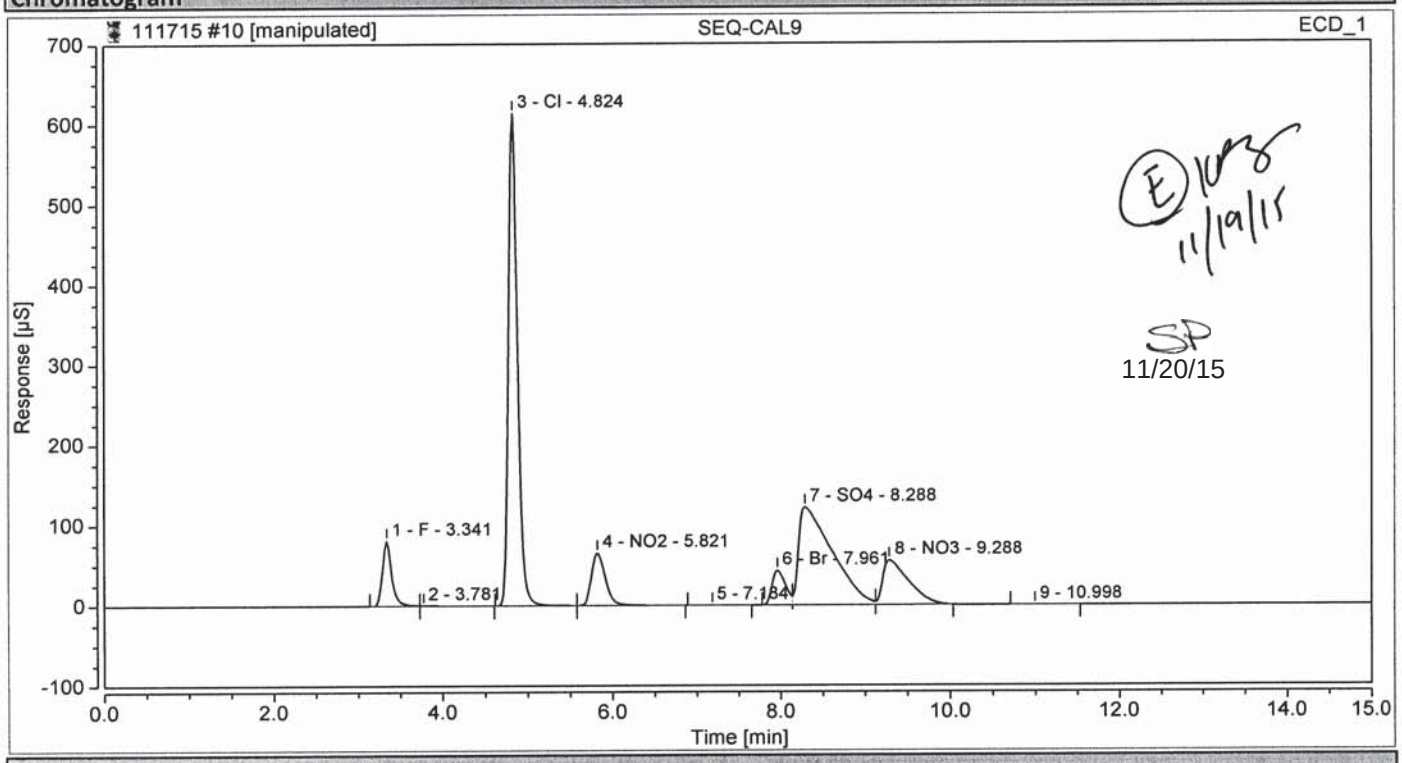

111715 #10
SEQ-CAL9
ECD_1
µS
700
600
500
400
300
200
100
0
-100
1 - F - 3.341
2 - 3.781
3 - Cl - 4.824
4 - NO2 - 5.821
5 - 7.184
6 - Br - 7.961
7 - 8.288
8 - 8.471
9 - SO4 - 8.558
10 - 9.288
11 - 10.998
min
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL9**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**09**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	
1	F	3.341	10.4666430	81.281	5.74	8.28	21.1100	
2		3.781	0.1907167	0.659	0.10	0.07	n.a.	
3	Cl	4.824	75.7374228	613.482	41.56	62.51	248.8602	99.54%
4	NO2	5.821	12.4914856	65.434	6.85	6.67	21.9521	
5		7.184	0.0690776	0.255	0.04	0.03	n.a.	
6	Br	7.961	7.9477879	43.168	4.36	4.40	61.6162	
7	SO4	8.288	55.9424901	121.640	30.70	12.39	250.1945	100.08%
8	NO3	9.288	19.3985090	55.441	10.64	5.65	25.1160	100.46%
9		10.998	0.0065839	0.016	0.00	0.00	n.a.	
Total:			**182.251**	**981.376**	**100.00**	**100.00**		

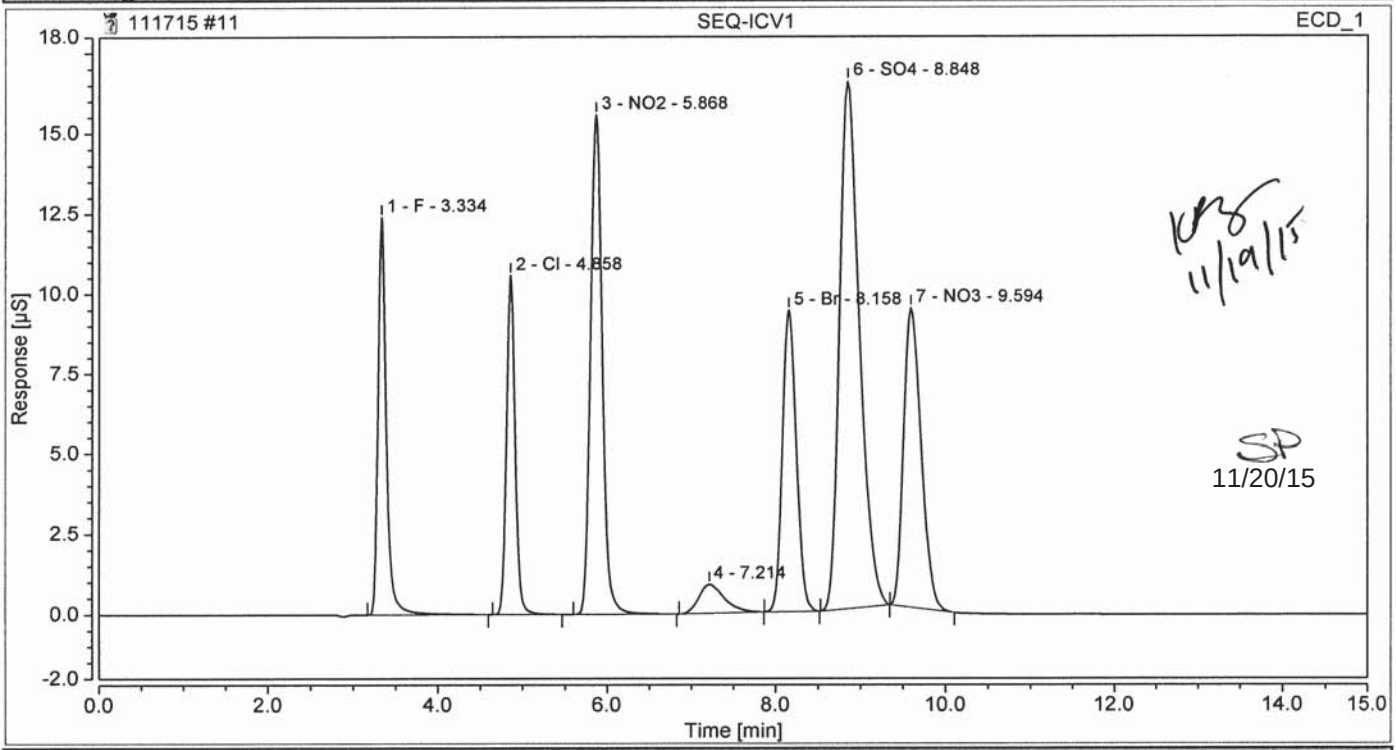
12/8/2015

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICV1**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

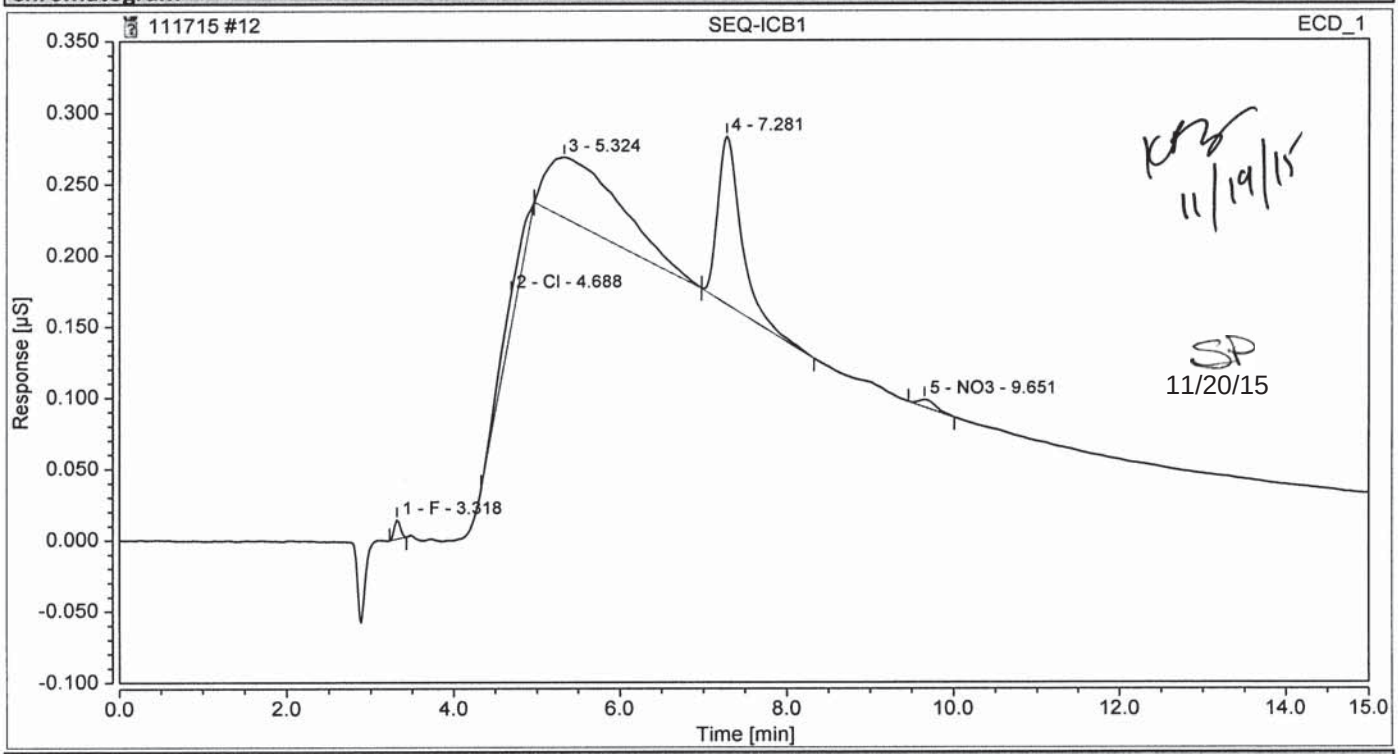
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.334	1.3903067	12.395	9.97	16.62	2.8041
2	Cl	4.858	1.2457670	10.572	8.93	14.18	4.0934
3	NO2	5.868	2.5129040	15.562	18.02	20.87	4.4161
4		7.214	0.3185593	0.899	2.28	1.20	n.a.
5	Br	8.158	1.7875226	9.386	12.82	12.58	13.8580
6	SO4	8.848	4.4654223	16.435	32.02	22.04	19.9709
7	NO3	9.594	2.2250539	9.334	15.96	12.51	2.8809
Total:			**13.946**	**74.583**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICB1**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0011415	0.014	1.17	6.70	0.0023
2	Cl	4.688	0.0091828	0.023	9.40	11.50	0.0302
3		5.324	0.0478564	0.042	49.00	20.91	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.281	0.0381807	0.118	39.09	58.31	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NO3	9.651	0.0013022	0.005	1.33	2.58	0.0017
Total:			**0.098**	**0.202**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**112415**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Nov/15 08:06:59**
No. of Injections:	**28**	*Updated By:*	**NSH-IONC2**

Injection Details

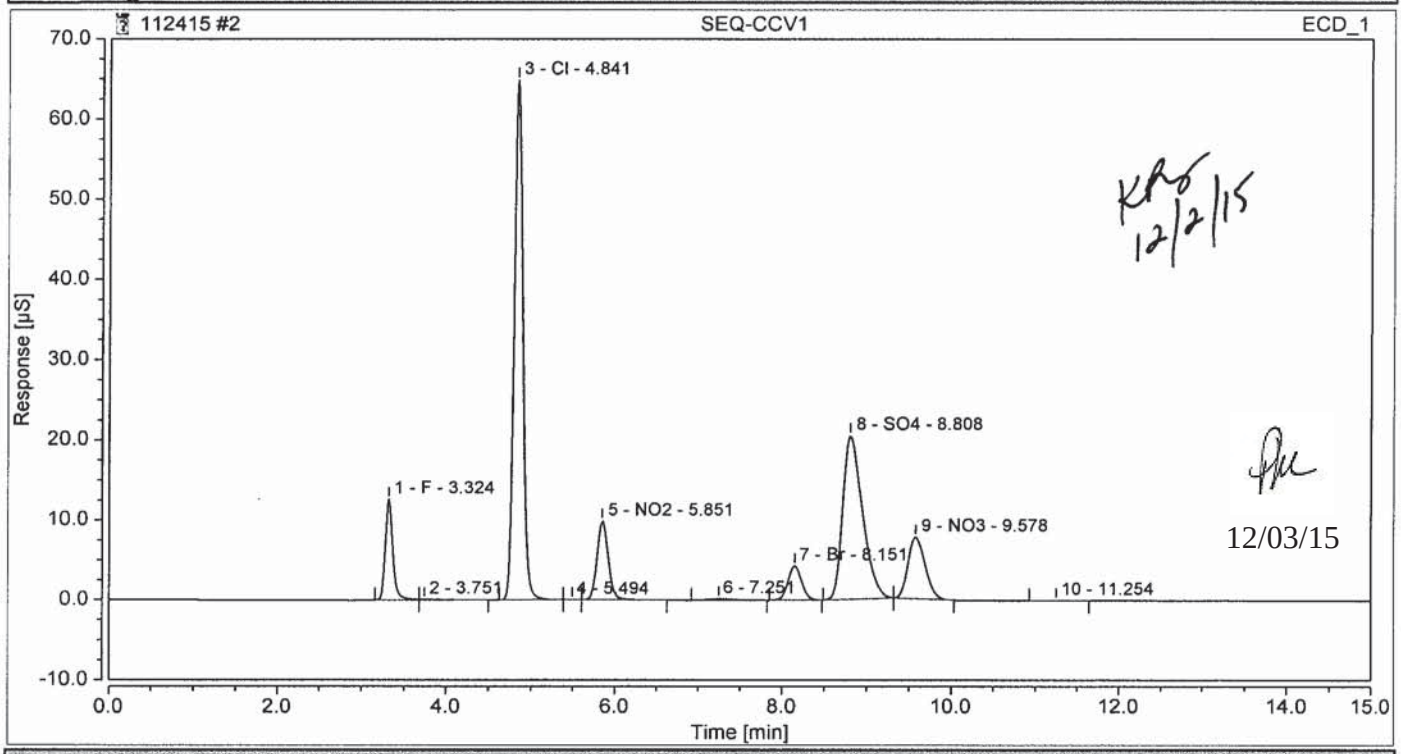
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		24/Nov/15 10:31:35	Finished
2	SEQ-CCV1	2	Unknown		24/Nov/15 10:49:27	Finished
3	SEQ-CCB1	3	Unknown		24/Nov/15 11:07:17	Finished
4	SEQ-CRL1	4	Unknown		24/Nov/15 11:25:08	Finished
5	SEQ-CRL2	5	Unknown		24/Nov/15 11:42:58	Finished
6	SEQ-CRL3	6	Unknown		24/Nov/15 12:00:48	Finished
7	5K24008-BLK1	7	Unknown		24/Nov/15 12:18:40	Finished
8	5K24008-BS1	8	Unknown		24/Nov/15 12:36:30	Finished
9	1511256-01	9	Unknown		24/Nov/15 12:54:21	Finished
10	1511256-02	10	Unknown		24/Nov/15 13:12:12	Finished
11	1511224-04RE1@20	11	Unknown		24/Nov/15 13:30:03	Finished
12	1511258-01	12	Unknown		24/Nov/15 13:47:53	Finished
13	1511258-02	13	Unknown		24/Nov/15 14:05:43	Finished
14	1511258-03	14	Unknown		24/Nov/15 14:23:34	Finished
15	1511258-04	15	Unknown		24/Nov/15 14:41:24	Finished
16	1511258-05	16	Unknown		24/Nov/15 14:59:15	Finished
17	5K24008-MS1	17	Unknown		24/Nov/15 15:17:05	Finished
18	5K24008-MSD1	18	Unknown		24/Nov/15 15:34:55	Finished
19	5K24008-DUP1	19	Unknown		24/Nov/15 15:52:46	Finished
20	SEQ-CCV2	20	Unknown		24/Nov/15 16:10:36	Finished
21	SEQ-CCB2	21	Unknown		24/Nov/15 16:28:26	Finished
22	1511021-01@10X	22	Unknown		24/Nov/15 16:46:17	Finished
23	1511021-01RE1@10	23	Unknown		24/Nov/15 17:04:07	Finished
24	1511021-02@10X	24	Unknown		24/Nov/15 17:21:57	Finished
25	1511021-02RE1@10	25	Unknown		24/Nov/15 17:39:48	Finished
26	SEQ-CCV3	26	Unknown		24/Nov/15 17:57:38	Finished
27	SEQ-CCB3	27	Unknown		24/Nov/15 18:15:29	Finished
28	BLANK	28	Unknown		24/Nov/15 18:33:19	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

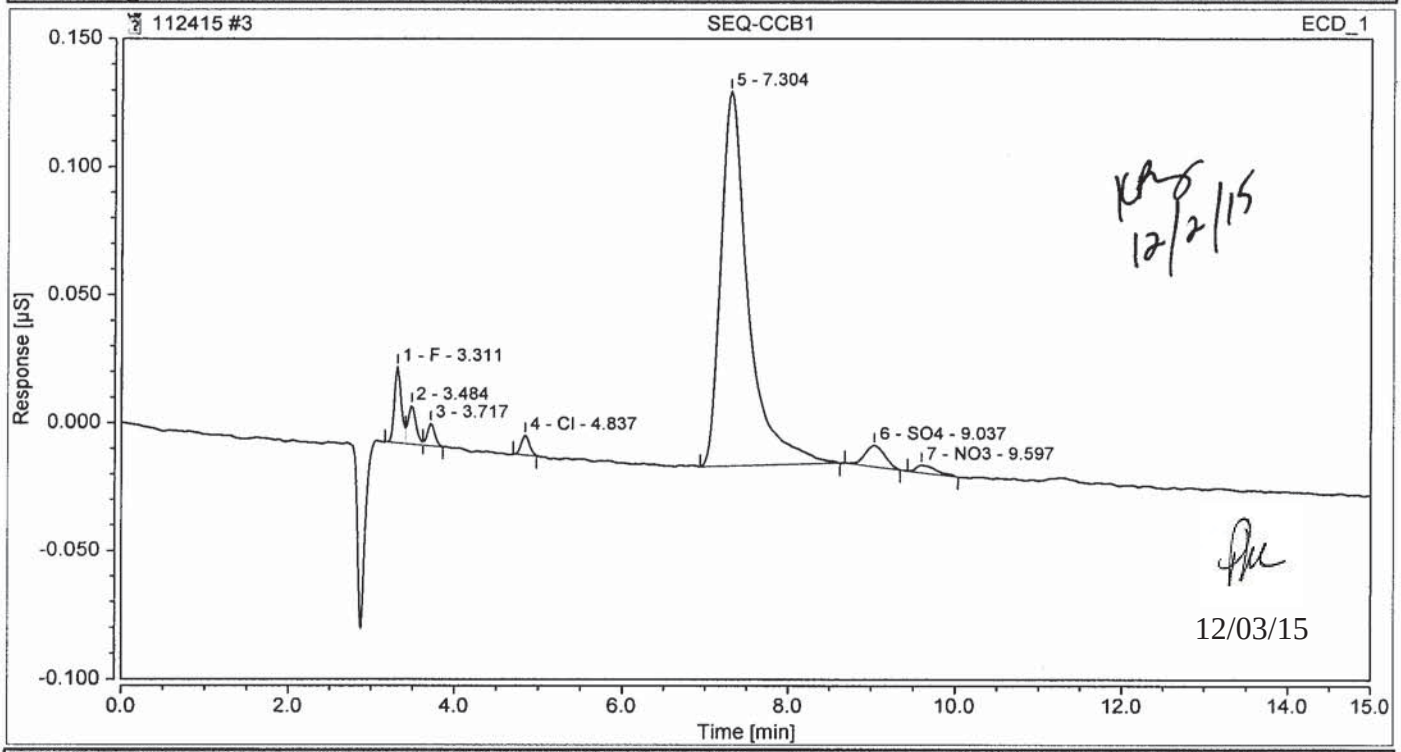
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2705989	12.614	6.79	10.51	2.5626
2		3.751	0.0165799	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7019628	64.849	41.18	54.04	25.3073
4		5.494	0.0004901	0.004	0.00	0.00	n.a.
5	NO2	5.851	1.5240646	9.858	8.15	8.21	2.6783
6		7.251	0.0484673	0.161	0.26	0.13	n.a.
7	Br	8.151	0.7982884	4.298	4.27	3.58	6.1888
8	SO4	8.808	5.5356306	20.443	29.60	17.03	24.7573
9	NO3	9.578	1.8052042	7.718	9.65	6.43	2.3373
10		11.254	0.0013871	0.004	0.01	0.00	n.a.
Total:			**18.703**	**120.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

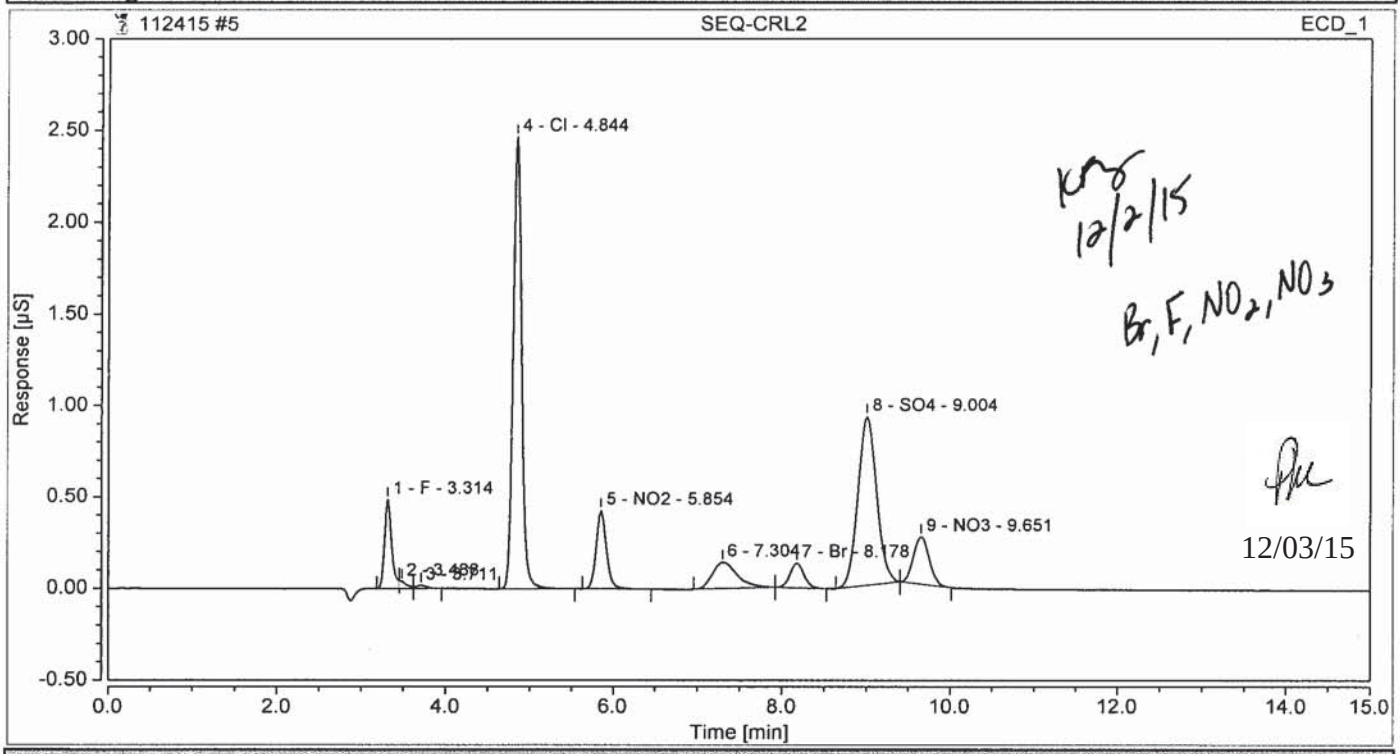
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0028367	0.030	4.30	13.58	0.0057
2		3.484	0.0016975	0.015	2.57	6.95	n.a.
3		3.717	0.0009154	0.009	1.39	4.01	n.a.
4	Cl	4.837	0.0008656	0.008	1.31	3.53	0.0028
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.304	0.0564475	0.146	85.58	66.68	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	9.037	0.0022898	0.008	3.47	3.85	0.0102
7	NO3	9.597	0.0009099	0.003	1.38	1.39	0.0012
Total:			**0.066**	**0.219**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL2**	*Run Time (min):*	**15.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

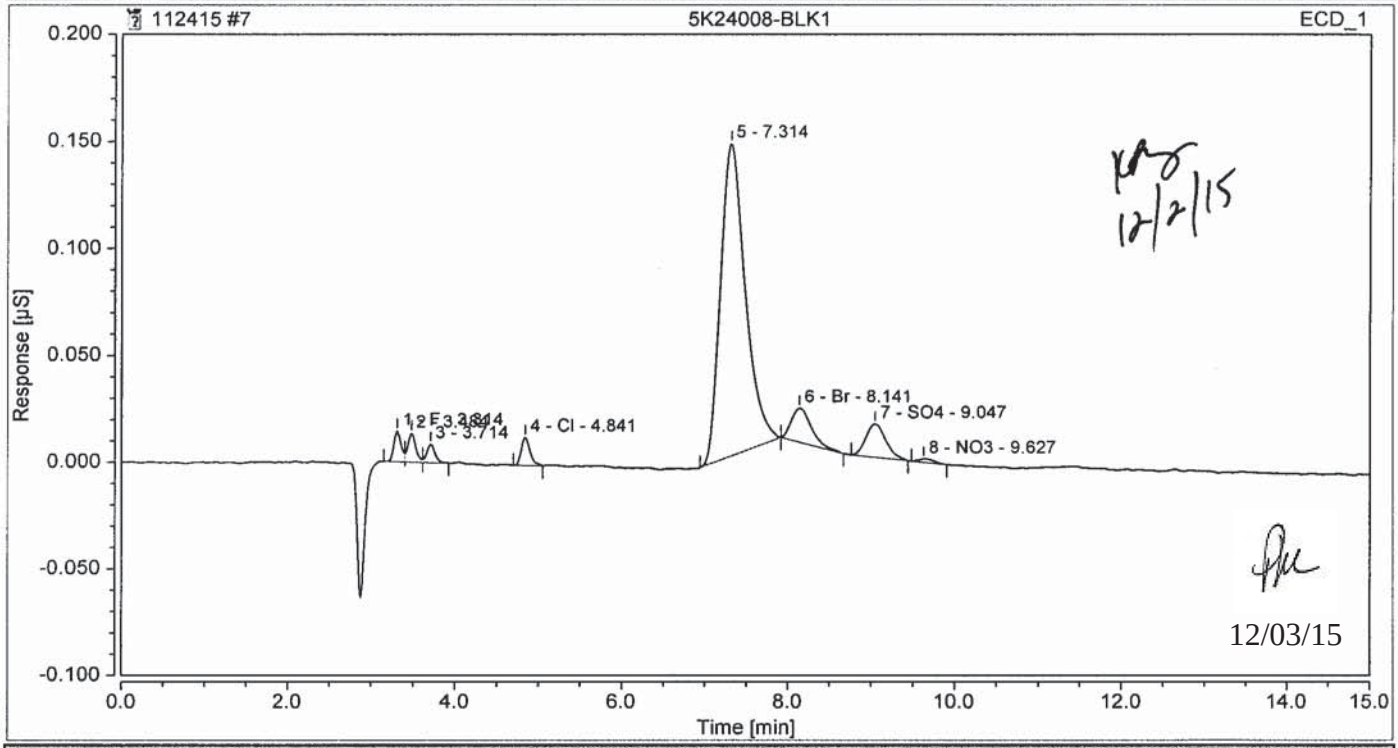
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0463111	0.486	6.02	9.93	0.0934
2		3.488	0.0040702	0.038	0.53	0.78	n.a.
3		3.711	0.0022268	0.016	0.29	0.34	n.a.
4	Cl	4.844	0.2867254	2.467	37.25	50.39	0.9421
5	NO2	5.854	0.0617777	0.429	8.03	8.76	0.1086
6		7.304	0.0487962	0.144	6.34	2.94	n.a.
7	Br	8.178	0.0260488	0.136	3.38	2.77	0.2019
8	SO4	9.004	0.2374141	0.921	30.85	18.82	1.0618
9	NO3	9.651	0.0563100	0.258	7.32	5.26	0.0729
Total:			**0.770**	**4.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5K24008-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

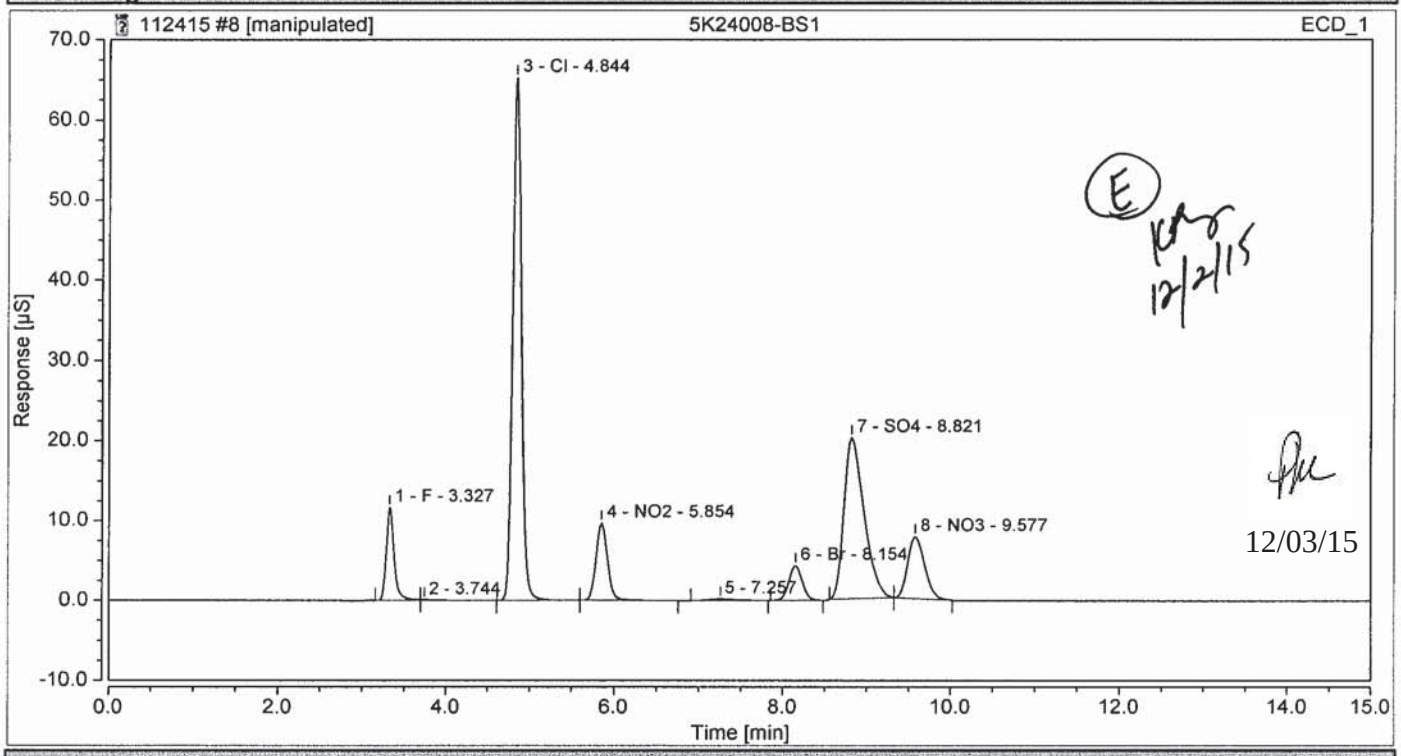
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0014124	0.014	2.17	6.30	0.0028
2		3.484	0.0015164	0.014	2.33	5.94	n.a.
3		3.714	0.0009678	0.009	1.49	3.78	n.a.
4	Cl	4.841	0.0016419	0.013	2.52	5.82	0.0054
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.314	0.0503585	0.146	77.33	63.65	n.a.
6	Br	8.141	0.0045066	0.016	6.92	6.99	0.0349
7	SO4	9.047	0.0043776	0.016	6.72	6.85	0.0196
8	NO3	9.627	0.0003436	0.002	0.53	0.67	0.0004
Total:			**0.065**	**0.230**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

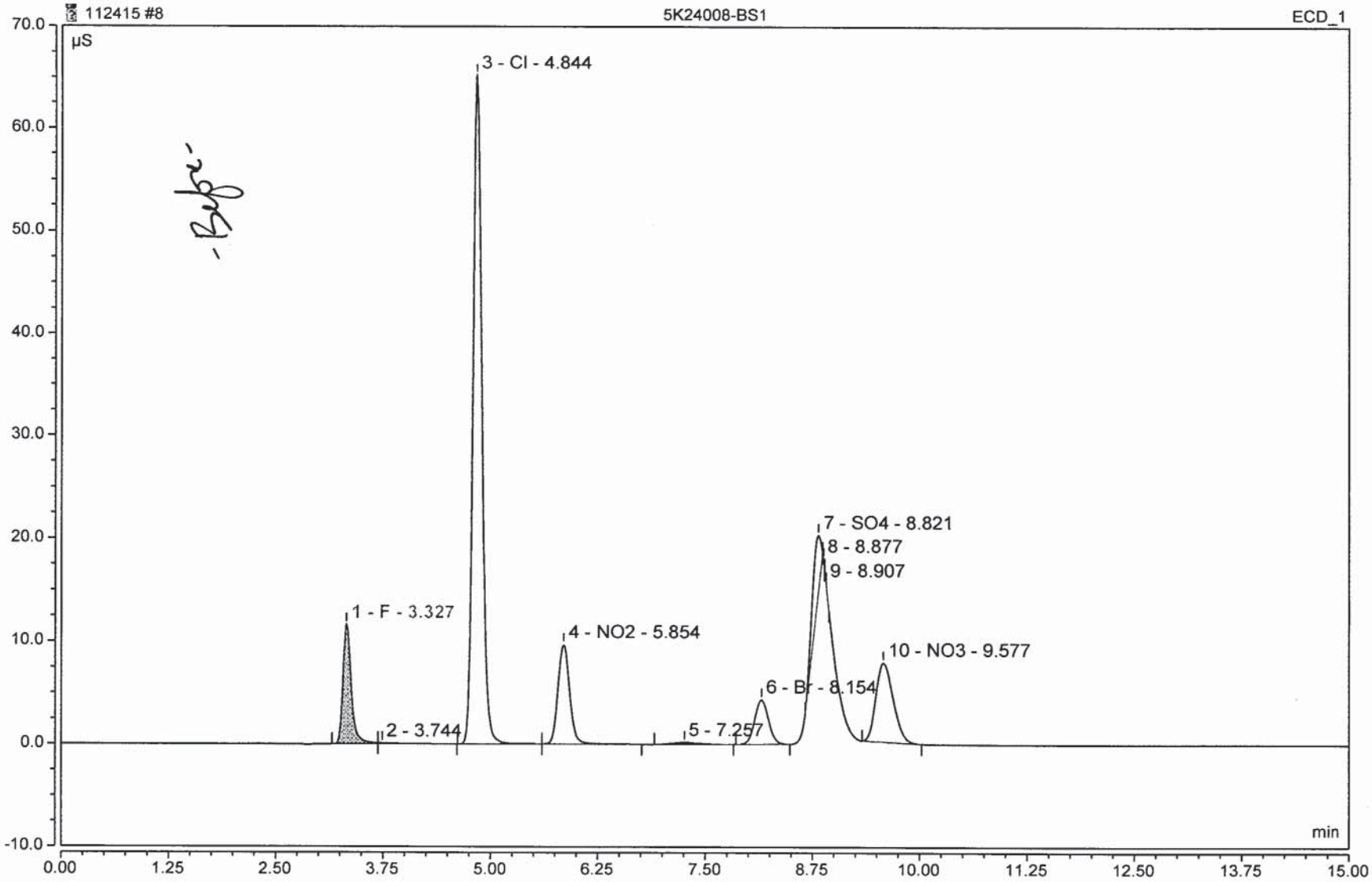
Injection Name:	**5K24008-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2791783	11.655	6.80	9.79	2.5800
2		3.744	0.0246001	0.086	0.13	0.07	n.a.
3	Cl	4.844	7.7768016	65.251	41.32	54.79	25.5532
4	NO2	5.854	1.5205323	9.693	8.08	8.14	2.6721
5		7.257	0.0613635	0.193	0.33	0.16	n.a.
6	Br	8.154	0.8100872	4.347	4.30	3.65	6.2803
7	SO4	8.821	5.5401456	20.145	29.43	16.91	24.7775
8	NO3	9.577	1.8090172	7.729	9.61	6.49	2.3422
Total:			**18.822**	**119.098**	**100.00**	**100.00**	

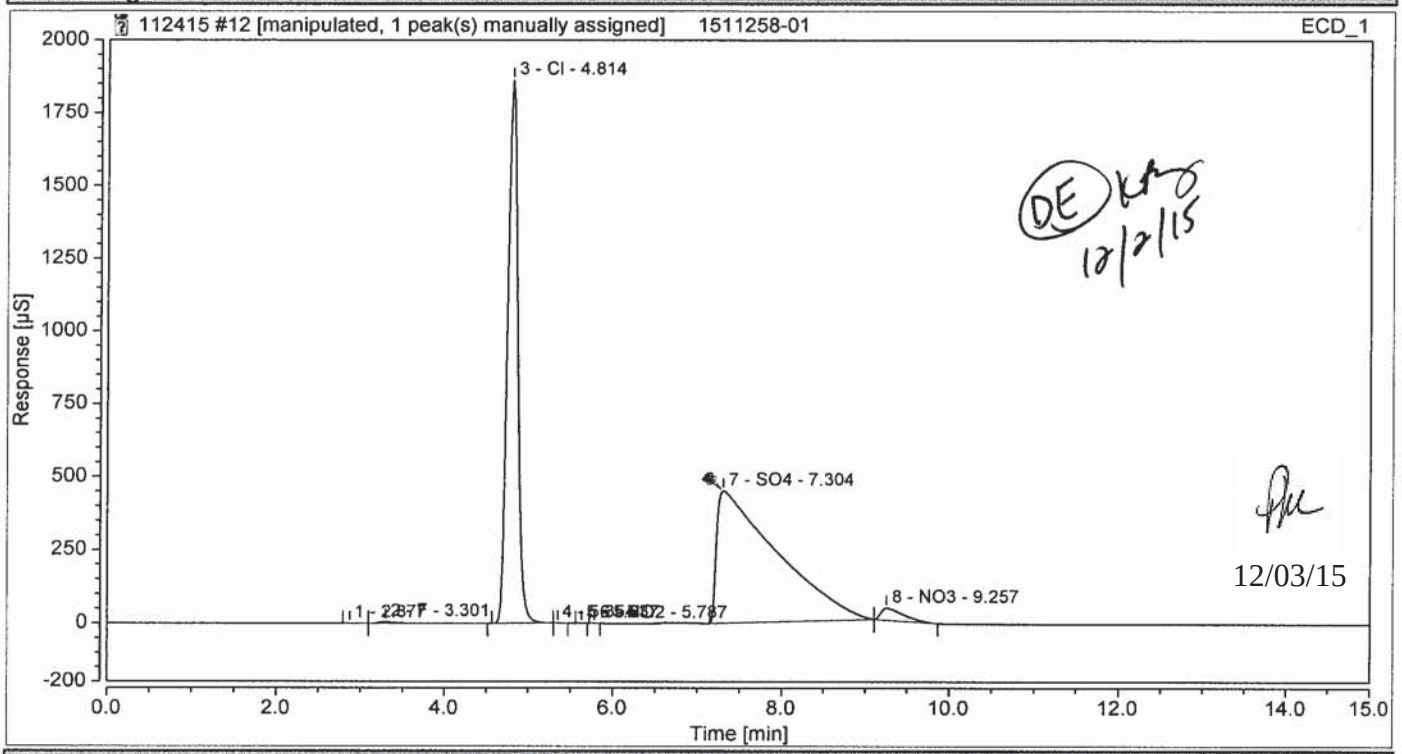

112415 #8
5K24008-BS1
ECD_1
µS
3 - Cl - 4.844
1 - F - 3.327
2 - 3.744
4 - NO2 - 5.854
5 - 7.257
6 - Br - 8.154
7 - SO4 - 8.821
8 - 8.877
9 - 8.907
10 - NO3 - 9.577
min
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

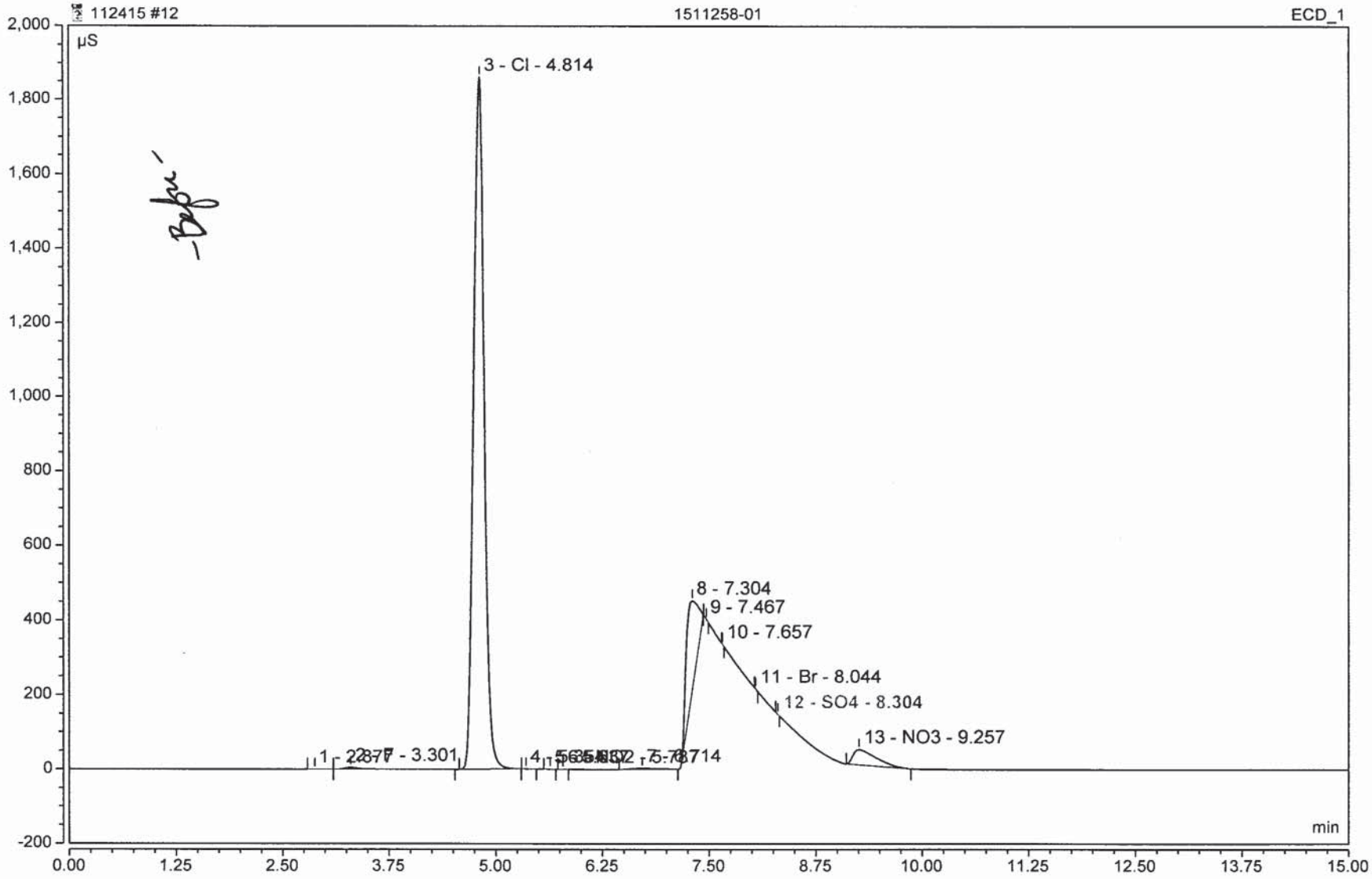
Injection Name:	**1511258-01**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.877	0.0086285	0.069	0.00	0.00	n.a.
2	F	3.301	0.8655185	4.973	0.13	0.21	1.7456
3	Cl	4.814	266.5940254	1861.256	40.82	78.93	875.9824
4		5.354	0.0016354	0.019	0.00	0.00	n.a.
5		5.637	0.0002650	0.003	0.00	0.00	n.a.
6	NO2	5.787	0.0002848	0.004	0.00	0.00	0.0005
7	SO4	7.304	372.7302122	450.303	57.07	19.10	1666.9805
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.257	12.9065054	41.538	1.98	1.76	16.7106
Total:			**653.107**	**2358.166**	**100.00**	**100.00**	


112415 #12
1511258-01
ECD_1
µS
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
-200
3 - Cl - 4.814
8 - 7.304
9 - 7.467
10 - 7.657
11 - Br - 8.044
12 - SO4 - 8.304
13 - NO3 - 9.257
1 - 2.877 - 3.301
4
7 - 7.714
min
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

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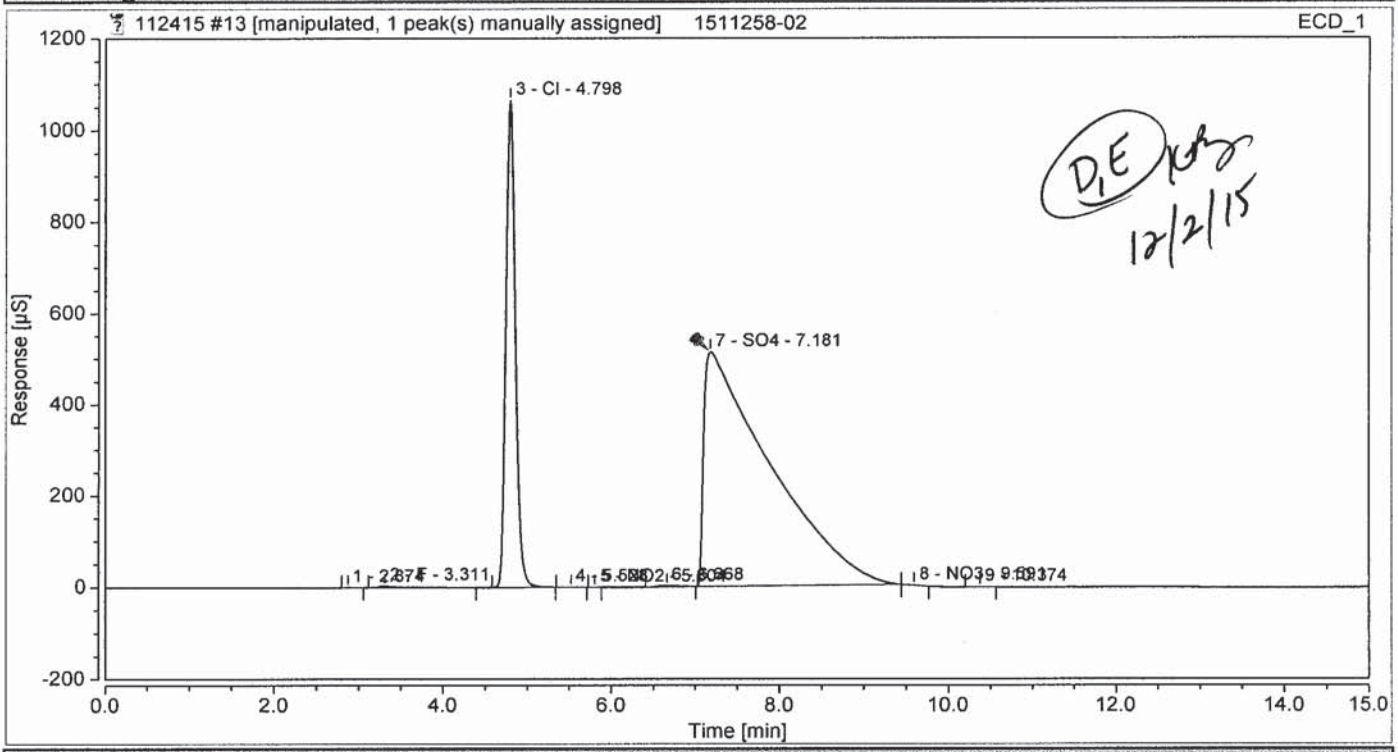
Chromatogram and Results

Injection Details

Injection Name:	**1511258-02**	*Run Time (min):*	**15.00**
Vial Number:	**13**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 14:05**	*Sample Weight:*	**1.0000**

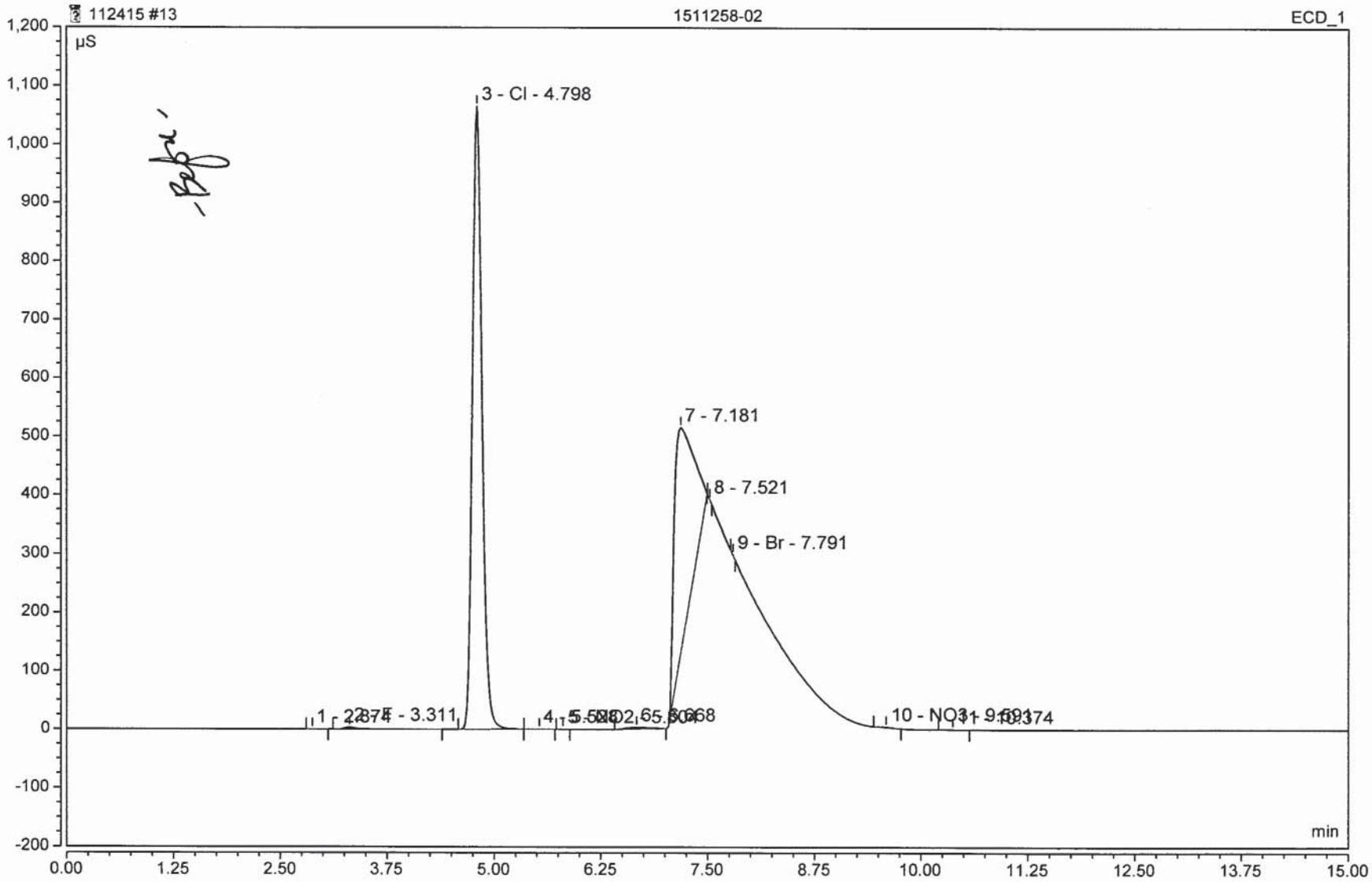
Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.874	0.0048435	0.044	0.00	0.00	n.a.
2	F	3.311	0.5584586	3.200	0.09	0.20	1.1263
3	Cl	4.798	137.9824230	1064.648	22.82	67.19	453.3867
4		5.528	0.0053154	0.024	0.00	0.00	n.a.
5	NO2	5.804	0.0008879	0.010	0.00	0.00	0.0016
6		6.668	0.8742887	2.647	0.14	0.17	n.a.
7	SO4	7.181	465.0775563	513.441	76.92	32.40	2079.9903
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.591	0.0933618	0.598	0.02	0.04	0.1209
9		10.374	0.0067952	0.036	0.00	0.00	n.a.
Total:			**604.604**	**1584.649**	**100.00**	**100.00**	

12/03/15


112415 #13
1511258-02
ECD_1
µS
3 - Cl - 4.798
7 - 7.181
8 - 7.521
9 - Br - 7.791
1 - 2.874
2 - 3.311
4
5
6
10 - NO3 - 9.591
11 - 10.374
min
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
-100
-200
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

107

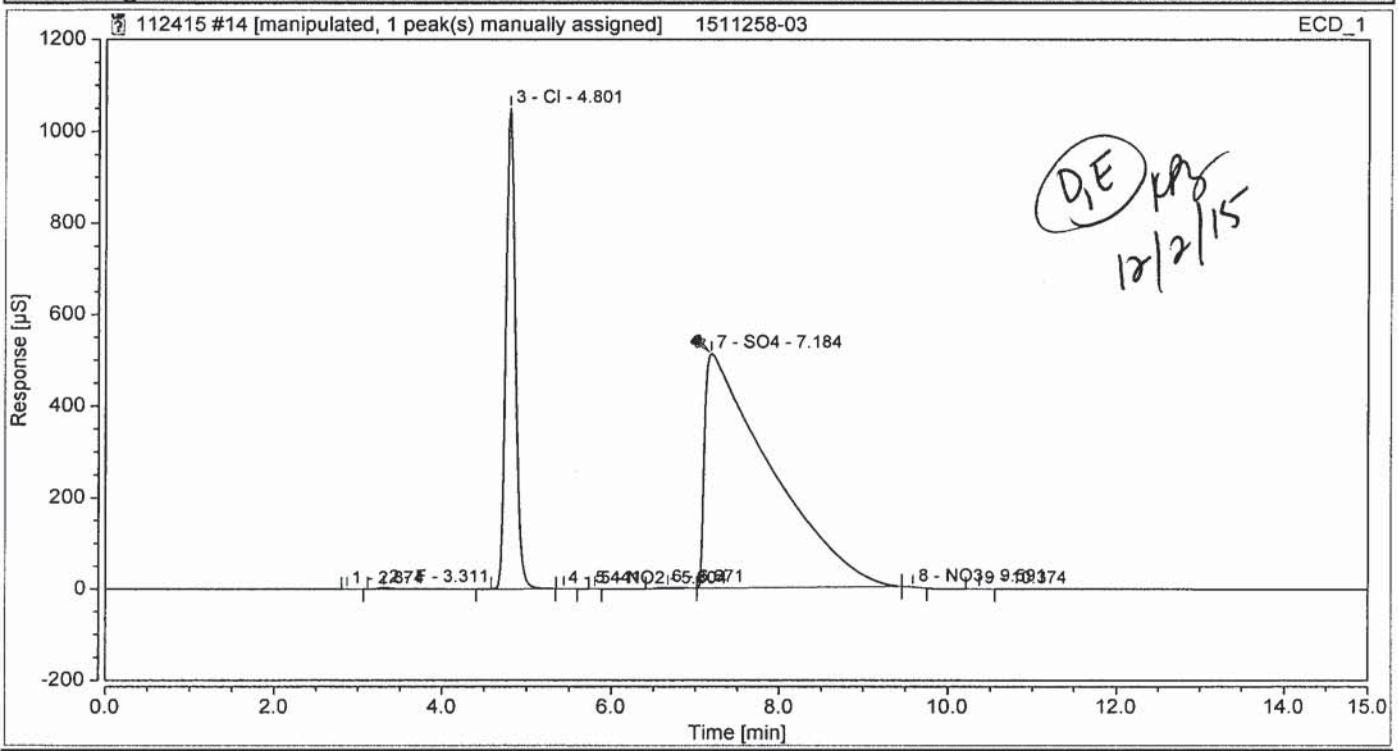
1511258

Chromatogram and Results

Injection Details

Injection Name:	**1511258-03**	*Run Time (min):*	**15.00**
Vial Number:	**14**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



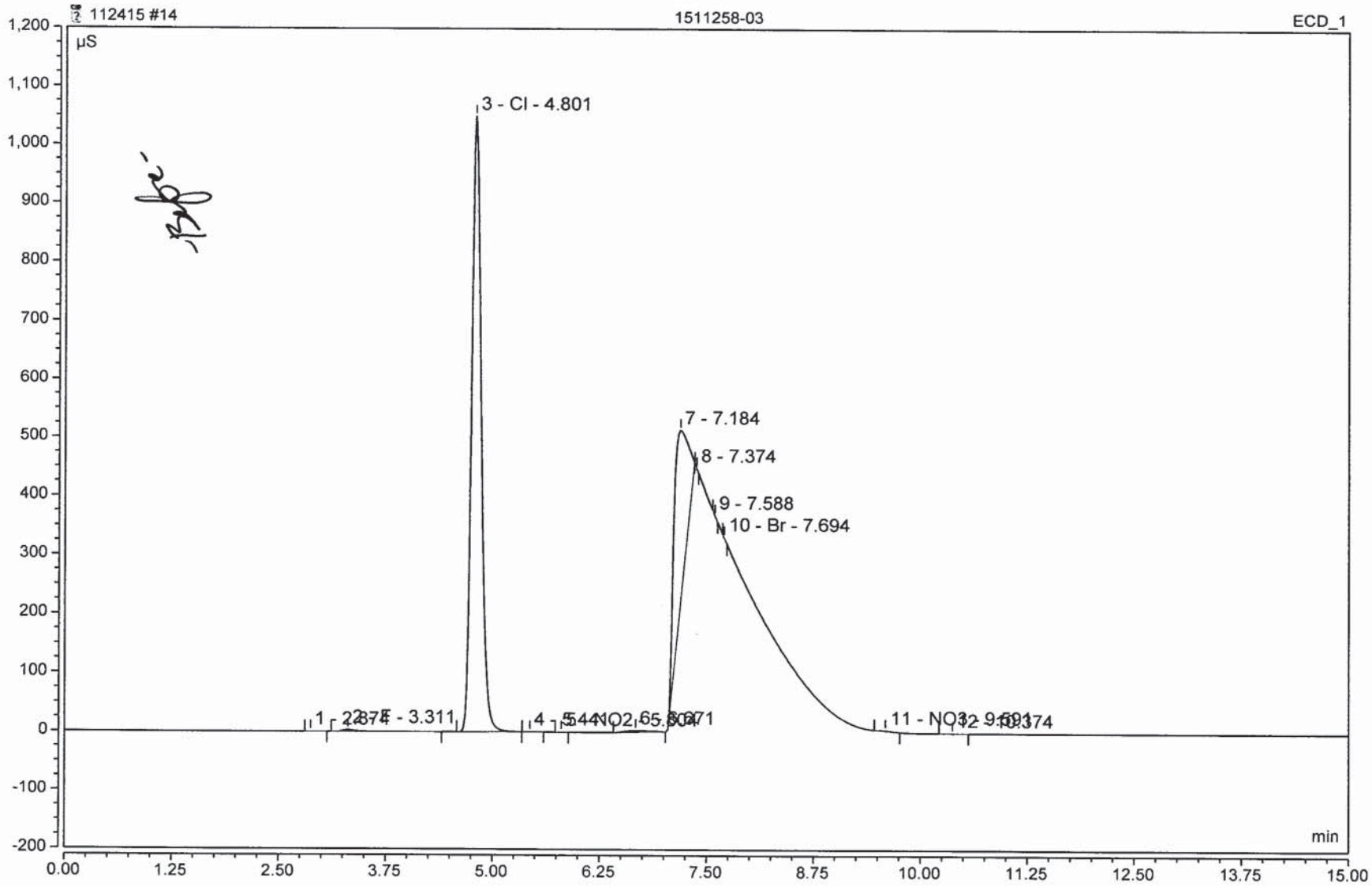
Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.874	0.0044278	0.042	0.00	0.00	n.a.
2	F	3.311	0.5489773	3.097	0.09	0.20	1.1072
3	Cl	4.801	136.3311892	1049.368	22.61	66.92	447.9610
4		5.441	0.0029355	0.022	0.00	0.00	n.a.
5	NO2	5.804	0.0006916	0.009	0.00	0.00	0.0012
6		6.671	0.8765623	2.644	0.15	0.17	n.a.
7	SO4	7.184	465.1333903	512.484	77.14	32.68	2080.2400
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.591	0.0722487	0.480	0.01	0.03	0.0935
9		10.374	0.0058598	0.033	0.00	0.00	n.a.
Total:			**602.976**	**1568.179**	**100.00**	**100.00**	

$NO_3 = 0.0722487 / \cancel{0.7713}\ 0.7723554 = 0.0935 \times 5mL/5mL = 0.0935\ mg/L$

12/2/15

12/03/15

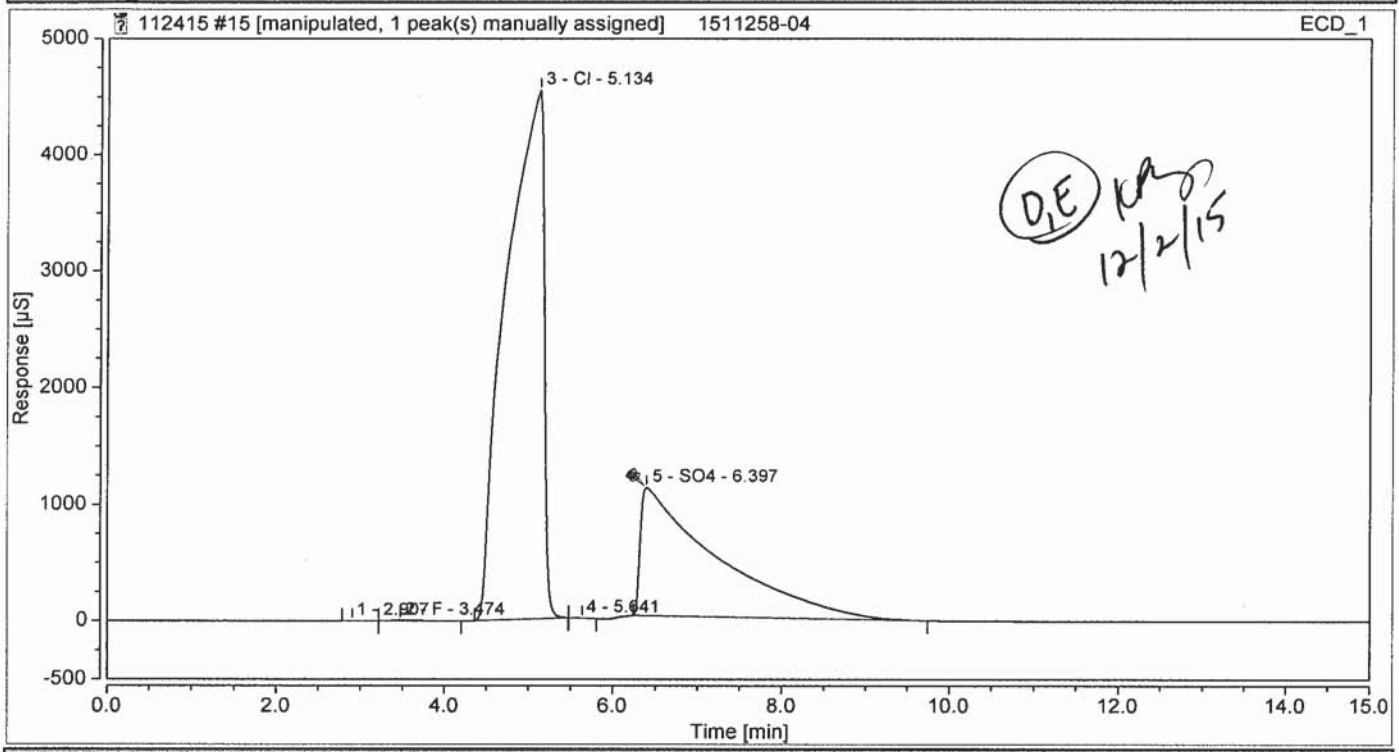

112415 #14
1511258-03
ECD_1
µS
3 - Cl - 4.801
7 - 7.184
8 - 7.374
9 - 7.588
10 - Br - 7.694
1 - 2.874
2 - 3.311
4 - 5.544
11 - NO3 - 9.591
min
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
-100
-200
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**1511258-04**	*Run Time (min):*	**15.00**
Vial Number:	**15**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 14:41**	*Sample Weight:*	**1.0000**

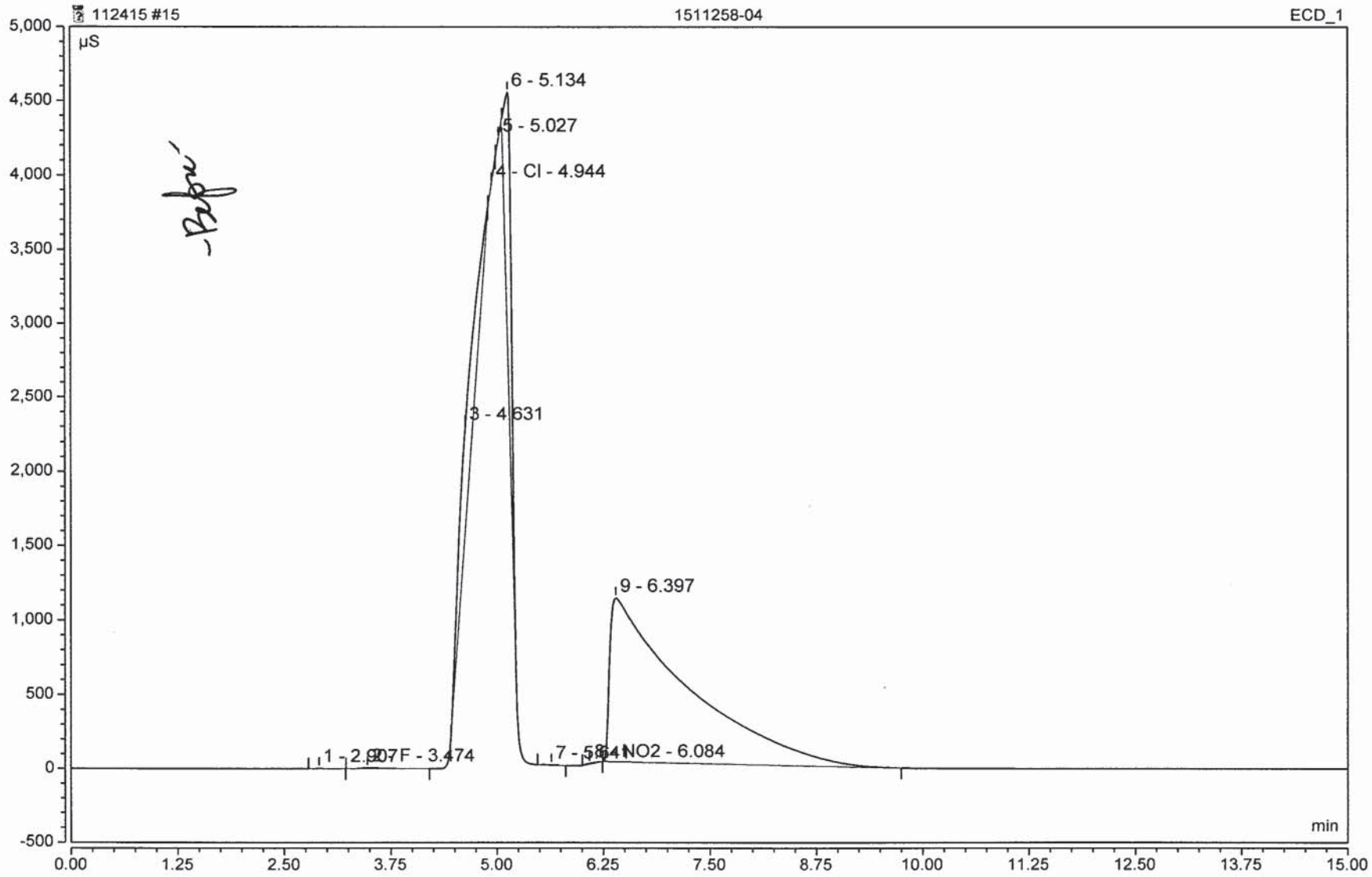
Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.907	0.1365171	0.828	0.00	0.01	n.a.
2	F	3.474	1.0718560	4.341	0.03	0.08	2.1618
3	Cl	5.134	2331.1835176	4537.832	67.22	80.37	7659.8707
4		5.641	0.2340855	1.289	0.01	0.02	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	6.397	1135.3221403	1101.566	32.74	19.51	5077.5596
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3467.948**	**5645.856**	**100.00**	**100.00**	

12/03/15

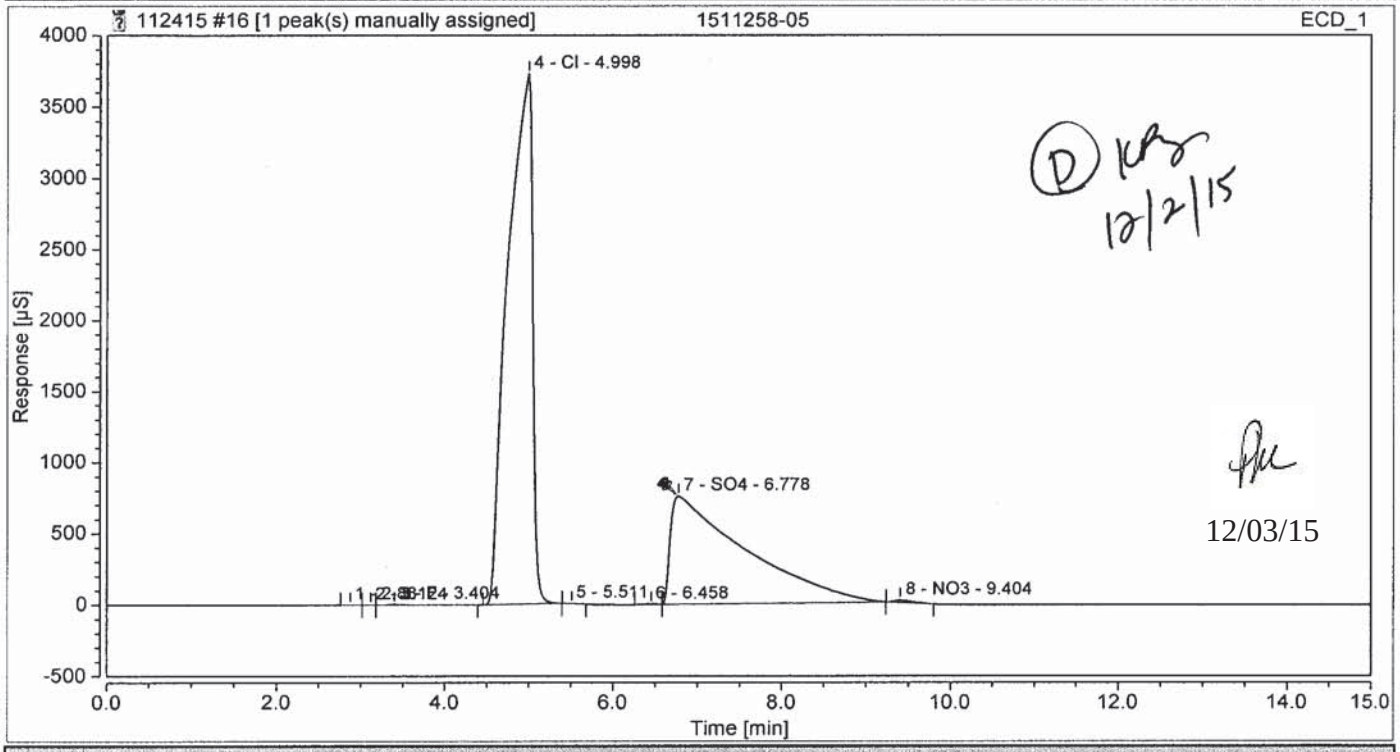

112415 #15
1511258-04
ECD_1
µS
6 - 5.134
5 - 5.027
4 - Cl - 4.944
3 - 4.631
9 - 6.397
1 - 2.907
F - 3.474
7 - 5.641
NO2 - 6.084
min
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
-500
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

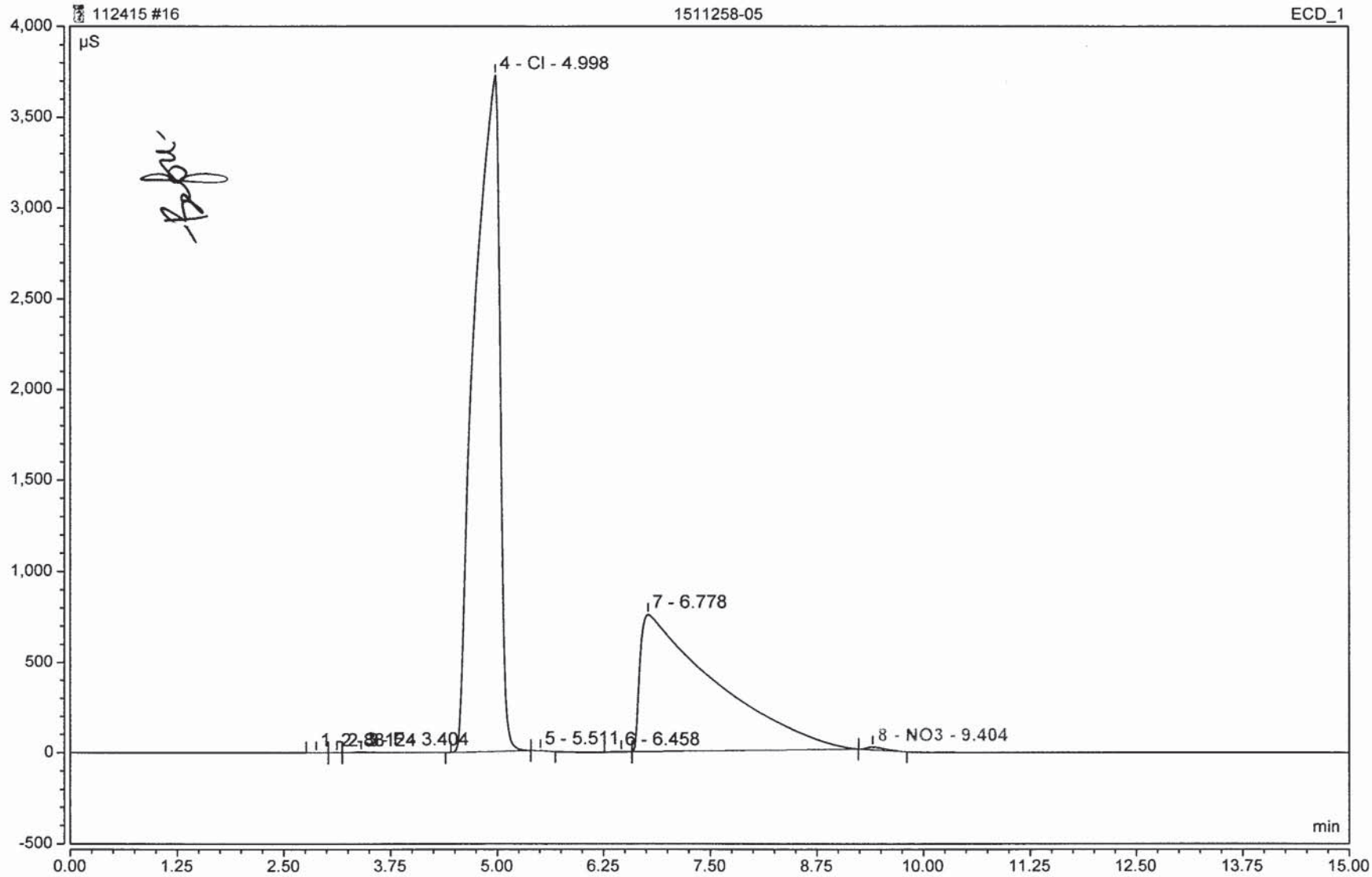
Injection Name:	**1511258-05**	*Run Time (min):*	**15.00**
Vial Number:	**16**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.881	0.0629508	0.511	0.00	0.01	n.a.
2		3.124	0.0346647	0.257	0.00	0.01	n.a.
3	F	3.404	1.0017904	4.107	0.05	0.09	2.0205
4	Cl	4.998	1271.3723997	3723.709	62.17	82.66	4177.5125
5		5.511	0.1288513	0.843	0.01	0.02	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		6.458	0.3578116	1.620	0.02	0.04	n.a.
7	SO4	6.778	768.1650153	757.653	37.56	16.82	3435.5039
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.404	3.9687016	15.974	0.19	0.35	5.1384
Total:			**2045.092**	**4504.674**	**100.00**	**100.00**	

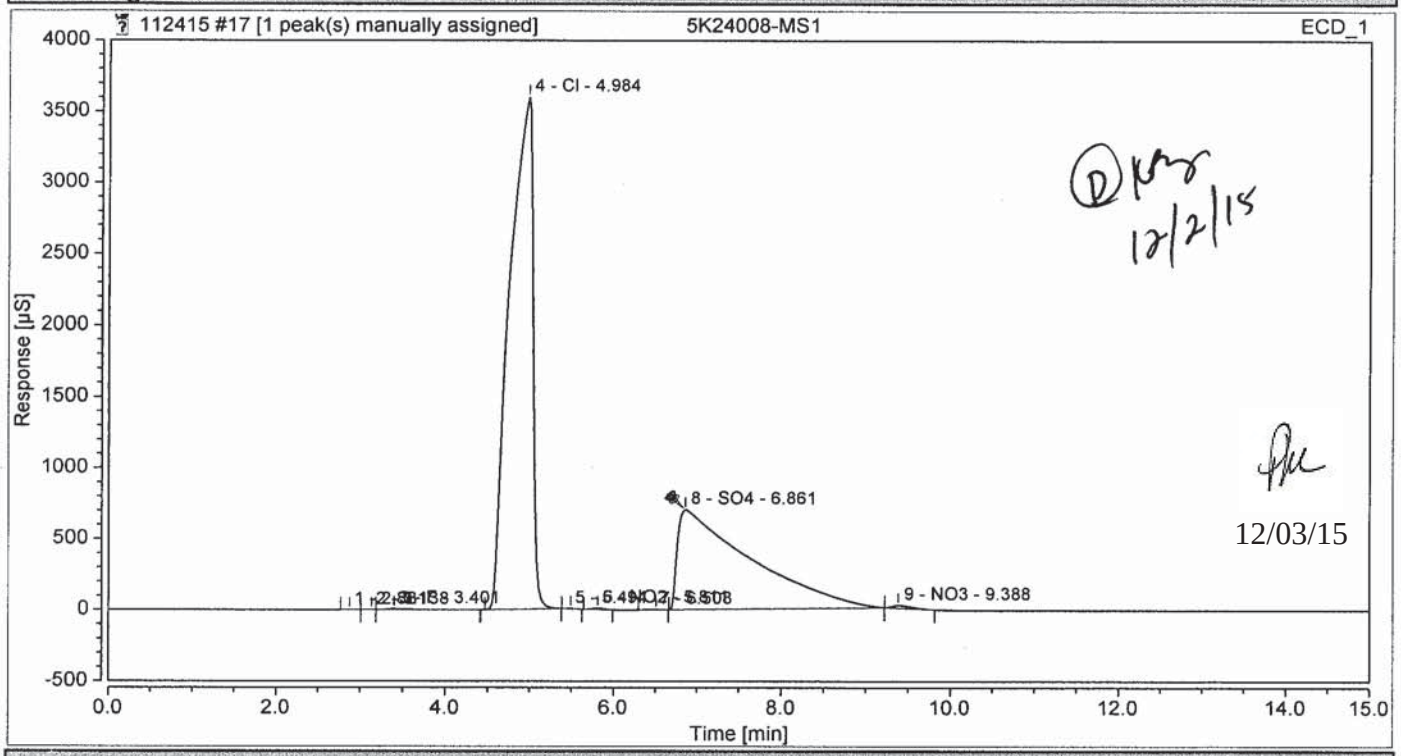

112415 #16
1511258-05
ECD_1
µS
4 - Cl - 4.998
7 - 6.778
5 - 5.511
6 - 6.458
8 - NO3 - 9.404
min
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
-500
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**5K24008-MS1**	*Run Time (min):*	**15.00**
Vial Number:	**17**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 15:17**	*Sample Weight:*	**1.0000**

Chromatogram

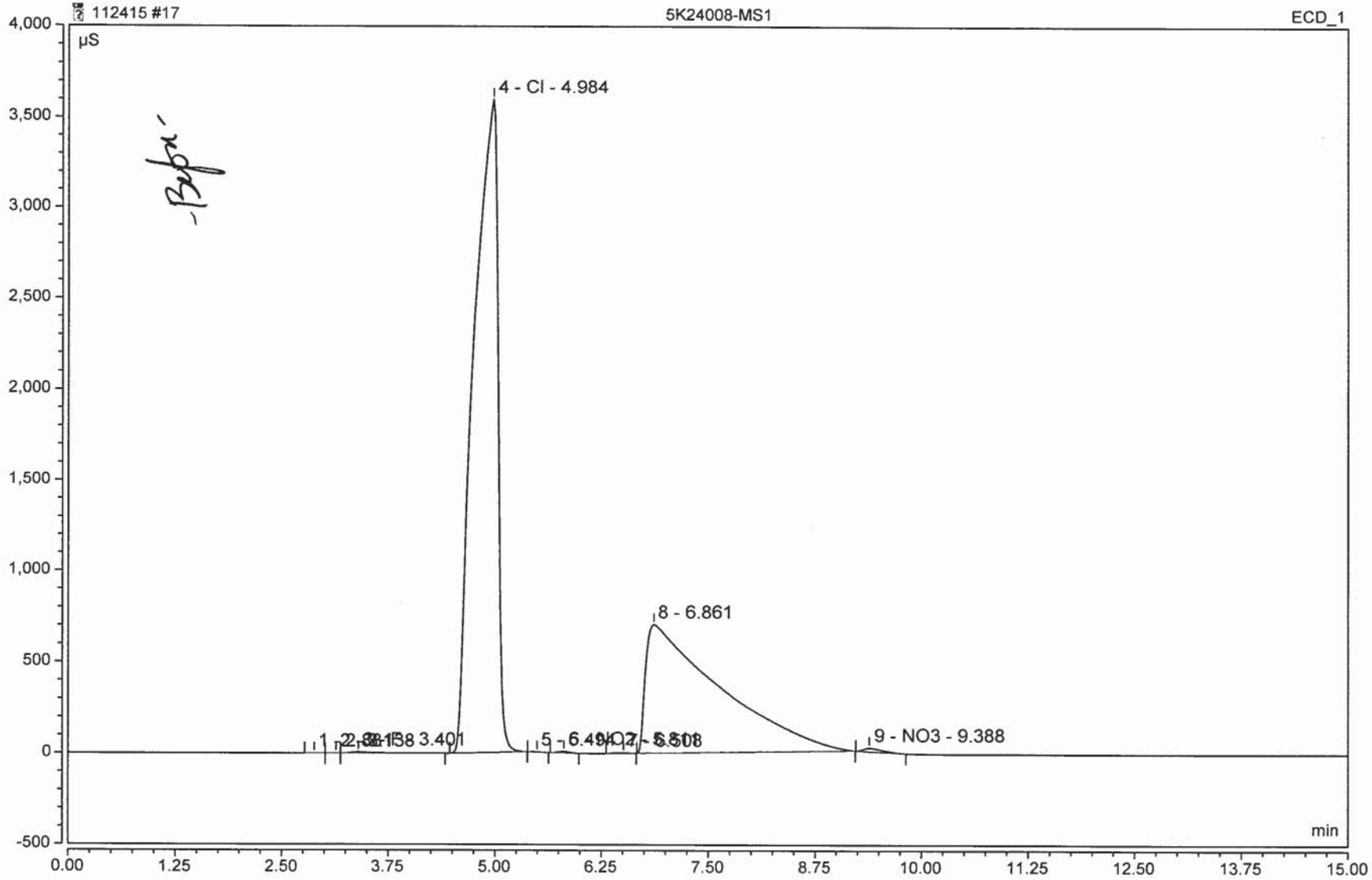


Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.881	0.0471112	0.416	0.00	0.01	n.a.
2		3.138	0.0562714	0.464	0.00	0.01	n.a.
3	F	3.401	1.7026785	6.915	0.09	0.16	3.4341
4	Cl	4.984	1153.9851674	3595.328	61.95	82.91	3791.7981
5		5.494	0.0961529	0.703	0.01	0.02	n.a.
6	NO2	5.811	1.1681143	8.573	0.06	0.20	2.0528
7		6.508	0.4073350	1.780	0.02	0.04	n.a.
8	SO4	6.861	700.2051110	702.443	37.59	16.20	3131.5633
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9	NO3	9.388	5.0431135	19.642	0.27	0.45	6.5295
Total:			**1862.711**	**4336.263**	**100.00**	**100.00**	

Sequence: 112415
Injection #17: 5K24008-MS1

Chromatogram



Chromeleon 7,
Version 7.2.0.3765, Thermo Fisher Scientific

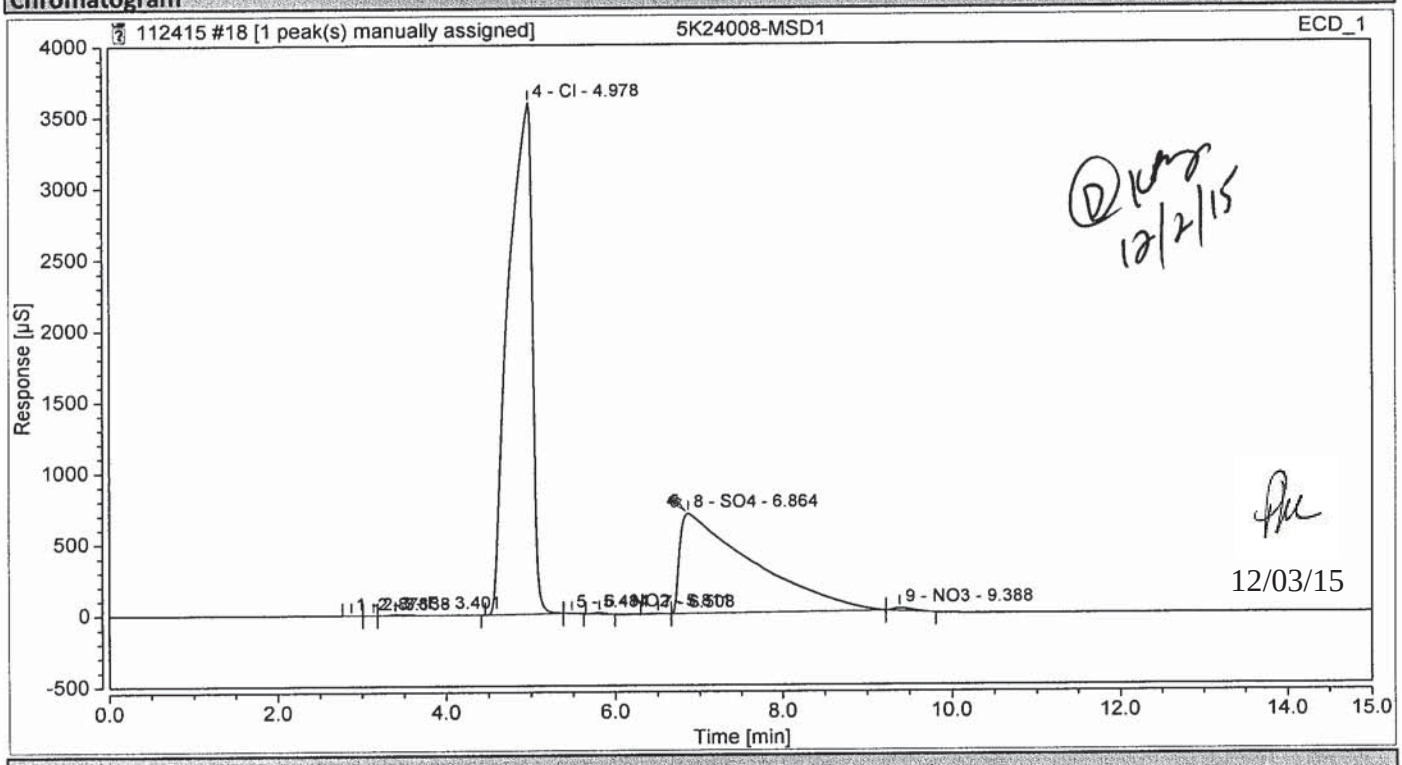
Printed by NSH-IONC2
25/11/15 08:02

Chromatogram and Results

Injection Details

Injection Name:	**5K24008-MSD1**	*Run Time (min):*	**15.00**
Vial Number:	**18**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 15:34**	*Sample Weight:*	**1.0000**

Chromatogram

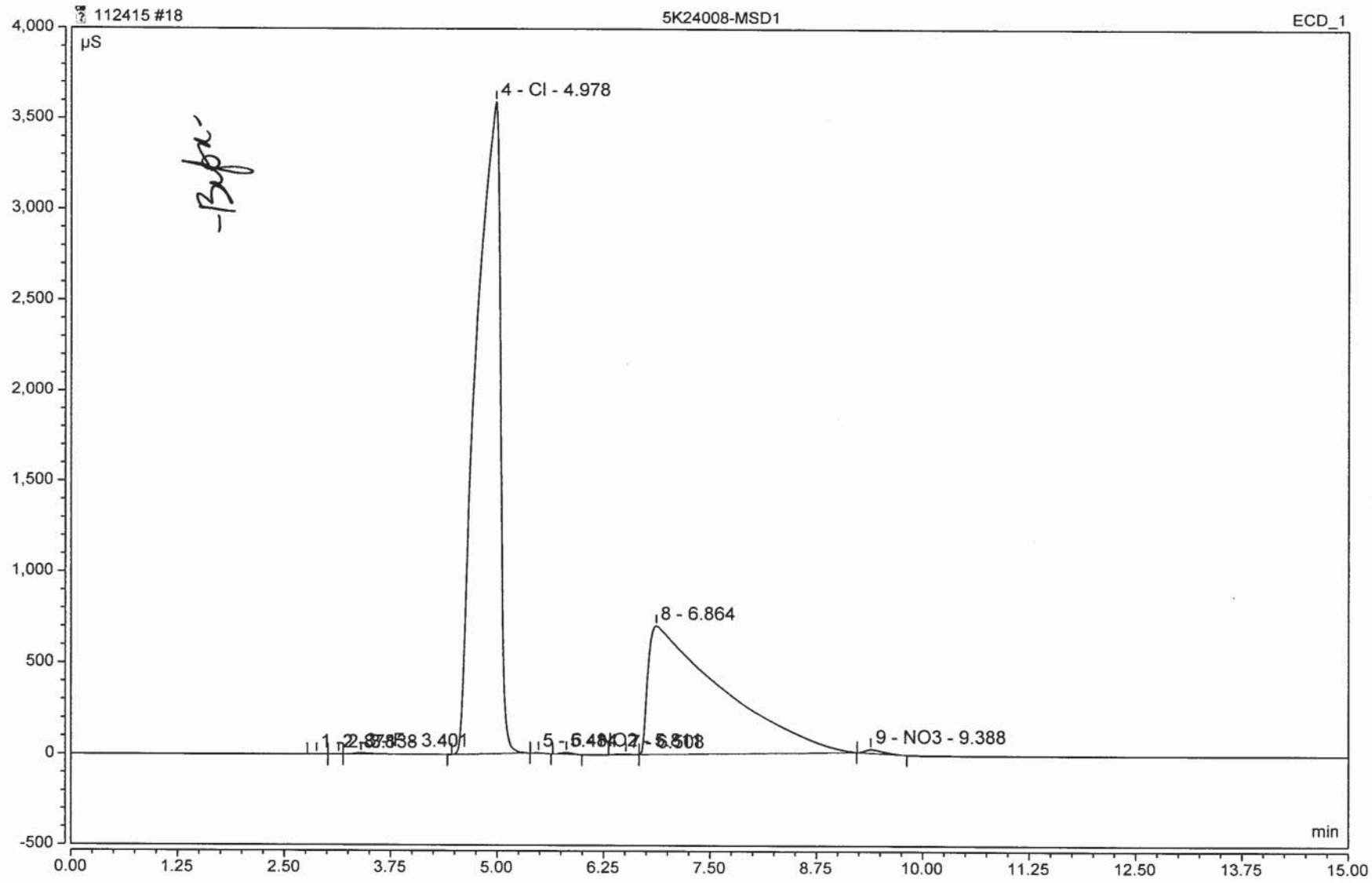


Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.878	0.0451805	0.400	0.00	0.01	n.a.
2		3.138	0.0515169	0.423	0.00	0.01	n.a.
3	F	3.401	1.6861814	6.944	0.09	0.16	3.4008
4	Cl	4.978	1153.3383726	3588.961	61.96	82.89	3789.6728
5		5.484	0.1139499	0.844	0.01	0.02	n.a.
6	NO2	5.811	1.1876840	8.666	0.06	0.20	2.0872
7		6.508	0.4144324	1.799	0.02	0.04	n.a.
8	SO4	6.864	699.6909383	701.950	37.59	16.21	3129.2637
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
9	NO3	9.388	5.0052216	19.565	0.27	0.45	6.4805
Total:			**1861.533**	**4329.552**	**100.00**	**100.00**	

Sequence: 112415
Injection #18: 5K24008-MSD1

Chromatogram



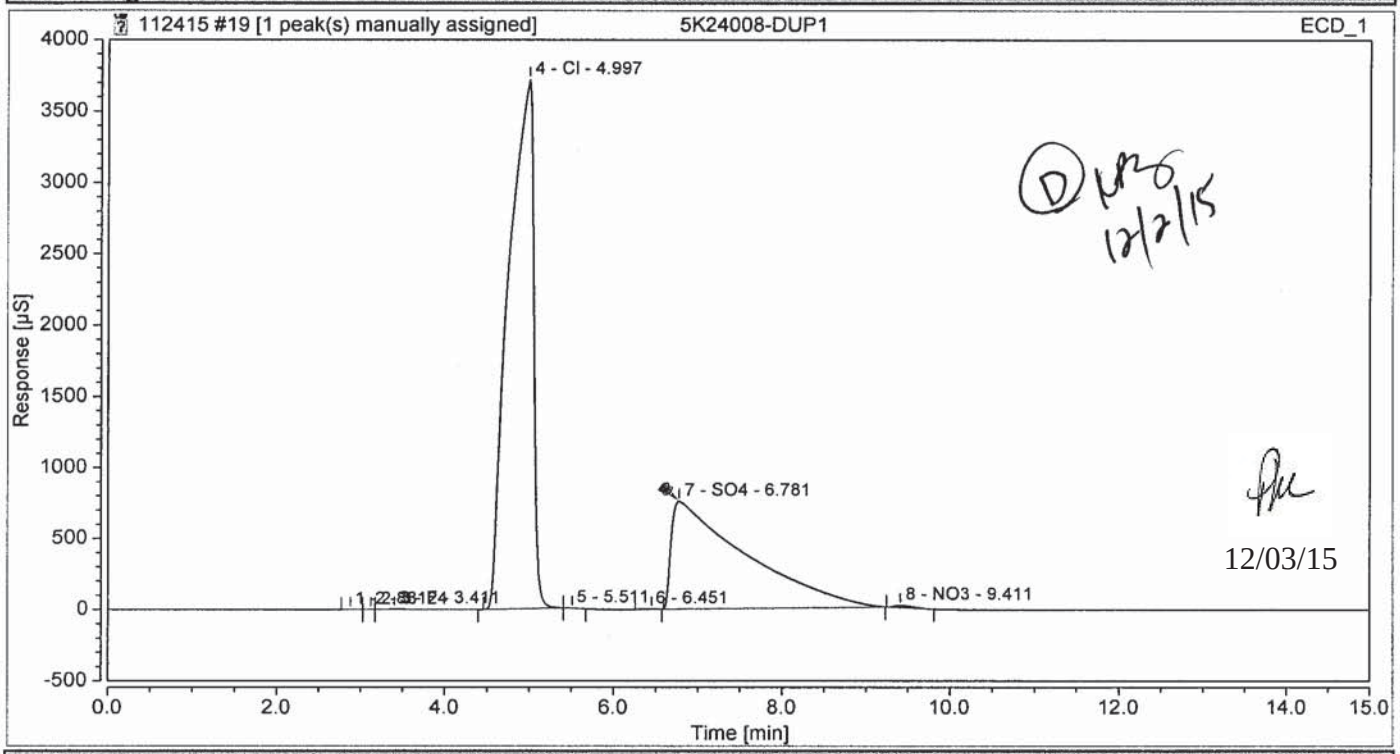
-Bibi-

Chromatogram and Results

Injection Details

Injection Name:	**5K24008-DUP1**	*Run Time (min):*	**15.00**
Vial Number:	**19**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 15:52**	*Sample Weight:*	**1.0000**

Chromatogram

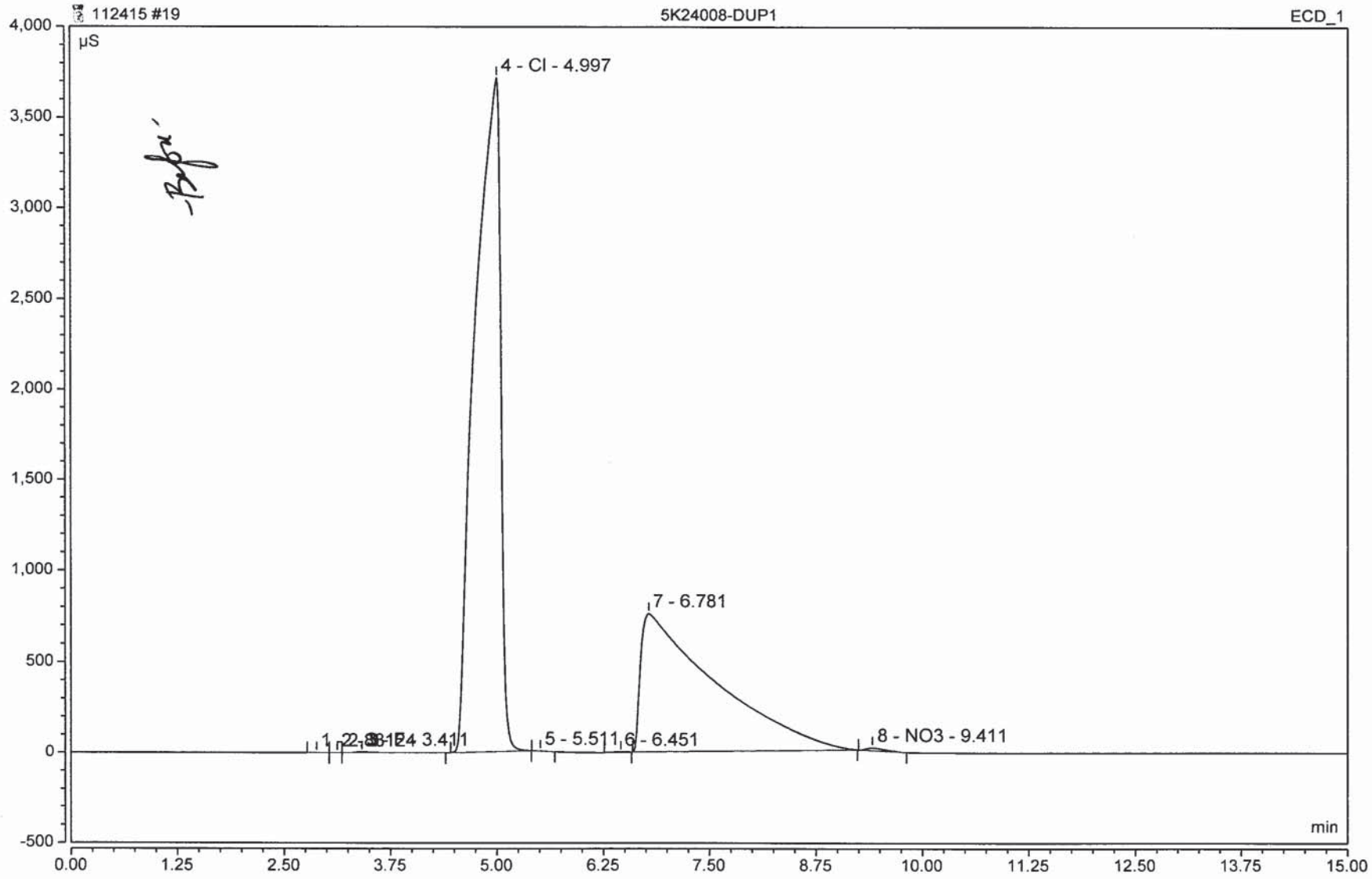


Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.881	0.0538875	0.452	0.00	0.01	n.a.
2		3.124	0.0229991	0.183	0.00	0.00	n.a.
3	F	3.411	0.9759394	4.160	0.05	0.09	1.9684
4	Cl	4.997	1272.4316343	3714.767	62.14	82.61	4180.9929
5		5.511	0.1025326	0.688	0.01	0.02	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		6.451	0.3630656	1.677	0.02	0.04	n.a.
7	SO4	6.781	769.8887367	758.968	37.60	16.88	3443.2130
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.411	3.9680716	15.895	0.19	0.35	5.1376
Total:			**2047.807**	**4496.789**	**100.00**	**100.00**	

Sequence: 112415
Injection #19: 5K24008-DUP1

Chromatogram

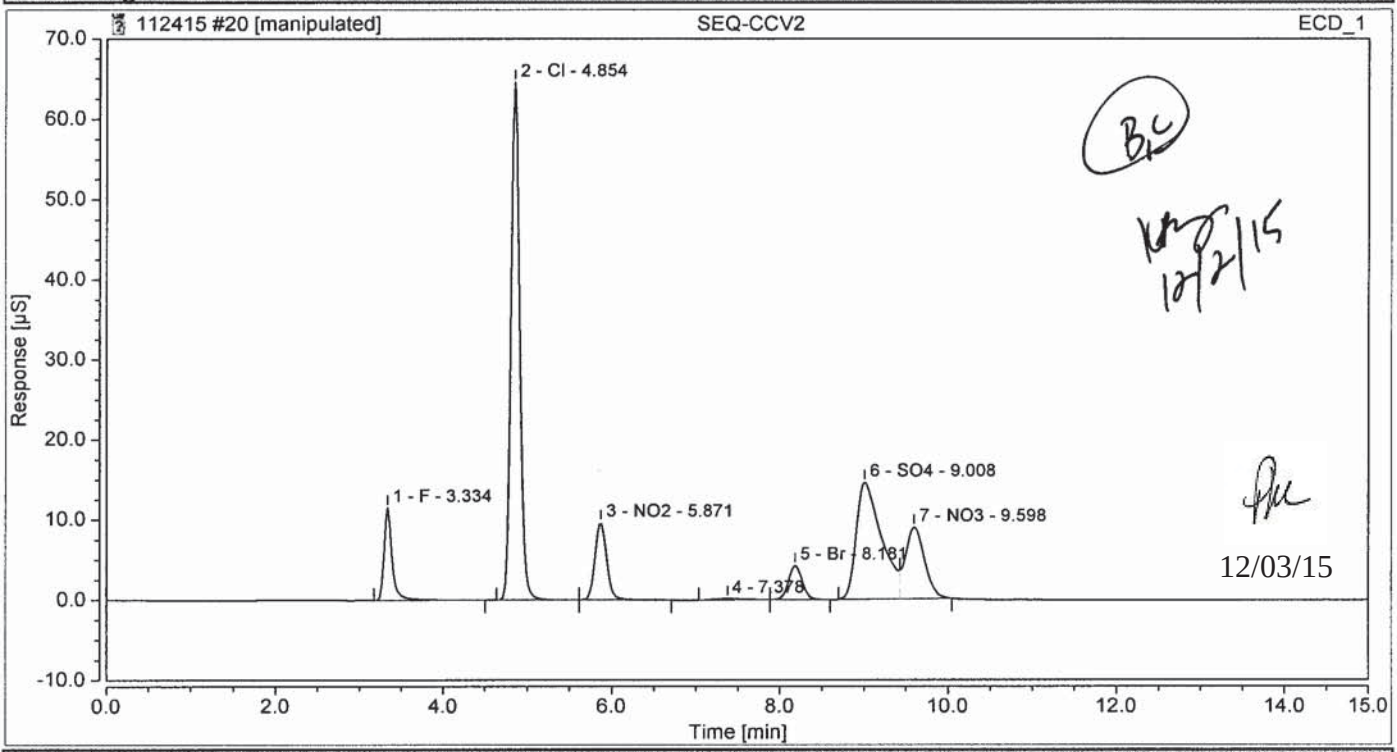


Chromatogram and Results

Injection Details

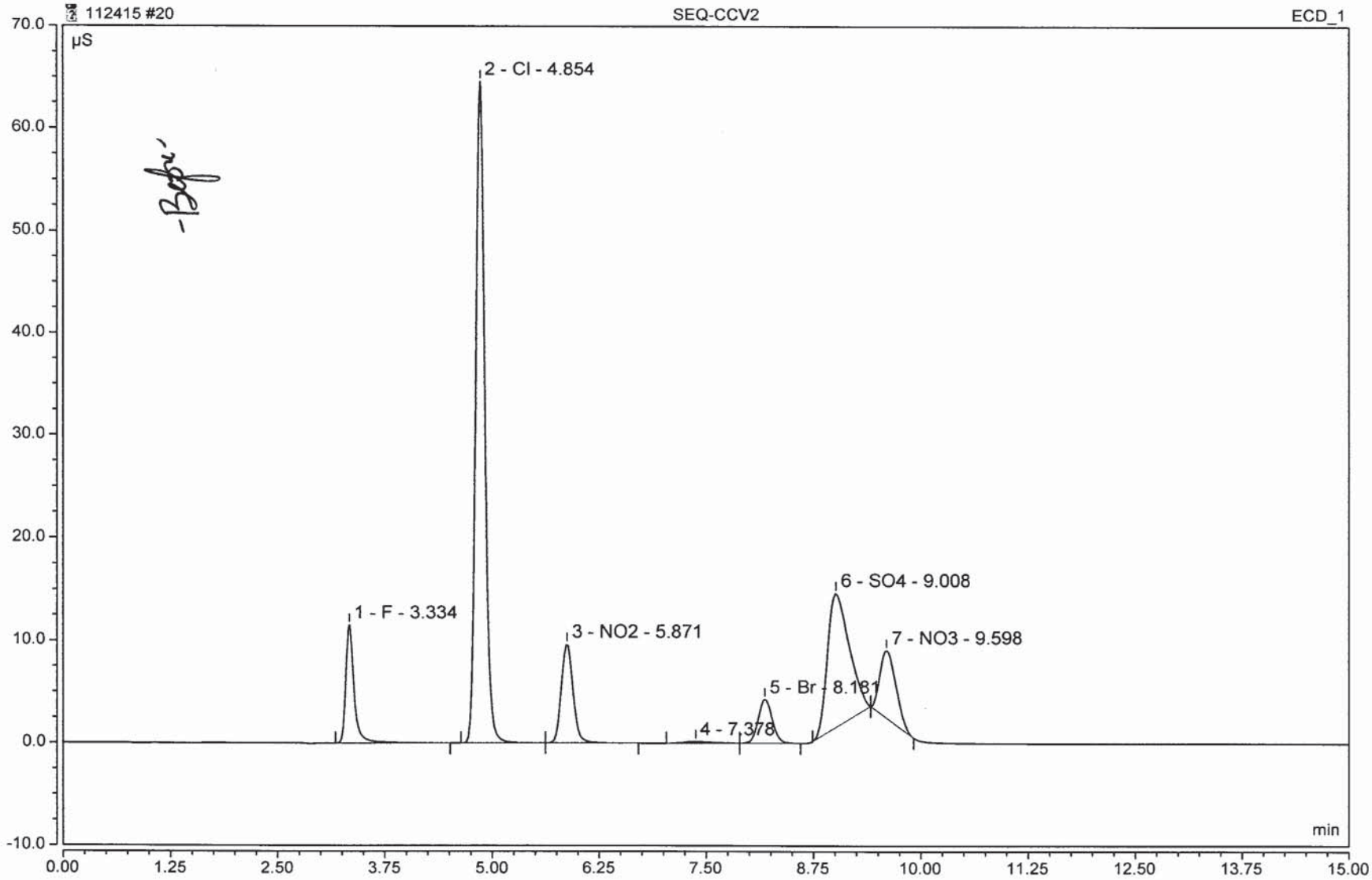
Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**20**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.334	1.2929585	11.531	6.80	10.13	2.6077
2	Cl	4.854	7.8091157	64.592	41.08	56.76	25.6594
3	NO2	5.871	1.5302191	9.658	8.05	8.49	2.6892
4		7.378	0.0588162	0.167	0.31	0.15	n.a.
5	Br	8.181	0.8118993	4.266	4.27	3.75	6.2943
6	SO4	9.008	5.1280134	14.611	26.98	12.84	22.9343
7	NO3	9.598	2.3790218	8.964	12.51	7.88	3.0802
Total:			**19.010**	**113.789**	**100.00**	**100.00**	

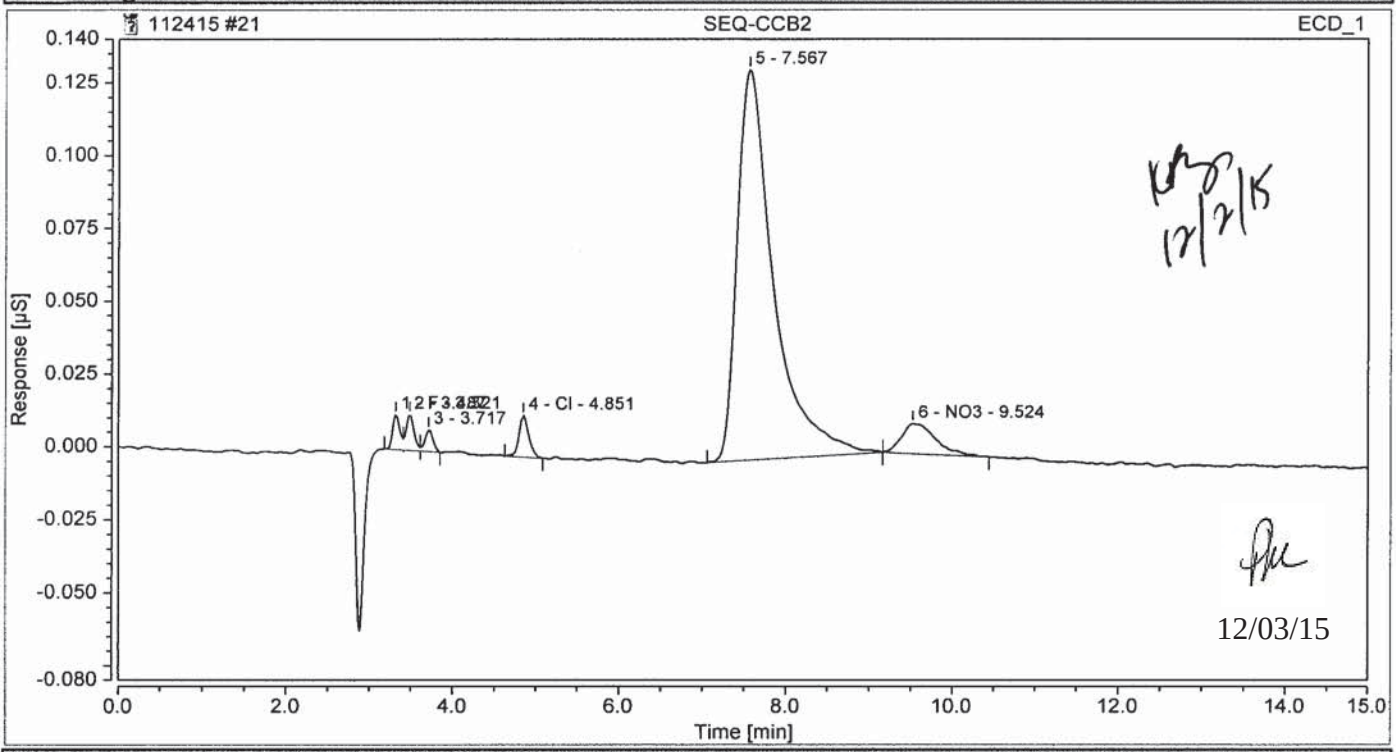

112415 #20
SEQ-CCV2
ECD_1
µS
2 - Cl - 4.854
1 - F - 3.334
3 - NO2 - 5.871
4 - 7.378
5 - Br - 8.181
6 - SO4 - 9.008
7 - NO3 - 9.598
min
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**21**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Nov/15 16:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0011899	0.012	1.53	6.33	0.0024
2		3.487	0.0013890	0.012	1.78	6.52	n.a.
3		3.717	0.0008291	0.008	1.06	3.96	n.a.
4	Cl	4.851	0.0019656	0.014	2.52	7.53	0.0065
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.567	0.0676114	0.134	86.73	70.23	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NO3	9.524	0.0049676	0.010	6.37	5.43	0.0064
Total:			**0.078**	**0.191**	**100.00**	**100.00**	

Sequence Overview

Sequence Details

Name:	**120815**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Dec2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Dec/15 07:29:39**
No. of Injections:	**47**	*Updated By:*	**NSH-IONC2**

Injection Details

No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		08/Dec/15 08:34:46	Finished
2	TESTV	2	Unknown		08/Dec/15 08:52:31	Finished
3	BLANK	3	Unknown		08/Dec/15 09:10:22	Finished
4	PRIMER	4	Unknown		08/Dec/15 09:35:56	Finished
5	PRIMER	5	Unknown		08/Dec/15 09:54:06	Finished
6	BLANK	6	Unknown		08/Dec/15 10:11:58	Finished
7	TESTV	7	Unknown		08/Dec/15 10:29:48	Finished
8	BLANK	8	Unknown		08/Dec/15 10:47:38	Finished
9	BLANK	9	Unknown		08/Dec/15 12:15:35	Finished
10	TESTV	10	Unknown		08/Dec/15 12:33:52	Finished
11	BLANK	11	Unknown		08/Dec/15 13:25:02	Finished
12	SEQ-CCV1	12	Unknown		08/Dec/15 13:42:53	Finished
13	SEQ-CCB1	13	Unknown		08/Dec/15 14:03:28	Finished
14	SEQ-CRL1	14	Unknown		08/Dec/15 14:21:19	Finished
15	SEQ-CRL2	15	Unknown		08/Dec/15 14:39:09	Finished
16	SEQ-CRL3	16	Unknown		08/Dec/15 14:56:59	Finished
17	5L08019-BLK1	17	Unknown		08/Dec/15 15:14:49	Finished
18	5L08019-BS1	18	Unknown		08/Dec/15 15:32:40	Finished
19	1512072-01	19	Unknown		08/Dec/15 15:50:30	Finished
20	1512072-02	20	Unknown		08/Dec/15 16:08:20	Finished
21	1511204-01RE1@10	21	Unknown		08/Dec/15 16:26:11	Finished
22	1511204-02RE1@10	22	Unknown		08/Dec/15 16:44:28	Finished
23	1511204-03RE1@20	23	Unknown		08/Dec/15 17:01:49	Finished
24	1511204-04RE1@50	24	Unknown		08/Dec/15 17:19:39	Finished
25	1511204-05RE1@20	25	Unknown		08/Dec/15 17:37:30	Finished
26	1511204-06RE1@20	26	Unknown		08/Dec/15 17:55:20	Finished
27	5L08019-MS1@20X	27	Unknown		08/Dec/15 18:13:09	Finished
28	5L08019-MSD1@20X	28	Unknown		08/Dec/15 18:30:59	Finished
29	5L08019-DUP1@20X	29	Unknown		08/Dec/15 18:48:49	Finished
30	1511258-02RE1@5X	30	Unknown		08/Dec/15 19:06:40	Finished
31	1511258-03RE1@5X	31	Unknown		08/Dec/15 19:24:30	Finished
32	SEQ-CCV2	32	Unknown		08/Dec/15 19:42:21	Finished
33	SEQ-CCB2	33	Unknown		08/Dec/15 20:00:10	Finished
34	1511258-04RE1@50	34	Unknown		08/Dec/15 20:18:01	Finished
35	1511258-05RE1@50	35	Unknown		08/Dec/15 20:35:50	Finished
36	1512078-01	36	Unknown		08/Dec/15 20:53:40	Finished
37	1512078-02	37	Unknown		08/Dec/15 21:11:31	Finished
38	1512078-04	38	Unknown		08/Dec/15 21:29:21	Finished
39	1512078-05	39	Unknown		08/Dec/15 21:47:12	Finished
40	1512078-06	40	Unknown		08/Dec/15 22:05:02	Finished
41	5L08019-MS2	41	Unknown		08/Dec/15 22:22:52	Finished
42	5L08019-MSD2	42	Unknown		08/Dec/15 22:40:43	Finished

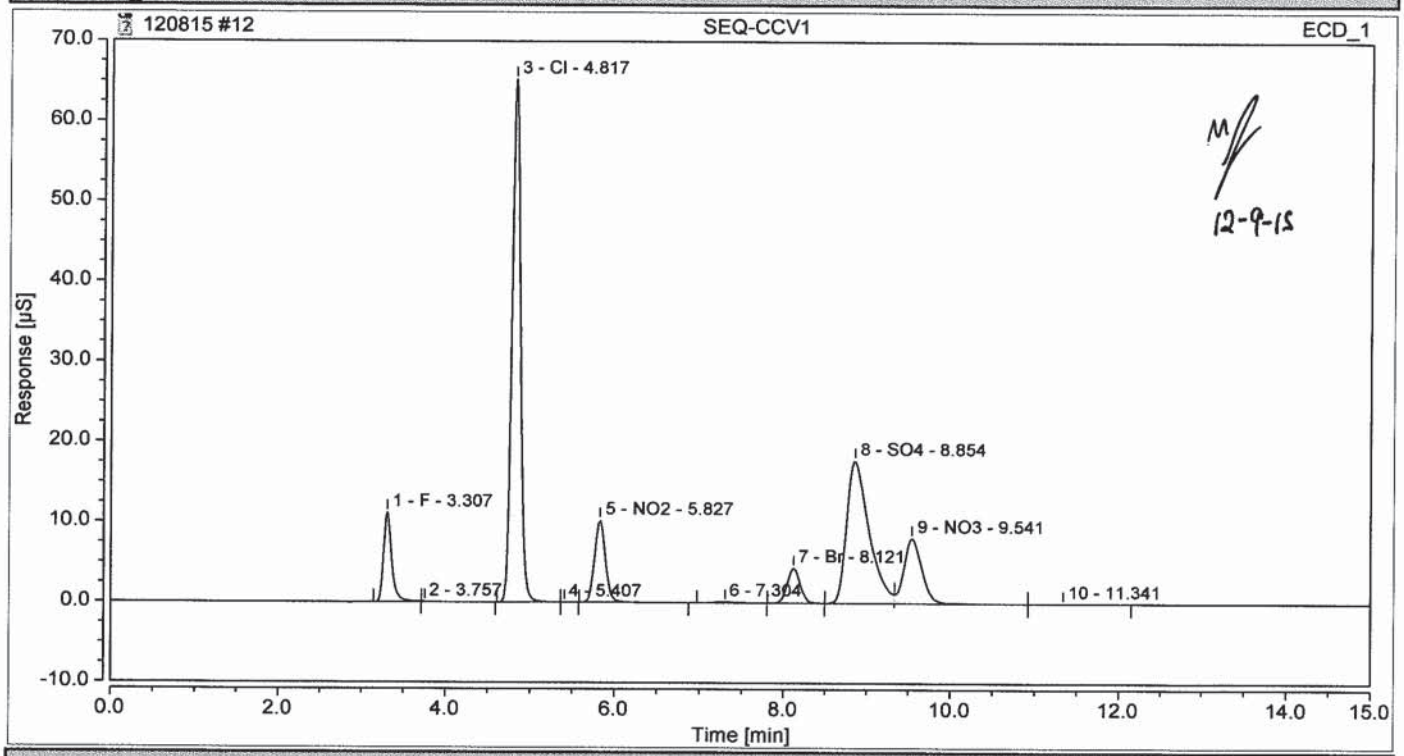
43	5L08019-DUP2	43	Unknown		08/Dec/15 22:58:33	Finished
44	1512078-07	44	Unknown		08/Dec/15 23:16:23	Finished
45	SEQ-CCV3	45	Unknown		08/Dec/15 23:34:14	Finished
46	SEQ-CCB3	46	Unknown		08/Dec/15 23:52:04	Finished
47	BLANK	47	Unknown		09/Dec/15 00:09:55	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.307	1.2519179	11.175	6.62	9.53	2.5250
2		3.757	0.0200440	0.071	0.11	0.06	n.a.
3	Cl	4.817	7.6246548	65.255	40.34	55.67	25.0533
4		5.407	0.0003079	0.002	0.00	0.00	n.a.
5	NO2	5.827	1.5513428	10.249	8.21	8.74	2.7263
6		7.304	0.0383193	0.123	0.20	0.10	n.a.
7	Br	8.121	0.8045584	4.387	4.26	3.74	6.2374
8	SO4	8.854	5.5764204	17.794	29.51	15.18	24.9397
9	NO3	9.541	2.0261075	8.142	10.72	6.95	2.6233
10		11.341	0.0054898	0.012	0.03	0.01	n.a.
Total:			**18.899**	**117.210**	**100.00**	**100.00**	

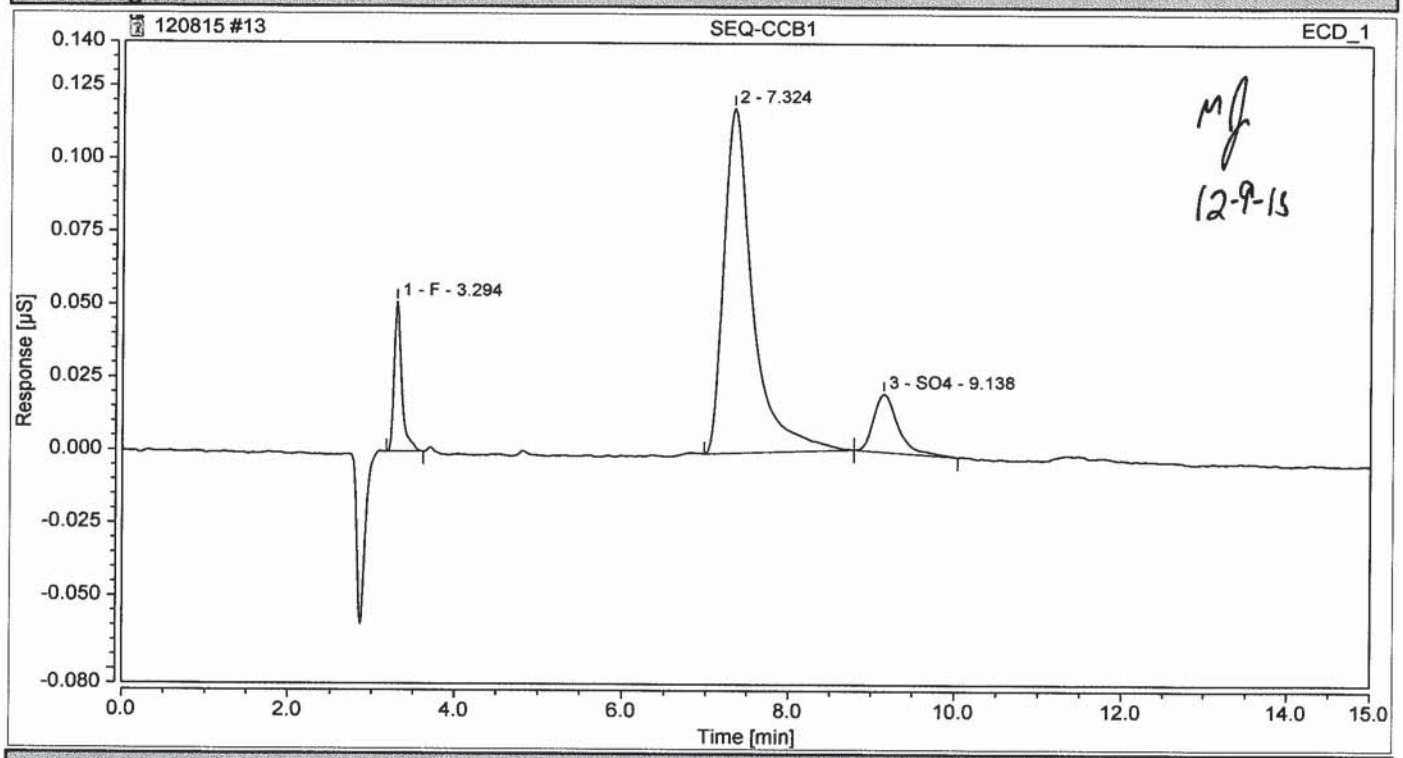
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**13**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.294	0.0053625	0.051	8.86	27.11	0.0108
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		7.324	0.0482683	0.118	79.79	62.37	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SO4	9.138	0.0068665	0.020	11.35	10.52	0.0307
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.060**	**0.190**	**100.00**	**100.00**	

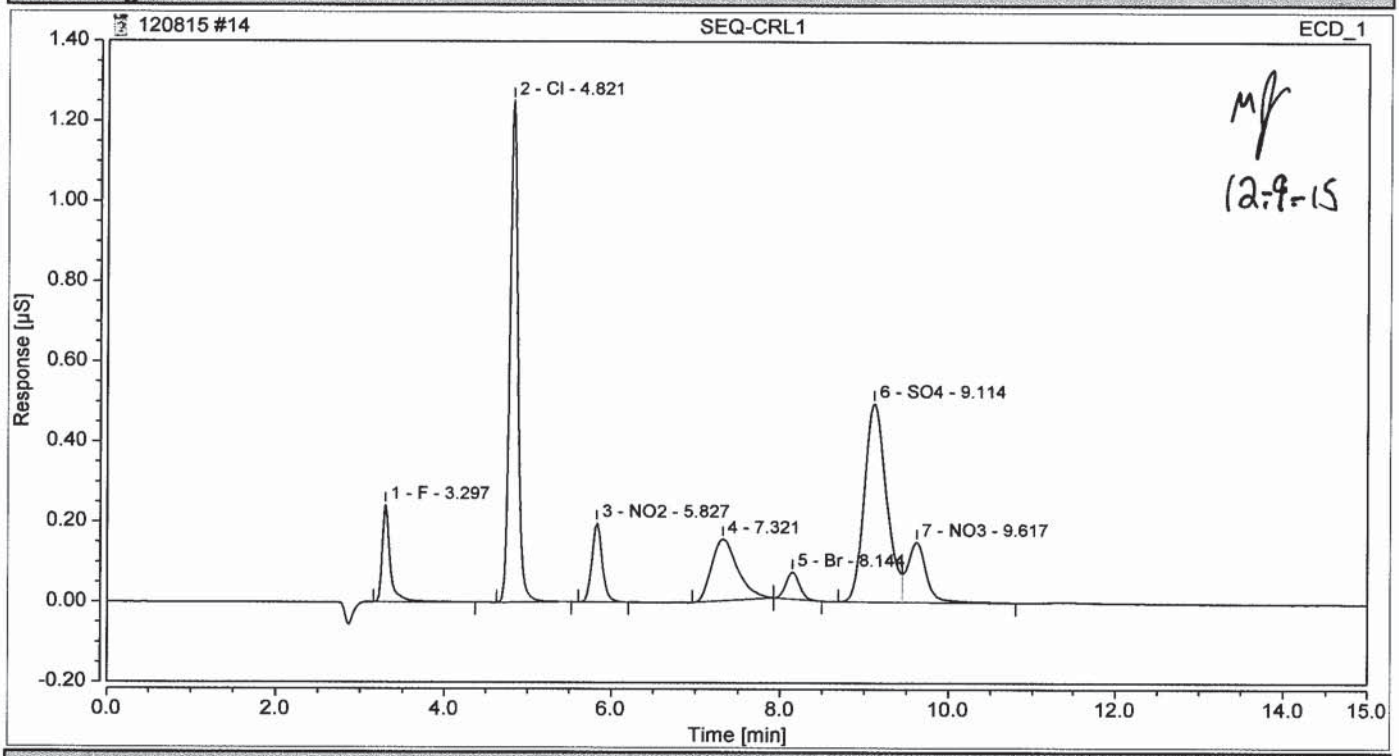
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL1**	*Run Time (min):*	**15.00**
Vial Number:	**14**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 14:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.297	0.0261970	0.242	5.74	9.45	0.0528
2	Cl	4.821	0.1431925	1.253	31.38	48.92	0.4705
3	NO2	5.827	0.0279861	0.198	6.13	7.73	0.0492
4		7.321	0.0546710	0.154	11.98	6.02	n.a.
5	Br	8.144	0.0126878	0.068	2.78	2.65	0.0984
6	SO4	9.114	0.1516493	0.496	33.23	19.35	0.6782
7	NO3	9.617	0.0399933	0.151	8.76	5.88	0.0518
Total:			**0.456**	**2.561**	**100.00**	**100.00**	

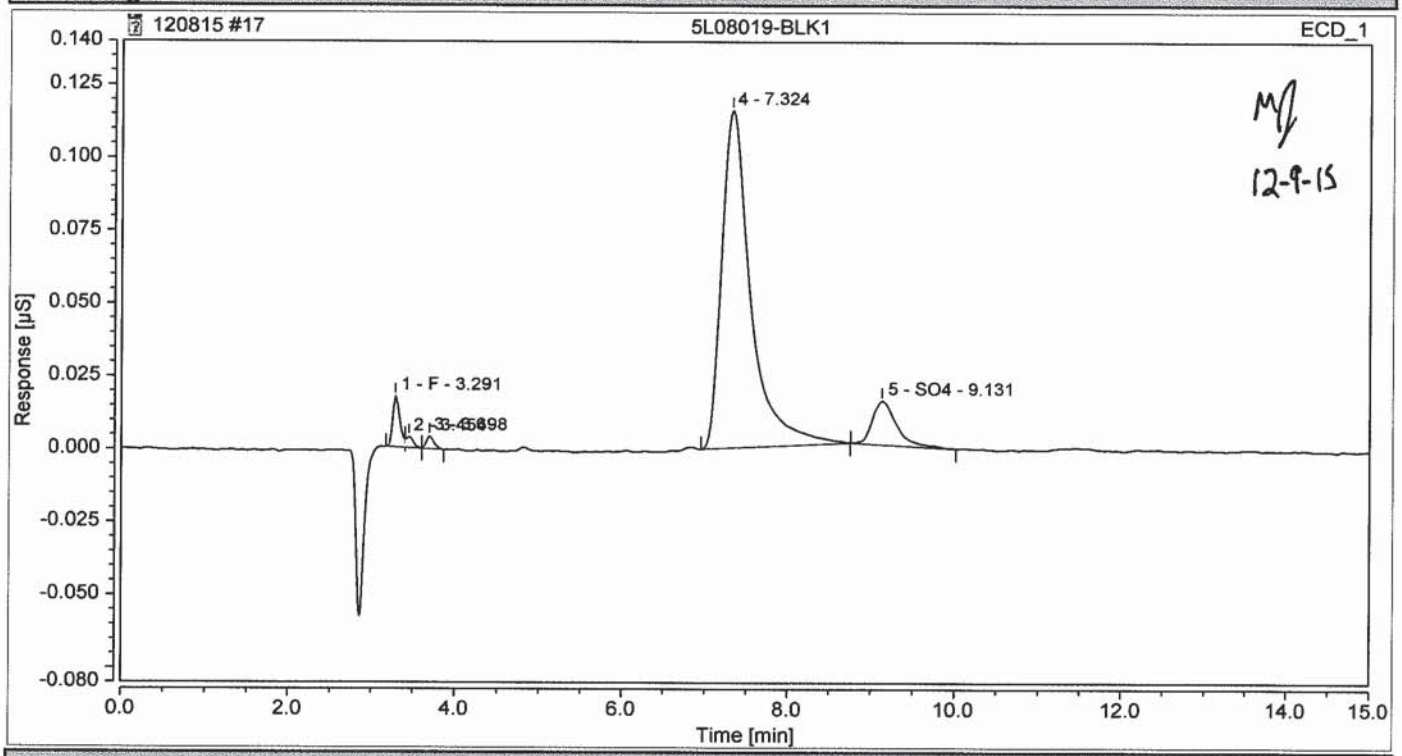
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**5L08019-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**17**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.291	0.0017184	0.018	3.15	11.22	0.0035
2		3.454	0.0003973	0.004	0.73	2.44	n.a.
3		3.698	0.0004538	0.004	0.83	2.81	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.324	0.0469829	0.116	86.02	73.88	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.131	0.0050633	0.015	9.27	9.65	0.0226
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.055**	**0.157**	**100.00**	**100.00**	

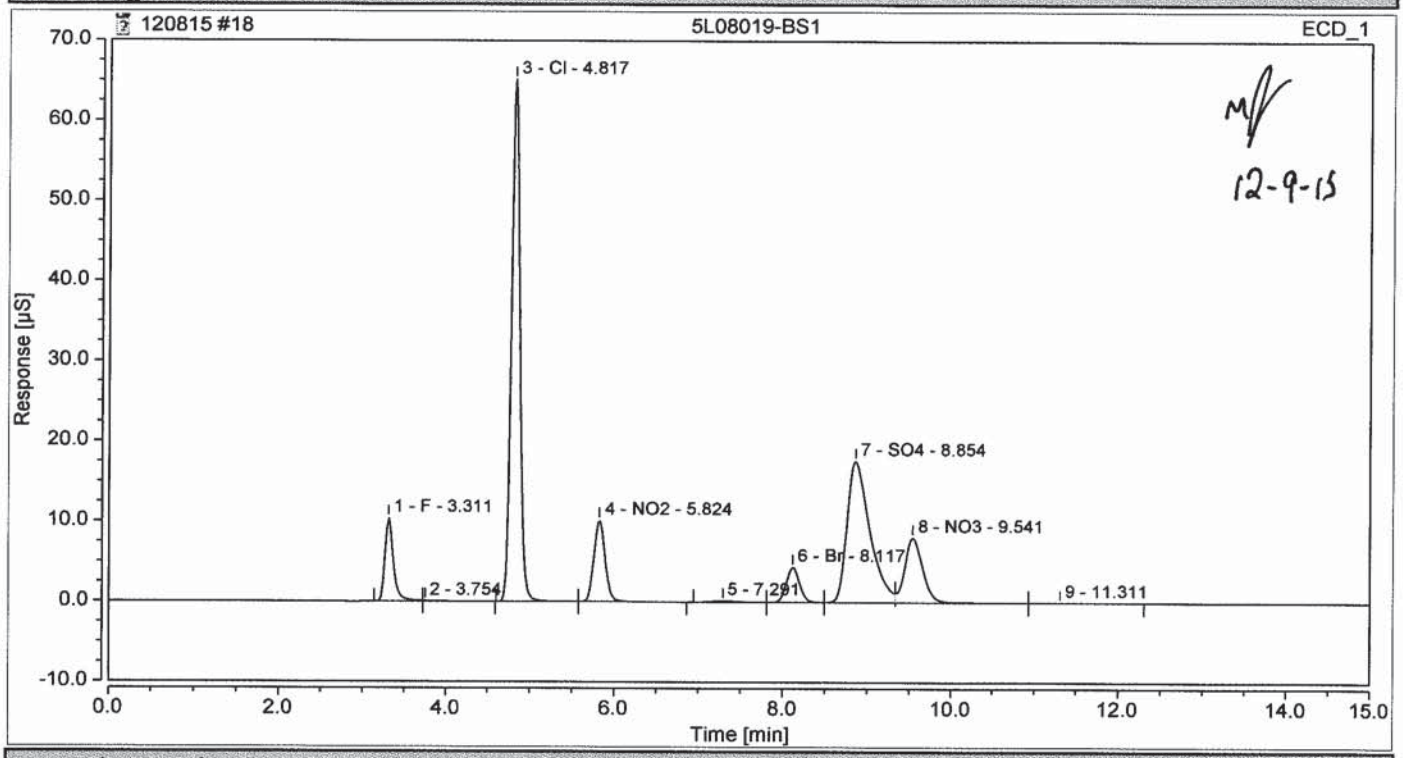
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**5L08019-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**18**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	1.2400979	10.432	6.56	8.98	2.5011
2		3.754	0.0217576	0.082	0.12	0.07	n.a.
3	Cl	4.817	7.6408068	65.149	40.41	56.09	25.1064
4	NO2	5.824	1.5480085	10.163	8.19	8.75	2.7204
5		7.291	0.0501941	0.159	0.27	0.14	n.a.
6	Br	8.117	0.8047162	4.380	4.26	3.77	6.2387
7	SO4	8.854	5.5690247	17.656	29.45	15.20	24.9066
8	NO3	9.541	2.0301518	8.112	10.74	6.98	2.6285
9		11.311	0.0046367	0.010	0.02	0.01	n.a.
Total:			**18.909**	**116.142**	**100.00**	**100.00**	

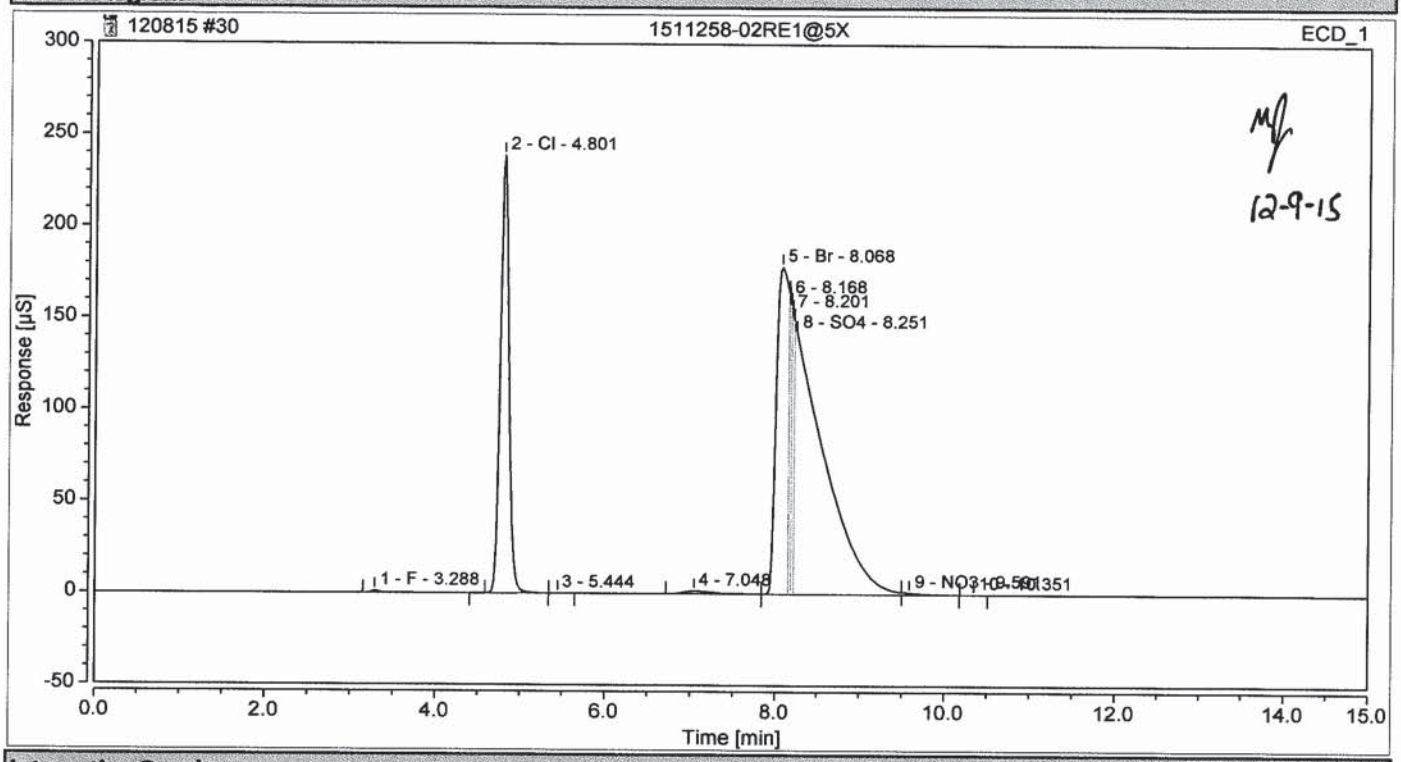
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**1511258-02RE1@5X**	*Run Time (min):*	**15.00**
Vial Number:	**30**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.288	0.1180302	1.076	0.09	0.12	0.2381
2	Cl	4.801	28.4174869	238.992	21.98	27.18	93.3750
3		5.444	0.0008034	0.005	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.048	0.5725255	1.537	0.44	0.17	n.a.
5	Br	8.068	28.8221953	178.647	22.29	20.32	223.4476
6		8.168	4.8332235	161.493	3.74	18.37	n.a.
7		8.201	5.6305638	153.953	4.35	17.51	n.a.
8	SO4	8.251	60.6730029	142.537	46.93	16.21	271.3510
9	NO3	9.591	0.2264684	0.944	0.18	0.11	0.2932
10		10.351	0.0011125	0.006	0.00	0.00	n.a.
Total:			**129.295**	**879.189**	**100.00**	**100.00**	

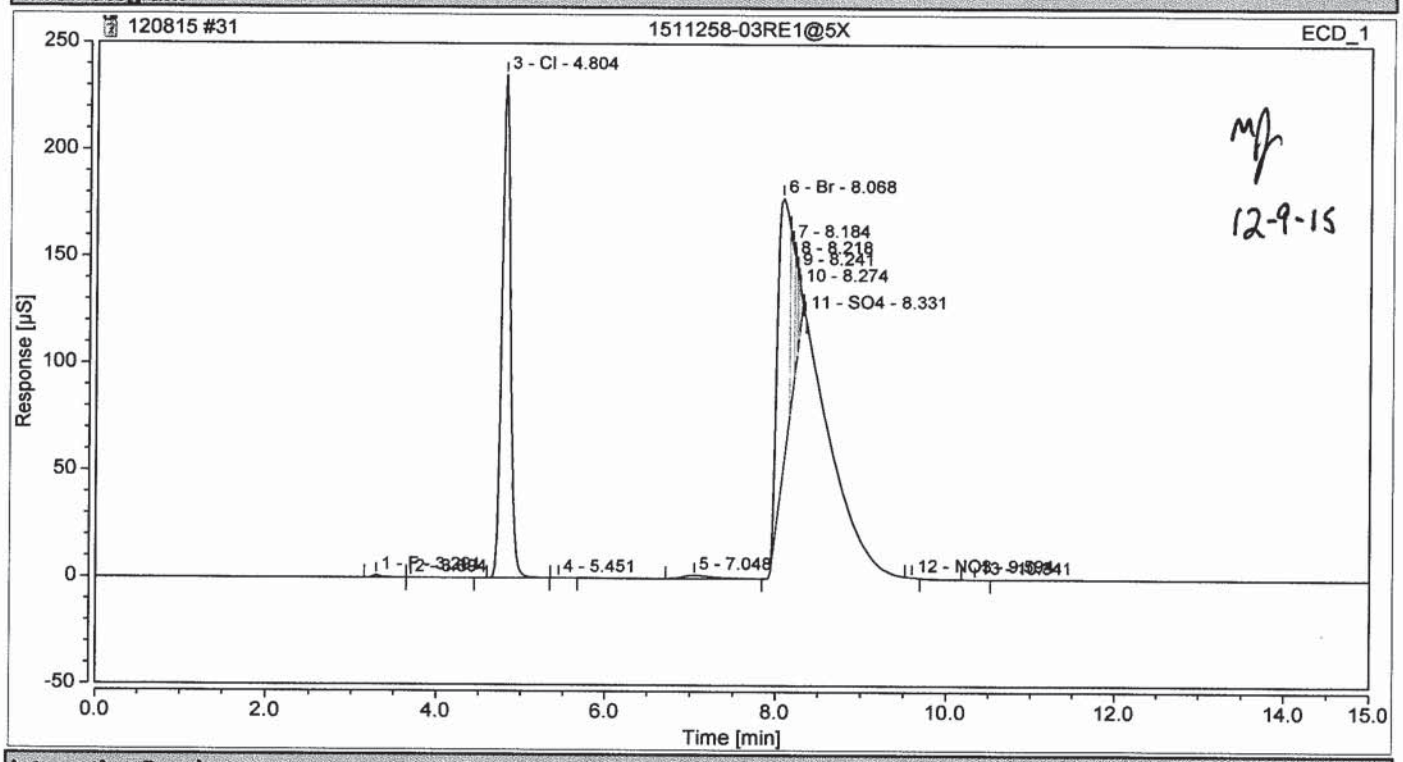
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**1511258-03RE1@5X**	*Run Time (min):*	**15.00**
Vial Number:	**31**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.291	0.1141461	1.077	0.21	0.20	0.2302
2		3.694	0.0031420	0.013	0.01	0.00	n.a.
3	Cl	4.804	27.9827743	235.368	50.57	42.86	91.9466
4		5.451	0.0012181	0.007	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.048	0.5710961	1.537	1.03	0.28	n.a.
6	Br	8.068	19.8948528	130.685	35.95	23.80	154.2373
7		8.184	3.8595728	70.510	6.97	12.84	n.a.
8		8.218	1.4663716	51.712	2.65	9.42	n.a.
9		8.241	0.7884785	38.508	1.42	7.01	n.a.
10		8.274	0.6545557	19.656	1.18	3.58	n.a.
11	SO4	8.331	0.0003311	0.019	0.00	0.00	0.0015
12	NO3	9.594	0.0024011	0.026	0.00	0.00	0.0031
13		10.341	0.0010776	0.006	0.00	0.00	n.a.
Total:			**55.340**	**549.123**	**100.00**	**100.00**	

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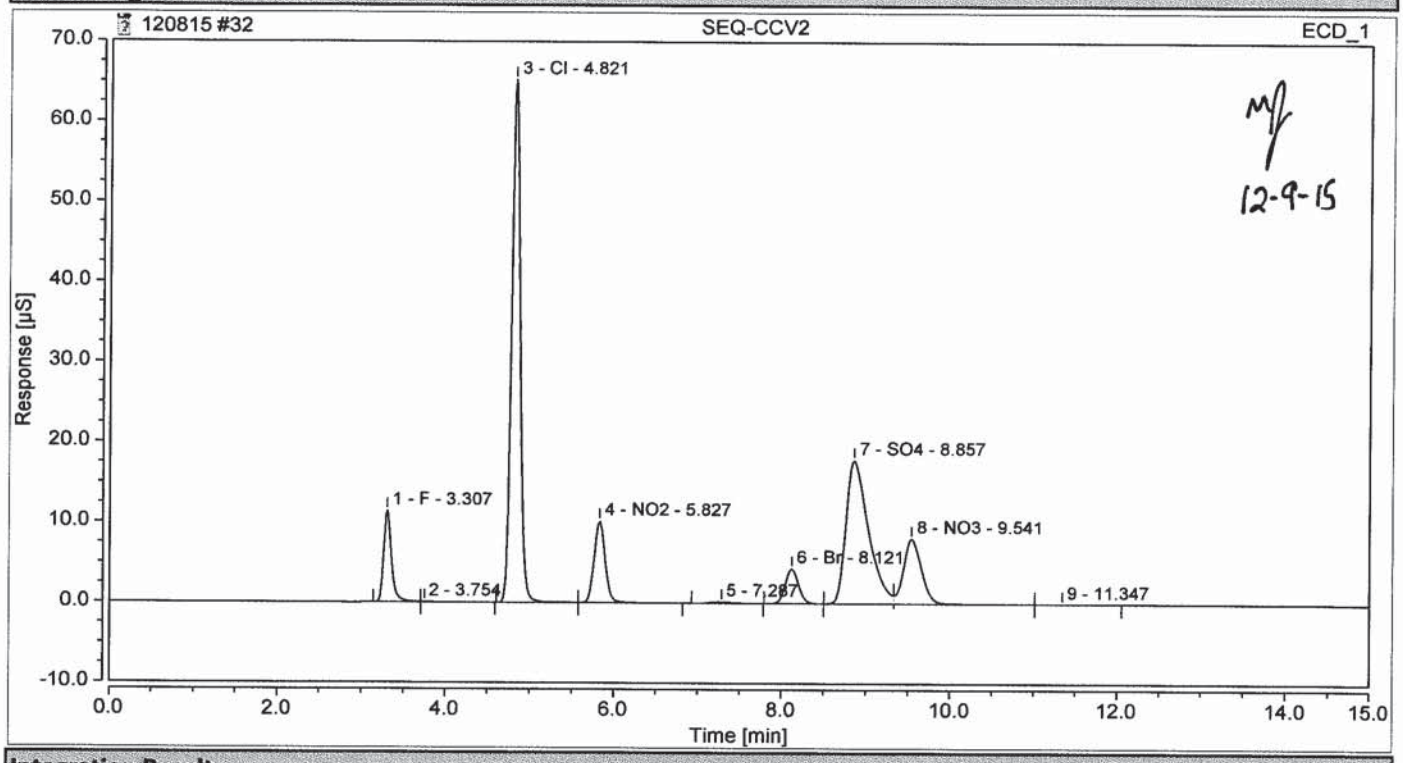
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.307	1.2413949	11.423	6.59	9.72	2.5037
2		3.754	0.0172317	0.063	0.09	0.05	n.a.
3	Cl	4.821	7.6411117	65.233	40.54	55.52	25.1074
4	NO2	5.827	1.5503895	10.198	8.23	8.68	2.7246
5		7.287	0.0500890	0.174	0.27	0.15	n.a.
6	Br	8.121	0.8029269	4.369	4.26	3.72	6.2248
7	SO4	8.857	5.5269149	17.902	29.33	15.24	24.7183
8	NO3	9.541	2.0146534	8.131	10.69	6.92	2.6085
9		11.347	0.0020430	0.004	0.01	0.00	n.a.
Total:			**18.847**	**117.497**	**100.00**	**100.00**	

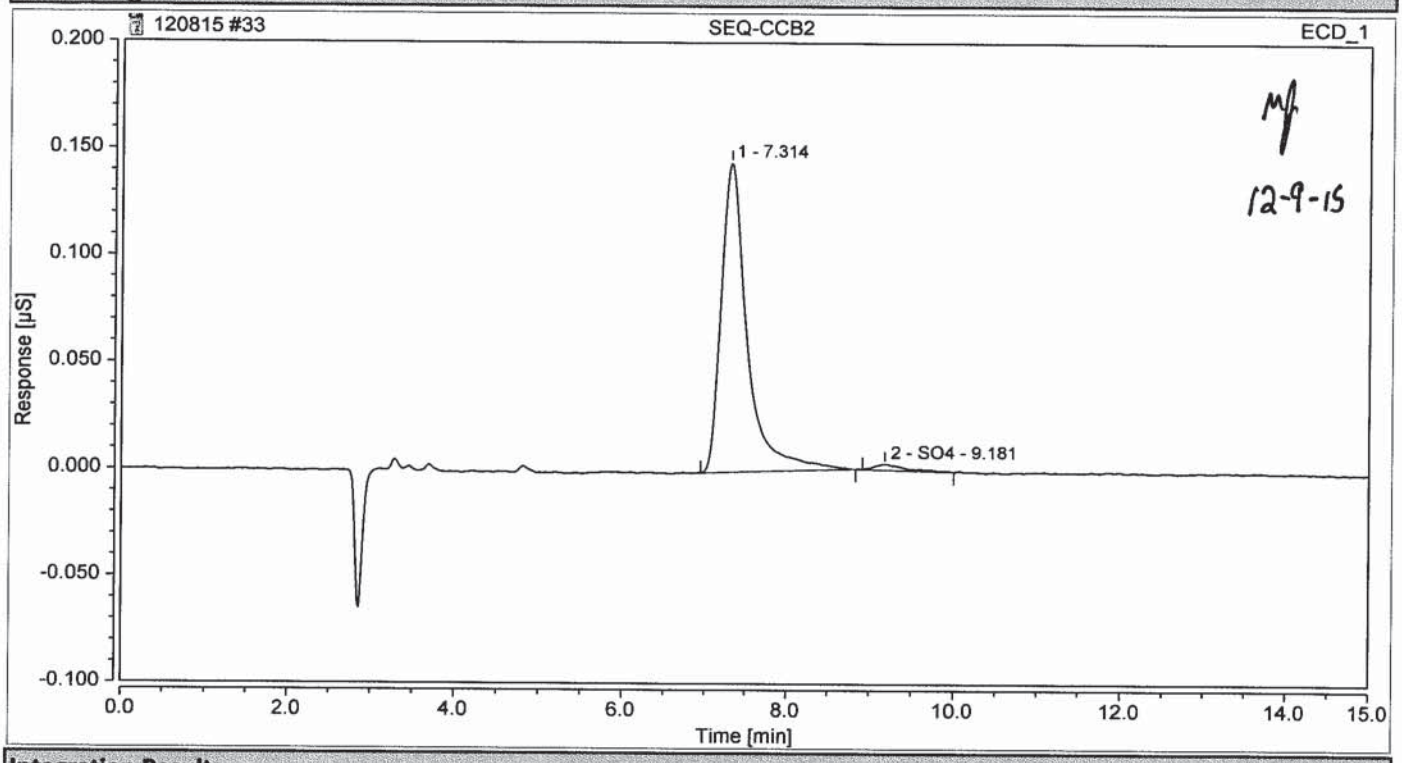
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**33**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 20:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	F	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.314	0.0538644	0.145	97.92	98.09	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	SO4	9.181	0.0011441	0.003	2.08	1.91	0.0051
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.055**	**0.147**	**100.00**	**100.00**	

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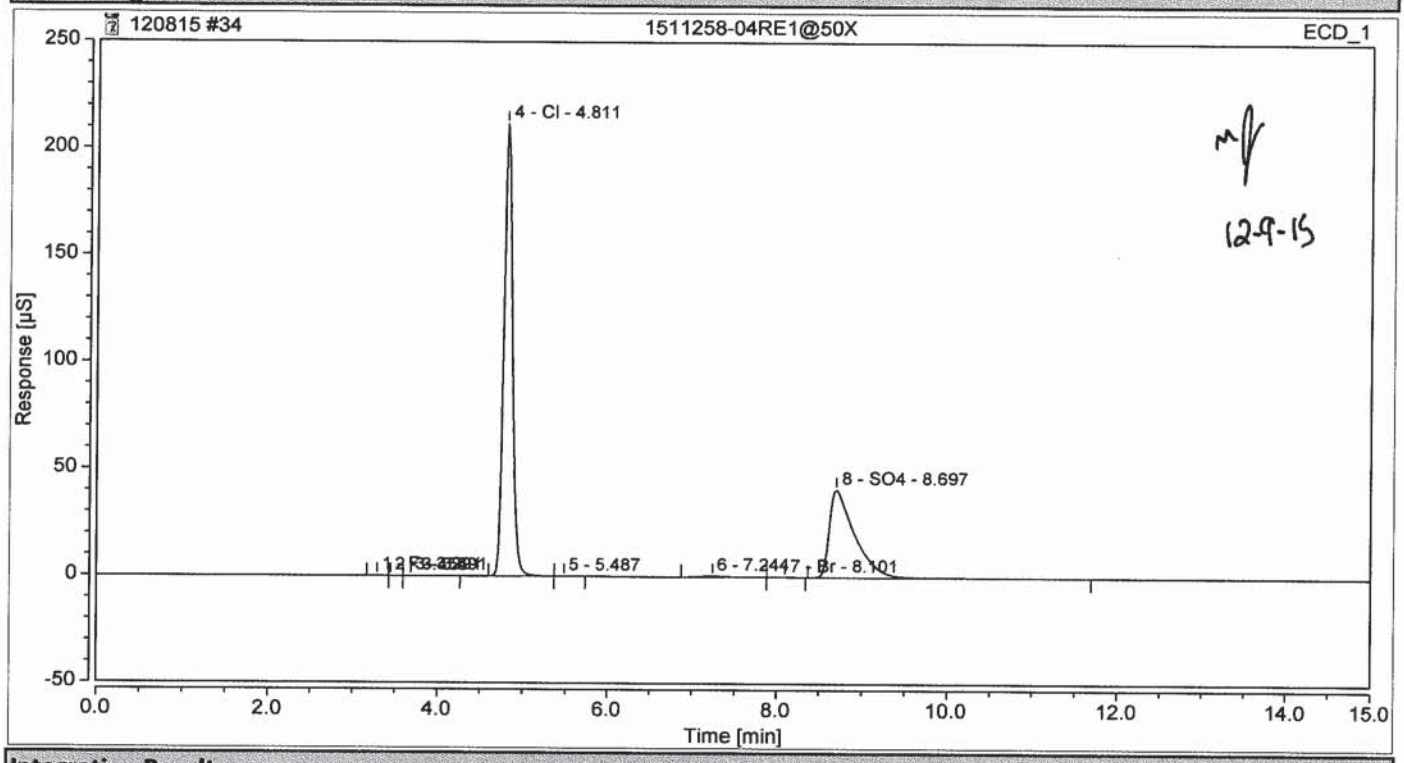
Chromatogram and Results

Injection Details

Injection Name:	**1511258-04RE1@50X**	*Run Time (min):*	**15.00**
Vial Number:	**34**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 20:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.291	0.0160877	0.163	0.04	0.06	0.0324
2		3.454	0.0015918	0.016	0.00	0.01	n.a.
3		3.691	0.0016982	0.010	0.00	0.00	n.a.
4	Cl	4.811	25.1695474	211.794	63.96	83.54	82.7028
5		5.487	0.0008258	0.005	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		7.244	0.1714753	0.517	0.44	0.20	n.a.
7	Br	8.101	0.0040754	0.020	0.01	0.01	0.0316
8	SO4	8.697	13.9885151	41.008	35.55	16.17	62.5616
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**39.354**	**253.533**	**100.00**	**100.00**	

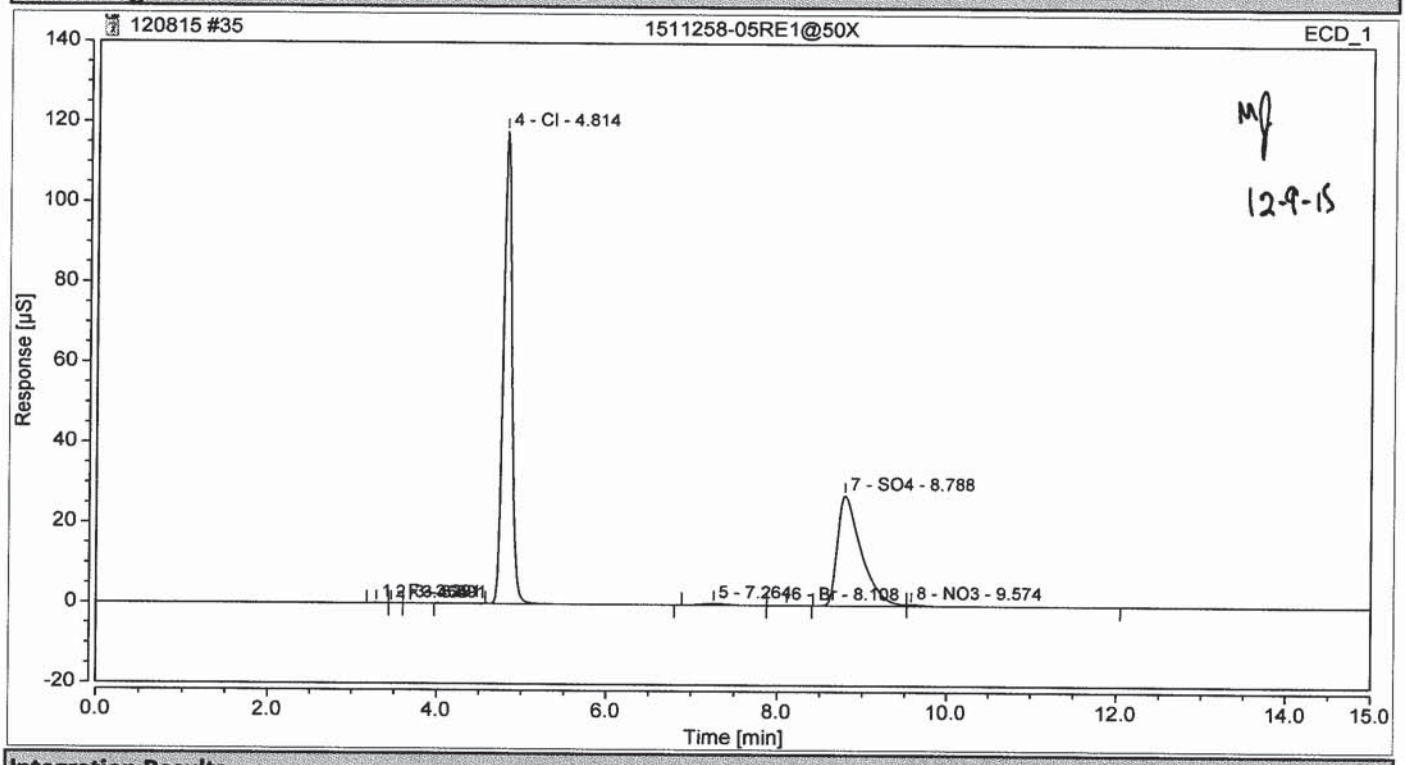
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**1511258-05RE1@50X**	*Run Time (min):*	**15.00**
Vial Number:	**35**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 20:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.291	0.0128425	0.131	0.06	0.09	0.0259
2		3.464	0.0009955	0.010	0.00	0.01	n.a.
3		3.691	0.0005621	0.005	0.00	0.00	n.a.
4	Cl	4.814	13.9498014	117.935	60.31	80.55	45.8367
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.264	0.1268578	0.390	0.55	0.27	n.a.
6	Br	8.108	0.0032613	0.015	0.01	0.01	0.0253
7	SO4	8.788	8.9412756	27.572	38.66	18.83	39.9885
8	NO3	9.574	0.0948147	0.362	0.41	0.25	0.1228
Total:			**23.130**	**146.419**	**100.00**	**100.00**	

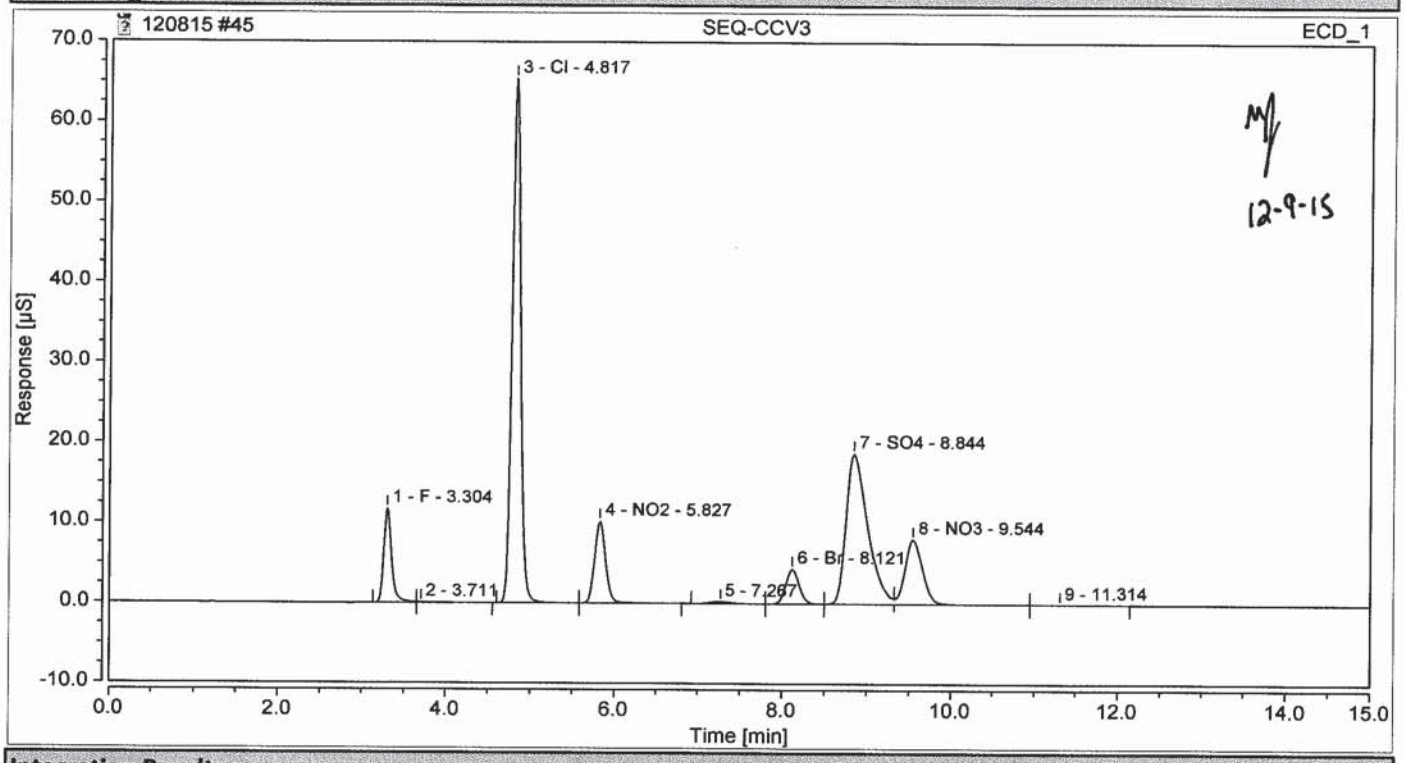
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV3**	*Run Time (min):*	**15.00**
Vial Number:	**45**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 23:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.304	1.2483510	11.742	6.61	9.87	2.5178
2		3.711	0.0203256	0.075	0.11	0.06	n.a.
3	Cl	4.817	7.6710631	65.403	40.60	54.99	25.2058
4	NO2	5.827	1.5541949	10.228	8.23	8.60	2.7313
5		7.267	0.0727572	0.241	0.39	0.20	n.a.
6	Br	8.121	0.7996794	4.363	4.23	3.67	6.1996
7	SO4	8.844	5.5610272	18.770	29.43	15.78	24.8709
8	NO3	9.544	1.9659294	8.113	10.40	6.82	2.5454
9		11.314	0.0025718	0.006	0.01	0.00	n.a.
Total:			**18.896**	**118.941**	**100.00**	**100.00**	

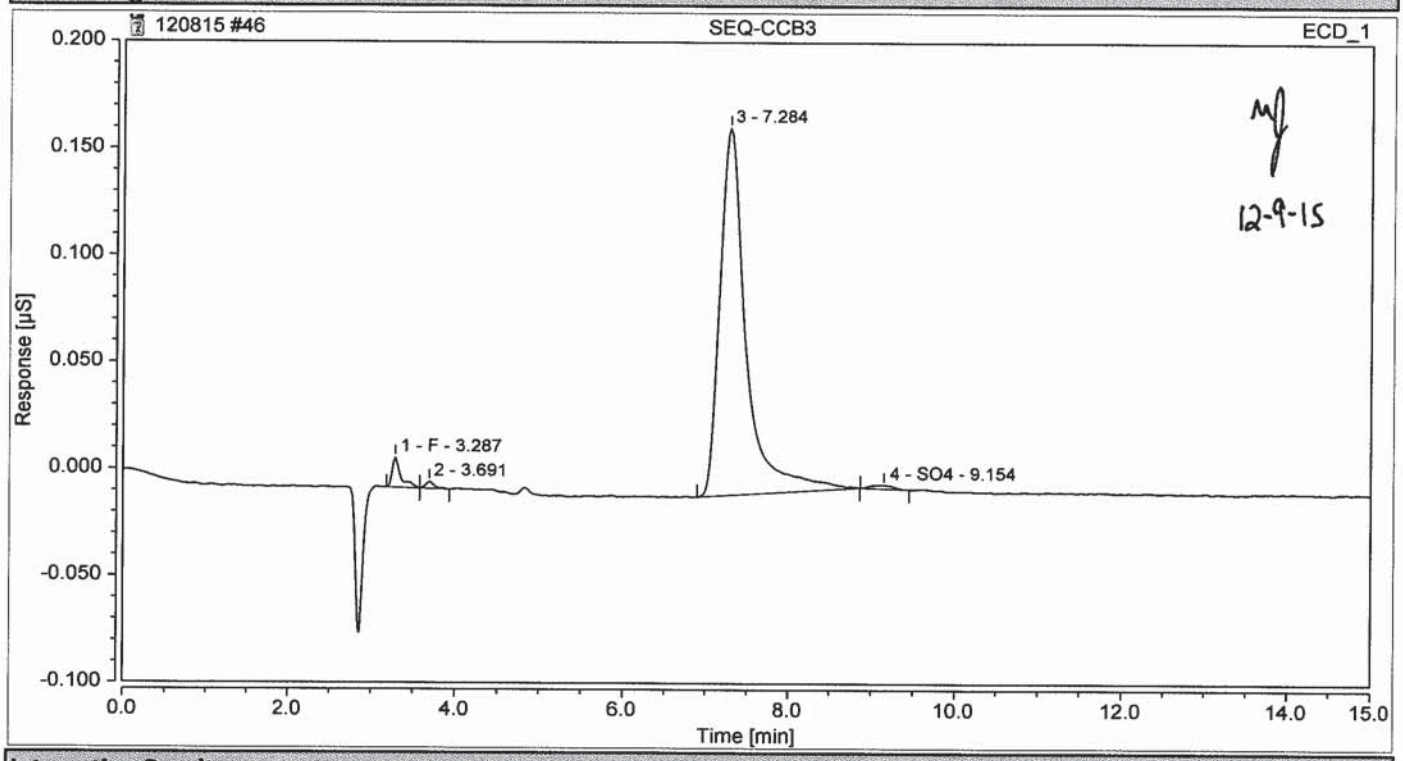
12/09/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB3**	*Run Time (min):*	**15.00**
Vial Number:	**46**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/15 23:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.287	0.0016474	0.014	2.50	7.35	0.0033
2		3.691	0.0004062	0.003	0.62	1.72	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3		7.284	0.0633096	0.172	96.04	90.01	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SO4	9.154	0.0005592	0.002	0.85	0.92	0.0025
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.066**	**0.191**	**100.00**	**100.00**	

12/09/15

Sequence Overview

Sequence Details

Name:	**121015**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Dec2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/Dec/15 07:58:58**
No. of Injections:	**63**	*Updated By:*	**NSH-IONC2**

Injection Details

No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		10/Dec/15 07:57:12	Finished
2	BLANK	2	Unknown		10/Dec/15 08:15:18	Finished
3	BLANK	3	Unknown		10/Dec/15 08:33:08	Finished
4	SEQ-CCV1	4	Unknown		10/Dec/15 08:51:22	Finished
5	BLANK	5	Unknown		10/Dec/15 09:11:38	Finished
6	BLANK	6	Unknown		10/Dec/15 09:29:34	Finished
7	BLANK	7	Unknown		10/Dec/15 09:47:24	Finished
8	BLANK	8	Unknown		10/Dec/15 10:05:14	Finished
9	SEQ-CCV1	9	Unknown		10/Dec/15 10:33:50	Finished
10	SEQ-CCB1	10	Unknown		10/Dec/15 10:51:48	Finished
11	SEQ-CRL1	11	Unknown		10/Dec/15 11:09:38	Finished
12	SEQ-CRL2	12	Unknown		10/Dec/15 11:27:29	Finished
13	SEQ-CRL3	13	Unknown		10/Dec/15 11:45:19	Finished
14	5L10011-BLK1	14	Unknown		10/Dec/15 12:03:09	Finished
15	5L10011-BS1	15	Unknown		10/Dec/15 12:20:59	Finished
16	1512101-01@10	16	Unknown		10/Dec/15 12:38:49	Finished
17	1512101-02@10	17	Unknown		10/Dec/15 12:56:53	Finished
18	1512101-03@10	18	Unknown		10/Dec/15 13:14:43	Finished
19	1512101-04@10	19	Unknown		10/Dec/15 13:32:33	Finished
20	1512101-05@10	20	Unknown		10/Dec/15 13:50:24	Finished
21	1512101-06@10	21	Unknown		10/Dec/15 14:08:14	Finished
22	1512101-08@10	22	Unknown		10/Dec/15 14:26:04	Finished
23	5L10011-MS1@10	23	Unknown		10/Dec/15 14:43:55	Finished
24	5L10011-MSD1@10	24	Unknown		10/Dec/15 15:01:46	Finished
25	5L10011-DUP1@10	25	Unknown		10/Dec/15 15:19:36	Finished
26	1512103-03	26	Unknown		10/Dec/15 15:37:26	Finished
27	1512105-01	27	Unknown		10/Dec/15 15:55:16	Finished
28	1512105-03	28	Unknown		10/Dec/15 16:13:06	Finished
29	5L10011-MS2	29	Unknown		10/Dec/15 16:30:57	Finished
30	5L10011-MSD2	30	Unknown		10/Dec/15 16:48:47	Finished
31	5L10011-DUP2	31	Unknown		10/Dec/15 17:06:37	Finished
32	SEQ-CCV2	32	Unknown		10/Dec/15 17:24:27	Finished
33	SEQ-CCB2	33	Unknown		10/Dec/15 17:42:18	Finished
34	1511229-07@20	34	Unknown		10/Dec/15 18:00:08	Finished
35	1511204-08RE1@10	35	Unknown		10/Dec/15 18:17:58	Finished
36	1511204-09RE1@20	36	Unknown		10/Dec/15 18:35:48	Finished
37	1511224-06RE1@10	37	Unknown		10/Dec/15 18:53:38	Finished
38	1511226-01RE1@20	38	Unknown		10/Dec/15 19:11:29	Finished
39	1511226-02RE1@20	39	Unknown		10/Dec/15 19:29:19	Finished
40	1511226-03RE1@20	40	Unknown		10/Dec/15 19:47:09	Finished
41	1511226-04RE1@20	41	Unknown		10/Dec/15 20:04:59	Finished
42	1511226-05RE1@20	42	Unknown		10/Dec/15 20:22:50	Finished

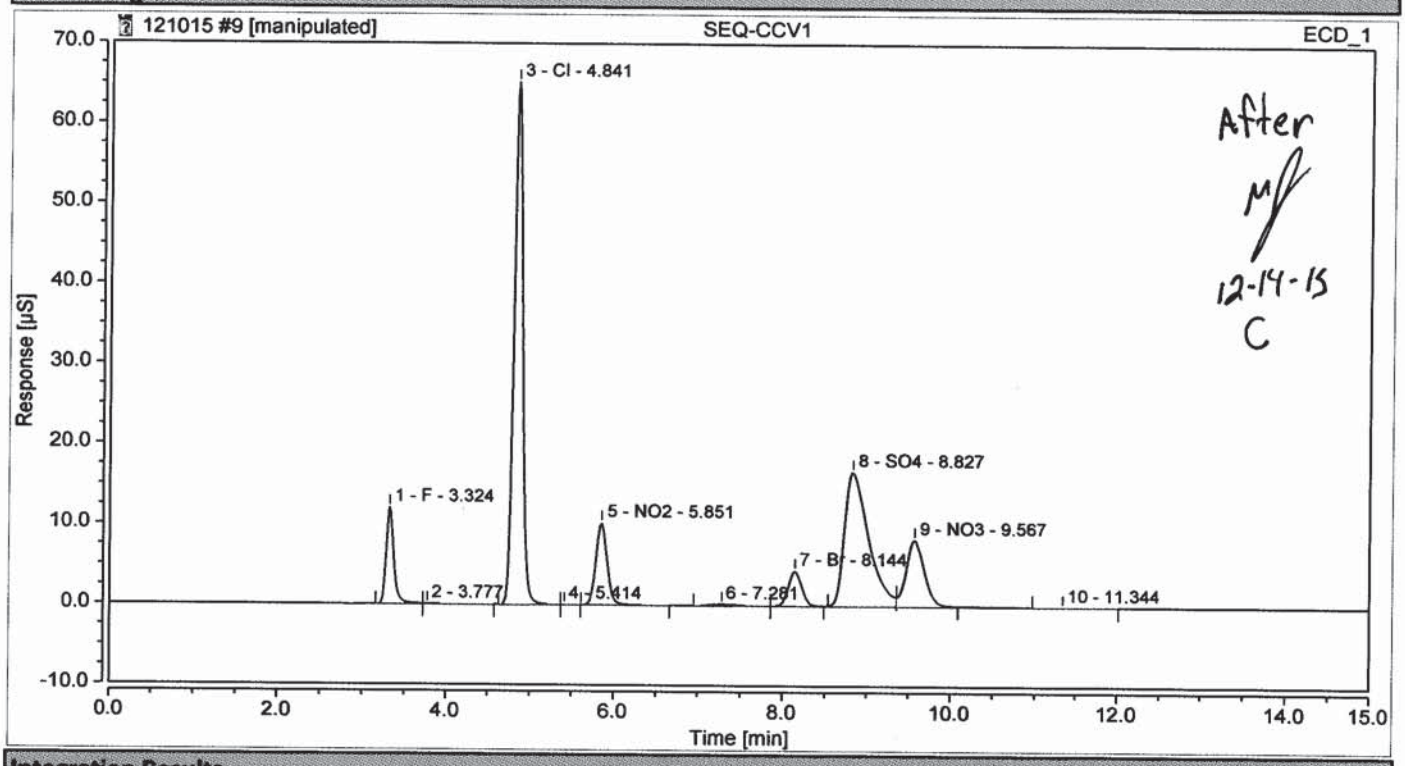
43	1511226-06RE1@20	43	Unknown		10/Dec/15 20:40:40	Finished
44	SEQ-CCV3	44	Unknown		10/Dec/15 20:58:30	Finished
45	SEQ-CCB3	45	Unknown		10/Dec/15 21:16:20	Finished
46	5L06002-BLK1	46	Unknown		10/Dec/15 21:34:10	Finished
47	5L06002-BS1	47	Unknown		10/Dec/15 21:52:01	Finished
48	1511258-01RE1@10	48	Unknown		10/Dec/15 22:09:51	Finished
~~49~~	~~1511226-07RE1@20~~	49	Unknown		10/Dec/15 22:27:41	Finished
50	1511229-01@5X	50	Unknown		10/Dec/15 22:45:31	Finished
51	1511229-02@5X	1	Unknown		10/Dec/15 23:03:22	Finished
52	1511229-03@5X	2	Unknown		10/Dec/15 23:21:12	Finished
53	1511229-04@5X	3	Unknown		10/Dec/15 23:39:02	Finished
54	1511229-05@5X	4	Unknown		10/Dec/15 23:56:53	Finished
55	1511229-06@5X	5	Unknown		11/Dec/15 00:14:43	Finished
56	5L06002-MS1@5X	6	Unknown		11/Dec/15 00:32:33	Finished
57	5L06002-MSD1@5X	7	Unknown		11/Dec/15 00:50:23	Finished
58	5L06002-DUP1@5X	8	Unknown		11/Dec/15 01:08:14	Finished
59	~~1511204-07@5X~~	9	Unknown		11/Dec/15 01:26:04	Finished
60	1511229-08@5X	10	Unknown		11/Dec/15 01:43:54	Finished
61	SEQ-CCV4	11	Unknown		11/Dec/15 02:01:44	Finished
62	SEQ-CCB4	12	Unknown		11/Dec/15 02:19:34	Finished
63	BLANK	13	Unknown		11/Dec/15 02:37:25	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2681993	12.059	6.64	10.30	2.5578
2		3.777	0.0179633	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7098321	65.155	40.39	55.65	25.3332
4		5.414	0.0004088	0.002	0.00	0.00	n.a.
5	NO2	5.851	1.5671010	10.216	8.21	8.73	2.7540
6		7.281	0.0628324	0.185	0.33	0.16	n.a.
7	Br	8.144	0.8036017	4.363	4.21	3.73	6.2300
8	SO4	8.827	5.5518366	16.724	29.08	14.28	24.8298
9	NO3	9.567	2.1027054	8.307	11.02	7.09	2.7225
10		11.344	0.0043632	0.010	0.02	0.01	n.a.
Total:			**19.089**	**117.083**	**100.00**	**100.00**	

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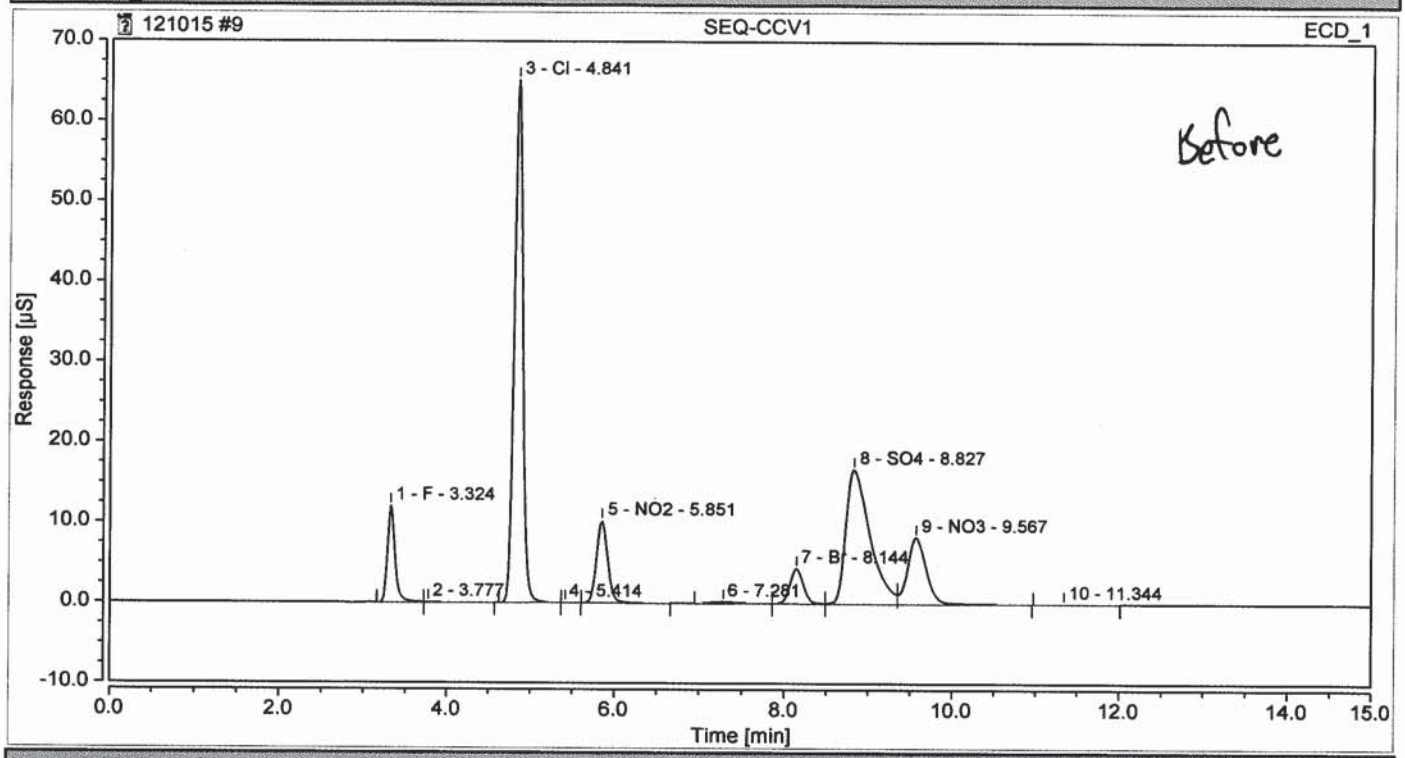
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

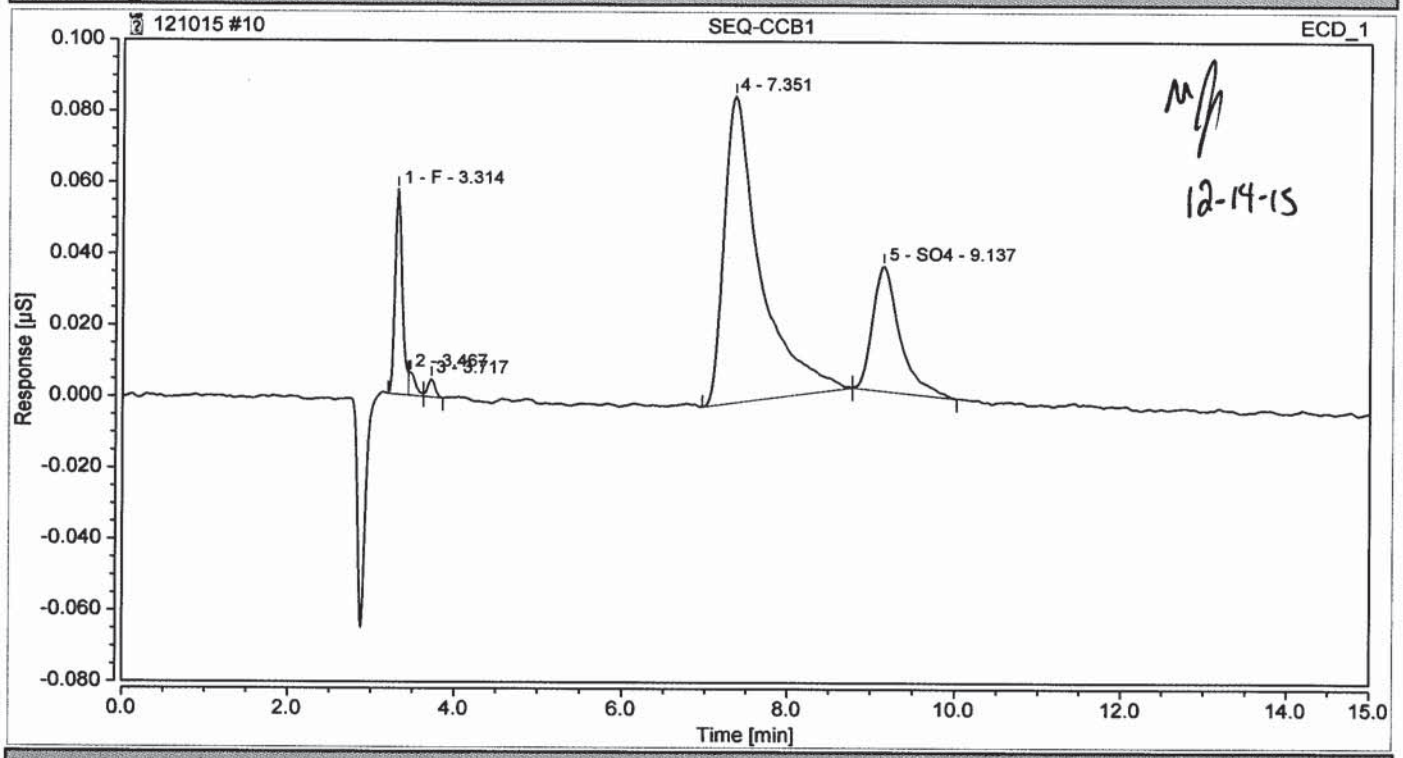
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2681993	12.059	6.64	10.30	2.5578
2		3.777	0.0179633	0.062	0.09	0.05	n.a.
3	Cl	4.841	7.7098321	65.155	40.35	55.65	25.3332
4		5.414	0.0004088	0.002	0.00	0.00	n.a.
5	NO2	5.851	1.5671010	10.216	8.20	8.73	2.7540
6		7.281	0.0628324	0.185	0.33	0.16	n.a.
7	Br	8.144	0.8036017	4.363	4.21	3.73	6.2300
8	SO4	8.827	5.5448251	16.724	29.02	14.28	24.7984
9	NO3	9.567	2.1274326	8.307	11.13	7.09	2.7545
10		11.344	0.0043632	0.010	0.02	0.01	n.a.
Total:			**19.107**	**117.083**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0056482	0.058	8.89	30.29	0.0114
2		3.467	0.0006010	0.006	0.95	3.35	n.a.
3		3.717	0.0004926	0.005	0.78	2.65	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.351	0.0437036	0.086	68.79	45.27	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.137	0.0130869	0.035	20.60	18.44	0.0585
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.064**	**0.190**	**100.00**	**100.00**	

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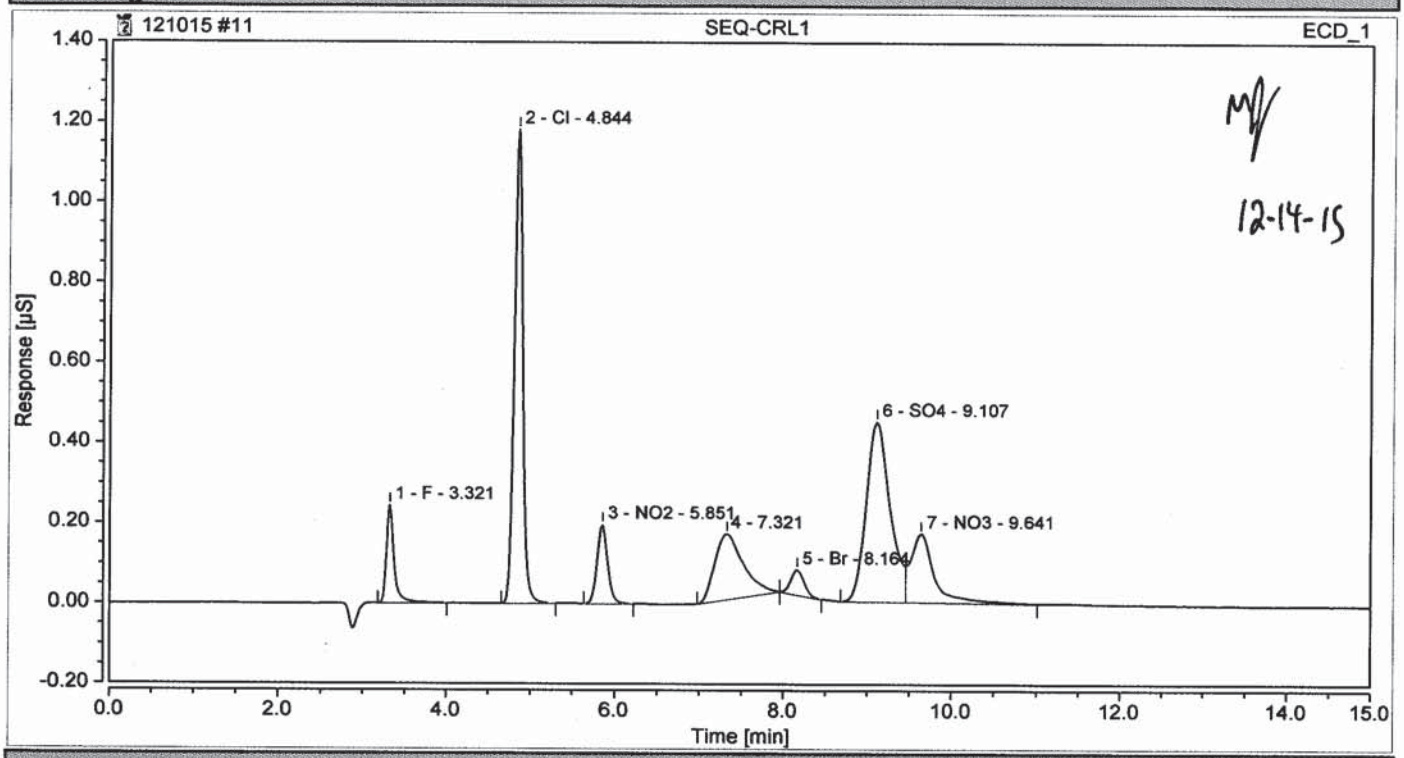
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CRL1**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0257931	0.245	5.49	9.90	0.0520
2	Cl	4.844	0.1361275	1.182	28.98	47.82	0.4473
3	NO2	5.851	0.0283737	0.198	6.04	8.00	0.0499
4		7.321	0.0643525	0.164	13.70	6.63	n.a.
5	Br	8.164	0.0114553	0.063	2.44	2.54	0.0888
6	SO4	9.107	0.1488035	0.449	31.67	18.18	0.6655
7	NO3	9.641	0.0548869	0.171	11.68	6.93	0.0711
Total:			**0.470**	**2.471**	**100.00**	**100.00**	

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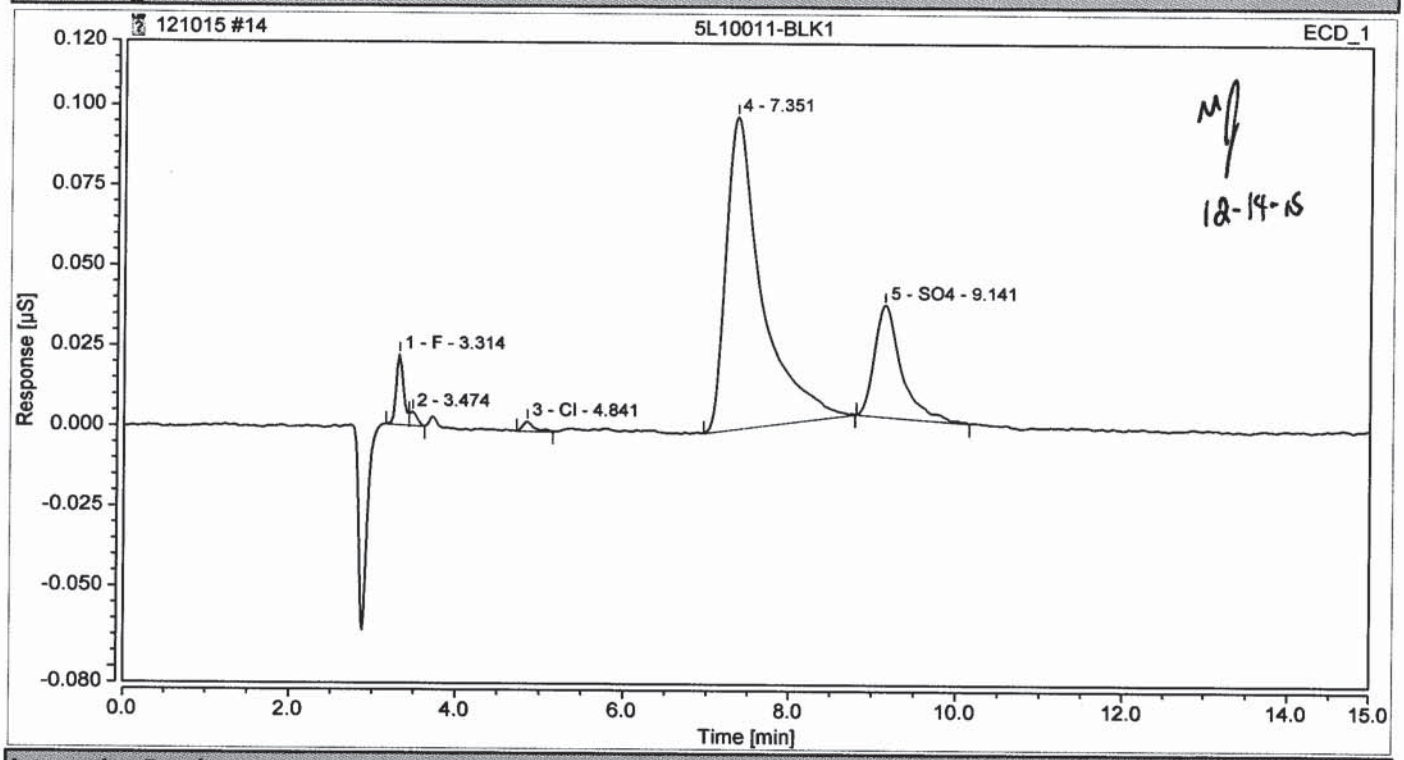
Chromatogram and Results

Injection Details

Injection Name:	**5L10011-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**14**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0021789	0.022	3.35	13.55	0.0044
2		3.474	0.0004303	0.004	0.66	2.62	n.a.
3	Cl	4.841	0.0004549	0.003	0.70	1.86	0.0015
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.351	0.0488705	0.097	75.23	60.36	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.141	0.0130295	0.035	20.06	21.61	0.0583
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.065**	**0.161**	**100.00**	**100.00**	

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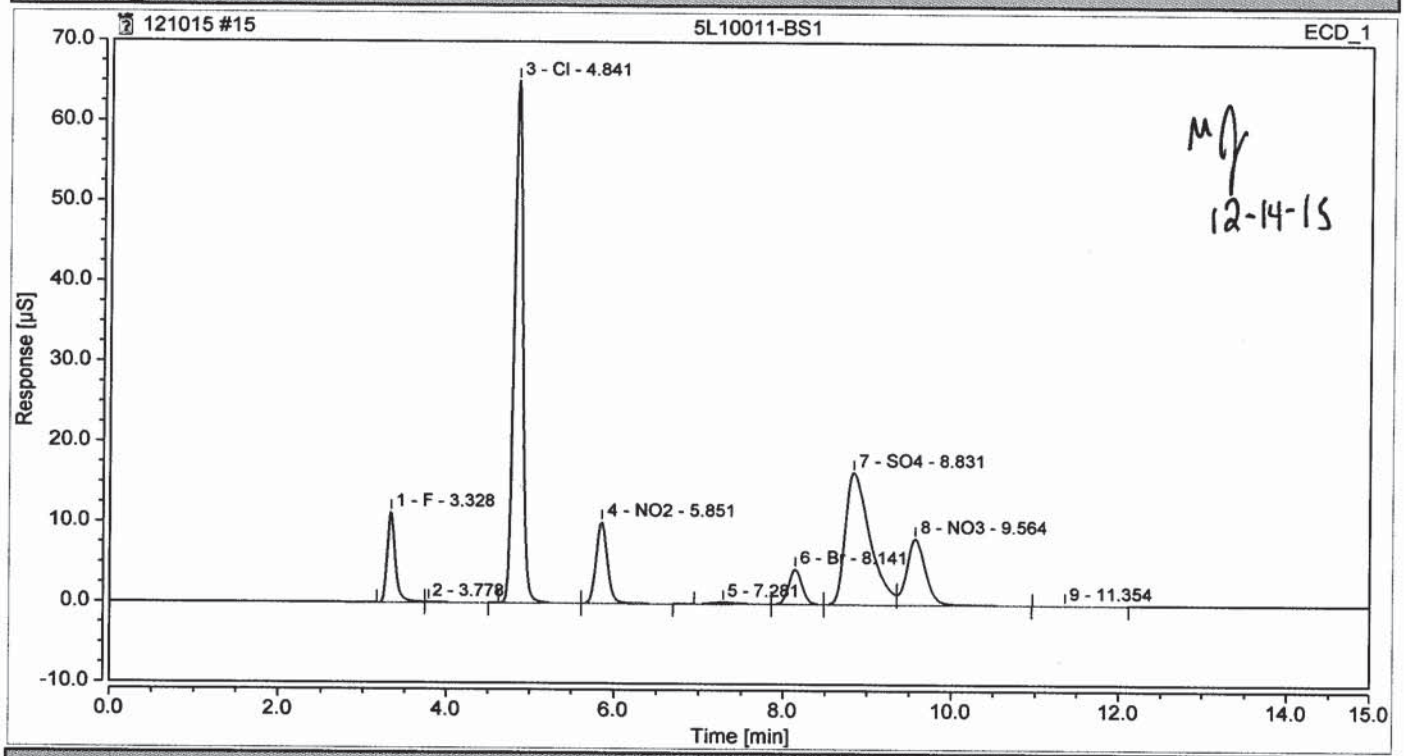
Chromatogram and Results

Injection Details

Injection Name:	**5L10011-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**15**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 12:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	1.2659467	11.245	6.62	9.70	2.5533
2		3.778	0.0199359	0.074	0.10	0.06	n.a.
3	Cl	4.841	7.7209916	65.104	40.35	56.18	25.3699
4	NO2	5.851	1.5593141	10.148	8.15	8.76	2.7403
5		7.281	0.0687834	0.200	0.36	0.17	n.a.
6	Br	8.141	0.8025821	4.364	4.19	3.77	6.2221
7	SO4	8.831	5.5739142	16.485	29.13	14.23	24.9285
8	NO3	9.564	2.1195043	8.250	11.08	7.12	2.7442
9		11.354	0.0046011	0.010	0.02	0.01	n.a.
Total:			**19.136**	**115.880**	**100.00**	**100.00**	

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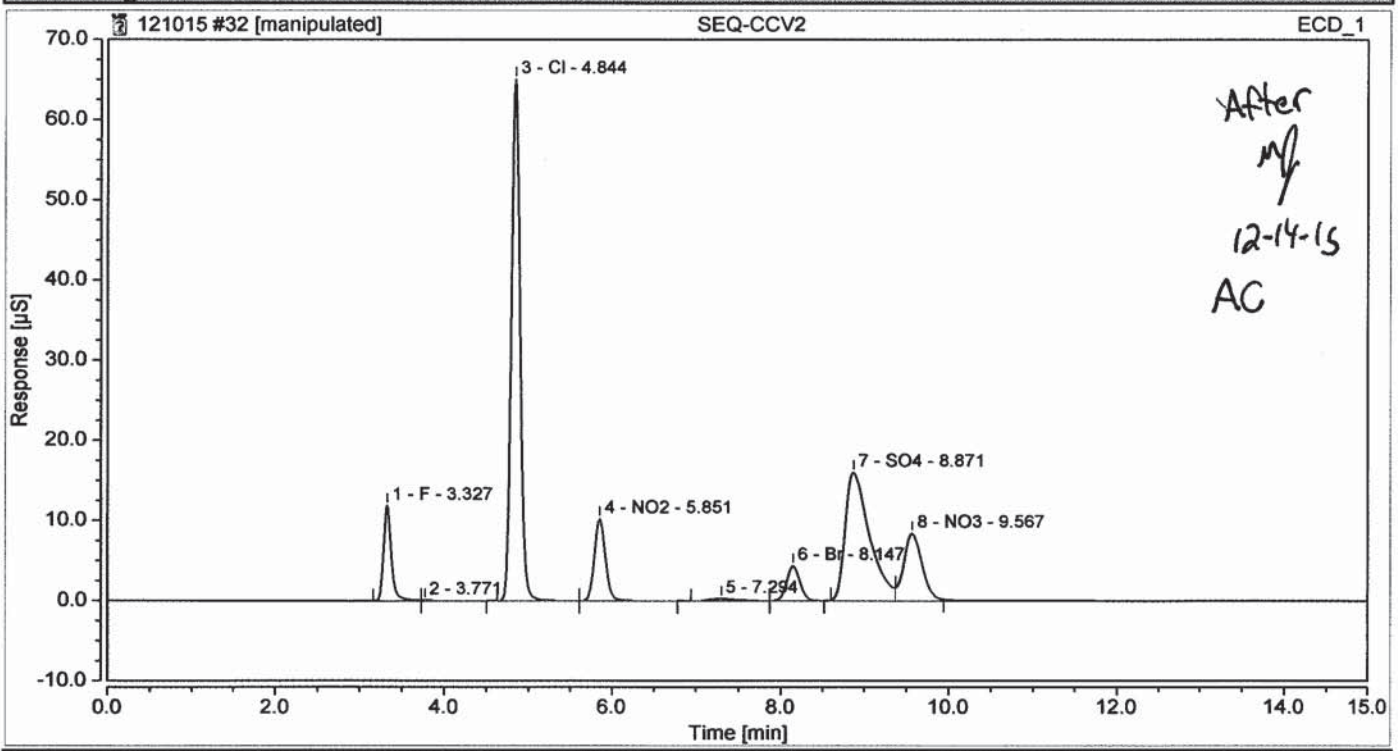
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2625268	11.885	6.64	10.22	2.5464
2		3.771	0.0155769	0.060	0.08	0.05	n.a.
3	Cl	4.844	7.7121553	65.071	40.54	55.94	25.3408
4	NO2	5.851	1.5652284	10.227	8.23	8.79	2.7507
5		7.294	0.0951732	0.270	0.50	0.23	n.a.
6	Br	8.147	0.8003201	4.350	4.21	3.74	6.2046
7	SO4	8.871	5.4467566	16.025	28.63	13.78	24.3598
8	NO3	9.567	2.1241073	8.429	11.17	7.25	2.7502
Total:			**19.022**	**116.318**	**100.00**	**100.00**	

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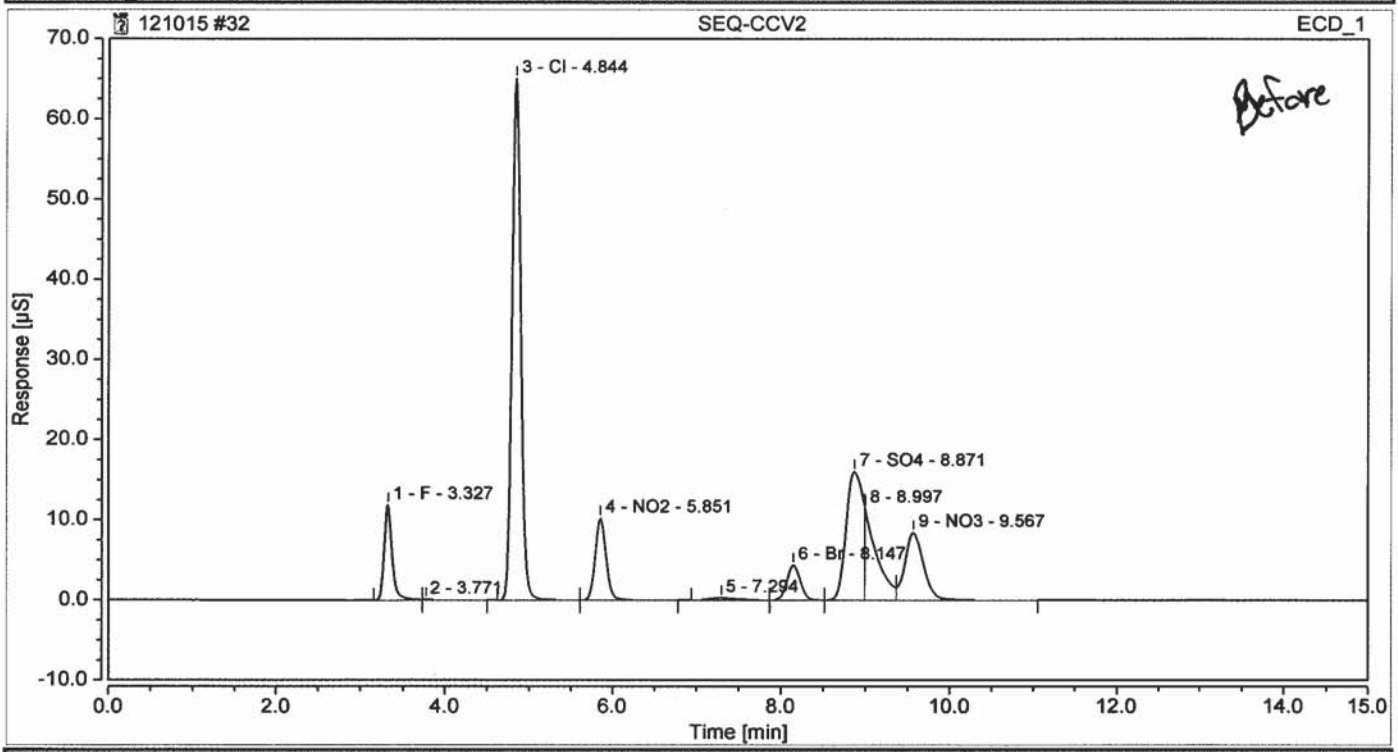
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**32**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

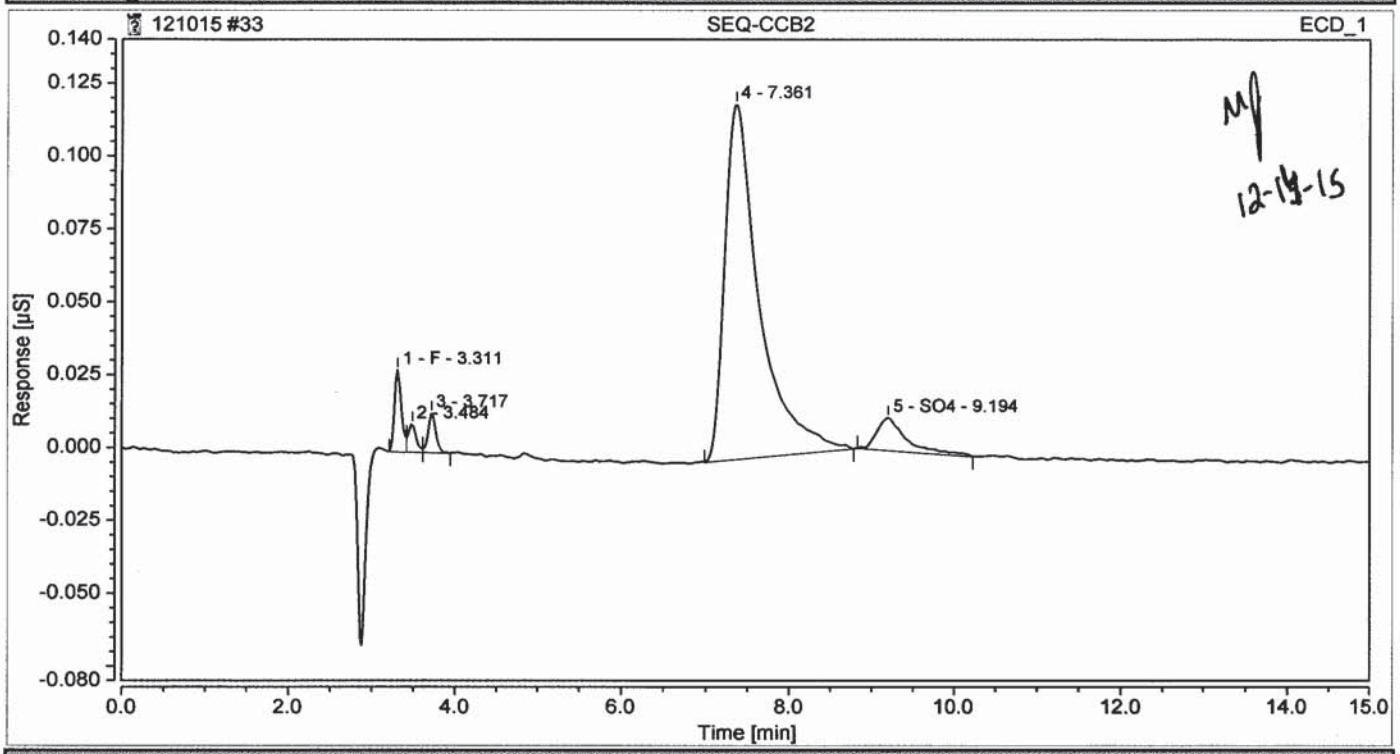
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2625268	11.885	6.63	9.30	2.5464
2		3.771	0.0155769	0.060	0.08	0.05	n.a.
3	Cl	4.844	7.7121553	65.071	40.47	50.92	25.3408
4	NO2	5.851	1.5652284	10.227	8.21	8.00	2.7507
5		7.294	0.0951732	0.270	0.50	0.21	n.a.
6	Br	8.147	0.8003201	4.350	4.20	3.40	6.2046
7	SO4	8.871	3.5511240	16.025	18.63	12.54	15.8819
8		8.997	1.8866960	11.464	9.90	8.97	n.a.
9	NO3	9.567	2.1677431	8.429	11.38	6.60	2.8067
Total:			**19.057**	**127.782**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**33**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 17:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0026251	0.028	3.85	15.20	0.0053
2		3.484	0.0010540	0.010	1.55	5.20	n.a.
3		3.717	0.0014490	0.014	2.13	7.34	n.a.
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.361	0.0583515	0.122	85.68	66.20	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.194	0.0046222	0.011	6.79	6.07	0.0207
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.068**	**0.184**	**100.00**	**100.00**	

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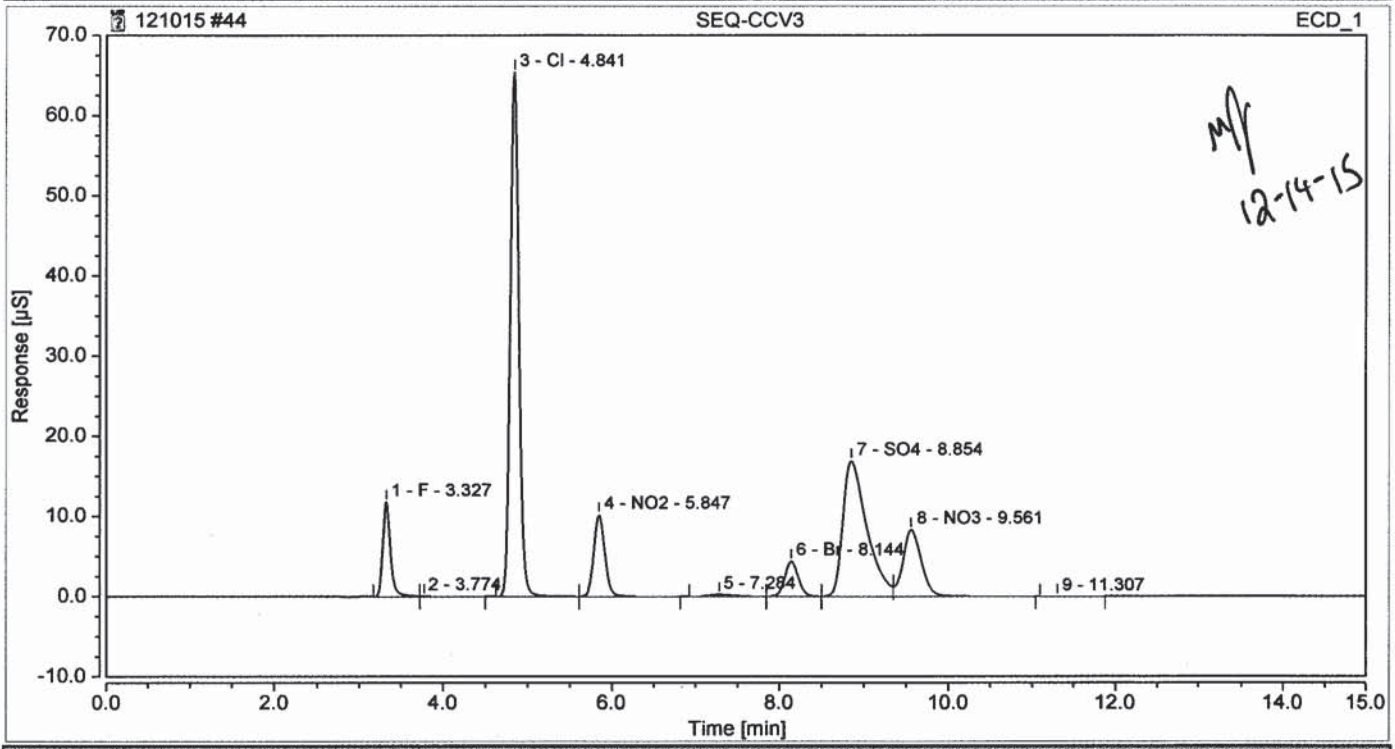
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV3**	*Run Time (min):*	**15.00**
Vial Number:	**44**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2602441	11.818	6.62	10.07	2.5418
2		3.774	0.0148951	0.057	0.08	0.05	n.a.
3	Cl	4.841	7.7213399	65.408	40.55	55.74	25.3710
4	NO2	5.847	1.5609618	10.206	8.20	8.70	2.7432
5		7.284	0.0762463	0.231	0.40	0.20	n.a.
6	Br	8.144	0.8060314	4.384	4.23	3.74	6.2489
7	SO4	8.854	5.5118054	16.914	28.95	14.41	24.6507
8	NO3	9.561	2.0877079	8.331	10.96	7.10	2.7030
9		11.307	0.0010550	0.003	0.01	0.00	n.a.
Total:			**19.040**	**117.353**	**100.00**	**100.00**	

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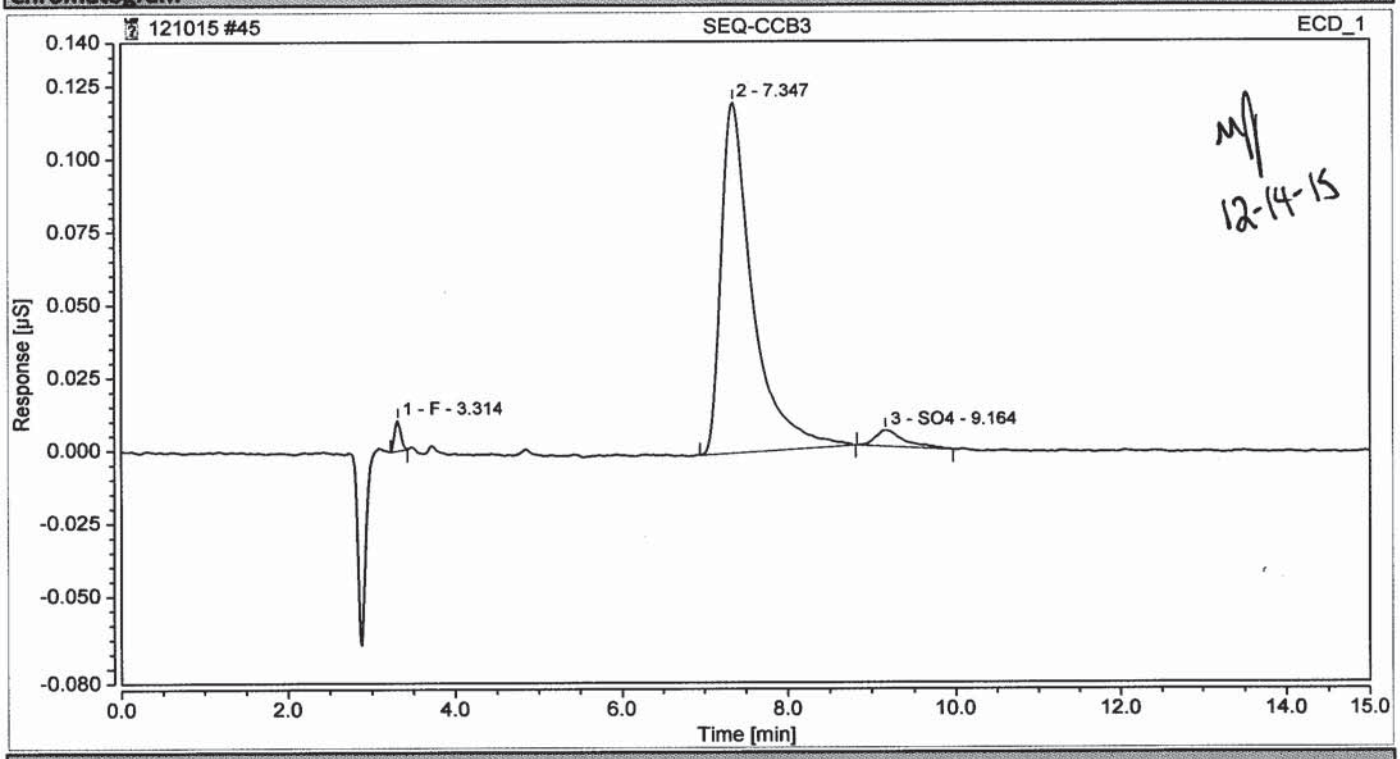
Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB3**	*Run Time (min):*	**15.00**
Vial Number:	**45**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 21:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0008938	0.010	1.60	7.64	0.0018
n.a.	Cl	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		7.347	0.0528401	0.120	94.55	88.39	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SO4	9.164	0.0021532	0.005	3.85	3.97	0.0096
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.056**	**0.136**	**100.00**	**100.00**	

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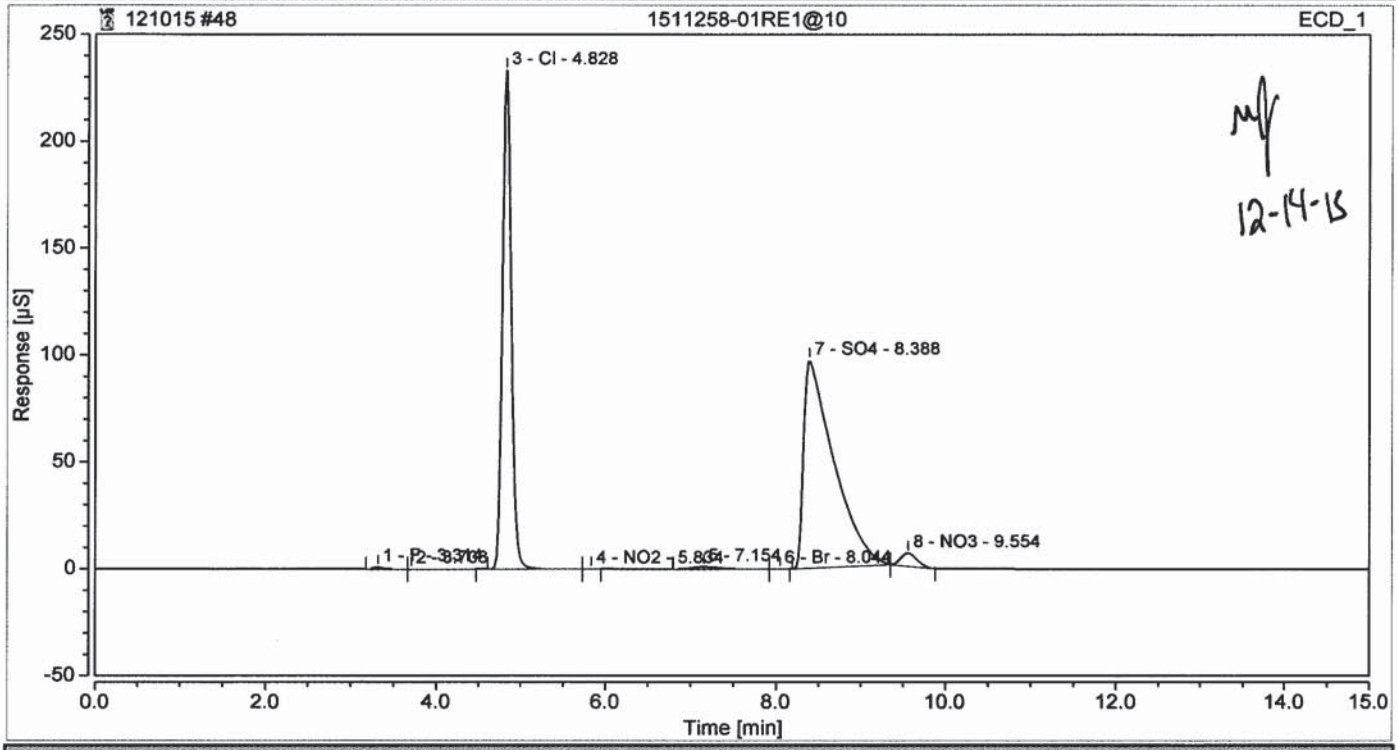
Chromatogram and Results

Injection Details

Injection Name:	**1511258-01RE1@10**	*Run Time (min):*	**15.00**
Vial Number:	**48**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Dec/15 22:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.314	0.0885308	0.875	0.13	0.26	0.1786
2		3.708	0.0025319	0.010	0.00	0.00	n.a.
3	Cl	4.828	27.9706905	233.265	40.00	68.92	91.9069
4	NO2	5.834	0.0004779	0.005	0.00	0.00	0.0008
5		7.154	0.3460103	0.970	0.49	0.29	n.a.
6	Br	8.044	0.0014642	0.011	0.00	0.00	0.0114
7	SO4	8.388	40.2076468	97.314	57.50	28.75	179.8227
8	NO3	9.554	1.3075634	5.997	1.87	1.77	1.6930
Total:			**69.925**	**338.446**	**100.00**	**100.00**	

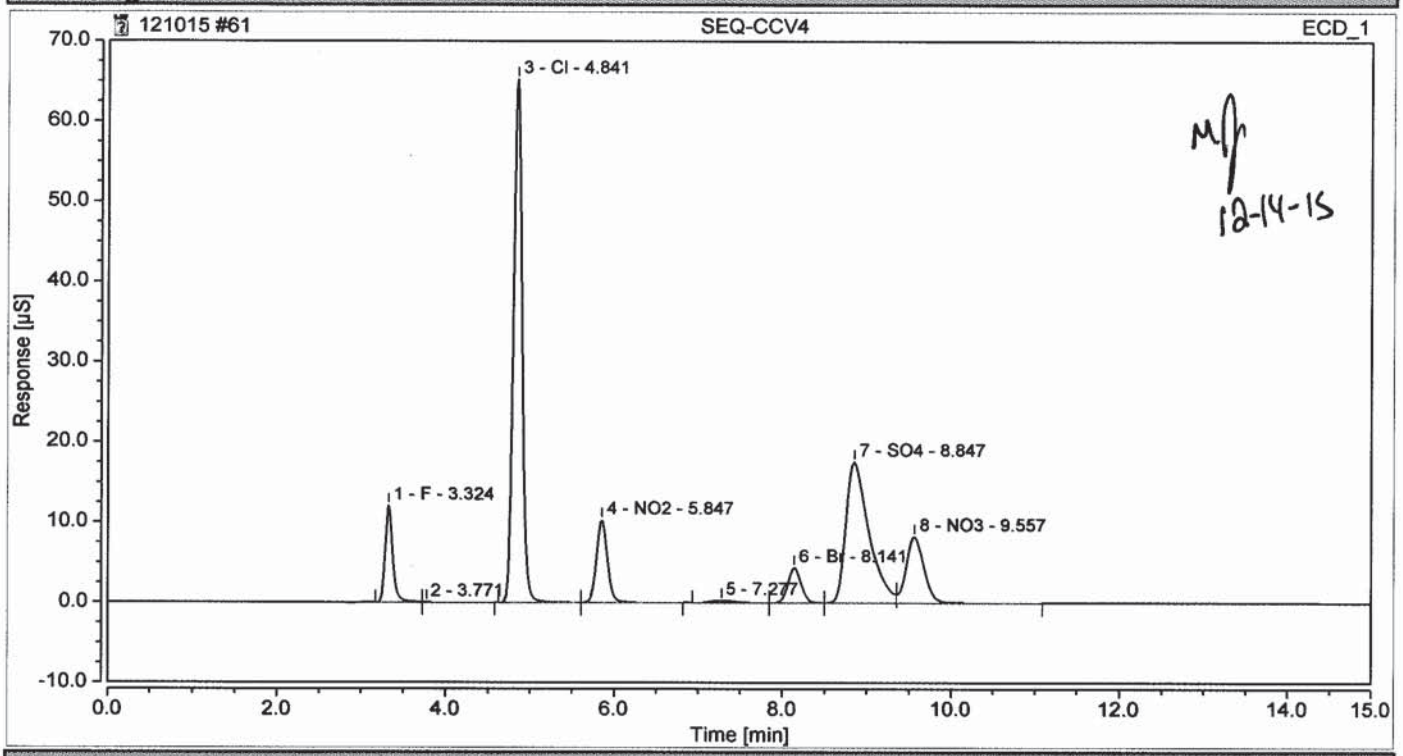
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCV4**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/15 02:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	1.2611086	12.069	6.63	10.22	2.5435
2		3.771	0.0146019	0.053	0.08	0.04	n.a.
3	Cl	4.841	7.7055191	65.246	40.50	55.24	25.3190
4	NO2	5.847	1.5682448	10.294	8.24	8.72	2.7560
5		7.277	0.0808172	0.254	0.42	0.22	n.a.
6	Br	8.141	0.8031753	4.367	4.22	3.70	6.2267
7	SO4	8.847	5.5510650	17.573	29.18	14.88	24.8263
8	NO3	9.557	2.0405153	8.253	10.73	6.99	2.6419
Total:			**19.025**	**118.108**	**100.00**	**100.00**	

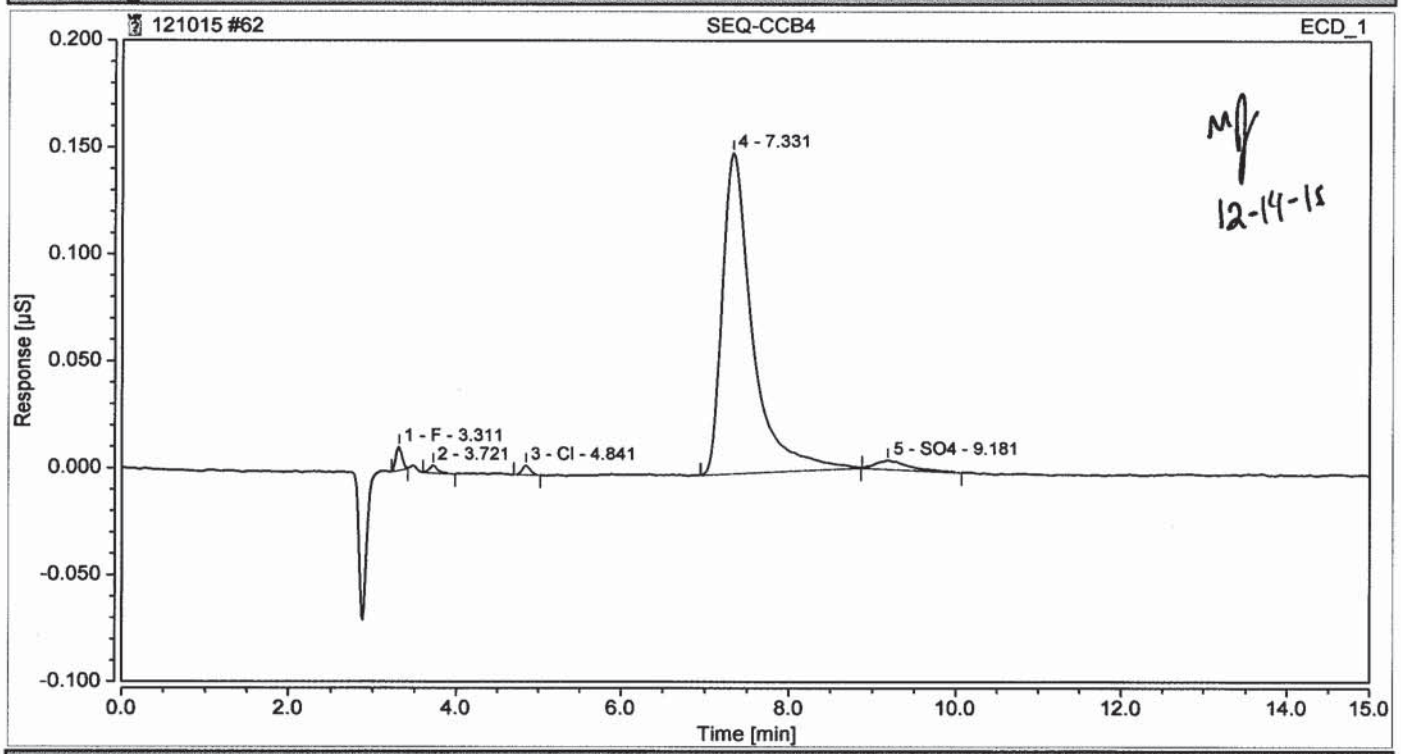
12/14/15

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CCB4**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/15 02:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.311	0.0009028	0.011	1.37	6.32	0.0018
2		3.721	0.0003971	0.003	0.60	1.98	n.a.
3	Cl	4.841	0.0005031	0.004	0.77	2.54	0.0017
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.331	0.0620767	0.150	94.53	86.77	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	SO4	9.181	0.0017921	0.004	2.73	2.38	0.0080
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.066**	**0.173**	**100.00**	**100.00**	

12/14/15

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511021-01	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-01RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511021-02	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride
1511021-02RE1	M	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	Hot samples;QSM5, see version sulfate and Chloride;QSM5, see version sulfate and Chloride; 1000X for Cl
1511224-04RE1	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;From 5K20011 by KBG on 11/24/2015;RR at 20X
1511224-04RE1	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Chloride;RR at 20X
1511256-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511256-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;see versions;see versions
1511258-01	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-01	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-02	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-03	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-03	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5						NA	;NO3;NO3
1511258-04	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5						NA	;Cl;Cl
1511258-05	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5						NA	;BatchQC;Added for BatchQC in: 5K24008

PREPARATION BENCH SHEET

5K24008

Empirical Laboratories, LLC

Printed: 12/15/2015 9:01:22AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-05	A	WC_ANIONS_300.0 (Short Hol	11/24/2015	5	5					NA	;NO3;NO3
1511258-05	A	WC_ANIONS_9056A (Regular)	11/24/2015	5	5					NA	;Cl;Cl
1511258-05RE1	A	WC_ANIONS_300.0 (Regular)_	11/24/2015	5	5					NA	;Added 12/9/2015 by MSJ;Added 12/9/2015 by MSJ
5K24008-BLK1		QC	11/24/2015	5	5					NA	
5K24008-BS1		QC	11/24/2015	5	5	15K0679		5000		NA	
5K24008-DUP1		QC	11/24/2015	5	5		1511258-05			NA	
5K24008-MS1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	
5K24008-MSD1		QC	11/24/2015	22.5	25	15I0318	1511258-05	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5K25005

Empirical Laboratories, LLC

Printed: 12/15/2015 9:40:23AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-01	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
1511258-02	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
1511258-03	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
1511258-04	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
1511258-05	A	WC_TDS_TOTAL_DISS_SOLID	11/25/2015	100	100					NA	;;
5K25005-BLK1		QC	11/25/2015	100	100					NA	
5K25005-BS1		QC	11/25/2015	20	20	13L0491		20000		NA	
5K25005-DUP1		QC	11/25/2015	100	100		1511258-05			NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5L08019

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:03AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511204-01RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 10X for SO4; KBG 11/23/15;RR at 10X for SO4; KBG 11/23/15
1511204-02RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 10X for SO4; KBG 11/23/15;RR at 10X for SO4; KBG 11/23/15
1511204-03RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 20X for SO4; KBG 11/23/15;RR at 20X for SO4; KBG 11/23/15
1511204-04RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 50X for SO4; KBG 11/23/15;RR at 50X for SO4; KBG 11/23/15
1511204-05RE1	G	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 20X for SO4; KBG 11/23/15;RR at 20X for SO4; KBG 11/23/15
1511204-06RE1	S	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	MS/MSD;RR at 20X for SO4; KBG 11/23/15;RR at 20X for SO4; KBG 11/23/15
1511204-06RE1	S	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L08019
1511204-06RE1	S	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L08019
1511204-06RE1	S	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L08019
1511258-02RE1	A	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 5X for Cl; KBG 12/2/15;RR at 5X for Cl; KBG 12/2/15
1511258-03RE1	A	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 5X for Cl; KBG 12/2/15;RR at 5X for Cl; KBG 12/2/15
1511258-04RE1	A	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 50X for Cl; KBG 12/2/15;RR at 50X for Cl; KBG 12/2/15
1511258-05RE1	A	WC_ANIONS_9056A (Regular)	12/08/2015	5	5						NA	;RR at 50X for Cl; KBG 12/2/15;RR at 50X for Cl; KBG 12/2/15
1512072-01	A	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	;see versions;see versions
1512072-02	A	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	;see versions;see versions
1512078-01	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5						NA	;QSM5. SO4;QSM5. SO4
1512078-01	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5						NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3

PREPARATION BENCH SHEET

5L08019

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:03AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1512078-02	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3
1512078-02	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512078-04	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512078-04	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3
1512078-05	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512078-05	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3
1512078-06	K	WC_ANIONS_9056A (Regular)	12/08/2015	5	5					NA	MS/MSD VOC only;BatchQC;Added for BatchQC in: 5L08019
1512078-06	K	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	MS/MSD VOC only;QSM5. SO4;QSM5. SO4
1512078-06	K	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	MS/MSD VOC only;BatchQC;Added for BatchQC in: 5L08019
1512078-06	K	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	MS/MSD VOC only;QSM5. NO2 & NO3;QSM5. NO2 & NO3
1512078-07	F	WC_ANIONS_300.0 (Regular)_	12/08/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512078-07	F	WC_ANIONS_300.0 (Short Hol	12/08/2015	5	5					NA	;QSM5. NO2 & NO3;QSM5. NO2 & NO3
5L08019-BLK1		QC	12/08/2015	5	5					NA	
5L08019-BS1		QC	12/08/2015	5	5	15L0102		5000		NA	
5L08019-DUP1		QC	12/08/2015	5	5		1511204-06RE1			NA	
5L08019-DUP2		QC	12/08/2015	5	5		1512078-06			NA	
5L08019-MS1		QC	12/08/2015	22.5	25	15L0284	1511204-06RE1	50000		NA	

PREPARATION BENCH SHEET

5L08019

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:03AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
5L08019-MS2		QC	12/08/2015	22.5	25	15L0284	1512078-06	2500		NA	
5L08019-MSD1		QC	12/08/2015	22.5	25	15L0284	1511204-06RE1	50000		NA	
5L08019-MSD2		QC	12/08/2015	22.5	25	15L0284	1512078-06	2500		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

5L10011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:33AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511258-01RE1	A	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Added 12/14/2015 by MSJ;From 5K24008 by MSJ on 12/14/2015
1512101-01	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-01	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-02	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-02	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-03	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-03	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-04	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-04	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-05	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	low volume on VOC;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-05	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	low volume on VOC;Cl, SO4;See versions
1512101-06	G	WC_ANIONS_9056A (Regular)	12/10/2015	5	5						NA	;Cl, SO4;See versions
1512101-06	G	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-08	M	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5						NA	MS/MSD VOC ONLY;NO2, NO3;If HT missed due to weather and sx is ND, run 353.2.
1512101-08	M	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5						NA	MS/MSD VOC ONLY;BatchQC;Added for BatchQC in: 5L10011
1512101-08	M	WC_ANIONS_300.0 (Regular)_	12/10/2015	5	5						NA	MS/MSD VOC ONLY;BatchQC;Added for BatchQC in: 5L10011
1512101-08	M	WC_ANIONS_300.0 (Short Hol	12/10/2015	5	5						NA	MS/MSD VOC ONLY;BatchQC;Added for BatchQC in: 5L10011

PREPARATION BENCH SHEET

5L10011

Empirical Laboratories, LLC **Printed: 12/15/2015 9:41:33AM**

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1512101-08	M	WC_ANIONS_9056A (Regular)	12/10/2015	5	5					NA	MS/MSD VOC ONLY;Cl, SO4;See versions
1512103-03	H	WC_ANIONS_300.0 (Regular)_	12/10/2015	5	5					NA	;QSM5. SO4;QSM5. SO4
1512103-03	H	WC_ANIONS_300.0 (Short Hol	12/10/2015	5	5					NA	;QSM5. NO3;QSM5. NO3
1512105-01	F	WC_ANIONS_300.0 (Regular)_	12/10/2015	5	5					NA	;QSM5;QSM5
1512105-01	F	WC_ANIONS_300.0 (Short Hol	12/10/2015	5	5					NA	;QSM5;QSM5
1512105-03	F	WC_ANIONS_9056A (Regular)	12/10/2015	5	5					NA	MS/MSD on Metals Only!;BatchQC;Added for BatchQC in: 5L10011
1512105-03	F	WC_ANIONS_9056A (Short Ho	12/10/2015	5	5					NA	MS/MSD on Metals Only!;BatchQC;Added for BatchQC in: 5L10011
1512105-03	F	WC_ANIONS_300.0 (Short Hol	12/10/2015	5	5					NA	MS/MSD on Metals Only!;QSM5;QSM5
1512105-03	F	WC_ANIONS_300.0 (Regular)_	12/10/2015	5	5					NA	MS/MSD on Metals Only!;QSM5;QSM5
1512105-03	F	WC_ANIONS_300.0 (Regular)	12/10/2015	5	5					NA	MS/MSD on Metals Only!;BatchQC;Added for BatchQC in: 5L10011
5L10011-BLK1		QC	12/10/2015	5	5					NA	
5L10011-BS1		QC	12/10/2015	5	5	15L0426		5000		NA	
5L10011-DUP1		QC	12/10/2015	5	5		1512101-08			NA	
5L10011-DUP2		QC	12/10/2015	5	5		1512105-03			NA	
5L10011-MS1		QC	12/10/2015	22.5	25	15L0284	1512101-08	25000		NA	
5L10011-MS2		QC	12/10/2015	22.5	25	15L0284	1512105-03	2500		NA	
5L10011-MSD1		QC	12/10/2015	22.5	25	15L0284	1512101-08	25000		NA	

PREPARATION BENCH SHEET

5L10011

Empirical Laboratories, LLC

Printed: 12/15/2015 9:41:33AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
5L10011-MSD2		QC	12/10/2015	22.5	25	15L0284	1512105-03	2500		NA	

Reagents Used:

Standard	Description

ANALYTICAL SUMMARY DATA PACKAGE
SDG # 1512147

PROJECT NAME: HOLLOMAN AFB IDW
PROJECT LOCATION: HOLLOMAN AFB, NM
CONTRACT #: FA8903-D-09-D-8580

SUBMITTAL TO:
Natalie Baum
CB&I Federal Services
5050 Section Ave
Cincinnati, OH 45212

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
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Fax (866)417-0548

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Original Report Date: January 6, 2016
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 540

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

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Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. Samples were subcontracted to ALS Environmental for Tritium by 906.0.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW8260B:
Note – Samples 1512147-02, -03, and -04 were analyzed at a 2x due to the samples foaming during screening. No lower analyses were performed.

The following batch spikes exceeded criteria:
5L24003-BS1 with a positive bias for 2-Hexanone; note – no positive results were detected in the associated samples

The following blanks have reported results:
5L24003-BLK1 for Hexachlorobutadiene, 1,2,3-Trichlorobenzene, and 1,24-Trichlorobenzene; note – no positive results were detected in the associated samples

The following continuing calibration verifications exceeded criteria:
5L36403-CCV1 with a positive bias for Carbon Tetrachloride, Dichlorodifluoromethane, and n-Propylbenzene; note – no positive results were detected in the associated samples for the compounds exceeding criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

SW8270D BNA:
The following surrogates exceeded criteria:
2-Fluorophenol with a negative bias in 1512147-03 and 5L21007-MSD1; note – the sample was not re-extracted since the exceedence was marginal at 15.2% with a lower limit of 20% and the other surrogates were within criteria
Phenol-d6 (advisory) with a negative bias in 1512147-03; note – the limits are only advisory

The following matrix spikes exceeded criteria:
5L21007-MS1/MSD1 (1512147-03) with a negative bias for N-Nitrosodimethylamine and exceeded relative percent difference criteria for 2,6-Dichlorophenol, 4,6-Dinitro-2-methylphenol, 2,4-Dinitrophenol, 4-Nitrophenol, Pentachlorophenol, 2,3,4,6-Tetrachlorophenol, and 2,4,6-Trichlorophenol; note – the associated batch spike is within criteria

The following continuing calibration verifications exceeded criteria:
6A00413-CCV1 with a positive bias for 4,6-Dinitro-2-methylphenol; note – no positive results were detected in the associated samples
No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

SW8015C DRO/ORO:
Note – The >C28-C36 range concentrations were calculated using the C10-C28 range calibration as detailed in TPHCWG section 9.5.1.

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

SW8015C GRO:
The following continuing calibration verifications exceeded criteria:
5L35102-CCV1 with a negative bias for Bromofluorobenzene; note –the CCV is not associated to samples or batch QC
5L35102-CCV2 with a negative bias for Bromofluorobenzene; note –no surrogate recoveries were biased into or out of control due to the exceedence

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

SW8330A:
The following matrix spikes exceeded criteria:
5L18007-MS1/MSD1 (1512147-03) with a positive bias for 2-Amino-4,6-Dinitotoluene; note – the associated batch spike is within criteria

The following continuing calibration verifications exceeded criteria:
5L36303-CCV2 with a positive bias on column 1 for Tetryl; note – no positive results were

detected in the associated samples

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

SW8082A:

Note – Due to an instrument error, the ending Aroclor-1242 and -1254 CCVs were not analyzed. Since no positive results were detected in the associated samples for Aroclor-1242 or -1254, the samples were not re-analyzed.

The following continuing calibration verifications exceeded criteria:
5L36309-CCV1 with a negative bias on column 1 for Decachlorobiphenyl; note – no surrogate recoveries were biased into or out of control due to the exceedence

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

SW6010C/SW7470A:

The following compounds are qualified with an M to indicate that the LOD and/or DL were raised due to sample interference:
Arsenic in 1512147-03

The following continuing calibration verifications exceeded criteria:
5L36205-CCV1 with a negative bias for Thallium; note- the CCV is not associated to samples or batch QC
6A00404-CCV7 with a negative bias for Antimony and Thallium; note – the CCV is only associated to the matrix spikes since the samples were re-analyzed
6A00404-CCV8 with a negative bias for Antimony and Thallium; note – the CCV is only associated to the matrix spikes since the samples were re-analyzed

The following matrix spikes exceeded criteria:
5L22012-MS1 (1512147-03) for Potassium; note – the parent sample concentration for Potassium is greater than 4 times the amount spiked
5L22012-MS2/MSD2 (1512147-03RE1) with a negative bias for Arsenic, Barium, Lead, and Thallium and exceeded criteria for Calcium, Magnesium, Manganese, and Sodium; note – the parent sample concentrations for Calcium, Magnesium, Manganese, and Sodium are greater than 4 times the amount spiked and the associated batch spike is within criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Wet Chemistry:

Note – Samples 1512147-02, -03, and -04 were re-analyzed as 1512147-02RE1 (for NO3 at a 2x), -02RE2 (for Chloride at a 20x), -03RE1 (for Chloride at a 20x), and -04RE1 (for Chloride at a 20x)

at the dilutions indicated due to over linear range concentrations in the lower analyses.

The following blanks have reported results:
5L21003-BLK1 for Cyanide; note – the concentration in the blank is less than the LOD and the associated samples are less than the LOD or non-detect

The following continuing calibration verifications exceeded criteria:
5L35111-CCV2 with a positive bias for Nitrate as N
5L35111-CCV3 with a positive bias for Nitrate as N
Note – The associated samples were not re-analyzed due to holding time constraints.

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

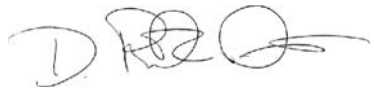
BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.



Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 12/16/2015)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 01/30/2016

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2016

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 06/30/2016

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2015

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2016

State of New Jersey, Department of Environmental Protection – NELAP Primary, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2016

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-15-11
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Utah, Department of Health – NELAP, Certificate Number: TN0042015-7
- Aqueous
- Non-aqueous
- Expires: 07/31/2016

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 7700, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2016

State of Washington, Department of Ecology – NELAP, Lab ID: C934-15
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2016

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

1512147-01 A

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Septic Sites

CHAIN OF CUSTODY

Ref. Document # 144106-H2015-151214

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: Empirical
Lab Contact: Sonya Gordon
Lab Phone #: 615-345-1115

Lab Sample Number	Sample Identification	Collection Information Date	Time	G/C	Matrix	# of Bottles	PRESERVATION HCL	NaOH	HNO_3	H2SO4	Ice	Nitrate by 300	Chloride by 9056A	Total Dissolved Solids by 2540C	VOCs by 8260C	SVOCs by 8270D	Explosives by 8330A	Cyanide by 9012B	Metals by 6010C/7470A	TPH-GRO/DRO/ORO by 8015C	PCBs by 8082A	Turn Around Time Required
01-	TB-01	12/14/15	05:45	G	LIQ	2	X				X				X							ST
02-	OTC538-GW-5382-151214	12/14/15	06:46	G	GW	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	ST
03- (MS/MSD)	OTC537-GW-5371-151214	12/14/15	10:01	G	GW	48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	ST
04-	OTC537-GW-5371-FD-151214	12/14/15	10:01	G	GW	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	ST

Requesting Testing Program

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s):

Relinquished By	Date	Time	Received By	Date	Time
[signature]	12/14/15	15:45	[signature]	12/15/15	0935

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific:

Method Codes
C = Composite
G = Grab

Matrix Codes
DW = Drinking Water
GW = Ground Water
WW = Waste Water
SW = Surface Water
LIQ = Other Liquid
SOL = Other Solid
SO = Soil
SL = Sludge
CP = Chip Samples
WP = Wipe Samples
GS = Air Sample

1512147 Summ Package

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 12/15/15 @0935 Work Order: 1512147

1. Tracking # 1Z6W725Ø19275Ø805 (last 4 digits, FedEx) JTG 12/15

   Courier: UPS

2. Temperature of rep. sample or temp blank when opened: 1.2 °C + correction factor(~~-0.0~~ +0.4) = 1.6 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 12/15/15

7. Were custody seals on containers: YES NO and intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence # 1

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) JTG 12/15/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) JTG 12/15/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) JTG 12/15/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) JTG 12/15/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) JTG 12/15/15

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II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 12/15/15 @0935 Work Order: 1512147

1. Tracking # 1Z66V725 01 9155 9757 (last 4 digits, FedEx) JTG 12/15

   Courier: UPS

2. Temperature of rep. sample or temp blank when opened: 1.7 °C + correction factor(~~+0.0~~ +0.4) = ~~2.0~~ 2.1 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 12/15/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence # 2

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) JTG 12/15/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) JTG

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) JTG 12/15/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) JTG 12/15/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) JTG 12/15/15

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II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 12/15/15 @0935 Work Order: 1512147

1. Tracking # 1Z66V7250 1938 1 6760 (last 4 digits, FedEx) JTG 12/15

   Courier: UPS

2. Temperature of rep. sample or temp blank when opened: 4.3 °C + correction factor(~~0.0~~ +0.4) = 4.7 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 12/15/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence # 3

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) JTG 12/15/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) JTG 12/15/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) JTG 12/15/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) JTG 12/15/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (Initial/date) JTG 12/15/15

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II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 12/15/15 @0935 Work Order: 1512147

1. Tracking # 1Z 66V 725 01 9041 9392 (last 4 digits, FedEx) JTG 12/15

   Courier: UPS

2. Temperature of rep. sample or temp blank when opened: 1.2 °C + correction factor(~~-0.0~~ +0.4) = 1.6 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 12/15/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used: Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence # 4

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) JTG 12/15/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) JTG 12/15/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) JTG 12/15/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) JTG 12/15/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) JTG 12/15/15

C:\Users\jgross\Desktop\QS10_R21_20140729_CRF.doc

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 12/15/15 @0935 Work Order: 1512147

1. Tracking # 176667250191308376 (last 4 digits, FedEx) JTG 12/15

   Courier: UPS

2. Temperature of rep. sample or temp blank when opened: 1.6 °C + correction factor(~~+0.0~~ +0.4) = 2.0 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 12/15/15

7. Were custody seals on containers: YES NO and intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence # 5

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) JTG 12/15/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) JTG 12/15/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) JTG 12/15/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) JTG 12/15/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) JTG 12/15/15

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III. EMPIRICAL LABORATORIES, LLC
DATA ENTRY VERIFICATION FORM – PROJECT MANAGEMENT

Workorder#: 1512147

	Verification Item	Yes	No	NA
1.	**Cooler Receipt Form Issues reviewed and communicated to client**			X
2.	**Element/ Project Screen/items verified to match the COC/CRF:**			
a.	**Client/Project**	X		
b.	Comments requiring laboratory reminder?			X
c.	Client and/or Project Memo requiring laboratory reminder?			X
3.	**Receipt Screen items verified to match the COC/CRF:**			
a.	Received Date/Received By	X		
b.	Workorder Due Date	X		
c.	Package Due Date	X		
d.	TAT	X		
e.	SDG Identifier Populated	X		
4.	**Sample Information verified against COC for each sample:**			
a.	Name	X		
b.	QC Source	X		
c.	Matrix	X		
d.	Sample Type	X		
e.	Sampled Date/Time (Correct Time Zone)	X		
f.	Work Analyses/Versions	X		
g.	Sample Issues included in comments			X
h.	Unpreserved VOA holding time set to 7 days			X
5.	**Containers consistent with tests requested**	X		
6.	**Field data entered and matching COC, if applicable**			X
	I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial/date):	SMG 12/17/2015		

C:\Users\sgordon\Desktop\QS10_R21_20140729_CoolerReceiptForm.doc

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

Please contact Julie Ellingson with any questions you may have about this report.

OrderNum: 1512292
Client Name: Empirical Laboratories, LLC
Client Project Name: Midwest Holloman AFB - Septic Site
Client Project Number: 144106
Client PO Number:
Report Due Date: 1/1/2016

Client Sample Number	Lab Sample Number	Test Group	COC Number	Matrix	Date Collected	Time Collected
TC538-GW-5382-151214	1512292-1	**1**		WATER	14-Dec-15	6:46
TC537-GW-5371-151214 **	1512292-2	**1**		WATER	14-Dec-15	10:01

***Designated QC*

Analytical Methods by Test Group

Test Group: 1

H3

1512292

Ref. Document # 144106-H2015-151214

New Septic Sites

CHAIN OF CUSTODY

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: ALS
Lab Contact: Julie Ellingson
Lab Phone #: 1-800-443-1511

* NOT ENOUGH BOTTLES FOR SAMPLE, EXTRA VOLUME ADDED IN LITER AMBER, EXTRA

	Lab Sample Number	Sample Identification	Collection Information: Date	Time	G/C	Matrix	# of Bottles	PRESERVATION: HCL	NaOH	HNO_3	H2SO4	Ice		Requesting Testing Program: Tritium by 906.0							Turn Around Time Required
1		OTC 538-GW-5382-151214	12/14/15	06:46	G	GW	1					X		X							ST
2	MS/MSD+DUP	OTC 537-GW-5371-151214	12/14/15	10:01	G	GW	2					X		X							ST

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s): P. Middleton

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/14/15	15:45	[signature]	12-16-15	1130

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific:

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO =Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid
SOL = Other Solid GS = Air Sample

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CB&I Federal Services Workorder No: 1512292

Project Manager: JE Initials: SDM Date: 12-16-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	NO
2. Are custody seals on shipping containers intact?	NONE	YES	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		YES	NO
5. Are the COC and bottle labels complete and legible?		YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		YES	NO
12. Are all samples within holding times for the requested analyses?		YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	YES	NO
15. Do any water samples contain sediment? Amount of sediment: ____ dusting ____ moderate X heavy	N/A	YES	~~NO~~ SDM
16. Were the samples shipped on ice?		YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD ONLY	YES	NO

Cooler #:	1
Temperature (°C):	2.4
No. of custody seals on cooler:	1
DOT Survey/ Acceptance Information — External µR/hr reading:	11
Background µR/hr reading:	10

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / NA (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

15.) Sample 1 has a heavy dusting of sediment noted not an issue

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: 12/16/15

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

1512292

MARY NORRIS
281.531.3151
GVT- HOUSTON 66V725
10777 WESTHEIMER ROAD
HOUSTON TX 77042

10 LBS

1 OF 1

DWT: 13,10,9

11

SHIP TO:
JULIE ELLINGSON
ALS
225 COMMERCE DR
FORT COLLINS CO 80524-2762

-1

CO 805 0-01

UPS NEXT DAY AIR

1

TRACKING #: 1Z 66V 725 01 9120 8297

BILLING: P/P

2.40

Charge to Coding: 00701.144106.4701..JR20001
Sender's Name: Patrick Middleton

CS 17.6.02. WNTR100.69.0A 10/2015

WORK ORDER

Printed: 12/29/2015 9:59:34AM

1512147

Empirical Laboratories, LLC

Client: CB&I
Project: Holloman AFB

Project Manager: Sonya Gordon
Project Number: CBI_HAFB

Report To:
CB&I
Mark Lyon
P.O. Box 98519
Baton Rouge, LA 70884
Phone: (225) 932-2500
Fax: (225) 932-2661

Invoice To:
CB&I
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Date Due: 12/31/2015 16:00 (10 day TAT)

Received By: Joshua T. Gross
Date Received: 12/15/2015 09:35

Logged In By: Joshua T. Gross
Date Logged In: 12/15/2015 11:32

Samples Received at: **1.6°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Analysis	Due	TAT	Expires	Comments
1512147-01 TB-01 [Water] Sampled 12/14/2015 05:45 (GMT-07:00) Mountain Time (US				
VOC_8260B_REG	12/28/2015 16:00	10	12/28/2015 06:45	
1512147-02 OTC538-GW-5382-151214 [Water] Sampled 12/14/2015 06:46 (GMT-07:00) Mountain Time (US				
VOC_8260B_REG	12/28/2015 16:00	10	12/28/2015 07:46	
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/28/2015 16:00	10	12/21/2015 07:46	
WC_CYANIDE_9012B	12/28/2015 16:00	10	12/28/2015 07:46	
WC_ANIONS_300.0 (Short Hold)	12/28/2015 16:00	10	12/16/2015 07:46	NO3
VGC_GRO_8015C	12/28/2015 16:00	10	12/28/2015 07:46	
SMS_BNA_8270D_REG	12/28/2015 16:00	10	12/21/2015 07:46	
SGC_PCB8082A	12/28/2015 16:00	10	12/21/2015 07:46	
SGC_DRO_8015C	12/28/2015 16:00	10	12/21/2015 07:46	
MET_ICP_LOW6010C_FULL	12/28/2015 16:00	10	06/11/2016 07:46	
MET_7470A_MERCURY	12/28/2015 16:00	10	01/11/2016 07:46	
LC_EXPL_8330A_new	12/28/2015 16:00	10	12/21/2015 07:46	
WC_ANIONS_9056A (Regular)	12/28/2015 16:00	10	01/11/2016 07:46	Cl

1512147

Empirical Laboratories, LLC

Client: CB&I
Project: Holloman AFB
Project Manager: Sonya Gordon
Project Number: CBI_HAFB

Analysis	Due	TAT	Expires	Comments
1512147-03 OTC537-GW-5371-151214 [Water] Sampled 12/14/2015 10:01 (GMT-07:00) Mountain Time (US				**MS/MSD**
SMS_BNA_8270D_REG	12/28/2015 16:00	10	12/21/2015 11:01	
SGC_PCB8082A	12/28/2015 16:00	10	12/21/2015 11:01	
LC_EXPL_8330A_new	12/28/2015 16:00	10	12/21/2015 11:01	
MET_7470A_MERCURY	12/28/2015 16:00	10	01/11/2016 11:01	
MET_ICP_LOW6010C_FULL	12/28/2015 16:00	10	06/11/2016 11:01	
SGC_DRO_8015C	12/28/2015 16:00	10	12/21/2015 11:01	
VGC_GRO_8015C	12/28/2015 16:00	10	12/28/2015 11:01	
VOC_8260B_REG	12/28/2015 16:00	10	12/28/2015 11:01	
WC_ANIONS_300.0 (Short Hold)	12/28/2015 16:00	10	12/16/2015 11:01	NO3
WC_ANIONS_9056A (Regular)	12/28/2015 16:00	10	01/11/2016 11:01	Cl
WC_CYANIDE_9012B	12/28/2015 16:00	10	12/28/2015 11:01	
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/28/2015 16:00	10	12/21/2015 11:01	
1512147-04 OTC537-GW-5371-FD-151214 [Water] Sampled 12/14/2015 10:01 (GMT-07:00) Mountain Time (US				
MET_ICP_LOW6010C_FULL	12/28/2015 16:00	10	06/11/2016 11:01	
WC_CYANIDE_9012B	12/28/2015 16:00	10	12/28/2015 11:01	
WC_ANIONS_9056A (Regular)	12/28/2015 16:00	10	01/11/2016 11:01	Cl
WC_ANIONS_300.0 (Short Hold)	12/28/2015 16:00	10	12/16/2015 11:01	NO3
VOC_8260B_REG	12/28/2015 16:00	10	12/28/2015 11:01	
VGC_GRO_8015C	12/28/2015 16:00	10	12/28/2015 11:01	
SMS_BNA_8270D_REG	12/28/2015 16:00	10	12/21/2015 11:01	
SGC_DRO_8015C	12/28/2015 16:00	10	12/21/2015 11:01	
WC_TDS_TOTAL_DISS_SOLIDS_2540C	12/28/2015 16:00	10	12/21/2015 11:01	
MET_7470A_MERCURY	12/28/2015 16:00	10	01/11/2016 11:01	
LC_EXPL_8330A_new	12/28/2015 16:00	10	12/21/2015 11:01	
SGC_PCB8082A	12/28/2015 16:00	10	12/21/2015 11:01	
ALS Environmental - CO (SUB)				
1512147-02 OTC538-GW-5382-151214 [Water] Sampled 12/14/2015 06:46 (GMT-07:00) Mountain Time (US				
SUB_RAD_H3	12/28/2015 16:00	10	12/28/2015 07:46	Tritium
1512147-03 OTC537-GW-5371-151214 [Water] Sampled 12/14/2015 10:01 (GMT-07:00) Mountain Time (US				**MS/MSD**
SUB_RAD_H3	12/28/2015 16:00	10	12/28/2015 11:01	Tritium

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Holloman AFB
SDG #: 1512147

QC LEVEL: Level IV
Report Due: 12/31/2015
Client Sample Count: 2

Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	E300.0	EPA 906.0	SM2540C	
Trip Blank	12/14/2015	12/15/2015	1512147-01	TB-01	Water				
Client Sample	12/14/2015	12/15/2015	1512147-02	OTC538-GW-5382-151214	Water	X	X	X	
Client Sample	12/14/2015	12/15/2015	1512147-03	OTC537-GW-5371-151214	Water	MS/MSD	MS/MSD	MS/MSD	
Field Duplicate	12/14/2015	12/15/2015	1512147-04	OTC537-GW-5371-FD-151214	Water	X		X	
Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	SW6010C	SW7470A	SW8015C DRO	
Trip Blank	12/14/2015	12/15/2015	1512147-01	TB-01	Water				
Client Sample	12/14/2015	12/15/2015	1512147-02	OTC538-GW-5382-151214	Water	X	X	X	
Client Sample	12/14/2015	12/15/2015	1512147-03	OTC537-GW-5371-151214	Water	MS/MSD	MS/MSD	MS/MSD	
Field Duplicate	12/14/2015	12/15/2015	1512147-04	OTC537-GW-5371-FD-151214	Water	X	X	X	
Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	SW8015C GRO	SW8082A	SW8260B	
Trip Blank	12/14/2015	12/15/2015	1512147-01	TB-01	Water			X	
Client Sample	12/14/2015	12/15/2015	1512147-02	OTC538-GW-5382-151214	Water	X	X	X	
Client Sample	12/14/2015	12/15/2015	1512147-03	OTC537-GW-5371-151214	Water	MS/MSD	MS/MSD	MS/MSD	
Field Duplicate	12/14/2015	12/15/2015	1512147-04	OTC537-GW-5371-FD-151214	Water	X	X	X	
Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	SW8270D	SW8330A	SW9012B	SW9056A
Trip Blank	12/14/2015	12/15/2015	1512147-01	TB-01	Water				
Client Sample	12/14/2015	12/15/2015	1512147-02	OTC538-GW-5382-151214	Water	X	X	X	X
Client Sample	12/14/2015	12/15/2015	1512147-03	OTC537-GW-5371-151214	Water	MS/MSD	MS/MSD	MS/MSD	MS/MSD
Field Duplicate	12/14/2015	12/15/2015	1512147-04	OTC537-GW-5371-FD-151214	Water	X	X	X	X

Data for SW8260B Forms

Sample Extraction Data

Prep Method: 5030B-SW8260B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-01 [TB-01]	5L24003	5.00/5.00	5.00	5.00	1.00			12/24/15
1512147-02 [OTC538-GW-5382-151214]	5L24003	5.00/5.00	5.00	5.00	2.00			12/24/15
1512147-03 [OTC537-GW-5371-151214]	5L24003	5.00/5.00	5.00	5.00	2.00			12/24/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L24003	5.00/5.00	5.00	5.00	2.00			12/24/15

ANALYSIS DATA SHEET

TB-01

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Water Laboratory ID: 1512147-01 File ID: 1214701A.D

Sampled: 12/14/15 05:45 Prepared: 12/24/15 09:58 Analyzed: 12/24/15 09:58

Solids: Preparation: 5030B Dilution: 1

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone		2.50	5.00	10.0	U
71-43-2	Benzene		0.250	0.500	1.00	U
108-86-1	Bromobenzene		0.250	0.500	1.00	U
74-97-5	Bromochloromethane		0.250	0.500	1.00	U
75-27-4	Bromodichloromethane		0.250	0.500	1.00	U
75-25-2	Bromoform		0.250	0.500	1.00	U
74-83-9	Bromomethane		0.500	1.00	2.00	U
104-51-8	n-Butylbenzene		0.250	0.500	1.00	U
78-93-3	2-Butanone		2.50	5.00	10.0	U
135-98-8	sec-Butylbenzene		0.250	0.500	1.00	U
98-06-6	tert-Butylbenzene		0.250	0.500	1.00	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	UX
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
75-00-3	Chloroethane		0.500	1.00	2.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
95-49-8	2-Chlorotoluene		0.250	0.500	1.00	U
106-43-4	4-Chlorotoluene		0.250	0.500	1.00	U
110-82-7	Cyclohexane		0.250	0.500	1.00	U
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	U
74-95-3	Dibromomethane		0.250	0.500	1.00	U
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	UX
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
540-59-0	1,2-Dichloroethene (total)		0.500	1.00	2.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
142-28-9	1,3-Dichloropropane		0.250	0.500	1.00	U
594-20-7	2,2-Dichloropropane		0.250	0.500	1.00	U
563-58-6	1,1-Dichloropropene		0.250	0.500	1.00	U
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	U

ANALYSIS DATA SHEET

TB-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-01	File ID:	1214701A.D
Sampled:	12/14/15 05:45	Prepared:	12/24/15 09:58	Analyzed:	12/24/15 09:58
Solids:		Preparation:	5030B	Dilution:	1

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
87-68-3	Hexachlorobutadiene		0.250	0.500	1.00	U
591-78-6	2-Hexanone		1.25	2.50	5.00	UQ
98-82-8	Isopropylbenzene		0.250	0.500	1.00	U
99-87-6	p-Isopropyltoluene		0.250	0.500	1.00	U
75-09-2	Methylene chloride		0.500	1.00	2.00	U
79-20-9	Methyl Acetate		0.500	1.00	2.00	U
108-87-2	Methylcyclohexane		0.250	0.500	1.00	U
91-20-3	Naphthalene		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	U
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
103-65-1	n-Propylbenzene		0.250	0.500	1.00	UX
100-42-5	Styrene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
108-88-3	Toluene		0.250	0.500	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.250	0.500	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
96-18-4	1,2,3-Trichloropropane		0.500	1.00	2.00	U
108-67-8	1,3,5-Trimethylbenzene		0.250	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.250	0.500	1.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported 71 Project Analytes: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.18	101	75 - 120	
Dibromofluoromethane	30.00	28.73	95.8	85 - 115	
1,2-Dichloroethane-d4	30.00	28.60	95.3	70 - 120	
Toluene-d8	30.00	29.84	99.5	85 - 120	

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02	File ID:	1214702B.D
Sampled:	12/14/15 06:46	Prepared:	12/24/15 14:19	Analyzed:	12/24/15 14:19
Solids:		Preparation:	5030B	Dilution:	2

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**27.1**	5.00	10.0	20.0	D
71-43-2	Benzene		0.500	1.00	2.00	U
108-86-1	Bromobenzene		0.500	1.00	2.00	U
74-97-5	Bromochloromethane		0.500	1.00	2.00	U
75-27-4	Bromodichloromethane		0.500	1.00	2.00	U
75-25-2	Bromoform		0.500	1.00	2.00	U
74-83-9	Bromomethane		1.00	2.00	4.00	U
104-51-8	n-Butylbenzene		0.500	1.00	2.00	U
78-93-3	2-Butanone		5.00	10.0	20.0	U
135-98-8	sec-Butylbenzene		0.500	1.00	2.00	U
98-06-6	tert-Butylbenzene		0.500	1.00	2.00	U
75-15-0	Carbon disulfide		0.500	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.500	1.00	2.00	UX
108-90-7	Chlorobenzene		0.500	1.00	2.00	U
75-00-3	Chloroethane		1.00	2.00	4.00	U
67-66-3	Chloroform	**2.13**	0.500	1.00	2.00	D
74-87-3	Chloromethane		0.500	1.00	2.00	U
95-49-8	2-Chlorotoluene		0.500	1.00	2.00	U
106-43-4	4-Chlorotoluene		0.500	1.00	2.00	U
110-82-7	Cyclohexane		0.500	1.00	2.00	U
124-48-1	Dibromochloromethane		0.500	1.00	2.00	U
96-12-8	1,2-Dibromo-3-chloropropane		1.00	2.00	4.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.500	1.00	2.00	U
74-95-3	Dibromomethane		0.500	1.00	2.00	U
95-50-1	1,2-Dichlorobenzene		0.500	1.00	2.00	U
541-73-1	1,3-Dichlorobenzene		0.500	1.00	2.00	U
106-46-7	1,4-Dichlorobenzene		0.500	1.00	2.00	U
75-71-8	Dichlorodifluoromethane		1.00	2.00	4.00	UX
75-34-3	1,1-Dichloroethane		0.500	1.00	2.00	U
107-06-2	1,2-Dichloroethane		0.500	1.00	2.00	U
75-35-4	1,1-Dichloroethene		0.500	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.500	1.00	2.00	U
156-60-5	trans-1,2-Dichloroethene		0.500	1.00	2.00	U
540-59-0	1,2-Dichloroethene (total)		1.00	2.00	4.00	U
78-87-5	1,2-Dichloropropane		0.500	1.00	2.00	U
142-28-9	1,3-Dichloropropane		0.500	1.00	2.00	U
594-20-7	2,2-Dichloropropane		0.500	1.00	2.00	U
563-58-6	1,1-Dichloropropene		0.500	1.00	2.00	U
10061-01-5	cis-1,3-Dichloropropene		0.500	1.00	2.00	U
10061-02-6	trans-1,3-Dichloropropene		0.500	1.00	2.00	U

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02	File ID:	1214702B.D
Sampled:	12/14/15 06:46	Prepared:	12/24/15 14:19	Analyzed:	12/24/15 14:19
Solids:		Preparation:	5030B	Dilution:	2

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.500	1.00	2.00	U
87-68-3	Hexachlorobutadiene		0.500	1.00	2.00	U
591-78-6	2-Hexanone		2.50	5.00	10.0	UQ
98-82-8	Isopropylbenzene		0.500	1.00	2.00	U
99-87-6	p-Isopropyltoluene		0.500	1.00	2.00	U
75-09-2	Methylene chloride		1.00	2.00	4.00	U
79-20-9	Methyl Acetate		1.00	2.00	4.00	U
108-87-2	Methylcyclohexane		0.500	1.00	2.00	U
91-20-3	Naphthalene		0.500	1.00	2.00	U
108-10-1	4-Methyl-2-pentanone		2.50	5.00	10.0	U
1634-04-4	Methyl t-Butyl Ether		0.500	1.00	2.00	U
103-65-1	n-Propylbenzene		0.500	1.00	2.00	UX
100-42-5	Styrene		0.500	1.00	2.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.500	1.00	2.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.500	1.00	2.00	U
127-18-4	Tetrachloroethene		0.500	1.00	2.00	U
108-88-3	Toluene	**0.707**	0.500	1.00	2.00	JD
87-61-6	1,2,3-Trichlorobenzene		0.500	1.00	2.00	U
120-82-1	1,2,4-Trichlorobenzene		0.500	1.00	2.00	U
79-00-5	1,1,2-Trichloroethane		0.500	1.00	2.00	U
71-55-6	1,1,1-Trichloroethane		0.500	1.00	2.00	U
79-01-6	Trichloroethene	**0.569**	0.500	1.00	2.00	JD
75-69-4	Trichlorofluoromethane		1.00	2.00	4.00	U
96-18-4	1,2,3-Trichloropropane		1.00	2.00	4.00	U
108-67-8	1,3,5-Trimethylbenzene		0.500	1.00	2.00	U
95-63-6	1,2,4-Trimethylbenzene		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		1.00	2.00	4.00	U
75-01-4	Vinyl chloride		0.500	1.00	2.00	U
108-38-3/106-42-	m,p-Xylene		1.00	2.00	4.00	U
95-47-6	o-Xylene		0.500	1.00	2.00	U
1330-20-7	Xylenes (total)		1.50	3.00	6.00	U

Total Target Analytes Reported 71 Project Analytes: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.46	98.2	75 - 120	
Dibromofluoromethane	30.00	29.10	97.0	85 - 115	
1,2-Dichloroethane-d4	30.00	28.55	95.2	70 - 120	
Toluene-d8	30.00	29.72	99.1	85 - 120	

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Water Laboratory ID: 1512147-03 File ID: 1214703B.D

Sampled: 12/14/15 10:01 Prepared: 12/24/15 14:48 Analyzed: 12/24/15 14:48

Solids: Preparation: 5030B Dilution: 2

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**33.1**	5.00	10.0	20.0	D
71-43-2	Benzene		0.500	1.00	2.00	U
108-86-1	Bromobenzene		0.500	1.00	2.00	U
74-97-5	Bromochloromethane		0.500	1.00	2.00	U
75-27-4	Bromodichloromethane		0.500	1.00	2.00	U
75-25-2	Bromoform		0.500	1.00	2.00	U
74-83-9	Bromomethane		1.00	2.00	4.00	U
104-51-8	n-Butylbenzene		0.500	1.00	2.00	U
78-93-3	2-Butanone		5.00	10.0	20.0	U
135-98-8	sec-Butylbenzene		0.500	1.00	2.00	U
98-06-6	tert-Butylbenzene		0.500	1.00	2.00	U
75-15-0	Carbon disulfide		0.500	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.500	1.00	2.00	UX
108-90-7	Chlorobenzene		0.500	1.00	2.00	U
75-00-3	Chloroethane		1.00	2.00	4.00	U
67-66-3	Chloroform	**2.57**	0.500	1.00	2.00	D
74-87-3	Chloromethane		0.500	1.00	2.00	U
95-49-8	2-Chlorotoluene		0.500	1.00	2.00	U
106-43-4	4-Chlorotoluene		0.500	1.00	2.00	U
110-82-7	Cyclohexane		0.500	1.00	2.00	U
124-48-1	Dibromochloromethane		0.500	1.00	2.00	U
96-12-8	1,2-Dibromo-3-chloropropane		1.00	2.00	4.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.500	1.00	2.00	U
74-95-3	Dibromomethane		0.500	1.00	2.00	U
95-50-1	1,2-Dichlorobenzene		0.500	1.00	2.00	U
541-73-1	1,3-Dichlorobenzene		0.500	1.00	2.00	U
106-46-7	1,4-Dichlorobenzene		0.500	1.00	2.00	U
75-71-8	Dichlorodifluoromethane		1.00	2.00	4.00	UX
75-34-3	1,1-Dichloroethane		0.500	1.00	2.00	U
107-06-2	1,2-Dichloroethane		0.500	1.00	2.00	U
75-35-4	1,1-Dichloroethene		0.500	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.500	1.00	2.00	U
156-60-5	trans-1,2-Dichloroethene		0.500	1.00	2.00	U
540-59-0	1,2-Dichloroethene (total)		1.00	2.00	4.00	U
78-87-5	1,2-Dichloropropane		0.500	1.00	2.00	U
142-28-9	1,3-Dichloropropane		0.500	1.00	2.00	U
594-20-7	2,2-Dichloropropane		0.500	1.00	2.00	U
563-58-6	1,1-Dichloropropene		0.500	1.00	2.00	U
10061-01-5	cis-1,3-Dichloropropene		0.500	1.00	2.00	U
10061-02-6	trans-1,3-Dichloropropene		0.500	1.00	2.00	U

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-03	File ID:	1214703B.D
Sampled:	12/14/15 10:01	Prepared:	12/24/15 14:48	Analyzed:	12/24/15 14:48
Solids:		Preparation:	5030B	Dilution:	2

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.500	1.00	2.00	U
87-68-3	Hexachlorobutadiene		0.500	1.00	2.00	U
591-78-6	2-Hexanone		2.50	5.00	10.0	UQ
98-82-8	Isopropylbenzene		0.500	1.00	2.00	U
99-87-6	p-Isopropyltoluene		0.500	1.00	2.00	U
75-09-2	Methylene chloride		1.00	2.00	4.00	U
79-20-9	Methyl Acetate		1.00	2.00	4.00	U
108-87-2	Methylcyclohexane		0.500	1.00	2.00	U
91-20-3	Naphthalene		0.500	1.00	2.00	U
108-10-1	4-Methyl-2-pentanone		2.50	5.00	10.0	U
1634-04-4	Methyl t-Butyl Ether		0.500	1.00	2.00	U
103-65-1	n-Propylbenzene		0.500	1.00	2.00	UX
100-42-5	Styrene		0.500	1.00	2.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.500	1.00	2.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.500	1.00	2.00	U
127-18-4	Tetrachloroethene		0.500	1.00	2.00	U
108-88-3	Toluene		0.500	1.00	2.00	U
87-61-6	1,2,3-Trichlorobenzene		0.500	1.00	2.00	U
120-82-1	1,2,4-Trichlorobenzene		0.500	1.00	2.00	U
79-00-5	1,1,2-Trichloroethane		0.500	1.00	2.00	U
71-55-6	1,1,1-Trichloroethane		0.500	1.00	2.00	U
79-01-6	Trichloroethene		0.500	1.00	2.00	U
75-69-4	Trichlorofluoromethane		1.00	2.00	4.00	U
96-18-4	1,2,3-Trichloropropane		1.00	2.00	4.00	U
108-67-8	1,3,5-Trimethylbenzene		0.500	1.00	2.00	U
95-63-6	1,2,4-Trimethylbenzene		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		1.00	2.00	4.00	U
75-01-4	Vinyl chloride		0.500	1.00	2.00	U
108-38-3/106-42-	m,p-Xylene		1.00	2.00	4.00	U
95-47-6	o-Xylene		0.500	1.00	2.00	U
1330-20-7	Xylenes (total)		1.50	3.00	6.00	U

Total Target Analytes Reported 71 Project Analytes: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.77	99.2	75 - 120	
Dibromofluoromethane	30.00	29.41	98.0	85 - 115	
1,2-Dichloroethane-d4	30.00	29.19	97.3	70 - 120	
Toluene-d8	30.00	29.59	98.6	85 - 120	

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-15121 4

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04	File ID:	1214704B.D
Sampled:	12/14/15 10:01	Prepared:	12/24/15 15:17	Analyzed:	12/24/15 15:17
Solids:		Preparation:	5030B	Dilution:	2

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**43.9**	5.00	10.0	20.0	D
71-43-2	Benzene		0.500	1.00	2.00	U
108-86-1	Bromobenzene		0.500	1.00	2.00	U
74-97-5	Bromochloromethane		0.500	1.00	2.00	U
75-27-4	Bromodichloromethane		0.500	1.00	2.00	U
75-25-2	Bromoform		0.500	1.00	2.00	U
74-83-9	Bromomethane		1.00	2.00	4.00	U
104-51-8	n-Butylbenzene		0.500	1.00	2.00	U
78-93-3	2-Butanone		5.00	10.0	20.0	U
135-98-8	sec-Butylbenzene		0.500	1.00	2.00	U
98-06-6	tert-Butylbenzene		0.500	1.00	2.00	U
75-15-0	Carbon disulfide		0.500	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.500	1.00	2.00	UX
108-90-7	Chlorobenzene		0.500	1.00	2.00	U
75-00-3	Chloroethane		1.00	2.00	4.00	U
67-66-3	Chloroform	**2.43**	0.500	1.00	2.00	D
74-87-3	Chloromethane		0.500	1.00	2.00	U
95-49-8	2-Chlorotoluene		0.500	1.00	2.00	U
106-43-4	4-Chlorotoluene		0.500	1.00	2.00	U
110-82-7	Cyclohexane		0.500	1.00	2.00	U
124-48-1	Dibromochloromethane		0.500	1.00	2.00	U
96-12-8	1,2-Dibromo-3-chloropropane		1.00	2.00	4.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.500	1.00	2.00	U
74-95-3	Dibromomethane		0.500	1.00	2.00	U
95-50-1	1,2-Dichlorobenzene		0.500	1.00	2.00	U
541-73-1	1,3-Dichlorobenzene		0.500	1.00	2.00	U
106-46-7	1,4-Dichlorobenzene		0.500	1.00	2.00	U
75-71-8	Dichlorodifluoromethane		1.00	2.00	4.00	UX
75-34-3	1,1-Dichloroethane		0.500	1.00	2.00	U
107-06-2	1,2-Dichloroethane		0.500	1.00	2.00	U
75-35-4	1,1-Dichloroethene		0.500	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.500	1.00	2.00	U
156-60-5	trans-1,2-Dichloroethene		0.500	1.00	2.00	U
540-59-0	1,2-Dichloroethene (total)		1.00	2.00	4.00	U
78-87-5	1,2-Dichloropropane		0.500	1.00	2.00	U
142-28-9	1,3-Dichloropropane		0.500	1.00	2.00	U
594-20-7	2,2-Dichloropropane		0.500	1.00	2.00	U
563-58-6	1,1-Dichloropropene		0.500	1.00	2.00	U
10061-01-5	cis-1,3-Dichloropropene		0.500	1.00	2.00	U
10061-02-6	trans-1,3-Dichloropropene		0.500	1.00	2.00	U

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-15121
4

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04	File ID:	1214704B.D
Sampled:	12/14/15 10:01	Prepared:	12/24/15 15:17	Analyzed:	12/24/15 15:17
Solids:		Preparation:	5030B	Dilution:	2

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.500	1.00	2.00	U
87-68-3	Hexachlorobutadiene		0.500	1.00	2.00	U
591-78-6	2-Hexanone		2.50	5.00	10.0	UQ
98-82-8	Isopropylbenzene		0.500	1.00	2.00	U
99-87-6	p-Isopropyltoluene		0.500	1.00	2.00	U
75-09-2	Methylene chloride		1.00	2.00	4.00	U
79-20-9	Methyl Acetate		1.00	2.00	4.00	U
108-87-2	Methylcyclohexane		0.500	1.00	2.00	U
91-20-3	Naphthalene		0.500	1.00	2.00	U
108-10-1	4-Methyl-2-pentanone		2.50	5.00	10.0	U
1634-04-4	Methyl t-Butyl Ether		0.500	1.00	2.00	U
103-65-1	n-Propylbenzene		0.500	1.00	2.00	UX
100-42-5	Styrene		0.500	1.00	2.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.500	1.00	2.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.500	1.00	2.00	U
127-18-4	Tetrachloroethene		0.500	1.00	2.00	U
108-88-3	Toluene		0.500	1.00	2.00	U
87-61-6	1,2,3-Trichlorobenzene		0.500	1.00	2.00	U
120-82-1	1,2,4-Trichlorobenzene		0.500	1.00	2.00	U
79-00-5	1,1,2-Trichloroethane		0.500	1.00	2.00	U
71-55-6	1,1,1-Trichloroethane		0.500	1.00	2.00	U
79-01-6	Trichloroethene		0.500	1.00	2.00	U
75-69-4	Trichlorofluoromethane		1.00	2.00	4.00	U
96-18-4	1,2,3-Trichloropropane		1.00	2.00	4.00	U
108-67-8	1,3,5-Trimethylbenzene		0.500	1.00	2.00	U
95-63-6	1,2,4-Trimethylbenzene		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		1.00	2.00	4.00	U
75-01-4	Vinyl chloride		0.500	1.00	2.00	U
108-38-3/106-42-	m,p-Xylene		1.00	2.00	4.00	U
95-47-6	o-Xylene		0.500	1.00	2.00	U
1330-20-7	Xylenes (total)		1.50	3.00	6.00	U

Total Target Analytes Reported 71 Project Analytes: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.47	98.2	75 - 120	
Dibromofluoromethane	30.00	29.14	97.1	85 - 115	
1,2-Dichloroethane-d4	30.00	28.64	95.5	70 - 120	
Toluene-d8	30.00	29.83	99.4	85 - 120	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36403	Instrument:	MS-VOA6
		Calibration:	5358001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (5L36403-CCV1) ug/L				Lab File ID: 1224CCV1.D		Analyzed: 12/24/15 06:58		
Bromofluorobenzene	30.00	103	80 - 120	12.089	12.089	0.0000	+/-1.000	
Dibromofluoromethane	30.00	94.8	80 - 120	6.739	6.739	0.0000	+/-1.000	
1,2-Dichloroethane-d4	30.00	96.7	80 - 120	7.241	7.241	0.0000	+/-1.000	
Toluene-d8	30.00	102	80 - 120	9.478	9.478	0.0000	+/-1.000	
LCS (5L24003-BS1) ug/L				Lab File ID: 1224LCS1.D		Analyzed: 12/24/15 07:33		
Bromofluorobenzene	30.00	100	75 - 120	12.083	12.089	-0.0060	+/-1.000	
Dibromofluoromethane	30.00	94.7	85 - 115	6.743	6.739	0.0040	+/-1.000	
1,2-Dichloroethane-d4	30.00	95.4	70 - 120	7.245	7.241	0.0040	+/-1.000	
Toluene-d8	30.00	100	85 - 120	9.472	9.478	-0.0060	+/-1.000	
Blank (5L24003-BLK1) ug/L				Lab File ID: 1224BLK1.D		Analyzed: 12/24/15 09:00		
Bromofluorobenzene	30.00	101	75 - 120	12.083	12.089	-0.0060	+/-1.000	
Dibromofluoromethane	30.00	95.7	85 - 115	6.733	6.739	-0.0060	+/-1.000	
1,2-Dichloroethane-d4	30.00	94.6	70 - 120	7.235	7.241	-0.0060	+/-1.000	
Toluene-d8	30.00	99.6	85 - 120	9.472	9.478	-0.0060	+/-1.000	
TB-01 (1512147-01) ug/L				Lab File ID: 1214701A.D		Analyzed: 12/24/15 09:58		
Bromofluorobenzene	30.00	101	75 - 120	12.086	12.089	-0.0030	+/-1.000	
Dibromofluoromethane	30.00	95.8	85 - 115	6.736	6.739	-0.0030	+/-1.000	
1,2-Dichloroethane-d4	30.00	95.3	70 - 120	7.239	7.241	-0.0020	+/-1.000	
Toluene-d8	30.00	99.5	85 - 120	9.466	9.478	-0.0120	+/-1.000	
OTC538-GW-5382-151214 (1512147-02) ug/L				Lab File ID: 1214702B.D		Analyzed: 12/24/15 14:19		
Bromofluorobenzene	30.00	98.2	75 - 120	12.082	12.089	-0.0070	+/-1.000	
Dibromofluoromethane	30.00	97.0	85 - 115	6.732	6.739	-0.0070	+/-1.000	
1,2-Dichloroethane-d4	30.00	95.2	70 - 120	7.234	7.241	-0.0070	+/-1.000	
Toluene-d8	30.00	99.1	85 - 120	9.471	9.478	-0.0070	+/-1.000	
OTC537-GW-5371-151214 (1512147-03) ug/L				Lab File ID: 1214703B.D		Analyzed: 12/24/15 14:48		
Bromofluorobenzene	30.00	99.2	75 - 120	12.087	12.089	-0.0020	+/-1.000	
Dibromofluoromethane	30.00	98.0	85 - 115	6.737	6.739	-0.0020	+/-1.000	
1,2-Dichloroethane-d4	30.00	97.3	70 - 120	7.24	7.241	-0.0010	+/-1.000	
Toluene-d8	30.00	98.6	85 - 120	9.466	9.478	-0.0120	+/-1.000	
OTC537-GW-5371-FD-151214 (1512147-04) ug/L				Lab File ID: 1214704B.D		Analyzed: 12/24/15 15:17		
Bromofluorobenzene	30.00	98.2	75 - 120	12.082	12.089	-0.0070	+/-1.000	
Dibromofluoromethane	30.00	97.1	85 - 115	6.732	6.739	-0.0070	+/-1.000	
1,2-Dichloroethane-d4	30.00	95.5	70 - 120	7.235	7.241	-0.0060	+/-1.000	
Toluene-d8	30.00	99.4	85 - 120	9.471	9.478	-0.0070	+/-1.000	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36403	Instrument:	MS-VOA6
		Calibration:	5358001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Matrix Spike (5L24003-MS1) ug/L				Lab File ID: 1214703M.D		Analyzed: 12/24/15 15:45		
Bromofluorobenzene	30.00	100	75 - 120	12.083	12.089	-0.0060	+/-1.000	
Dibromofluoromethane	30.00	97.1	85 - 115	6.733	6.739	-0.0060	+/-1.000	
1,2-Dichloroethane-d4	30.00	96.0	70 - 120	7.235	7.241	-0.0060	+/-1.000	
Toluene-d8	30.00	98.1	85 - 120	9.472	9.478	-0.0060	+/-1.000	
Matrix Spike Dup (5L24003-MSD1) ug/L				Lab File ID: 1214703S.D		Analyzed: 12/24/15 16:14		
Bromofluorobenzene	30.00	100	75 - 120	12.081	12.089	-0.0080	+/-1.000	
Dibromofluoromethane	30.00	96.3	85 - 115	6.731	6.739	-0.0080	+/-1.000	
1,2-Dichloroethane-d4	30.00	94.5	70 - 120	7.234	7.241	-0.0070	+/-1.000	
Toluene-d8	30.00	98.9	85 - 120	9.47	9.478	-0.0080	+/-1.000	

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L24003	Laboratory ID:	5L24003-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Acetone	100.0	127	127	40 - 140
Benzene	50.00	50.8	102	80 - 120
Bromobenzene	50.00	51.3	103	75 - 125
Bromochloromethane	50.00	50.2	100	65 - 130
Bromodichloromethane	50.00	53.7	107	75 - 120
Bromoform	50.00	42.7	85.5	70 - 130
Bromomethane	50.00	47.6	95.2	30 - 145
n-Butylbenzene	50.00	54.4	109	70 - 135
2-Butanone	100.0	124	124	30 - 150
sec-Butylbenzene	50.00	54.4	109	70 - 125
tert-Butylbenzene	50.00	54.0	108	70 - 130
Carbon disulfide	50.00	48.7	97.5	35 - 160
Carbon tetrachloride	50.00	55.8	112	65 - 140
Chlorobenzene	50.00	49.9	99.8	80 - 120
Chloroethane	50.00	42.8	85.7	60 - 135
Chloroform	50.00	46.1	92.1	65 - 135
Chloromethane	50.00	49.1	98.2	40 - 125
2-Chlorotoluene	50.00	50.1	100	75 - 125
4-Chlorotoluene	50.00	51.4	103	75 - 130
Cyclohexane	50.00	56.5	113	60 - 130
Dibromochloromethane	50.00	44.6	89.3	60 - 135
1,2-Dibromo-3-chloropropane	50.00	43.7	87.4	50 - 130
1,2-Dibromoethane (EDB)	50.00	53.1	106	80 - 120
Dibromomethane	50.00	49.0	97.9	75 - 125
1,2-Dichlorobenzene	50.00	51.0	102	70 - 120
1,3-Dichlorobenzene	50.00	50.2	100	75 - 125
1,4-Dichlorobenzene	50.00	49.9	99.8	75 - 125
Dichlorodifluoromethane	50.00	58.1	116	30 - 155
1,1-Dichloroethane	50.00	50.3	101	70 - 135
1,2-Dichloroethane	50.00	44.9	89.9	70 - 130

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L24003	Laboratory ID:	5L24003-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
1,1-Dichloroethene	50.00	49.7	99.3	70 - 130
cis-1,2-Dichloroethene	50.00	50.0	100	70 - 125
trans-1,2-Dichloroethene	50.00	45.6	91.3	60 - 140
1,2-Dichloroethene (total)	100.0	95.6	95.6	75 - 125
1,2-Dichloropropane	50.00	51.0	102	75 - 125
1,3-Dichloropropane	50.00	52.5	105	75 - 125
2,2-Dichloropropane	50.00	55.4	111	70 - 135
1,1-Dichloropropene	50.00	50.8	102	75 - 130
cis-1,3-Dichloropropene	50.00	57.6	115	70 - 130
trans-1,3-Dichloropropene	50.00	45.7	91.4	55 - 140
Ethylbenzene	50.00	53.2	106	75 - 125
Hexachlorobutadiene	50.00	49.1	98.3	50 - 140
2-Hexanone	**100.0**	**136**	**136**	**55 - 130**
Isopropylbenzene	50.00	53.3	107	75 - 125
p-Isopropyltoluene	50.00	53.4	107	75 - 130
Methylene chloride	50.00	45.7	91.4	55 - 140
Methyl Acetate	50.00	54.1	108	55 - 150
Methylcyclohexane	50.00	55.6	111	60 - 125
Naphthalene	50.00	54.1	108	55 - 140
4-Methyl-2-pentanone	100.0	105	105	60 - 135
Methyl t-Butyl Ether	50.00	54.3	109	65 - 125
n-Propylbenzene	50.00	52.8	106	70 - 130
Styrene	50.00	55.3	111	65 - 135
1,1,2,2-Tetrachloroethane	50.00	51.4	103	65 - 130
1,1,1,2-Tetrachloroethane	50.00	54.1	108	80 - 130
Tetrachloroethene	50.00	52.8	106	45 - 150
Toluene	50.00	52.4	105	75 - 120
1,2,3-Trichlorobenzene	50.00	54.2	108	55 - 140
1,2,4-Trichlorobenzene	50.00	53.8	108	65 - 135
1,1,2-Trichloroethane	50.00	51.4	103	75 - 125

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L24003	Laboratory ID:	5L24003-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
1,1,1-Trichloroethane	50.00	52.4	105	65 - 130
Trichloroethene	50.00	50.3	101	70 - 125
Trichlorofluoromethane	50.00	51.6	103	60 - 145
1,2,3-Trichloropropane	50.00	51.5	103	75 - 125
1,3,5-Trimethylbenzene	50.00	53.1	106	75 - 130
1,2,4-Trimethylbenzene	50.00	52.7	105	75 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	50.00	51.2	102	60 - 130
Vinyl chloride	50.00	48.5	97.0	50 - 145
m,p-Xylene	100.0	108	108	75 - 130
o-Xylene	50.00	50.6	101	80 - 120
Xylenes (total)	150.0	159	106	75 - 130

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L24003

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Acetone	200.0	33.1	263	115		40 - 140
Benzene	100.0	ND	104	104		80 - 120
Bromobenzene	100.0	ND	105	105		75 - 125
Bromochloromethane	100.0	ND	103	103		65 - 130
Bromodichloromethane	100.0	ND	116	116		75 - 120
Bromoform	100.0	ND	84.5	84.5		70 - 130
Bromomethane	100.0	ND	92.6	92.6		30 - 145
n-Butylbenzene	100.0	ND	108	108		70 - 135
2-Butanone	200.0	ND	219	109		30 - 150
sec-Butylbenzene	100.0	ND	105	105		70 - 125
tert-Butylbenzene	100.0	ND	105	105		70 - 130
Carbon disulfide	100.0	ND	104	104		35 - 160
Carbon tetrachloride	100.0	ND	116	116		65 - 140
Chlorobenzene	100.0	ND	96.2	96.2		80 - 120
Chloroethane	100.0	ND	89.0	89.0		60 - 135
Chloroform	100.0	2.57	98.8	96.2		65 - 135
Chloromethane	100.0	ND	86.9	86.9		40 - 125
2-Chlorotoluene	100.0	ND	99.5	99.5		75 - 125
4-Chlorotoluene	100.0	ND	101	101		75 - 130
Cyclohexane	100.0	ND	116	116		60 - 130
Dibromochloromethane	100.0	ND	91.4	91.4		60 - 135
1,2-Dibromo-3-chloropropane	100.0	ND	96.6	96.6		50 - 130
1,2-Dibromoethane (EDB)	100.0	ND	112	112		80 - 120
Dibromomethane	100.0	ND	102	102		75 - 125
1,2-Dichlorobenzene	100.0	ND	100	100		70 - 120
1,3-Dichlorobenzene	100.0	ND	97.6	97.6		75 - 125
1,4-Dichlorobenzene	100.0	ND	96.2	96.2		75 - 125
Dichlorodifluoromethane	100.0	ND	81.3	81.3		30 - 155
1,1-Dichloroethane	100.0	ND	101	101		70 - 135
1,2-Dichloroethane	100.0	ND	99.8	99.8		70 - 130
1,1-Dichloroethene	100.0	ND	96.2	96.2		70 - 130
cis-1,2-Dichloroethene	100.0	ND	104	104		70 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L24003

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
trans-1,2-Dichloroethene	100.0	ND	110	110		60 - 140
1,2-Dichloroethene (total)	200.0	ND	215	107		75 - 125
1,2-Dichloropropane	100.0	ND	108	108		75 - 125
1,3-Dichloropropane	100.0	ND	110	110		75 - 125
2,2-Dichloropropane	100.0	ND	108	108		70 - 135
1,1-Dichloropropene	100.0	ND	101	101		75 - 130
cis-1,3-Dichloropropene	100.0	ND	117	117		70 - 130
trans-1,3-Dichloropropene	100.0	ND	92.1	92.1		55 - 140
Ethylbenzene	100.0	ND	107	107		75 - 125
Hexachlorobutadiene	100.0	ND	106	106		50 - 140
2-Hexanone	200.0	ND	228	114		55 - 130
Isopropylbenzene	100.0	ND	104	104		75 - 125
p-Isopropyltoluene	100.0	ND	105	105		75 - 130
Methylene chloride	100.0	ND	97.4	97.4		55 - 140
Methyl Acetate	100.0	ND	119	119		55 - 150
Methylcyclohexane	100.0	ND	112	112		60 - 125
Naphthalene	100.0	ND	101	101		55 - 140
4-Methyl-2-pentanone	200.0	ND	236	118		60 - 135
Methyl t-Butyl Ether	100.0	ND	114	114		65 - 125
n-Propylbenzene	100.0	ND	103	103		70 - 130
Styrene	100.0	ND	108	108		65 - 135
1,1,2,2-Tetrachloroethane	100.0	ND	113	113		65 - 130
1,1,1,2-Tetrachloroethane	100.0	ND	111	111		80 - 130
Tetrachloroethene	100.0	ND	104	104		45 - 150
Toluene	100.0	ND	105	105		75 - 120
1,2,3-Trichlorobenzene	100.0	ND	106	106		55 - 140
1,2,4-Trichlorobenzene	100.0	ND	104	104		65 - 135
1,1,2-Trichloroethane	100.0	ND	108	108		75 - 125
1,1,1-Trichloroethane	100.0	ND	110	110		65 - 130
Trichloroethene	100.0	ND	109	109		70 - 125
Trichlorofluoromethane	100.0	ND	110	110		60 - 145
1,2,3-Trichloropropane	100.0	ND	113	113		75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L24003

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
1,3,5-Trimethylbenzene	100.0	ND	110	110		75 - 130
1,2,4-Trimethylbenzene	100.0	ND	106	106		75 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	100.0	ND	108	108		60 - 130
Vinyl chloride	100.0	ND	89.3	89.3		50 - 145
m,p-Xylene	200.0	ND	213	106		75 - 130
o-Xylene	100.0	ND	98.8	98.8		80 - 120
Xylenes (total)	300.0	ND	312	104		75 - 130

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L24003

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Acetone	200.0	274	120	3.89		30	40 - 140
Benzene	100.0	105	105	0.932		30	80 - 120
Bromobenzene	100.0	107	107	1.84		30	75 - 125
Bromochloromethane	100.0	102	102	0.348		30	65 - 130
Bromodichloromethane	100.0	118	118	1.10		30	75 - 120
Bromoform	100.0	86.0	86.0	1.77		30	70 - 130
Bromomethane	100.0	96.2	96.2	3.85		30	30 - 145
n-Butylbenzene	100.0	109	109	0.865		30	70 - 135
2-Butanone	200.0	216	108	1.14		30	30 - 150
sec-Butylbenzene	100.0	106	106	1.59		30	70 - 125
tert-Butylbenzene	100.0	108	108	3.14		30	70 - 130
Carbon disulfide	100.0	111	111	6.48		30	35 - 160
Carbon tetrachloride	100.0	117	117	0.635		30	65 - 140
Chlorobenzene	100.0	99.5	99.5	3.33		30	80 - 120
Chloroethane	100.0	86.4	86.4	3.05		30	60 - 135
Chloroform	100.0	99.3	96.8	0.541		30	65 - 135
Chloromethane	100.0	90.6	90.6	4.19		30	40 - 125
2-Chlorotoluene	100.0	101	101	1.29		30	75 - 125
4-Chlorotoluene	100.0	103	103	2.34		30	75 - 130
Cyclohexane	100.0	112	112	2.91		30	60 - 130
Dibromochloromethane	100.0	92.4	92.4	1.02		30	60 - 135
1,2-Dibromo-3-chloropropane	100.0	95.7	95.7	1.01		30	50 - 130
1,2-Dibromoethane (EDB)	100.0	113	113	0.917		30	80 - 120
Dibromomethane	100.0	101	101	0.594		30	75 - 125
1,2-Dichlorobenzene	100.0	101	101	0.524		30	70 - 120
1,3-Dichlorobenzene	100.0	98.9	98.9	1.35		30	75 - 125
1,4-Dichlorobenzene	100.0	98.4	98.4	2.26		30	75 - 125
Dichlorodifluoromethane	100.0	83.7	83.7	2.93		30	30 - 155
1,1-Dichloroethane	100.0	102	102	1.14		30	70 - 135
1,2-Dichloroethane	100.0	99.2	99.2	0.627		30	70 - 130
1,1-Dichloroethene	100.0	108	108	11.9		30	70 - 130
cis-1,2-Dichloroethene	100.0	105	105	0.659		30	70 - 125
trans-1,2-Dichloroethene	100.0	116	116	5.14		30	60 - 140

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L24003

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
1,2-Dichloroethene (total)	200.0	221	111	2.99		30	75 - 125
1,2-Dichloropropane	100.0	108	108	0.498		30	75 - 125
1,3-Dichloropropane	100.0	111	111	0.797		30	75 - 125
2,2-Dichloropropane	100.0	109	109	0.949		30	70 - 135
1,1-Dichloropropene	100.0	102	102	1.05		30	75 - 130
cis-1,3-Dichloropropene	100.0	120	120	2.20		30	70 - 130
trans-1,3-Dichloropropene	100.0	93.2	93.2	1.17		30	55 - 140
Ethylbenzene	100.0	110	110	3.11		30	75 - 125
Hexachlorobutadiene	100.0	109	109	2.35		30	50 - 140
2-Hexanone	200.0	226	113	0.904		30	55 - 130
Isopropylbenzene	100.0	106	106	1.79		30	75 - 125
p-Isopropyltoluene	100.0	108	108	3.12		30	75 - 130
Methylene chloride	100.0	104	104	6.13		30	55 - 140
Methyl Acetate	100.0	125	125	4.62		30	55 - 150
Methylcyclohexane	100.0	110	110	2.14		30	60 - 125
Naphthalene	100.0	103	103	1.40		30	55 - 140
4-Methyl-2-pentanone	200.0	232	116	1.59		30	60 - 135
Methyl t-Butyl Ether	100.0	120	120	4.96		30	65 - 125
n-Propylbenzene	100.0	104	104	1.25		30	70 - 130
Styrene	100.0	111	111	2.45		30	65 - 135
1,1,2,2-Tetrachloroethane	100.0	113	113	0.624		30	65 - 130
1,1,1,2-Tetrachloroethane	100.0	114	114	2.08		30	80 - 130
Tetrachloroethene	100.0	106	106	1.44		30	45 - 150
Toluene	100.0	108	108	2.81		30	75 - 120
1,2,3-Trichlorobenzene	100.0	107	107	0.428		30	55 - 140
1,2,4-Trichlorobenzene	100.0	105	105	1.04		30	65 - 135
1,1,2-Trichloroethane	100.0	109	109	1.05		30	75 - 125
1,1,1-Trichloroethane	100.0	110	110	0.0235		30	65 - 130
Trichloroethene	100.0	110	110	1.06		30	70 - 125
Trichlorofluoromethane	100.0	110	110	0.0131		30	60 - 145
1,2,3-Trichloropropane	100.0	113	113	0.0520		30	75 - 125
1,3,5-Trimethylbenzene	100.0	112	112	2.05		30	75 - 130
1,2,4-Trimethylbenzene	100.0	108	108	1.97		30	75 - 130

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L24003

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
1,1,2-Trichloro-1,2,2-trifluoroethane	100.0	108	108	0.652		30	60 - 130
Vinyl chloride	100.0	102	102	12.8		30	50 - 145
m,p-Xylene	200.0	219	109	2.56		30	75 - 130
o-Xylene	100.0	101	101	2.25		30	80 - 120
Xylenes (total)	300.0	320	107	2.46		30	75 - 130

PREPARATION BATCH SUMMARY

SW8260B

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L24003 Batch Matrix: Water Preparation: 5030B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
TB-01	1512147-01	12/24/15 09:58	5.00	5.00
OTC538-GW-5382-151214	1512147-02	12/24/15 14:19	5.00	5.00
OTC537-GW-5371-151214	1512147-03	12/24/15 14:48	5.00	5.00
OTC537-GW-5371-FD-151214	1512147-04	12/24/15 15:17	5.00	5.00
Blank	5L24003-BLK1	12/24/15 09:00	5.00	5.00
LCS	5L24003-BS1	12/24/15 07:33	5.00	5.00
OTC537-GW-5371-151214	5L24003-MS1	12/24/15 15:45	5.00	5.00
OTC537-GW-5371-151214	5L24003-MSD1	12/24/15 16:14	5.00	5.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L24003-BLK1 File ID: 1224BLK1.D

Sampled: Prepared: Analyzed: 12/24/15 09:00

Solids: Preparation: 5030B Dilution:

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone		2.50	5.00	10.0	U
71-43-2	Benzene		0.250	0.500	1.00	U
108-86-1	Bromobenzene		0.250	0.500	1.00	U
74-97-5	Bromochloromethane		0.250	0.500	1.00	U
75-27-4	Bromodichloromethane		0.250	0.500	1.00	U
75-25-2	Bromoform		0.250	0.500	1.00	U
74-83-9	Bromomethane		0.500	1.00	2.00	U
104-51-8	n-Butylbenzene		0.250	0.500	1.00	U
78-93-3	2-Butanone		2.50	5.00	10.0	U
135-98-8	sec-Butylbenzene		0.250	0.500	1.00	U
98-06-6	tert-Butylbenzene		0.250	0.500	1.00	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	UX
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
75-00-3	Chloroethane		0.500	1.00	2.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
95-49-8	2-Chlorotoluene		0.250	0.500	1.00	U
106-43-4	4-Chlorotoluene		0.250	0.500	1.00	U
110-82-7	Cyclohexane		0.250	0.500	1.00	U
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	U
74-95-3	Dibromomethane		0.250	0.500	1.00	U
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	UX
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
540-59-0	1,2-Dichloroethene (total)		0.500	1.00	2.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
142-28-9	1,3-Dichloropropane		0.250	0.500	1.00	U
594-20-7	2,2-Dichloropropane		0.250	0.500	1.00	U
563-58-6	1,1-Dichloropropene		0.250	0.500	1.00	U
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	U

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L24003-BLK1 File ID: 1224BLK1.D

Sampled: Prepared: Analyzed: 12/24/15 09:00

Solids: Preparation: 5030B Dilution:

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
87-68-3	Hexachlorobutadiene	**0.291**	0.250	0.500	1.00	J
591-78-6	2-Hexanone		1.25	2.50	5.00	UQ
98-82-8	Isopropylbenzene		0.250	0.500	1.00	U
99-87-6	p-Isopropyltoluene		0.250	0.500	1.00	U
75-09-2	Methylene chloride		0.500	1.00	2.00	U
79-20-9	Methyl Acetate		0.500	1.00	2.00	U
108-87-2	Methylcyclohexane		0.250	0.500	1.00	U
91-20-3	Naphthalene		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	U
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
103-65-1	n-Propylbenzene		0.250	0.500	1.00	UX
100-42-5	Styrene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
108-88-3	Toluene		0.250	0.500	1.00	U
87-61-6	1,2,3-Trichlorobenzene	**0.272**	0.250	0.500	1.00	J
120-82-1	1,2,4-Trichlorobenzene	**0.293**	0.250	0.500	1.00	J
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
96-18-4	1,2,3-Trichloropropane		0.500	1.00	2.00	U
108-67-8	1,3,5-Trimethylbenzene		0.250	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.250	0.500	1.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.30	101	75 - 120	
Dibromofluoromethane	30.00	28.72	95.7	85 - 115	
1,2-Dichloroethane-d4	30.00	28.39	94.6	70 - 120	
Toluene-d8	30.00	29.89	99.6	85 - 120	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L24003-BS1 File ID: 1224LCS1.D

Sampled: Prepared: Analyzed: 12/24/15 07:33

Solids: Preparation: 5030B Dilution:

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**127**	2.50	5.00	10.0	
71-43-2	Benzene	**50.8**	0.250	0.500	1.00	
108-86-1	Bromobenzene	**51.3**	0.250	0.500	1.00	
74-97-5	Bromochloromethane	**50.2**	0.250	0.500	1.00	
75-27-4	Bromodichloromethane	**53.7**	0.250	0.500	1.00	
75-25-2	Bromoform	**42.7**	0.250	0.500	1.00	
74-83-9	Bromomethane	**47.6**	0.500	1.00	2.00	
104-51-8	n-Butylbenzene	**54.4**	0.250	0.500	1.00	
78-93-3	2-Butanone	**124**	2.50	5.00	10.0	
135-98-8	sec-Butylbenzene	**54.4**	0.250	0.500	1.00	
98-06-6	tert-Butylbenzene	**54.0**	0.250	0.500	1.00	
75-15-0	Carbon disulfide	**48.7**	0.250	0.500	1.00	
56-23-5	Carbon tetrachloride	**55.8**	0.250	0.500	1.00	X
108-90-7	Chlorobenzene	**49.9**	0.250	0.500	1.00	
75-00-3	Chloroethane	**42.8**	0.500	1.00	2.00	
67-66-3	Chloroform	**46.1**	0.250	0.500	1.00	
74-87-3	Chloromethane	**49.1**	0.250	0.500	1.00	
95-49-8	2-Chlorotoluene	**50.1**	0.250	0.500	1.00	
106-43-4	4-Chlorotoluene	**51.4**	0.250	0.500	1.00	
110-82-7	Cyclohexane	**56.5**	0.250	0.500	1.00	
124-48-1	Dibromochloromethane	**44.6**	0.250	0.500	1.00	
96-12-8	1,2-Dibromo-3-chloropropane	**43.7**	0.500	1.00	2.00	
106-93-4	1,2-Dibromoethane (EDB)	**53.1**	0.250	0.500	1.00	
74-95-3	Dibromomethane	**49.0**	0.250	0.500	1.00	
95-50-1	1,2-Dichlorobenzene	**51.0**	0.250	0.500	1.00	
541-73-1	1,3-Dichlorobenzene	**50.2**	0.250	0.500	1.00	
106-46-7	1,4-Dichlorobenzene	**49.9**	0.250	0.500	1.00	
75-71-8	Dichlorodifluoromethane	**58.1**	0.500	1.00	2.00	X
75-34-3	1,1-Dichloroethane	**50.3**	0.250	0.500	1.00	
107-06-2	1,2-Dichloroethane	**44.9**	0.250	0.500	1.00	
75-35-4	1,1-Dichloroethene	**49.7**	0.250	0.500	1.00	
156-59-2	cis-1,2-Dichloroethene	**50.0**	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	**45.6**	0.250	0.500	1.00	
540-59-0	1,2-Dichloroethene (total)	**95.6**	0.500	1.00	2.00	
78-87-5	1,2-Dichloropropane	**51.0**	0.250	0.500	1.00	
142-28-9	1,3-Dichloropropane	**52.5**	0.250	0.500	1.00	
594-20-7	2,2-Dichloropropane	**55.4**	0.250	0.500	1.00	
563-58-6	1,1-Dichloropropene	**50.8**	0.250	0.500	1.00	
10061-01-5	cis-1,3-Dichloropropene	**57.6**	0.250	0.500	1.00	
10061-02-6	trans-1,3-Dichloropropene	**45.7**	0.250	0.500	1.00	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L24003-BS1 File ID: 1224LCS1.D

Sampled: Prepared: Analyzed: 12/24/15 07:33

Solids: Preparation: 5030B Dilution:

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene	**53.2**	0.250	0.500	1.00	
87-68-3	Hexachlorobutadiene	**49.1**	0.250	0.500	1.00	B
591-78-6	2-Hexanone	**136**	1.25	2.50	5.00	
98-82-8	Isopropylbenzene	**53.3**	0.250	0.500	1.00	
99-87-6	p-Isopropyltoluene	**53.4**	0.250	0.500	1.00	
75-09-2	Methylene chloride	**45.7**	0.500	1.00	2.00	
79-20-9	Methyl Acetate	**54.1**	0.500	1.00	2.00	
108-87-2	Methylcyclohexane	**55.6**	0.250	0.500	1.00	
91-20-3	Naphthalene	**54.1**	0.250	0.500	1.00	
108-10-1	4-Methyl-2-pentanone	**105**	1.25	2.50	5.00	
1634-04-4	Methyl t-Butyl Ether	**54.3**	0.250	0.500	1.00	
103-65-1	n-Propylbenzene	**52.8**	0.250	0.500	1.00	X
100-42-5	Styrene	**55.3**	0.250	0.500	1.00	
79-34-5	1,1,2,2-Tetrachloroethane	**51.4**	0.250	0.500	1.00	
630-20-6	1,1,1,2-Tetrachloroethane	**54.1**	0.250	0.500	1.00	
127-18-4	Tetrachloroethene	**52.8**	0.250	0.500	1.00	
108-88-3	Toluene	**52.4**	0.250	0.500	1.00	
87-61-6	1,2,3-Trichlorobenzene	**54.2**	0.250	0.500	1.00	B
120-82-1	1,2,4-Trichlorobenzene	**53.8**	0.250	0.500	1.00	B
79-00-5	1,1,2-Trichloroethane	**51.4**	0.250	0.500	1.00	
71-55-6	1,1,1-Trichloroethane	**52.4**	0.250	0.500	1.00	
79-01-6	Trichloroethene	**50.3**	0.250	0.500	1.00	
75-69-4	Trichlorofluoromethane	**51.6**	0.500	1.00	2.00	
96-18-4	1,2,3-Trichloropropane	**51.5**	0.500	1.00	2.00	
108-67-8	1,3,5-Trimethylbenzene	**53.1**	0.250	0.500	1.00	
95-63-6	1,2,4-Trimethylbenzene	**52.7**	0.250	0.500	1.00	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**51.2**	0.500	1.00	2.00	
75-01-4	Vinyl chloride	**48.5**	0.250	0.500	1.00	
108-38-3/106-42-	m,p-Xylene	**108**	0.500	1.00	2.00	
95-47-6	o-Xylene	**50.6**	0.250	0.500	1.00	
1330-20-7	Xylenes (total)	**159**	0.750	1.50	3.00	

Total Target Analytes Reported: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.15	100	75 - 120	
Dibromofluoromethane	30.00	28.40	94.7	85 - 115	
1,2-Dichloroethane-d4	30.00	28.62	95.4	70 - 120	
Toluene-d8	30.00	30.11	100	85 - 120	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L24003-MS1 File ID: 1214703M.D

Sampled: Prepared: Analyzed: 12/24/15 15:45

Solids: Preparation: 5030B Dilution:

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**263**	5.00	10.0	20.0	D
71-43-2	Benzene	**104**	0.500	1.00	2.00	D
108-86-1	Bromobenzene	**105**	0.500	1.00	2.00	D
74-97-5	Bromochloromethane	**103**	0.500	1.00	2.00	D
75-27-4	Bromodichloromethane	**116**	0.500	1.00	2.00	D
75-25-2	Bromoform	**84.5**	0.500	1.00	2.00	D
74-83-9	Bromomethane	**92.6**	1.00	2.00	4.00	D
104-51-8	n-Butylbenzene	**108**	0.500	1.00	2.00	D
78-93-3	2-Butanone	**219**	5.00	10.0	20.0	D
135-98-8	sec-Butylbenzene	**105**	0.500	1.00	2.00	D
98-06-6	tert-Butylbenzene	**105**	0.500	1.00	2.00	D
75-15-0	Carbon disulfide	**104**	0.500	1.00	2.00	D
56-23-5	Carbon tetrachloride	**116**	0.500	1.00	2.00	XD
108-90-7	Chlorobenzene	**96.2**	0.500	1.00	2.00	D
75-00-3	Chloroethane	**89.0**	1.00	2.00	4.00	D
67-66-3	Chloroform	**98.8**	0.500	1.00	2.00	D
74-87-3	Chloromethane	**86.9**	0.500	1.00	2.00	D
95-49-8	2-Chlorotoluene	**99.5**	0.500	1.00	2.00	D
106-43-4	4-Chlorotoluene	**101**	0.500	1.00	2.00	D
110-82-7	Cyclohexane	**116**	0.500	1.00	2.00	D
124-48-1	Dibromochloromethane	**91.4**	0.500	1.00	2.00	D
96-12-8	1,2-Dibromo-3-chloropropane	**96.6**	1.00	2.00	4.00	D
106-93-4	1,2-Dibromoethane (EDB)	**112**	0.500	1.00	2.00	D
74-95-3	Dibromomethane	**102**	0.500	1.00	2.00	D
95-50-1	1,2-Dichlorobenzene	**100**	0.500	1.00	2.00	D
541-73-1	1,3-Dichlorobenzene	**97.6**	0.500	1.00	2.00	D
106-46-7	1,4-Dichlorobenzene	**96.2**	0.500	1.00	2.00	D
75-71-8	Dichlorodifluoromethane	**81.3**	1.00	2.00	4.00	XD
75-34-3	1,1-Dichloroethane	**101**	0.500	1.00	2.00	D
107-06-2	1,2-Dichloroethane	**99.8**	0.500	1.00	2.00	D
75-35-4	1,1-Dichloroethene	**96.2**	0.500	1.00	2.00	D
156-59-2	cis-1,2-Dichloroethene	**104**	0.500	1.00	2.00	D
156-60-5	trans-1,2-Dichloroethene	**110**	0.500	1.00	2.00	D
540-59-0	1,2-Dichloroethene (total)	**215**	1.00	2.00	4.00	D
78-87-5	1,2-Dichloropropane	**108**	0.500	1.00	2.00	D
142-28-9	1,3-Dichloropropane	**110**	0.500	1.00	2.00	D
594-20-7	2,2-Dichloropropane	**108**	0.500	1.00	2.00	D
563-58-6	1,1-Dichloropropene	**101**	0.500	1.00	2.00	D
10061-01-5	cis-1,3-Dichloropropene	**117**	0.500	1.00	2.00	D
10061-02-6	trans-1,3-Dichloropropene	**92.1**	0.500	1.00	2.00	D

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L24003-MS1 File ID: 1214703M.D

Sampled: Prepared: Analyzed: 12/24/15 15:45

Solids: Preparation: 5030B Dilution:

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene	**107**	0.500	1.00	2.00	D
87-68-3	Hexachlorobutadiene	**106**	0.500	1.00	2.00	BD
591-78-6	2-Hexanone	**228**	2.50	5.00	10.0	QD
98-82-8	Isopropylbenzene	**104**	0.500	1.00	2.00	D
99-87-6	p-Isopropyltoluene	**105**	0.500	1.00	2.00	D
75-09-2	Methylene chloride	**97.4**	1.00	2.00	4.00	D
79-20-9	Methyl Acetate	**119**	1.00	2.00	4.00	D
108-87-2	Methylcyclohexane	**112**	0.500	1.00	2.00	D
91-20-3	Naphthalene	**101**	0.500	1.00	2.00	D
108-10-1	4-Methyl-2-pentanone	**236**	2.50	5.00	10.0	D
1634-04-4	Methyl t-Butyl Ether	**114**	0.500	1.00	2.00	D
103-65-1	n-Propylbenzene	**103**	0.500	1.00	2.00	XD
100-42-5	Styrene	**108**	0.500	1.00	2.00	D
79-34-5	1,1,2,2-Tetrachloroethane	**113**	0.500	1.00	2.00	D
630-20-6	1,1,1,2-Tetrachloroethane	**111**	0.500	1.00	2.00	D
127-18-4	Tetrachloroethene	**104**	0.500	1.00	2.00	D
108-88-3	Toluene	**105**	0.500	1.00	2.00	D
87-61-6	1,2,3-Trichlorobenzene	**106**	0.500	1.00	2.00	BD
120-82-1	1,2,4-Trichlorobenzene	**104**	0.500	1.00	2.00	BD
79-00-5	1,1,2-Trichloroethane	**108**	0.500	1.00	2.00	D
71-55-6	1,1,1-Trichloroethane	**110**	0.500	1.00	2.00	D
79-01-6	Trichloroethene	**109**	0.500	1.00	2.00	D
75-69-4	Trichlorofluoromethane	**110**	1.00	2.00	4.00	D
96-18-4	1,2,3-Trichloropropane	**113**	1.00	2.00	4.00	D
108-67-8	1,3,5-Trimethylbenzene	**110**	0.500	1.00	2.00	D
95-63-6	1,2,4-Trimethylbenzene	**106**	0.500	1.00	2.00	D
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**108**	1.00	2.00	4.00	D
75-01-4	Vinyl chloride	**89.3**	0.500	1.00	2.00	D
108-38-3/106-42-	m,p-Xylene	**213**	1.00	2.00	4.00	D
95-47-6	o-Xylene	**98.8**	0.500	1.00	2.00	D
1330-20-7	Xylenes (total)	**312**	1.50	3.00	6.00	D

Total Target Analytes Reported: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.05	100	75 - 120	
Dibromofluoromethane	30.00	29.12	97.1	85 - 115	
1,2-Dichloroethane-d4	30.00	28.80	96.0	70 - 120	
Toluene-d8	30.00	29.43	98.1	85 - 120	

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L24003-MSD1 File ID: 1214703S.D

Sampled: Prepared: Analyzed: 12/24/15 16:14

Solids: Preparation: 5030B Dilution:

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**274**	5.00	10.0	20.0	D
71-43-2	Benzene	**105**	0.500	1.00	2.00	D
108-86-1	Bromobenzene	**107**	0.500	1.00	2.00	D
74-97-5	Bromochloromethane	**102**	0.500	1.00	2.00	D
75-27-4	Bromodichloromethane	**118**	0.500	1.00	2.00	D
75-25-2	Bromoform	**86.0**	0.500	1.00	2.00	D
74-83-9	Bromomethane	**96.2**	1.00	2.00	4.00	D
104-51-8	n-Butylbenzene	**109**	0.500	1.00	2.00	D
78-93-3	2-Butanone	**216**	5.00	10.0	20.0	D
135-98-8	sec-Butylbenzene	**106**	0.500	1.00	2.00	D
98-06-6	tert-Butylbenzene	**108**	0.500	1.00	2.00	D
75-15-0	Carbon disulfide	**111**	0.500	1.00	2.00	D
56-23-5	Carbon tetrachloride	**117**	0.500	1.00	2.00	XD
108-90-7	Chlorobenzene	**99.5**	0.500	1.00	2.00	D
75-00-3	Chloroethane	**86.4**	1.00	2.00	4.00	D
67-66-3	Chloroform	**99.3**	0.500	1.00	2.00	D
74-87-3	Chloromethane	**90.6**	0.500	1.00	2.00	D
95-49-8	2-Chlorotoluene	**101**	0.500	1.00	2.00	D
106-43-4	4-Chlorotoluene	**103**	0.500	1.00	2.00	D
110-82-7	Cyclohexane	**112**	0.500	1.00	2.00	D
124-48-1	Dibromochloromethane	**92.4**	0.500	1.00	2.00	D
96-12-8	1,2-Dibromo-3-chloropropane	**95.7**	1.00	2.00	4.00	D
106-93-4	1,2-Dibromoethane (EDB)	**113**	0.500	1.00	2.00	D
74-95-3	Dibromomethane	**101**	0.500	1.00	2.00	D
95-50-1	1,2-Dichlorobenzene	**101**	0.500	1.00	2.00	D
541-73-1	1,3-Dichlorobenzene	**98.9**	0.500	1.00	2.00	D
106-46-7	1,4-Dichlorobenzene	**98.4**	0.500	1.00	2.00	D
75-71-8	Dichlorodifluoromethane	**83.7**	1.00	2.00	4.00	XD
75-34-3	1,1-Dichloroethane	**102**	0.500	1.00	2.00	D
107-06-2	1,2-Dichloroethane	**99.2**	0.500	1.00	2.00	D
75-35-4	1,1-Dichloroethene	**108**	0.500	1.00	2.00	D
156-59-2	cis-1,2-Dichloroethene	**105**	0.500	1.00	2.00	D
156-60-5	trans-1,2-Dichloroethene	**116**	0.500	1.00	2.00	D
540-59-0	1,2-Dichloroethene (total)	**221**	1.00	2.00	4.00	D
78-87-5	1,2-Dichloropropane	**108**	0.500	1.00	2.00	D
142-28-9	1,3-Dichloropropane	**111**	0.500	1.00	2.00	D
594-20-7	2,2-Dichloropropane	**109**	0.500	1.00	2.00	D
563-58-6	1,1-Dichloropropene	**102**	0.500	1.00	2.00	D
10061-01-5	cis-1,3-Dichloropropene	**120**	0.500	1.00	2.00	D
10061-02-6	trans-1,3-Dichloropropene	**93.2**	0.500	1.00	2.00	D

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L24003-MSD1 File ID: 1214703S.D

Sampled: Prepared: Analyzed: 12/24/15 16:14

Solids: Preparation: 5030B Dilution:

Batch: 5L24003 Sequence: 5L36403 Calibration: 5358001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene	**110**	0.500	1.00	2.00	D
87-68-3	Hexachlorobutadiene	**109**	0.500	1.00	2.00	BD
591-78-6	2-Hexanone	**226**	2.50	5.00	10.0	QD
98-82-8	Isopropylbenzene	**106**	0.500	1.00	2.00	D
99-87-6	p-Isopropyltoluene	**108**	0.500	1.00	2.00	D
75-09-2	Methylene chloride	**104**	1.00	2.00	4.00	D
79-20-9	Methyl Acetate	**125**	1.00	2.00	4.00	D
108-87-2	Methylcyclohexane	**110**	0.500	1.00	2.00	D
91-20-3	Naphthalene	**103**	0.500	1.00	2.00	D
108-10-1	4-Methyl-2-pentanone	**232**	2.50	5.00	10.0	D
1634-04-4	Methyl t-Butyl Ether	**120**	0.500	1.00	2.00	D
103-65-1	n-Propylbenzene	**104**	0.500	1.00	2.00	XD
100-42-5	Styrene	**111**	0.500	1.00	2.00	D
79-34-5	1,1,2,2-Tetrachloroethane	**113**	0.500	1.00	2.00	D
630-20-6	1,1,1,2-Tetrachloroethane	**114**	0.500	1.00	2.00	D
127-18-4	Tetrachloroethene	**106**	0.500	1.00	2.00	D
108-88-3	Toluene	**108**	0.500	1.00	2.00	D
87-61-6	1,2,3-Trichlorobenzene	**107**	0.500	1.00	2.00	BD
120-82-1	1,2,4-Trichlorobenzene	**105**	0.500	1.00	2.00	BD
79-00-5	1,1,2-Trichloroethane	**109**	0.500	1.00	2.00	D
71-55-6	1,1,1-Trichloroethane	**110**	0.500	1.00	2.00	D
79-01-6	Trichloroethene	**110**	0.500	1.00	2.00	D
75-69-4	Trichlorofluoromethane	**110**	1.00	2.00	4.00	D
96-18-4	1,2,3-Trichloropropane	**113**	1.00	2.00	4.00	D
108-67-8	1,3,5-Trimethylbenzene	**112**	0.500	1.00	2.00	D
95-63-6	1,2,4-Trimethylbenzene	**108**	0.500	1.00	2.00	D
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**108**	1.00	2.00	4.00	D
75-01-4	Vinyl chloride	**102**	0.500	1.00	2.00	D
108-38-3/106-42-	m,p-Xylene	**219**	1.00	2.00	4.00	D
95-47-6	o-Xylene	**101**	0.500	1.00	2.00	D
1330-20-7	Xylenes (total)	**320**	1.50	3.00	6.00	D

Total Target Analytes Reported: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.09	100	75 - 120	
Dibromofluoromethane	30.00	28.89	96.3	85 - 115	
1,2-Dichloroethane-d4	30.00	28.36	94.5	70 - 120	
Toluene-d8	30.00	29.68	98.9	85 - 120	

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Lab File ID:	1223TUN1.D	Injection Date:	12/23/15
Instrument ID:	MS-VOA6	Injection Time:	05:58
Sequence:	5L35714	Lab Sample ID:	5L35714-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	22	PASS
75	30 - 60% of 95	46.3	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.69	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	76.3	PASS
175	5 - 9% of 174	6.96	PASS
176	95 - 101% of 174	96.9	PASS
177	5 - 9% of 176	6.57	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Lab File ID:	1224TUN1.D	Injection Date:	12/24/15
Instrument ID:	MS-VOA6	Injection Time:	06:27
Sequence:	5L36403	Lab Sample ID:	5L36403-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	21	PASS
75	30 - 60% of 95	44.1	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.48	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	78.5	PASS
175	5 - 9% of 174	7.03	PASS
176	95 - 101% of 174	96.6	PASS
177	5 - 9% of 176	6.59	PASS

ANALYSIS SEQUENCE SUMMARY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L35714	Instrument:	MS-VOA6
Calibration:	5358001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L35714-TUN1	1223TUN1.D	12/23/15 05:58
Cal Standard	5L35714-CAL1	1223CAL1.D	12/23/15 07:00
Cal Standard	5L35714-CAL2	1223CAL2.D	12/23/15 07:29
Cal Standard	5L35714-CAL3	1223CAL3.D	12/23/15 07:58
Cal Standard	5L35714-CAL4	1223CAL4.D	12/23/15 08:27
Cal Standard	5L35714-CAL5	1223CAL5.D	12/23/15 08:56
Cal Standard	5L35714-CAL6	1223CAL6.D	12/23/15 09:25
Cal Standard	5L35714-CAL7	1223CAL7.D	12/23/15 09:53
Cal Standard	5L35714-CAL9	1223CAL9.D	12/23/15 10:51
Initial Cal Check	5L35714-ICV1	1223ICV1.D	12/23/15 11:49

ANALYSIS SEQUENCE SUMMARY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36403	Instrument:	MS-VOA6
Calibration:	5358001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L36403-TUN1	1224TUN1.D	12/24/15 06:27
Calibration Check	5L36403-CCV1	1224CCV1.D	12/24/15 06:58
LCS	5L24003-BS1	1224LCS1.D	12/24/15 07:33
Blank	5L24003-BLK1	1224BLK1.D	12/24/15 09:00
TB-01	1512147-01	1214701A.D	12/24/15 09:58
OTC538-GW-5382-151214	1512147-02	1214702B.D	12/24/15 14:19
OTC537-GW-5371-151214	1512147-03	1214703B.D	12/24/15 14:48
OTC537-GW-5371-FD-151214	1512147-04	1214704B.D	12/24/15 15:17
OTC537-GW-5371-151214	5L24003-MS1	1214703M.D	12/24/15 15:45
OTC537-GW-5371-151214	5L24003-MSD1	1214703S.D	12/24/15 16:14

INTERNAL STANDARD AREA AND RT SUMMARY
SW8260B

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Sequence: 5L36403
Instrument: MS-VOA6
Calibration: 5358001

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (5L36403-CCV1)			Lab File ID: 1224CCV1.D				Analyzed: 12/24/15 06:58		
Fluorobenzene	1160240	7.773	1023583	7.782	113	50 - 200	-0.0090	+/-0.50	
Chlorobenzene-d5	457993	10.896	410730	10.905	112	50 - 200	-0.0090	+/-0.50	
1,4-Dichlorobenzene-d4	387783	13.291	350825	13.299	111	50 - 200	-0.0080	+/-0.50	
LCS (5L24003-BS1)			Lab File ID: 1224LCS1.D				Analyzed: 12/24/15 07:33		
Fluorobenzene	1170358	7.777	1023583	7.773	114	50 - 200	0.0040	+/-0.50	
Chlorobenzene-d5	466219	10.9	410730	10.896	114	50 - 200	0.0040	+/-0.50	
1,4-Dichlorobenzene-d4	398878	13.285	350825	13.291	114	50 - 200	-0.0060	+/-0.50	
Blank (5L24003-BLK1)			Lab File ID: 1224BLK1.D				Analyzed: 12/24/15 09:00		
Fluorobenzene	1128168	7.768	1023583	7.773	110	50 - 200	-0.0050	+/-0.50	
Chlorobenzene-d5	459760	10.901	410730	10.896	112	50 - 200	0.0050	+/-0.50	
1,4-Dichlorobenzene-d4	406856	13.285	350825	13.291	116	50 - 200	-0.0060	+/-0.50	
TB-01 (1512147-01)			Lab File ID: 1214701A.D				Analyzed: 12/24/15 09:58		
Fluorobenzene	1081337	7.771	1023583	7.773	106	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	448581	10.894	410730	10.896	109	50 - 200	-0.0020	+/-0.50	
1,4-Dichlorobenzene-d4	393833	13.278	350825	13.291	112	50 - 200	-0.0130	+/-0.50	
OTC538-GW-5382-151214 (1512147-02)			Lab File ID: 1214702B.D				Analyzed: 12/24/15 14:19		
Fluorobenzene	975181	7.766	1023583	7.773	95	50 - 200	-0.0070	+/-0.50	
Chlorobenzene-d5	405417	10.899	410730	10.896	99	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	344798	13.284	350825	13.291	98	50 - 200	-0.0070	+/-0.50	
OTC537-GW-5371-151214 (1512147-03)			Lab File ID: 1214703B.D				Analyzed: 12/24/15 14:48		
Fluorobenzene	976716	7.772	1023583	7.773	95	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	404705	10.895	410730	10.896	99	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	349560	13.279	350825	13.291	100	50 - 200	-0.0120	+/-0.50	
OTC537-GW-5371-FD-151214 (1512147-04)			Lab File ID: 1214704B.D				Analyzed: 12/24/15 15:17		
Fluorobenzene	956272	7.767	1023583	7.773	93	50 - 200	-0.0060	+/-0.50	
Chlorobenzene-d5	397945	10.89	410730	10.896	97	50 - 200	-0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	340863	13.284	350825	13.291	97	50 - 200	-0.0070	+/-0.50	
Matrix Spike (5L24003-MS1)			Lab File ID: 1214703M.D				Analyzed: 12/24/15 15:45		
Fluorobenzene	979342	7.768	1023583	7.773	96	50 - 200	-0.0050	+/-0.50	
Chlorobenzene-d5	402669	10.891	410730	10.896	98	50 - 200	-0.0050	+/-0.50	
1,4-Dichlorobenzene-d4	342253	13.285	350825	13.291	98	50 - 200	-0.0060	+/-0.50	
Matrix Spike Dup (5L24003-MSD1)			Lab File ID: 1214703S.D				Analyzed: 12/24/15 16:14		
Fluorobenzene	1009391	7.766	1023583	7.773	99	50 - 200	-0.0070	+/-0.50	
Chlorobenzene-d5	409565	10.899	410730	10.896	100	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	348147	13.283	350825	13.291	99	50 - 200	-0.0080	+/-0.50	

INITIAL CALIBRATION DATA

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Acetone	1	~~0.1599283~~	2	8.890282E-02	4	8.613297E-02	10	8.451341E-02	20	8.898593E-02	100	9.548096E-02
Acetonitrile	5	6.756858E-02	10	6.294027E-02	20	5.876624E-02	50	6.018327E-02	100	5.953232E-02	500	5.905121E-02
Acrolein	2.5	3.402472E-02	5	3.464523E-02	10	3.490938E-02	25	3.787722E-02	50	3.900988E-02	250	4.280029E-02
Acrylonitrile	2.5	9.114241E-02	5	0.1022138	10	0.108778	25	0.1114773	50	0.11111	250	0.1200222
Benzene	0.5	1.127928	1	1.155492	2	1.203736	5	1.175321	10	1.132181	50	1.220073
Allyl chloride	0.5	0.1202125	1	0.1319499	2	0.131302	5	0.1348724	10	0.1300177	50	0.1435212
Bromobenzene	0.5	0.8104765	1	0.8019678	2	0.8093058	5	0.8685905	10	0.8203238	50	0.8773344
Bromochloromethane	0.5	0.143829	1	0.1590603	2	0.1652834	5	0.1649375	10	0.1589339	50	0.1662771
Tert-Amyl Methyl Ether	0.5	0.5482301	1	0.597499	2	0.5963207	5	0.6348277	10	0.6549816	50	0.7589955
Bromodichloromethane	0.5	0.2887536	1	0.317968	2	0.329698	5	0.3506519	10	0.3430713	50	0.3762673
Bromoform	0.5	0.3490674	1	0.3373949	2	0.3458491	5	0.3535187	10	0.3890836	50	0.4837003
Bromomethane	0.5	0.3063442	1	0.2777297	2	0.252906	5	0.2452525	10	0.2378687	50	0.2317223
Bromofluorobenzene	30	0.9111542	35	0.8820141	40	0.8843133	50	0.9008845	60	0.8971702	70	0.89285
n-Butylbenzene	0.5	2.172985	1	2.232167	2	2.273982	5	2.299998	10	2.278664	50	2.522971
2-Butanone	1	0.1422769	2	0.1295533	4	0.1405732	10	0.1379861	20	0.1537409	100	0.1681392
sec-Butylbenzene	0.5	2.542143	1	2.693393	2	2.783187	5	2.778111	10	2.826176	50	3.123372
tert-Butylbenzene	0.5	1.870016	1	1.946662	2	1.97483	5	2.055795	10	2.037993	50	2.224392
Carbon disulfide	0.5	1.007107	1	0.9770151	2	0.9894973	5	0.9734361	10	0.9737638	50	1.018399
Carbon tetrachloride	0.5	0.2179651	1	0.2422235	2	0.2464356	5	0.2515423	10	0.2585337	50	0.3029039
Chlorobenzene	0.5	1.669128	1	1.746796	2	1.708585	5	1.707708	10	1.677611	50	1.75814
Chloroethane	0.5	0.2320863	1	0.2044887	2	0.1969995	5	0.183115	10	0.1870336	50	0.1838821
Chloroform	0.5	0.5817679	1	0.5640689	2	0.5599186	5	0.5549241	10	0.5287776	50	0.5396827
2-Chloroethyl vinyl ether	1	0.1123303	2	0.1279352	4	0.1383	10	0.1515849	20	0.1583804	100	0.1650414
Chloromethane	0.5	0.3969144	1	0.4077562	2	0.3975057	5	0.3789218	10	0.3952888	50	0.4090966
1-Chlorohexane	0.5	1.013132	1	0.9603004	2	0.9194453	5	0.8427474	10	0.8312052	50	0.9094512
2-Chlorotoluene	0.5	2.015529	1	2.196694	2	2.274543	5	2.293229	10	2.234391	50	2.38692
Chloroprene	0.5	0.4218091	1	0.4625572	2	0.4616051	5	0.4507527	10	0.4519622	50	0.4792056
4-Chlorotoluene	0.5	2.373258	1	2.529668	2	2.589407	5	2.67097	10	2.59957	50	2.764991
Cyclohexane	0.5	0.4547382	1	0.4933923	2	0.5152617	5	0.4774704	10	0.4822883	50	0.5145893
Dibromochloromethane	0.5	0.4557601	1	0.503557	2	0.5094264	5	0.5511193	10	0.5848588	50	0.6900679
1,2-Dibromo-3-chloropropane	0.5	0.113784	1	0.1245415	2	0.1214736	5	0.1264372	10	0.1389275	50	0.1718192

INITIAL CALIBRATION DATA

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,2-Dibromoethane (EDB)	0.5	0.5811315	1	0.588218	2	0.6166233	5	0.6579501	10	0.6824635	50	0.7228584
Dibromomethane	0.5	0.1948965	1	0.2090682	2	0.2178228	5	0.2207603	10	0.2147816	50	0.2264042
1,2-Dichlorobenzene	0.5	1.313207	1	1.370129	2	1.363621	5	1.413211	10	1.374647	50	1.475652
1,3-Dichlorobenzene	0.5	1.49881	1	1.42597	2	1.447927	5	1.496799	10	1.433218	50	1.50183
trans-1,4-Dichloro-2-butene	0.5	0.1791203	1	0.2014413	2	0.2262413	5	0.2144913	10	0.2454715	50	0.2846565
cis-1,4-Dichloro-2-butene	0.5	0.1765614	1	0.1972123	2	0.2242556	5	0.2355671	10	0.2459654	50	0.3074212
1,4-Dichlorobenzene	0.5	1.502393	1	1.515643	2	1.515053	5	1.529546	10	1.477829	50	1.529007
Dichlorodifluoromethane	0.5	0.294962	1	0.2891173	2	0.3082229	5	0.2742953	10	0.3237979	50	0.3608418
1,1-Dichloroethane	0.5	0.5490822	1	0.5591841	2	0.5860952	5	0.5980987	10	0.5690065	50	0.595946
1,2-Dichloroethane	0.5	0.4333738	1	0.4265931	2	0.4229841	5	0.4226512	10	0.4057604	50	0.4206908
1,1-Dichloroethene	0.5	0.2417642	1	0.2580685	2	0.266871	5	0.2475902	10	0.247325	50	0.2655419
cis-1,2-Dichloroethene	0.5	0.3167525	1	0.3151287	2	0.3364167	5	0.3401357	10	0.3265442	50	0.3382315
trans-1,2-Dichloroethene	0.5	0.278954	1	0.2815459	2	0.3034438	5	0.2825862	10	0.2942638	50	0.2899212
1,2-Dichloroethene (total)	1	0.2978532	2	0.2983373	4	0.3199302	10	0.3113609	20	0.310404	100	0.3140764
1,2-Dichloropropane	0.5	0.2942925	1	0.3235244	2	0.3240964	5	0.3524348	10	0.3300582	50	0.3588044
1,3-Dichloropropane	0.5	0.9925111	1	1.038274	2	1.057874	5	1.090355	10	1.086438	50	1.133222
2,2-Dichloropropane	0.5	0.3249086	1	0.3452617	2	0.3502265	5	0.3435144	10	0.3358598	50	0.3585629
1,1-Dichloropropene	0.5	0.3997143	1	0.3903847	2	0.3906939	5	0.40016	10	0.3856827	50	0.4147867
cis-1,3-Dichloropropene	0.5	0.3537597	1	0.3852863	2	0.4104932	5	0.4372318	10	0.4279454	50	0.4845127
trans-1,3-Dichloropropene	0.5	0.725331	1	0.7475454	2	0.7856161	5	0.8393844	10	0.9050254	50	1.046258
Diisopropyl Ether	0.5	1.156779	1	1.17036	2	1.243288	5	1.277398	10	1.272413	50	1.363652
1,4-Dioxane	10	~~1.707323E-03~~	20	2.246994E-03	40	2.374825E-03	100	2.513117E-03	200	2.603381E-03	1000	2.794387E-03
Ethylbenzene	0.5	2.664179	1	2.732157	2	2.755665	5	2.847211	10	2.824072	50	3.021514
Ethyl tert-Butyl Ether	0.5	0.7536566	1	0.7945995	2	0.8174486	5	0.8558311	10	0.8665244	50	0.932936
Ethyl Methacrylate	0.5	~~0.5518433~~	1	0.6155565	2	0.6730408	5	0.6937363	10	0.7442217	50	0.8247898
Hexachlorobutadiene	0.5	0.4097589	1	0.3960644	2	0.3950697	5	0.3634873	10	0.3688788	50	0.4079246
Hexane	0.5	0.3446905	1	0.3467882	2	0.3369132	5	0.3099396	10	0.3213145	50	0.3380523
2-Hexanone	1	0.4387252	2	0.4055574	4	0.3936983	10	0.4015126	20	0.4345895	100	0.4697935
Iodomethane	0.5	0.2820582	1	0.3176627	2	0.335765	5	0.3672398	10	0.3756545	50	0.4855652
Isobutyl alcohol	10	~~7.620563E-03~~	20	5.034366E-03	40	5.025846E-03	100	3.987699E-03	200	5.356007E-03	1000	6.042741E-03
Isopropylbenzene	0.5	2.246225	1	2.301208	2	2.411003	5	2.40422	10	2.480136	50	2.660248

INITIAL CALIBRATION DATA

SW8260B

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Calibration: 5358001
Instrument: MS-VOA6
Matrix: Water
Calibration Dates: 12/23/15 7:00 12/23/15 10:51

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
p-Isopropyltoluene	0.5	2.26408	1	2.17693	2	2.238109	5	2.280423	10	2.278066	50	2.432656
Methacrylonitrile	5	0.1756625	10	0.1821378	20	0.1965852	50	0.1981631	100	0.2050923	500	0.2098075
Methylene chloride	0.5	~~0.4708071~~	1	0.3849504	2	0.3605761	5	0.3578332	10	0.3241007	50	0.3238475
Methyl Acetate	0.5	0.1934966	1	0.228302	2	0.2321137	5	0.2601573	10	0.257555	50	0.262521
Methylcyclohexane	0.5	0.3302041	1	0.3593054	2	0.3714378	5	0.3505896	10	0.3539191	50	0.3880713
Naphthalene	0.5	~~1.802462~~	1	1.82704	2	1.942627	5	2.018947	10	2.115048	50	2.374163
Methyl Methacrylate	0.5	0.2485813	1	0.244269	2	0.243146	5	0.2477273	10	0.2595093	50	0.2809766
4-Methyl-2-pentanone	1	0.2170826	2	0.2581906	4	0.2475605	10	0.2507756	20	0.269409	100	0.2932955
Methyl t-Butyl Ether	0.5	0.5032493	1	0.5726172	2	0.6188664	5	0.6190814	10	0.6455681	50	0.7133652
n-Propylbenzene	0.5	3.385714	1	3.558193	2	3.577686	5	3.614582	10	3.622869	50	3.966492
Propionitrile	5	3.426818E-02	10	3.622362E-02	20	4.316889E-02	50	4.015875E-02	100	4.104396E-02	500	0.0432549
Styrene	0.5	1.482192	1	1.495973	2	1.612219	5	1.732757	10	1.765876	50	1.927062
1,1,2,2-Tetrachloroethane	0.5	0.7833526	1	0.8476244	2	0.8867484	5	0.910079	10	0.9501264	50	1.004764
1,1,1,2-Tetrachloroethane	0.5	0.4941635	1	0.4579928	2	0.4667702	5	0.5160721	10	0.5160248	50	0.5846141
tert-Butyl alcohol	2.5	9.458749E-03	5	1.224856E-02	10	1.312709E-02	25	1.366053E-02	50	1.621635E-02	250	0.0167615
Tetrachloroethene	0.5	0.5977182	1	0.6625169	2	0.6672544	5	0.6641935	10	0.6483143	50	0.6944973
Toluene	0.5	1.566321	1	1.521033	2	1.553762	5	1.575633	10	1.543299	50	1.61693
1,2,3-Trichlorobenzene	0.5	0.8550007	1	0.842446	2	0.8748342	5	0.8845369	10	0.9013648	50	0.9668746
1,2,4-Trichlorobenzene	0.5	1.01945	1	0.9656065	2	0.9846957	5	0.9912417	10	1.013186	50	1.076852
1,1,2-Trichloroethane	0.5	0.4860943	1	0.5139926	2	0.5322382	5	0.5358277	10	0.5577476	50	0.5856167
1,1,1-Trichloroethane	0.5	0.3387255	1	0.340957	2	0.3603123	5	0.3545792	10	0.3547173	50	0.3873114
Tetrahydrofuran	0.5	2.477291E-02	1	0.0217067	2	2.451632E-02	5	2.735972E-02	10	3.127421E-02	50	3.019251E-02
Trichloroethene	0.5	0.305979	1	0.3037411	2	0.3057092	5	0.310457	10	0.2933739	50	0.3172379
Trichlorofluoromethane	0.5	0.396671	1	0.3983225	2	0.4077312	5	0.3882162	10	0.38738	50	0.4229922
1,2,3-Trichloropropane	0.5	0.1389695	1	0.1810806	2	0.1895048	5	0.1855211	10	0.1952848	50	0.203339
1,3,5-Trimethylbenzene	0.5	2.28148	1	2.202909	2	2.328675	5	2.372629	10	2.396473	50	2.552005
1,2,4-Trimethylbenzene	0.5	2.299222	1	2.355586	2	2.447127	5	2.535094	10	2.506787	50	2.697606
1,1,2-Trichloro-1,2,2-trifluoroethan	0.5	0.2742063	1	0.2898195	2	0.2870892	5	0.28541	10	0.2620385	50	0.2857562
Vinyl chloride	0.5	0.3034834	1	0.2911628	2	0.2721777	5	0.2376038	10	0.2536006	50	0.2343499
m,p-Xylene	1	2.052191	2	2.029293	4	2.138467	10	2.200534	20	2.167754	100	2.329226
o-Xylene	0.5	2.127429	1	2.172453	2	2.229213	5	2.323403	10	2.270518	50	2.332957

INITIAL CALIBRATION DATA

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Vinyl acetate	1	0.5092143	2	0.5405456	4	0.5692286	10	0.6526904	20	0.6531802	100	0.762364
Xylenes (total)	1.5	2.07727	3	2.077013	6	2.168716	15	2.24149	30	2.202009	150	2.33047
Dibromofluoromethane	30	0.2974079	35	0.3011984	40	0.3014452	50	0.3075521	60	0.3098816	70	0.3023098
1,2-Dichloroethane-d4	30	6.162694E-02	35	6.278849E-02	40	6.497756E-02	50	6.543516E-02	60	6.416474E-02	70	6.479451E-02
Toluene-d8	30	2.223898	35	2.202939	40	2.173792	50	2.23508	60	2.240503	70	2.213907
tert-Amyl alcohol	2.5	~~6.890157E-03~~	5	8.188096E-03	10	8.695535E-03	25	9.927793E-03	50	1.119339E-02	250	1.313574E-02
tert-Amyl ethyl ether	0.5	0.6333223	1	0.6786167	2	0.6966359	5	0.7374656	10	0.741449	50	0.820594
1,3,5-Trichlorobenzene	0.5	1.032586	1	1.105165	2	1.049706	5	1.090636	10	1.064764	50	1.151694
Diethyl ether	0.5	0.2241736	1	0.2368198	2	0.2358222	5	0.2434946	10	0.2487288	50	0.2632149
Cyclohexanone (outside certificatio	1.25	6.479265E-02	2.5	6.405432E-02	5	6.572765E-02	12.5	6.461119E-02	25	6.559483E-02	125	6.692112E-02
Ethyl Acetate (outside certification	0.5	0.321074	1	0.3574431	2	0.3777841	5	0.3738039	10	0.3882394	50	0.4114108

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Acetone	200	9.438067E-02	400	9.774616E-02								
Acetonitrile	1000	5.687961E-02	2000	5.672918E-02								
Acrolein	500	4.376907E-02	1000	4.577678E-02								
Acrylonitrile	500	0.1172281	1000	0.1206209								
Benzene	100	1.254334	200	1.267788								
Allyl chloride	100	0.1438479	200	0.1423652								
Bromobenzene	100	0.9103983	200	0.9343913								
Bromochloromethane	100	0.1660919	200	0.1600184								
Tert-Amyl Methyl Ether	100	0.7870529	200	0.8200667								
Bromodichloromethane	100	0.3910226	200	0.3866944								
Bromoform	100	0.5186948	200	0.5733695								
Bromomethane	100	0.2452614	200	0.2337241								
Bromofluorobenzene	30	0.9263993	30	0.9353797								
n-Butylbenzene	100	2.657363	200	2.729979								
2-Butanone	200	0.1663317	400	0.1809163								
sec-Butylbenzene	100	3.344794	200	3.482274								
tert-Butylbenzene	100	2.344082	200	2.422919								
Carbon disulfide	100	1.037676	200	1.043859								
Carbon tetrachloride	100	0.3153906	200	0.3200054								
Chlorobenzene	100	1.825249	200	1.892994								
Chloroethane	100	0.180913	200	0.1754194								
Chloroform	100	0.5418897	200	0.5335874								
2-Chloroethyl vinyl ether	200	0.1579795	400	0.1552854								
Chloromethane	100	0.4101451	200	0.342044								
1-Chlorohexane	100	0.9540633	200	0.9619986								
2-Chlorotoluene	100	2.520565	200	2.60832								
Chloroprene	100	0.4843337	200	0.4830476								
4-Chlorotoluene	100	2.918579	200	3.042678								
Cyclohexane	100	0.5216851	200	0.5137032								
Dibromochloromethane	100	0.7384654	200	0.7875525								
1,2-Dibromo-3-chloropropane	100	0.176305	200	0.194718								

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,2-Dibromoethane (EDB)	100	0.7525696	200	0.7880145								
Dibromomethane	100	0.2294525	200	0.2258484								
1,2-Dichlorobenzene	100	1.527244	200	1.563501								
1,3-Dichlorobenzene	100	1.570648	200	1.60853								
trans-1,4-Dichloro-2-butene	100	0.2944904	200	0.32073								
cis-1,4-Dichloro-2-butene	100	0.3202503	200	0.3488197								
1,4-Dichlorobenzene	100	1.586907	200	1.613793								
Dichlorodifluoromethane	100	0.3678141	200	0.3948439								
1,1-Dichloroethane	100	0.6028441	200	0.5968631								
1,2-Dichloroethane	100	0.4256645	200	0.4158572								
1,1-Dichloroethene	100	0.2682808	200	0.2674134								
cis-1,2-Dichloroethene	100	0.3327239	200	0.3354713								
trans-1,2-Dichloroethene	100	0.2929284	200	0.3064344								
1,2-Dichloroethene (total)	200	0.3128261	400	0.3209528								
1,2-Dichloropropane	100	0.3535865	200	0.345612								
1,3-Dichloropropane	100	1.157058	200	1.182901								
2,2-Dichloropropane	100	0.3676321	200	0.3620233								
1,1-Dichloropropene	100	0.4165981	200	0.4100588								
cis-1,3-Dichloropropene	100	0.5041429	200	0.5079963								
trans-1,3-Dichloropropene	100	1.098891	200	1.113675								
Diisopropyl Ether	100	1.401249	200	1.428062								
1,4-Dioxane	2000	0.0027488	4000	2.911294E-03								
Ethylbenzene	100	3.29138	200	3.36242								
Ethyl tert-Butyl Ether	100	0.9681711	200	0.9789197								
Ethyl Methacrylate	100	0.8507363	200	0.9028619								
Hexachlorobutadiene	100	0.4348852	200	0.4395741								
Hexane	100	0.3394664	200	0.33166								
2-Hexanone	200	0.469076	400	0.5222831								
Iodomethane	100	0.5136164	200	0.5150628								
Isobutyl alcohol	2000	6.04374E-03	4000	7.154059E-03								
Isopropylbenzene	100	2.875542	200	3.023212								

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
p-Isopropyltoluene	100	2.585818	200	2.687827								
Methacrylonitrile	1000	0.2081647	2000	0.2084948								
Methylene chloride	100	0.3180835	200	0.3047355								
Methyl Acetate	100	0.2578961	200	0.2668692								
Methylcyclohexane	100	0.4017259	200	0.4014172								
Naphthalene	100	2.45423	200	2.702352								
Methyl Methacrylate	100	0.2824587	200	0.293567								
4-Methyl-2-pentanone	200	0.2941185	400	0.3194954								
Methyl t-Butyl Ether	100	0.7353812	200	0.7656842								
n-Propylbenzene	100	4.269424	200	4.246111								
Propionitrile	1000	4.174008E-02	2000	4.450111E-02								
Styrene	100	2.001345	200	2.040329								
1,1,2,2-Tetrachloroethane	100	1.019537	200	1.088639								
1,1,1,2-Tetrachloroethane	100	0.6277255	200	0.6412829								
tert-Butyl alcohol	500	1.737362E-02	1000	~~2.184887E-02~~								
Tetrachloroethene	100	0.7173362	200	0.7417008								
Toluene	100	1.658832	200	1.64169								
1,2,3-Trichlorobenzene	100	1.00507	200	1.046181								
1,2,4-Trichlorobenzene	100	1.144662	200	1.164428								
1,1,2-Trichloroethane	100	0.5923672	200	0.6042356								
1,1,1-Trichloroethane	100	0.3973891	200	0.3977139								
Tetrahydrofuran	100	3.006732E-02	200	3.252848E-02								
Trichloroethene	100	0.3227249	200	0.3151188								
Trichlorofluoromethane	100	0.4229672	200	0.4541878								
1,2,3-Trichloropropane	100	0.2043481	200	0.2147047								
1,3,5-Trimethylbenzene	100	2.744319	200	2.836408								
1,2,4-Trimethylbenzene	100	2.854899	200	2.961399								
1,1,2-Trichloro-1,2,2-trifluoroethan	100	0.2881636	200	0.288464								
Vinyl chloride	100	0.2537346	200	0.1982588								
m,p-Xylene	200	2.476192	400	2.184661								
o-Xylene	100	2.427307	200	2.500048								

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Vinyl acetate	200	0.8136957	400	0.8913668								
Xylenes (total)	300	2.459898	600	2.28979								
Dibromofluoromethane	30	0.289953	30	0.2881316								
1,2-Dichloroethane-d4	30	6.144494E-02	30	6.333233E-02								
Toluene-d8	30	2.253244	30	2.315587								
tert-Amyl alcohol	500	1.311763E-02	1000	0.0160535								
tert-Amyl ethyl ether	100	0.85118	200	0.8709679								
1,3,5-Trichlorobenzene	100	1.221769	200	1.233718								
Diethyl ether	100	0.2712595	200	0.2680585								
Cyclohexanone (outside certificatio	250	0.0628854	500	7.134285E-02								
Ethyl Acetate (outside certification	100	0.4059458	200	0.4120583								

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acetone	9.087756E-02	5.522645	3.568143	0.1940707			15	
Acetonitrile	6.020633E-02	5.912416	3.644875	0.4010196			15	
Acrolein	3.910157E-02	11.62922	3.4565	0.1139564			15	
Acrylonitrile	0.1103241	8.97176	4.40725	0.1377072			15	
Benzene	1.192107	4.466956	7.51925	0.0425237			15	
Allyl chloride	0.1347611	6.088044	4.4875	7.573553E-02			15	
Bromobenzene	0.8540986	5.959254	12.25713	2.842989E-02			15	
Bromochloromethane	0.1605539	4.648275	6.600625	7.055747E-02			15	
Tert-Amyl Methyl Ether	0.6747468	14.91922	7.710125	2.801757E-02			15	
Bromodichloromethane	0.3480159	10.26054	8.50825	2.746028E-02			15	
Bromoform	0.4188348	22.11179	11.666	3.991566E-02	0.9962959		SPCC (0.1)	
Bromomethane	0.2538511	10.12526	2.646	8.897945E-02			15	
Bromofluorobenzene	0.9037707	2.127814	12.09475	0.0216835			15	
n-Butylbenzene	2.396014	8.788992	13.68337	3.119694E-02			15	
2-Butanone	0.1524397	11.70562	6.05625	8.442463E-02			15	
sec-Butylbenzene	2.946681	11.285	13.14525	2.354759E-02			15	
tert-Butylbenzene	2.109586	9.420459	12.91225	1.181403E-02			15	
Carbon disulfide	1.002594	2.848903	4.58075	9.873751E-02			15	
Carbon tetrachloride	0.269375	14.1339	7.486375	6.152652E-02			15	
Chlorobenzene	1.748276	4.401357	10.94312	0.0394218			SPCC (0.3)	
Chloroethane	0.1929922	9.488544	2.7765	0.1411398			15	
Chloroform	0.5505771	3.233852	6.577125	3.144296E-02			CCC (30)	
2-Chloroethyl vinyl ether	0.1458546	12.41666	8.872875	2.945276E-02			15	
Chloromethane	0.3922091	5.783181	2.073625	0.1610972			SPCC (0.1)	
1-Chlorohexane	0.9240429	6.72797	10.9135	3.770207E-02			15	
2-Chlorotoluene	2.316274	8.089093	12.47763	2.481517E-02			15	
Chloroprene	0.4619092	4.541772	5.869125	5.822379E-02			15	
4-Chlorotoluene	2.68614	8.044138	12.538	2.157416E-02			15	
Cyclohexane	0.4966411	4.769183	7.417375	6.203943E-02			15	
Dibromochloromethane	0.6026009	20.16255	10.17937	3.279903E-02	0.9980538		0.99	
1,2-Dibromo-3-chloropropane	0.1460008	20.8571	14.28187	1.792402E-02	0.9970136		0.99	
1,2-Dibromoethane (EDB)	0.6737286	11.38208	10.39262	0.043929			15	

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dibromomethane	0.2173793	5.192569	8.445375	0.0363777			15	
1,2-Dichlorobenzene	1.425151	6.171602	13.64013	2.155767E-02			15	
1,3-Dichlorobenzene	1.497966	4.326636	13.23162	3.468692E-02			15	
trans-1,4-Dichloro-2-butene	0.2458303	20.20621	12.06125	0.0216149	0.9976433		0.99	
cis-1,4-Dichloro-2-butene	0.2570066	24.01788	11.74988	6.17904E-03	0.9974753		0.99	
1,4-Dichlorobenzene	1.533771	2.922058	13.32238	2.622182E-02			15	
Dichlorodifluoromethane	0.3267369	13.19722	1.867875	0.1165328			15	
1,1-Dichloroethane	0.58214	3.495585	5.601875	3.852637E-02			SPCC (0.1)	
1,2-Dichloroethane	0.4216969	1.938428	7.345875	2.756258E-02			15	
1,1-Dichloroethene	0.2578569	4.186233	4.0365	0.0906405			CCC (30)	
cis-1,2-Dichloroethene	0.3301756	2.935012	6.32225	6.379379E-02			15	
trans-1,2-Dichloroethene	0.2912597	3.465924	5.219	6.167085E-02			15	
1,2-Dichloroethene (total)	0.3107176	2.7862	6.32225	6.379379E-02			15	
1,2-Dichloropropane	0.3353011	6.436192	8.331	2.104334E-02			CCC (30)	
1,3-Dichloropropane	1.092329	5.808217	9.9245	0.0354732			15	
2,2-Dichloropropane	0.3484987	4.065006	6.429375	0.0342551			15	
1,1-Dichloropropene	0.4010099	2.937485	7.36525	2.908015E-02			15	
cis-1,3-Dichloropropene	0.438921	12.82017	9.086	3.717286E-02			15	
trans-1,3-Dichloropropene	0.9077158	17.50153	9.559	3.259131E-02	0.9995924		0.99	
Diisopropyl Ether	1.28915	7.843451	5.976125	3.620577E-02			15	
1,4-Dioxane	2.598971E-03	9.155272	8.494572	8.246196E-02			15	
Ethylbenzene	2.937325	8.950155	11.09113	3.562343E-02			CCC (30)	
Ethyl tert-Butyl Ether	0.8710109	9.472304	6.450375	6.318862E-02			15	
Ethyl Methacrylate	0.757849	13.82602	9.750143	2.325686E-02			15	
Hexachlorobutadiene	0.4019554	6.814543	15.638	1.702812E-02			15	
Hexane	0.3336031	3.717567	5.81875	0.0353249			15	
2-Hexanone	0.4419044	9.870153	9.8605	4.484751E-02			15	
Iodomethane	0.3990781	23.18824	4.23225	5.219995E-02	0.9995136		0.99	
Isobutyl alcohol	5.520637E-03	18.22308	6.674714	5.509433E-02	0.9926747		0.99	
Isopropylbenzene	2.550224	10.90808	11.98738	3.243532E-02			15	
p-Isopropyltoluene	2.367989	7.718645	13.28312	0.0277196			15	
Methacrylonitrile	0.1980135	6.489243	6.223875	0.1270099			15	

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Methylene chloride	0.339161	8.506861	4.529572	9.614489E-02			15	
Methyl Acetate	0.2448639	10.28098	4.39625	0.1770159			15	
Methylcyclohexane	0.3695838	6.976933	8.66225	0.0337085			15	
Naphthalene	2.204915	14.25193	15.50414	7.729398E-03			15	
Methyl Methacrylate	0.2625294	7.662602	8.468875	2.195218E-02			15	
4-Methyl-2-pentanone	0.268741	12.07782	9.009625	3.351354E-02			15	
Methyl t-Butyl Ether	0.6467266	13.58978	5.207875	4.040556E-02			15	
n-Propylbenzene	3.780134	8.882646	12.39512	3.527224E-02			15	
Propionitrile	4.054494E-02	8.832834	5.773	8.016298E-02			15	
Styrene	1.757219	12.43419	11.56387	3.876785E-02			15	
1,1,2,2-Tetrachloroethane	0.9363588	10.6348	11.91338	2.570466E-02			SPCC (0.3)	
1,1,1,2-Tetrachloroethane	0.5380807	13.18833	10.98738	2.789773E-02			15	
tert-Butyl alcohol	1.412091E-02	20.11018	4.184429	0.1578768	0.9995051		0.99	
Tetrachloroethene	0.6741914	6.545924	10.29175	2.653653E-02			15	
Toluene	1.584688	3.1031	9.559	3.259131E-02			CCC (30)	
1,2,3-Trichlorobenzene	0.9220385	8.116775	15.78912	8.300734E-03			15	
1,2,4-Trichlorobenzene	1.045015	7.206936	15.35588	1.171172E-02			15	
1,1,2-Trichloroethane	0.551015	7.499583	9.7115	4.325422E-02			15	
1,1,1-Trichloroethane	0.3664632	6.607836	7.145125	4.306972E-02			15	
Tetrahydrofuran	2.780227E-02	13.76774	6.7965	0.1531795			15	
Trichloroethene	0.3092927	2.960469	8.283125	5.110203E-02			15	
Trichlorofluoromethane	0.4098085	5.529605	3.266875	6.643182E-02			15	
1,2,3-Trichloropropane	0.1890941	12.19026	12.03813	3.961455E-02			15	
1,3,5-Trimethylbenzene	2.464362	9.173065	12.57375	2.254071E-02			15	
1,2,4-Trimethylbenzene	2.582215	9.129868	12.94187	1.909411E-02			15	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.2826184	3.40621	4.12025	7.594548E-02			15	
Vinyl chloride	0.2555464	13.14873	2.22225	9.519984E-02			CCC (30)	
m,p-Xylene	2.19729	6.639227	11.20425	0.0230098			15	
o-Xylene	2.297916	5.449134	11.59338	0.0397025			15	
Vinyl acetate	0.6740357	20.32668	5.675875	0.0740317	0.9969463		0.99	
Xylenes (total)	2.230832	5.818039	11.59338	0.0397025			15	
Dibromofluoromethane	0.2997349	2.557996	6.75225	4.719333E-02			15	

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5358001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	12/23/15 7:00 12/23/15 10:51

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,2-Dichloroethane-d4	6.357058E-02	2.398364	7.25325	3.896929E-02			15	
Toluene-d8	2.232369	1.865897	9.483875	2.776809E-02			15	
tert-Amyl alcohol	0.0114731	24.50361	6.953571	5.086623E-02	0.9898854		0.99	*
tert-Amyl ethyl ether	0.7537789	11.38218	8.60325	3.882204E-02			15	
1,3,5-Trichlorobenzene	1.118755	6.840522	14.804	2.248121E-02			15	
Diethyl ether	0.2489465	6.839737	3.68075	6.202859E-02			15	
Cyclohexanone (outside certification)	6.574125E-02	3.898105	11.7115	0.0329822			15	
Ethyl Acetate (outside certification)	0.3809699	8.164482	6.434375	7.113381E-02			15	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	5358001
Lab File ID:	1223ICV1.D	Calibration Date:	12/23/15 07:00
Sequence:	5L35714	Injection Date:	12/23/15
Lab Sample ID:	5L35714-ICV1	Injection Time:	11:49

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Acetone	A	100.0	110.9	9.087756E-02	0.1007739		10.9	20
Benzene	A	50.00	50.02	1.192107	1.192469		0.03	20
Bromobenzene	A	50.00	51.23	0.8540986	0.8750779		2.5	20
Bromochloromethane	A	50.00	50.04	0.1605539	0.1606962		0.09	20
Bromodichloromethane	A	50.00	53.77	0.3480159	0.3742838		7.5	20
Bromoform	A	50.00	41.78	0.4188348	0.4664349	0.1	-16.4	20
Bromomethane	A	50.00	47.48	0.2538511	0.2410619		-5.0	20
n-Butylbenzene	A	50.00	51.71	2.396014	2.477883		3.4	20
2-Butanone	A	100.0	109.0	0.1524397	0.1661984		9.0	20
sec-Butylbenzene	A	50.00	52.00	2.946681	3.06476		4.0	20
tert-Butylbenzene	A	50.00	52.85	2.109586	2.229892		5.7	20
Carbon disulfide	A	50.00	47.28	1.002594	0.9479872		-5.4	20
Carbon tetrachloride	A	50.00	53.42	0.269375	0.2878235		6.8	20
Chlorobenzene	A	50.00	49.93	1.748276	1.74574	0.3	-0.1	20
Chloroethane	A	50.00	42.10	0.1929922	0.162499		-15.8	20
Chloroform	A	50.00	45.87	0.5505771	0.5050639		-8.3	20
Chloromethane	A	50.00	48.13	0.3922091	0.3775343	0.1	-3.7	20
2-Chlorotoluene	A	50.00	49.76	2.316274	2.305165		-0.5	20
4-Chlorotoluene	A	50.00	50.00	2.68614	2.686295		0.006	20
Cyclohexane	A	50.00	54.30	0.4966411	0.5393027		8.6	20
Dibromochloromethane	A	50.00	43.46	0.6026009	0.6719501		-13.1	20
1,2-Dibromo-3-chloropropane	A	50.00	43.91	0.1460008	0.1668299		-12.2	20
1,2-Dibromoethane (EDB)	A	50.00	53.37	0.6737286	0.7191965		6.7	20
Dibromomethane	A	50.00	49.23	0.2173793	0.214018		-1.5	20
1,2-Dichlorobenzene	A	50.00	50.54	1.425151	1.440527		1.1	20
1,3-Dichlorobenzene	A	50.00	49.12	1.497966	1.471597		-1.8	20
1,4-Dichlorobenzene	A	50.00	49.34	1.533771	1.513485		-1.3	20
Dichlorodifluoromethane	A	50.00	51.27	0.3267369	0.335007		2.5	20
1,1-Dichloroethane	A	50.00	49.88	0.58214	0.5807395	0.1	-0.2	20

INITIAL CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	5358001
Lab File ID:	1223ICV1.D	Calibration Date:	12/23/15 07:00
Sequence:	5L35714	Injection Date:	12/23/15
Lab Sample ID:	5L35714-ICV1	Injection Time:	11:49

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
1,2-Dichloroethane	A	50.00	45.44	0.4216969	0.383261		-9.1	20
1,1-Dichloroethene	A	50.00	48.77	0.2578569	0.2515136		-2.5	20
cis-1,2-Dichloroethene	A	50.00	49.97	0.3301756	0.3300092		-0.05	20
trans-1,2-Dichloroethene	A	50.00	44.73	0.2912597	0.2605838		-10.5	20
1,2-Dichloroethene (total)	A	100.0	94.71	0.3107176	0.2952965		-5.0	20
1,2-Dichloropropane	A	50.00	50.33	0.3353011	0.3375252		0.7	20
1,3-Dichloropropane	A	50.00	52.90	1.092329	1.155728		5.8	20
2,2-Dichloropropane	A	50.00	48.77	0.3484987	0.3399057		-2.5	20
1,1-Dichloropropene	A	50.00	49.50	0.4010099	0.3969917		-1.0	20
cis-1,3-Dichloropropene	A	50.00	55.80	0.438921	0.4898372		11.6	20
trans-1,3-Dichloropropene	A	50.00	44.04	0.9077158	0.9750399		-11.9	20
Ethylbenzene	A	50.00	52.34	2.937325	3.074976		4.7	20
Hexachlorobutadiene	A	50.00	46.60	0.4019554	0.374593		-6.8	20
2-Hexanone	A	100.0	107.0	0.4419044	0.4728145		7.0	20
Isopropylbenzene	A	50.00	52.04	2.550224	2.654441		4.1	20
p-Isopropyltoluene	A	50.00	51.43	2.367989	2.4355		2.9	20
Methylene chloride	A	50.00	46.06	0.339161	0.3124245		-7.9	20
Methyl Acetate	A	50.00	55.89	0.2448639	0.2736851		11.8	20
Methylcyclohexane	A	50.00	53.54	0.3695838	0.3957473		7.1	20
Naphthalene	A	50.00	55.37	2.204915	2.441796		10.7	20
4-Methyl-2-pentanone	A	100.0	106.4	0.268741	0.2859993		6.4	20
Methyl t-Butyl Ether	A	50.00	54.55	0.6467266	0.7055594		9.1	20
n-Propylbenzene	A	50.00	51.36	3.780134	3.883014		2.7	20
Styrene	A	50.00	54.23	1.757219	1.905734		8.5	20
1,1,2,2-Tetrachloroethane	A	50.00	52.73	0.9363588	0.9874341	0.3	5.5	20
1,1,1,2-Tetrachloroethane	A	50.00	53.18	0.5380807	0.5722817		6.4	20
Tetrachloroethene	A	50.00	51.86	0.6741914	0.6992135		3.7	20
Toluene	A	50.00	51.27	1.584688	1.624857		2.5	20
1,2,3-Trichlorobenzene	A	50.00	53.60	0.9220385	0.9885162		7.2	20

INITIAL CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	5358001
Lab File ID:	1223ICV1.D	Calibration Date:	12/23/15 07:00
Sequence:	5L35714	Injection Date:	12/23/15
Lab Sample ID:	5L35714-ICV1	Injection Time:	11:49

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
1,2,4-Trichlorobenzene	A	50.00	52.59	1.045015	1.099236		5.2	20
1,1,2-Trichloroethane	A	50.00	51.66	0.551015	0.5692684		3.3	20
1,1,1-Trichloroethane	A	50.00	50.67	0.3664632	0.3713863		1.3	20
Trichloroethene	A	50.00	49.50	0.3092927	0.3061818		-1.0	20
Trichlorofluoromethane	A	50.00	50.73	0.4098085	0.4158089		1.5	20
1,2,3-Trichloropropane	A	50.00	52.34	0.1890941	0.1979289		4.7	20
1,3,5-Trimethylbenzene	A	50.00	52.01	2.464362	2.56326		4.0	20
1,2,4-Trimethylbenzene	A	50.00	51.53	2.582215	2.661222		3.1	20
1,1,2-Trichloro-1,2,2-trifluoroethane	A	50.00	48.88	0.2826184	0.2762953		-2.2	20
Vinyl chloride	A	50.00	48.37	0.2555464	0.2472055		-3.3	20
m,p-Xylene	A	100.0	104.5	2.19729	2.29611		4.5	20
o-Xylene	A	50.00	49.71	2.297916	2.284758		-0.6	20
Xylenes (total)	A	150.0	154.2	2.230832	2.292326		2.8	20
Bromofluorobenzene	A	30.00	29.94	0.9037707	0.9021113		-0.2	20
Dibromofluoromethane	A	30.00	28.56	0.2997349	0.2853928		-4.8	20
1,2-Dichloroethane-d4	A	30.00	28.88	6.357058E-02	6.119441E-02		-3.7	20
Toluene-d8	A	30.00	30.14	2.232369	2.243131		0.5	20

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	5358001
Lab File ID:	1224CCV1.D	Calibration Date:	12/23/15 07:00
Sequence:	5L36403	Injection Date:	12/24/15
Lab Sample ID:	5L36403-CCV1	Injection Time:	06:58

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	A	200.0	206.4	9.087756E-02	9.376409E-02		3.2	20
Benzene	A	100.0	108.9	1.192107	1.29779		8.9	20
Bromobenzene	A	100.0	108.6	0.8540986	0.9274932		8.6	20
Bromochloromethane	A	100.0	103.8	0.1605539	0.1666853		3.8	20
Bromodichloromethane	A	100.0	111.5	0.3480159	0.387864		11.5	20
Bromoform	A	100.0	97.60	0.4188348	0.5448516	0.1	-2.4	20
Bromomethane	A	100.0	99.88	0.2538511	0.2535544		-0.1	20
n-Butylbenzene	A	100.0	118.2	2.396014	2.83122		18.2	20
2-Butanone	A	200.0	222.4	0.1524397	0.1695042		11.2	20
sec-Butylbenzene	A	100.0	119.3	2.946681	3.516812		19.3	20
tert-Butylbenzene	A	100.0	115.5	2.109586	2.436698		15.5	20
Carbon disulfide	A	100.0	111.6	1.002594	1.118679		11.6	20
Carbon tetrachloride	A	100.0	121.0	0.269375	0.3259599		21.0	20 *
Chlorobenzene	A	100.0	108.2	1.748276	1.891147	0.3	8.2	20
Chloroethane	A	100.0	106.0	0.1929922	0.2046521		6.0	20
Chloroform	A	100.0	97.99	0.5505771	0.5395152		-2.0	20
Chloromethane	A	100.0	104.1	0.3922091	0.4081729	0.1	4.1	20
2-Chlorotoluene	A	100.0	113.0	2.316274	2.617378		13.0	20
4-Chlorotoluene	A	100.0	112.9	2.68614	3.031318		12.9	20
Cyclohexane	A	100.0	113.1	0.4966411	0.5618288		13.1	20
Dibromochloromethane	A	100.0	98.71	0.6026009	0.76308		-1.3	20
1,2-Dibromo-3-chloropropane	A	100.0	96.20	0.1460008	0.1827728		-3.8	20
1,2-Dibromoethane (EDB)	A	100.0	113.5	0.6737286	0.7648322		13.5	20
Dibromomethane	A	100.0	104.9	0.2173793	0.2279334		4.9	20
1,2-Dichlorobenzene	A	100.0	110.2	1.425151	1.570833		10.2	20
1,3-Dichlorobenzene	A	100.0	108.1	1.497966	1.619711		8.1	20
1,4-Dichlorobenzene	A	100.0	107.1	1.533771	1.642483		7.1	20
Dichlorodifluoromethane	A	100.0	129.9	0.3267369	0.424415		29.9	20 *
1,1-Dichloroethane	A	100.0	106.9	0.58214	0.6223265	0.1	6.9	20

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	5358001
Lab File ID:	1224CCV1.D	Calibration Date:	12/23/15 07:00
Sequence:	5L36403	Injection Date:	12/24/15
Lab Sample ID:	5L36403-CCV1	Injection Time:	06:58

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,2-Dichloroethane	A	100.0	97.77	0.4216969	0.4122763		-2.2	20
1,1-Dichloroethene	A	100.0	110.1	0.2578569	0.2839582		10.1	20
cis-1,2-Dichloroethene	A	100.0	102.7	0.3301756	0.338942		2.7	20
trans-1,2-Dichloroethene	A	100.0	104.8	0.2912597	0.3051333		4.8	20
1,2-Dichloroethene (total)	A	200.0	207.4	0.3107176	0.3220377		3.6	20
1,2-Dichloropropane	A	100.0	108.7	0.3353011	0.3644574		8.7	20
1,3-Dichloropropane	A	100.0	108.6	1.092329	1.186657		8.6	20
2,2-Dichloropropane	A	100.0	116.7	0.3484987	0.4067316		16.7	20
1,1-Dichloropropene	A	100.0	109.8	0.4010099	0.440259		9.8	20
cis-1,3-Dichloropropene	A	100.0	118.8	0.438921	0.5212322		18.8	20
trans-1,3-Dichloropropene	A	100.0	102.9	0.9077158	1.138986		2.9	20
Ethylbenzene	A	100.0	116.7	2.937325	3.427411		16.7	20
Hexachlorobutadiene	A	100.0	109.6	0.4019554	0.4403857		9.6	20
2-Hexanone	A	200.0	221.4	0.4419044	0.4891608		10.7	20
Isopropylbenzene	A	100.0	118.1	2.550224	3.012708		18.1	20
p-Isopropyltoluene	A	100.0	115.6	2.367989	2.73728		15.6	20
Methylene chloride	A	100.0	95.57	0.339161	0.3241372		-4.4	20
Methyl Acetate	A	100.0	106.1	0.2448639	0.2597284		6.1	20
Methylcyclohexane	A	100.0	114.9	0.3695838	0.4246498		14.9	20
Naphthalene	A	100.0	113.6	2.204915	2.50524		13.6	20
4-Methyl-2-pentanone	A	200.0	223.8	0.268741	0.3006687		11.9	20
Methyl t-Butyl Ether	A	100.0	114.4	0.6467266	0.7395681		14.4	20
n-Propylbenzene	A	100.0	122.5	3.780134	4.629376		22.5	20 *
Styrene	A	100.0	117.6	1.757219	2.066186		17.6	20
1,1,2,2-Tetrachloroethane	A	100.0	112.4	0.9363588	1.052807	0.3	12.4	20
1,1,1,2-Tetrachloroethane	A	100.0	118.8	0.5380807	0.6394368		18.8	20
Tetrachloroethene	A	100.0	112.6	0.6741914	0.7592782		12.6	20
Toluene	A	100.0	109.4	1.584688	1.733264		9.4	20
1,2,3-Trichlorobenzene	A	100.0	112.0	0.9220385	1.032892		12.0	20

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	5358001
Lab File ID:	1224CCV1.D	Calibration Date:	12/23/15 07:00
Sequence:	5L36403	Injection Date:	12/24/15
Lab Sample ID:	5L36403-CCV1	Injection Time:	06:58

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,2,4-Trichlorobenzene	A	100.0	112.2	1.045015	1.173005		12.2	20
1,1,2-Trichloroethane	A	100.0	108.7	0.551015	0.5991177		8.7	20
1,1,1-Trichloroethane	A	100.0	111.7	0.3664632	0.4092788		11.7	20
Trichloroethene	A	100.0	106.6	0.3092927	0.3297758		6.6	20
Trichlorofluoromethane	A	100.0	109.0	0.4098085	0.4465755		9.0	20
1,2,3-Trichloropropane	A	100.0	110.1	0.1890941	0.2081036		10.1	20
1,3,5-Trimethylbenzene	A	100.0	117.0	2.464362	2.882168		17.0	20
1,2,4-Trimethylbenzene	A	100.0	115.4	2.582215	2.979227		15.4	20
1,1,2-Trichloro-1,2,2-trifluoroethane	A	100.0	109.6	0.2826184	0.3096552		9.6	20
Vinyl chloride	A	100.0	105.4	0.2555464	0.2694048		5.4	20
m,p-Xylene	A	200.0	236.8	2.19729	2.601226		18.4	20
o-Xylene	A	100.0	109.0	2.297916	2.504927		9.0	20
Xylenes (total)	A	300.0	345.8	2.230832	2.569127		15.2	20
Bromofluorobenzene	A	30.00	30.81	0.9037707	0.9282893		2.7	20
Dibromofluoromethane	A	30.00	28.44	0.2997349	0.2841662		-5.2	20
1,2-Dichloroethane-d4	A	30.00	29.01	6.357058E-02	6.148211E-02		-3.3	20
Toluene-d8	A	30.00	30.52	2.232369	2.27105		1.7	20

HOLDING TIME SUMMARY

SW8260B

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
TB-01	12/14/15 05:45	12/15/15 09:35	12/24/15 09:58	N/A	14.00	12/24/15 09:58	10.13	14.00	
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/24/15 14:19	N/A	14.00	12/24/15 14:19	10.27	14.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/24/15 14:48	N/A	14.00	12/24/15 14:48	10.16	14.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/24/15 15:17	N/A	14.00	12/24/15 15:17	10.18	14.00	

Data for SW8270D
Forms

Sample Extraction Data

Prep Method: EXT_3510-SW8270D

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02 [OTC538-GW-5382-151214]	5L21007	1,000.00/1.00	1050	1.00	1.00			12/21/15
1512147-03 [OTC537-GW-5371-151214]	5L21007	1,000.00/1.00	1050	1.00	1.00			12/21/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L21007	1,000.00/1.00	1050	1.00	1.00			12/21/15

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02	File ID:	1214702.D
Sampled:	12/14/15 06:46	Prepared:	12/21/15 13:30	Analyzed:	12/30/15 20:07
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene		1.19	2.38	4.76	U
208-96-8	Acenaphthylene		1.19	2.38	4.76	U
98-86-2	Acetophenone		1.19	2.38	4.76	U
120-12-7	Anthracene		1.19	2.38	4.76	U
1912-24-9	Atrazine		1.19	2.38	4.76	U
100-52-7	Benzaldehyde		1.19	2.38	4.76	U
56-55-3	Benzo(a)anthracene		1.19	2.38	4.76	U
50-32-8	Benzo(a)pyrene		1.19	2.38	4.76	U
205-99-2	Benzo(b)fluoranthene		1.19	2.38	4.76	U
191-24-2	Benzo(g,h,i)perylene		1.19	2.38	4.76	U
65-85-0	Benzoic acid		11.9	47.6	95.2	U
207-08-9	Benzo(k)fluoranthene		1.19	2.38	4.76	U
100-51-6	Benzyl alcohol		1.19	2.38	4.76	U
92-52-4	1,1-Biphenyl		1.19	2.38	4.76	U
101-55-3	4-Bromophenyl-phenylether		1.19	2.38	4.76	U
85-68-7	Butylbenzylphthalate		1.19	2.38	4.76	U
105-60-2	Caprolactam		1.19	2.38	4.76	U
86-74-8	Carbazole		1.19	2.38	4.76	U
59-50-7	4-Chloro-3-methylphenol		1.19	2.38	4.76	U
106-47-8	4-Chloroaniline		1.19	2.38	4.76	U
111-91-1	Bis(2-chloroethoxy)methane		1.19	2.38	4.76	U
111-44-4	Bis(2-chloroethyl)ether		1.19	2.38	4.76	U
108-60-1	2,2'-Oxybis-1-chloropropane		1.19	2.38	4.76	U
91-58-7	2-Chloronaphthalene		1.19	2.38	4.76	U
95-57-8	2-Chlorophenol		1.19	2.38	4.76	U
7005-72-3	4-Chlorophenyl phenyl ether		1.19	2.38	4.76	U
218-01-9	Chrysene		1.19	2.38	4.76	U
53-70-3	Dibenz(a,h)anthracene		1.19	2.38	4.76	U
132-64-9	Dibenzofuran		1.19	2.38	4.76	U
84-74-2	Di-n-butylphthalate		1.19	2.38	4.76	U
106-46-7	1,4-Dichlorobenzene		1.19	2.38	4.76	U
541-73-1	1,3-Dichlorobenzene		1.19	2.38	4.76	U
95-50-1	1,2-Dichlorobenzene		1.19	2.38	4.76	U
91-94-1	3,3'-Dichlorobenzidine		1.19	2.38	4.76	U
87-65-0	2,6-Dichlorophenol		1.19	2.38	4.76	U
120-83-2	2,4-Dichlorophenol		1.19	2.38	4.76	U
84-66-2	Diethylphthalate		1.19	2.38	4.76	U
105-67-9	2,4-Dimethylphenol		4.76	9.52	19.0	U
131-11-3	Dimethyl phthalate		1.19	2.38	4.76	U
534-52-1	4,6-Dinitro-2-methylphenol		4.76	9.52	19.0	U

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02	File ID:	1214702.D
Sampled:	12/14/15 06:46	Prepared:	12/21/15 13:30	Analyzed:	12/30/15 20:07
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
51-28-5	2,4-Dinitrophenol		7.93	23.8	47.6	UX
121-14-2	2,4-Dinitrotoluene		1.19	2.38	4.76	U
606-20-2	2,6-Dinitrotoluene		1.19	2.38	4.76	U
117-84-0	Di-n-octylphthalate		1.19	2.38	4.76	U
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)		1.19	2.38	4.76	U
117-81-7	Bis(2-ethylhexyl)phthalate		1.19	2.38	4.76	U
206-44-0	Fluoranthene		1.19	2.38	4.76	U
86-73-7	Fluorene		1.19	2.38	4.76	U
118-74-1	Hexachlorobenzene		1.19	2.38	4.76	U
87-68-3	Hexachlorobutadiene		1.19	2.38	4.76	U
77-47-4	Hexachlorocyclopentadiene		1.19	4.76	9.52	U
67-72-1	Hexachloroethane		1.19	2.38	4.76	U
193-39-5	Indeno(1,2,3-cd)pyrene		1.19	2.38	4.76	U
78-59-1	Isophorone		1.19	2.38	4.76	U
90-12-0	1-Methylnaphthalene		1.19	2.38	4.76	U
91-57-6	2-Methylnaphthalene		1.19	2.38	4.76	U
95-48-7	2-Methylphenol		1.19	2.38	4.76	U
108-39-4/106	3-Methylphenol/4-Methylphenol		1.19	2.38	4.76	U
91-20-3	Naphthalene		1.19	2.38	4.76	U
100-01-6	4-Nitroaniline		4.76	9.52	19.0	U
99-09-2	3-Nitroaniline		4.76	9.52	19.0	U
88-74-4	2-Nitroaniline		4.76	9.52	19.0	U
98-95-3	Nitrobenzene		1.19	2.38	4.76	U
100-02-7	4-Nitrophenol		4.76	9.52	19.0	U
88-75-5	2-Nitrophenol		1.19	2.38	4.76	U
62-75-9	N-Nitrosodimethylamine		1.19	2.38	4.76	U
86-30-6	N-Nitrosodiphenylamine		1.19	2.38	4.76	U
621-64-7	N-Nitroso-di-n-propylamine		1.19	2.38	4.76	U
87-86-5	Pentachlorophenol		4.76	9.52	19.0	U
85-01-8	Phenanthrene		1.19	2.38	4.76	U
108-95-2	Phenol		1.19	2.38	4.76	U
129-00-0	Pyrene		1.19	2.38	4.76	U
95-94-3	1,2,4,5-Tetrachlorobenzene		1.19	2.38	4.76	U
58-90-2	2,3,4,6-Tetrachlorophenol		2.38	4.76	9.52	U
120-82-1	1,2,4-Trichlorobenzene		1.19	2.38	4.76	U
88-06-2	2,4,6-Trichlorophenol		1.19	2.38	4.76	U
95-95-4	2,4,5-Trichlorophenol		1.19	2.38	4.76	U

Total Target Analytes Reported 77 Project Analytes: 77

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	47.62	35.61	74.8	50 - 110	

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02	File ID:	1214702.D
Sampled:	12/14/15 06:46	Prepared:	12/21/15 13:30	Analyzed:	12/30/15 20:07
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	95.24	22.19	23.3	20 - 110	
Nitrobenzene-d5	47.62	35.16	73.8	40 - 110	
Phenol-d6 (advisory)	95.24	12.10	12.7	10 - 110	
Terphenyl-d14	47.62	30.70	64.5	50 - 135	
2,4,6-Tribromophenol	95.24	79.25	83.2	40 - 125	

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-03	File ID:	1214703.D
Sampled:	12/14/15 10:01	Prepared:	12/21/15 13:30	Analyzed:	12/30/15 20:35
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene		1.19	2.38	4.76	U
208-96-8	Acenaphthylene		1.19	2.38	4.76	U
98-86-2	Acetophenone		1.19	2.38	4.76	U
120-12-7	Anthracene		1.19	2.38	4.76	U
1912-24-9	Atrazine		1.19	2.38	4.76	U
100-52-7	Benzaldehyde		1.19	2.38	4.76	U
56-55-3	Benzo(a)anthracene		1.19	2.38	4.76	U
50-32-8	Benzo(a)pyrene		1.19	2.38	4.76	U
205-99-2	Benzo(b)fluoranthene		1.19	2.38	4.76	U
191-24-2	Benzo(g,h,i)perylene		1.19	2.38	4.76	U
65-85-0	Benzoic acid		11.9	47.6	95.2	U
207-08-9	Benzo(k)fluoranthene		1.19	2.38	4.76	U
100-51-6	Benzyl alcohol		1.19	2.38	4.76	U
92-52-4	1,1-Biphenyl		1.19	2.38	4.76	U
101-55-3	4-Bromophenyl-phenylether		1.19	2.38	4.76	U
85-68-7	Butylbenzylphthalate		1.19	2.38	4.76	U
105-60-2	Caprolactam		1.19	2.38	4.76	U
86-74-8	Carbazole		1.19	2.38	4.76	U
59-50-7	4-Chloro-3-methylphenol		1.19	2.38	4.76	U
106-47-8	4-Chloroaniline		1.19	2.38	4.76	U
111-91-1	Bis(2-chloroethoxy)methane		1.19	2.38	4.76	U
111-44-4	Bis(2-chloroethyl)ether		1.19	2.38	4.76	U
108-60-1	2,2'-Oxybis-1-chloropropane		1.19	2.38	4.76	U
91-58-7	2-Chloronaphthalene		1.19	2.38	4.76	U
95-57-8	2-Chlorophenol		1.19	2.38	4.76	U
7005-72-3	4-Chlorophenyl phenyl ether		1.19	2.38	4.76	U
218-01-9	Chrysene		1.19	2.38	4.76	U
53-70-3	Dibenz(a,h)anthracene		1.19	2.38	4.76	U
132-64-9	Dibenzofuran		1.19	2.38	4.76	U
84-74-2	Di-n-butylphthalate		1.19	2.38	4.76	U
106-46-7	1,4-Dichlorobenzene		1.19	2.38	4.76	U
541-73-1	1,3-Dichlorobenzene		1.19	2.38	4.76	U
95-50-1	1,2-Dichlorobenzene		1.19	2.38	4.76	U
91-94-1	3,3'-Dichlorobenzidine		1.19	2.38	4.76	U
87-65-0	2,6-Dichlorophenol		1.19	2.38	4.76	NU
120-83-2	2,4-Dichlorophenol		1.19	2.38	4.76	U
84-66-2	Diethylphthalate		1.19	2.38	4.76	U
105-67-9	2,4-Dimethylphenol		4.76	9.52	19.0	U
131-11-3	Dimethyl phthalate		1.19	2.38	4.76	U
534-52-1	4,6-Dinitro-2-methylphenol		4.76	9.52	19.0	NU

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-03	File ID:	1214703.D
Sampled:	12/14/15 10:01	Prepared:	12/21/15 13:30	Analyzed:	12/30/15 20:35
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
51-28-5	2,4-Dinitrophenol		7.93	23.8	47.6	NUX
121-14-2	2,4-Dinitrotoluene		1.19	2.38	4.76	U
606-20-2	2,6-Dinitrotoluene		1.19	2.38	4.76	U
117-84-0	Di-n-octylphthalate		1.19	2.38	4.76	U
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)		1.19	2.38	4.76	U
117-81-7	Bis(2-ethylhexyl)phthalate		1.19	2.38	4.76	U
206-44-0	Fluoranthene		1.19	2.38	4.76	U
86-73-7	Fluorene		1.19	2.38	4.76	U
118-74-1	Hexachlorobenzene		1.19	2.38	4.76	U
87-68-3	Hexachlorobutadiene		1.19	2.38	4.76	U
77-47-4	Hexachlorocyclopentadiene		1.19	4.76	9.52	U
67-72-1	Hexachloroethane		1.19	2.38	4.76	U
193-39-5	Indeno(1,2,3-cd)pyrene		1.19	2.38	4.76	U
78-59-1	Isophorone		1.19	2.38	4.76	U
90-12-0	1-Methylnaphthalene		1.19	2.38	4.76	U
91-57-6	2-Methylnaphthalene		1.19	2.38	4.76	U
95-48-7	2-Methylphenol		1.19	2.38	4.76	U
108-39-4/106	3-Methylphenol/4-Methylphenol		1.19	2.38	4.76	U
91-20-3	Naphthalene		1.19	2.38	4.76	U
100-01-6	4-Nitroaniline		4.76	9.52	19.0	U
99-09-2	3-Nitroaniline		4.76	9.52	19.0	U
88-74-4	2-Nitroaniline		4.76	9.52	19.0	U
98-95-3	Nitrobenzene		1.19	2.38	4.76	U
100-02-7	4-Nitrophenol		4.76	9.52	19.0	NU
88-75-5	2-Nitrophenol		1.19	2.38	4.76	U
62-75-9	N-Nitrosodimethylamine		1.19	2.38	4.76	NU
86-30-6	N-Nitrosodiphenylamine		1.19	2.38	4.76	U
621-64-7	N-Nitroso-di-n-propylamine		1.19	2.38	4.76	U
87-86-5	Pentachlorophenol		4.76	9.52	19.0	NU
85-01-8	Phenanthrene		1.19	2.38	4.76	U
108-95-2	Phenol		1.19	2.38	4.76	U
129-00-0	Pyrene		1.19	2.38	4.76	U
95-94-3	1,2,4,5-Tetrachlorobenzene		1.19	2.38	4.76	U
58-90-2	2,3,4,6-Tetrachlorophenol		2.38	4.76	9.52	NU
120-82-1	1,2,4-Trichlorobenzene		1.19	2.38	4.76	U
88-06-2	2,4,6-Trichlorophenol		1.19	2.38	4.76	NU
95-95-4	2,4,5-Trichlorophenol		1.19	2.38	4.76	U

Total Target Analytes Reported 77 Project Analytes: 77

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	47.62	33.38	70.1	50 - 110	

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-03	File ID:	1214703.D
Sampled:	12/14/15 10:01	Prepared:	12/21/15 13:30	Analyzed:	12/30/15 20:35
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	95.24	14.46	15.2	20 - 110	*
Nitrobenzene-d5	47.62	32.03	67.3	40 - 110	
Phenol-d6 (advisory)	95.24	8.114	8.52	10 - 110	*
Terphenyl-d14	47.62	28.32	59.5	50 - 135	
2,4,6-Tribromophenol	95.24	68.65	72.1	40 - 125	

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-15121
4

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04	File ID:	1214704.D
Sampled:	12/14/15 10:01	Prepared:	12/21/15 13:30	Analyzed:	12/30/15 21:57
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene		1.19	2.38	4.76	U
208-96-8	Acenaphthylene		1.19	2.38	4.76	U
98-86-2	Acetophenone		1.19	2.38	4.76	U
120-12-7	Anthracene		1.19	2.38	4.76	U
1912-24-9	Atrazine		1.19	2.38	4.76	U
100-52-7	Benzaldehyde		1.19	2.38	4.76	U
56-55-3	Benzo(a)anthracene		1.19	2.38	4.76	U
50-32-8	Benzo(a)pyrene		1.19	2.38	4.76	U
205-99-2	Benzo(b)fluoranthene		1.19	2.38	4.76	U
191-24-2	Benzo(g,h,i)perylene		1.19	2.38	4.76	U
65-85-0	Benzoic acid		11.9	47.6	95.2	U
207-08-9	Benzo(k)fluoranthene		1.19	2.38	4.76	U
100-51-6	Benzyl alcohol		1.19	2.38	4.76	U
92-52-4	1,1-Biphenyl		1.19	2.38	4.76	U
101-55-3	4-Bromophenyl-phenylether		1.19	2.38	4.76	U
85-68-7	Butylbenzylphthalate		1.19	2.38	4.76	U
105-60-2	Caprolactam		1.19	2.38	4.76	U
86-74-8	Carbazole		1.19	2.38	4.76	U
59-50-7	4-Chloro-3-methylphenol		1.19	2.38	4.76	U
106-47-8	4-Chloroaniline		1.19	2.38	4.76	U
111-91-1	Bis(2-chloroethoxy)methane		1.19	2.38	4.76	U
111-44-4	Bis(2-chloroethyl)ether		1.19	2.38	4.76	U
108-60-1	2,2'-Oxybis-1-chloropropane		1.19	2.38	4.76	U
91-58-7	2-Chloronaphthalene		1.19	2.38	4.76	U
95-57-8	2-Chlorophenol		1.19	2.38	4.76	U
7005-72-3	4-Chlorophenyl phenyl ether		1.19	2.38	4.76	U
218-01-9	Chrysene		1.19	2.38	4.76	U
53-70-3	Dibenz(a,h)anthracene		1.19	2.38	4.76	U
132-64-9	Dibenzofuran		1.19	2.38	4.76	U
84-74-2	Di-n-butylphthalate		1.19	2.38	4.76	U
106-46-7	1,4-Dichlorobenzene		1.19	2.38	4.76	U
541-73-1	1,3-Dichlorobenzene		1.19	2.38	4.76	U
95-50-1	1,2-Dichlorobenzene		1.19	2.38	4.76	U
91-94-1	3,3'-Dichlorobenzidine		1.19	2.38	4.76	U
87-65-0	2,6-Dichlorophenol		1.19	2.38	4.76	U
120-83-2	2,4-Dichlorophenol		1.19	2.38	4.76	U
84-66-2	Diethylphthalate		1.19	2.38	4.76	U
105-67-9	2,4-Dimethylphenol		4.76	9.52	19.0	U
131-11-3	Dimethyl phthalate		1.19	2.38	4.76	U
534-52-1	4,6-Dinitro-2-methylphenol		4.76	9.52	19.0	U

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-15121 4

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04	File ID:	1214704.D
Sampled:	12/14/15 10:01	Prepared:	12/21/15 13:30	Analyzed:	12/30/15 21:57
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
51-28-5	2,4-Dinitrophenol		7.93	23.8	47.6	UX
121-14-2	2,4-Dinitrotoluene		1.19	2.38	4.76	U
606-20-2	2,6-Dinitrotoluene		1.19	2.38	4.76	U
117-84-0	Di-n-octylphthalate		1.19	2.38	4.76	U
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)		1.19	2.38	4.76	U
117-81-7	Bis(2-ethylhexyl)phthalate		1.19	2.38	4.76	U
206-44-0	Fluoranthene		1.19	2.38	4.76	U
86-73-7	Fluorene		1.19	2.38	4.76	U
118-74-1	Hexachlorobenzene		1.19	2.38	4.76	U
87-68-3	Hexachlorobutadiene		1.19	2.38	4.76	U
77-47-4	Hexachlorocyclopentadiene		1.19	4.76	9.52	U
67-72-1	Hexachloroethane		1.19	2.38	4.76	U
193-39-5	Indeno(1,2,3-cd)pyrene		1.19	2.38	4.76	U
78-59-1	Isophorone		1.19	2.38	4.76	U
90-12-0	1-Methylnaphthalene		1.19	2.38	4.76	U
91-57-6	2-Methylnaphthalene		1.19	2.38	4.76	U
95-48-7	2-Methylphenol		1.19	2.38	4.76	U
108-39-4/106	3-Methylphenol/4-Methylphenol		1.19	2.38	4.76	U
91-20-3	Naphthalene		1.19	2.38	4.76	U
100-01-6	4-Nitroaniline		4.76	9.52	19.0	U
99-09-2	3-Nitroaniline		4.76	9.52	19.0	U
88-74-4	2-Nitroaniline		4.76	9.52	19.0	U
98-95-3	Nitrobenzene		1.19	2.38	4.76	U
100-02-7	4-Nitrophenol		4.76	9.52	19.0	U
88-75-5	2-Nitrophenol		1.19	2.38	4.76	U
62-75-9	N-Nitrosodimethylamine		1.19	2.38	4.76	U
86-30-6	N-Nitrosodiphenylamine		1.19	2.38	4.76	U
621-64-7	N-Nitroso-di-n-propylamine		1.19	2.38	4.76	U
87-86-5	Pentachlorophenol		4.76	9.52	19.0	U
85-01-8	Phenanthrene		1.19	2.38	4.76	U
108-95-2	Phenol		1.19	2.38	4.76	U
129-00-0	Pyrene		1.19	2.38	4.76	U
95-94-3	1,2,4,5-Tetrachlorobenzene		1.19	2.38	4.76	U
58-90-2	2,3,4,6-Tetrachlorophenol		2.38	4.76	9.52	U
120-82-1	1,2,4-Trichlorobenzene		1.19	2.38	4.76	U
88-06-2	2,4,6-Trichlorophenol		1.19	2.38	4.76	U
95-95-4	2,4,5-Trichlorophenol		1.19	2.38	4.76	U

Total Target Analytes Reported 77 Project Analytes: 77

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	47.62	36.83	77.3	50 - 110	

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-15121 4

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04	File ID:	1214704.D
Sampled:	12/14/15 10:01	Prepared:	12/21/15 13:30	Analyzed:	12/30/15 21:57
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	95.24	23.41	24.6	20 - 110	
Nitrobenzene-d5	47.62	34.87	73.2	40 - 110	
Phenol-d6 (advisory)	95.24	14.05	14.8	10 - 110	
Terphenyl-d14	47.62	41.27	86.7	50 - 135	
2,4,6-Tribromophenol	95.24	83.01	87.2	40 - 125	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	6A00413	Instrument:	MS-BNA3
		Calibration:	5343002

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (6A00413-CCV1) ug/mL				Lab File ID: 1230CCV1.D		Analyzed: 12/30/15 15:33		
2-Fluorobiphenyl	50.00	99.8	80 - 120	7.267	7.267	0.0000	+/-0.500	
2-Fluorophenol	100.0	106	80 - 120	3.329	3.329	0.0000	+/-0.500	
Nitrobenzene-d5	50.00	103	80 - 120	5.165	5.165	0.0000	+/-0.500	
Phenol-d6 (advisory)	100.0	102	80 - 120	4.173	4.173	0.0000	+/-0.500	
Terphenyl-d14	50.00	108	80 - 120	11.879	11.879	0.0000	+/-0.500	
2,4,6-Tribromophenol	100.0	102	80 - 120	9.037	9.037	0.0000	+/-0.500	
Blank (5L21007-BLK1) ug/L				Lab File ID: L21007B1.D		Analyzed: 12/30/15 19:13		
2-Fluorobiphenyl	50.00	76.3	50 - 110	7.266	7.267	-0.0010	+/-0.500	
2-Fluorophenol	100.0	30.2	20 - 110	3.333	3.329	0.0040	+/-0.500	
Nitrobenzene-d5	50.00	78.5	40 - 110	5.16	5.165	-0.0050	+/-0.500	
Phenol-d6 (advisory)	100.0	17.0	10 - 110	4.168	4.173	-0.0050	+/-0.500	
Terphenyl-d14	50.00	93.7	50 - 135	11.878	11.879	-0.0010	+/-0.500	
2,4,6-Tribromophenol	100.0	86.2	40 - 125	9.036	9.037	-0.0010	+/-0.500	
LCS (5L21007-BS1) ug/L				Lab File ID: L21007L1.D		Analyzed: 12/30/15 19:40		
2-Fluorobiphenyl	50.00	73.1	50 - 110	7.267	7.267	0.0000	+/-0.500	
2-Fluorophenol	100.0	27.5	20 - 110	3.334	3.329	0.0050	+/-0.500	
Nitrobenzene-d5	50.00	71.4	40 - 110	5.161	5.165	-0.0040	+/-0.500	
Phenol-d6 (advisory)	100.0	14.9	10 - 110	4.169	4.173	-0.0040	+/-0.500	
Terphenyl-d14	50.00	85.2	50 - 135	11.874	11.879	-0.0050	+/-0.500	
2,4,6-Tribromophenol	100.0	87.8	40 - 125	9.037	9.037	0.0000	+/-0.500	
OTC538-GW-5382-151214 (1512147-02) ug/L				Lab File ID: 1214702.D		Analyzed: 12/30/15 20:07		
2-Fluorobiphenyl	47.62	74.8	50 - 110	7.27	7.267	0.0030	+/-0.500	
2-Fluorophenol	95.24	23.3	20 - 110	3.331	3.329	0.0020	+/-0.500	
Nitrobenzene-d5	47.62	73.8	40 - 110	5.158	5.165	-0.0070	+/-0.500	
Phenol-d6 (advisory)	95.24	12.7	10 - 110	4.167	4.173	-0.0060	+/-0.500	
Terphenyl-d14	47.62	64.5	50 - 135	11.877	11.879	-0.0020	+/-0.500	
2,4,6-Tribromophenol	95.24	83.2	40 - 125	9.035	9.037	-0.0020	+/-0.500	
OTC537-GW-5371-151214 (1512147-03) ug/L				Lab File ID: 1214703.D		Analyzed: 12/30/15 20:35		
2-Fluorobiphenyl	47.62	70.1	50 - 110	7.267	7.267	0.0000	+/-0.500	
2-Fluorophenol	95.24	15.2	20 - 110	3.333	3.329	0.0040	+/-0.500	*
Nitrobenzene-d5	47.62	67.3	40 - 110	5.16	5.165	-0.0050	+/-0.500	
Phenol-d6 (advisory)	95.24	8.52	10 - 110	4.168	4.173	-0.0050	+/-0.500	*
Terphenyl-d14	47.62	59.5	50 - 135	11.879	11.879	0.0000	+/-0.500	
2,4,6-Tribromophenol	95.24	72.1	40 - 125	9.036	9.037	-0.0010	+/-0.500	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	6A00413	Instrument:	MS-BNA3
		Calibration:	5343002

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Matrix Spike (5L21007-MS1) ug/L				Lab File ID: 1214703M.D		Analyzed: 12/30/15 21:02		
2-Fluorobiphenyl	47.62	80.1	50 - 110	7.268	7.267	0.0010	+/-0.500	
2-Fluorophenol	95.24	25.1	20 - 110	3.334	3.329	0.0050	+/-0.500	
Nitrobenzene-d5	47.62	78.0	40 - 110	5.161	5.165	-0.0040	+/-0.500	
Phenol-d6 (advisory)	95.24	15.8	10 - 110	4.17	4.173	-0.0030	+/-0.500	
Terphenyl-d14	47.62	95.2	50 - 135	11.88	11.879	0.0010	+/-0.500	
2,4,6-Tribromophenol	95.24	81.9	40 - 125	9.038	9.037	0.0010	+/-0.500	
Matrix Spike Dup (5L21007-MSD1) ug/L				Lab File ID: 1214703S.D		Analyzed: 12/30/15 21:30		
2-Fluorobiphenyl	47.62	81.8	50 - 110	7.267	7.267	0.0000	+/-0.500	
2-Fluorophenol	95.24	16.5	20 - 110	3.334	3.329	0.0050	+/-0.500	*
Nitrobenzene-d5	47.62	78.3	40 - 110	5.161	5.165	-0.0040	+/-0.500	
Phenol-d6 (advisory)	95.24	12.2	10 - 110	4.169	4.173	-0.0040	+/-0.500	
Terphenyl-d14	47.62	94.0	50 - 135	11.879	11.879	0.0000	+/-0.500	
2,4,6-Tribromophenol	95.24	63.2	40 - 125	9.037	9.037	0.0000	+/-0.500	
OTC537-GW-5371-FD-151214 (1512147-04) ug/L				Lab File ID: 1214704.D		Analyzed: 12/30/15 21:57		
2-Fluorobiphenyl	47.62	77.3	50 - 110	7.267	7.267	0.0000	+/-0.500	
2-Fluorophenol	95.24	24.6	20 - 110	3.329	3.329	0.0000	+/-0.500	
Nitrobenzene-d5	47.62	73.2	40 - 110	5.16	5.165	-0.0050	+/-0.500	
Phenol-d6 (advisory)	95.24	14.8	10 - 110	4.169	4.173	-0.0040	+/-0.500	
Terphenyl-d14	47.62	86.7	50 - 135	11.879	11.879	0.0000	+/-0.500	
2,4,6-Tribromophenol	95.24	87.2	40 - 125	9.032	9.037	-0.0050	+/-0.500	

LCS / LCS DUPLICATE RECOVERY

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L21007	Laboratory ID:	5L21007-BS1
Preparation:	EXT_3510	Initial/Final:	1000 mL / 1 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Acenaphthene	50.00	43.54	87.1	45 - 110
Acenaphthylene	50.00	43.49	87.0	50 - 105
Acetophenone	50.00	36.31	72.6	45 - 130
Anthracene	50.00	45.33	90.7	55 - 110
Atrazine	50.00	46.32	92.6	40 - 150
Benzaldehyde	50.00	33.44	66.9	40 - 125
Benzo(a)anthracene	50.00	44.55	89.1	55 - 110
Benzo(a)pyrene	50.00	43.19	86.4	55 - 110
Benzo(b)fluoranthene	50.00	46.55	93.1	45 - 120
Benzo(g,h,i)perylene	50.00	44.02	88.0	40 - 125
Benzoic acid	100.0	100 U	0	0 - 125
Benzo(k)fluoranthene	50.00	46.20	92.4	45 - 125
Benzyl alcohol	50.00	23.82	47.6	30 - 110
1,1-Biphenyl	50.00	39.11	78.2	45 - 135
4-Bromophenyl-phenylether	50.00	46.50	93.0	50 - 115
Butylbenzylphthalate	50.00	49.21	98.4	45 - 115
Caprolactam	50.00	7.689	15.4	5 - 110
Carbazole	50.00	45.17	90.3	50 - 115
4-Chloro-3-methylphenol	100.0	84.29	84.3	45 - 110
4-Chloroaniline	50.00	36.38	72.8	15 - 110
Bis(2-chloroethoxy)methane	50.00	39.98	80.0	45 - 105
Bis(2-chloroethyl)ether	50.00	37.94	75.9	35 - 110
2,2'-Oxybis-1-chloropropane	50.00	38.09	76.2	25 - 130
2-Chloronaphthalene	50.00	39.84	79.7	50 - 105
2-Chlorophenol	100.0	65.85	65.8	35 - 105
4-Chlorophenyl phenyl ether	50.00	43.82	87.6	50 - 110
Chrysene	50.00	46.40	92.8	55 - 110
Dibenz(a,h)anthracene	50.00	45.44	90.9	40 - 125
Dibenzofuran	50.00	41.30	82.6	55 - 105
Di-n-butylphthalate	50.00	49.15	98.3	55 - 115

LCS / LCS DUPLICATE RECOVERY

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L21007	Laboratory ID:	5L21007-BS1
Preparation:	EXT_3510	Initial/Final:	1000 mL / 1 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
1,4-Dichlorobenzene	50.00	32.42	64.8	30 - 100
1,3-Dichlorobenzene	50.00	31.67	63.3	30 - 100
1,2-Dichlorobenzene	50.00	33.34	66.7	35 - 100
3,3'-Dichlorobenzidine	50.00	39.68	79.4	20 - 110
2,6-Dichlorophenol	50.00	39.25	78.5	30 - 140
2,4-Dichlorophenol	100.0	82.54	82.5	50 - 105
Diethylphthalate	50.00	45.20	90.4	40 - 120
2,4-Dimethylphenol	100.0	76.66	76.7	30 - 110
Dimethyl phthalate	50.00	45.42	90.8	25 - 125
4,6-Dinitro-2-methylphenol	100.0	109.2	109	40 - 130
2,4-Dinitrophenol	100.0	81.21	81.2	15 - 140
2,4-Dinitrotoluene	50.00	47.17	94.3	50 - 120
2,6-Dinitrotoluene	50.00	44.96	89.9	50 - 115
Di-n-octylphthalate	50.00	52.64	105	35 - 135
1,2-Diphenylhydrazine (as Azobenzene)	50.00	46.74	93.5	55 - 115
Bis(2-ethylhexyl)phthalate	50.00	47.73	95.5	40 - 125
Fluoranthene	50.00	45.17	90.3	55 - 115
Fluorene	50.00	45.18	90.4	50 - 110
Hexachlorobenzene	50.00	45.15	90.3	50 - 110
Hexachlorobutadiene	50.00	35.04	70.1	25 - 105
Hexachlorocyclopentadiene	50.00	28.07	56.1	0 - 120
Hexachloroethane	50.00	30.17	60.3	30 - 100
Indeno(1,2,3-cd)pyrene	50.00	43.23	86.5	45 - 125
Isophorone	50.00	36.14	72.3	50 - 110
1-Methylnaphthalene	50.00	35.36	70.7	35 - 115
2-Methylnaphthalene	50.00	36.54	73.1	45 - 105
2-Methylphenol	100.0	52.02	52.0	40 - 110
3-Methylphenol/4-Methylphenol	100.0	46.16	46.2	30 - 110
Naphthalene	50.00	38.26	76.5	40 - 100
4-Nitroaniline	50.00	42.09	84.2	35 - 120

LCS / LCS DUPLICATE RECOVERY

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L21007	Laboratory ID:	5L21007-BS1
Preparation:	EXT_3510	Initial/Final:	1000 mL / 1 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
3-Nitroaniline	50.00	41.66	83.3	20 - 125
2-Nitroaniline	50.00	49.46	98.9	50 - 115
Nitrobenzene	50.00	36.34	72.7	45 - 110
4-Nitrophenol	100.0	24.55	24.6	0 - 125
2-Nitrophenol	100.0	85.27	85.3	40 - 115
N-Nitrosodimethylamine	50.00	13.44	26.9	25 - 110
N-Nitrosodiphenylamine	50.00	38.32	76.6	50 - 110
N-Nitroso-di-n-propylamine	50.00	39.55	79.1	35 - 130
Pentachlorophenol	100.0	85.24	85.2	40 - 115
Phenanthrene	50.00	46.01	92.0	50 - 115
Phenol	100.0	18.47	18.5	0 - 115
Pyrene	50.00	44.63	89.3	50 - 130
1,2,4,5-Tetrachlorobenzene	50.00	37.67	75.3	30 - 135
2,3,4,6-Tetrachlorophenol	50.00	41.11	82.2	25 - 135
1,2,4-Trichlorobenzene	50.00	34.60	69.2	35 - 105
2,4,6-Trichlorophenol	100.0	94.47	94.5	50 - 115
2,4,5-Trichlorophenol	100.0	99.40	99.4	50 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8270D

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L21007

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Acenaphthene	47.62	ND	46.71	98.1		45 - 110
Acenaphthylene	47.62	ND	45.93	96.5		50 - 105
Acetophenone	47.62	ND	40.85	85.8		45 - 130
Anthracene	47.62	ND	47.17	99.1		55 - 110
Atrazine	47.62	ND	50.49	106		40 - 150
Benzaldehyde	47.62	ND	38.00	79.8		40 - 125
Benzo(a)anthracene	47.62	ND	49.17	103		55 - 110
Benzo(a)pyrene	47.62	ND	47.08	98.9		55 - 110
Benzo(b)fluoranthene	47.62	ND	49.68	104		45 - 120
Benzo(g,h,i)perylene	47.62	ND	48.29	101		40 - 125
Benzoic acid	95.24	ND	14.49	15.2		0 - 125
Benzo(k)fluoranthene	47.62	ND	50.37	106		45 - 125
Benzyl alcohol	47.62	ND	21.60	45.4		30 - 110
1,1-Biphenyl	47.62	ND	42.70	89.7		45 - 135
4-Bromophenyl-phenylether	47.62	ND	48.52	102		50 - 115
Butylbenzylphthalate	47.62	ND	52.78	111		45 - 115
Caprolactam	47.62	ND	5.563	11.7		5 - 110
Carbazole	47.62	ND	48.13	101		50 - 115
4-Chloro-3-methylphenol	95.24	ND	88.58	93.0		45 - 110
4-Chloroaniline	47.62	ND	32.43	68.1		15 - 110
Bis(2-chloroethoxy)methane	47.62	ND	44.30	93.0		45 - 105
Bis(2-chloroethyl)ether	47.62	ND	41.52	87.2		35 - 110
2,2'-Oxybis-1-chloropropane	47.62	ND	41.20	86.5		25 - 130
2-Chloronaphthalene	47.62	ND	41.40	87.0		50 - 105
2-Chlorophenol	95.24	ND	66.26	69.6		35 - 105
4-Chlorophenyl phenyl ether	47.62	ND	47.46	99.7		50 - 110
Chrysene	47.62	ND	50.41	106		55 - 110
Dibenz(a,h)anthracene	47.62	ND	51.11	107		40 - 125
Dibenzofuran	47.62	ND	43.85	92.1		55 - 105
Di-n-butylphthalate	47.62	ND	52.27	110		55 - 115
1,4-Dichlorobenzene	47.62	ND	33.51	70.4		30 - 100
1,3-Dichlorobenzene	47.62	ND	33.89	71.2		30 - 100

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8270D

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L21007

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
1,2-Dichlorobenzene	47.62	ND	35.59	74.7		35 - 100
3,3'-Dichlorobenzidine	47.62	ND	29.31	61.5		20 - 110
2,6-Dichlorophenol	47.62	ND	35.55	74.7		30 - 140
2,4-Dichlorophenol	95.24	ND	79.59	83.6		50 - 105
Diethylphthalate	47.62	ND	49.89	105		40 - 120
2,4-Dimethylphenol	95.24	ND	79.56	83.5		30 - 110
Dimethyl phthalate	47.62	ND	47.72	100		25 - 125
4,6-Dinitro-2-methylphenol	95.24	ND	91.41	96.0		40 - 130
2,4-Dinitrophenol	95.24	ND	83.10	87.3		15 - 140
2,4-Dinitrotoluene	47.62	ND	51.37	108		50 - 120
2,6-Dinitrotoluene	47.62	ND	49.14	103		50 - 115
Di-n-octylphthalate	47.62	ND	56.90	120		35 - 135
1,2-Diphenylhydrazine (as Azobenzer	47.62	ND	49.01	103		55 - 115
Bis(2-ethylhexyl)phthalate	47.62	ND	52.02	109		40 - 125
Fluoranthene	47.62	ND	48.33	102		55 - 115
Fluorene	47.62	ND	47.53	99.8		50 - 110
Hexachlorobenzene	47.62	ND	48.65	102		50 - 110
Hexachlorobutadiene	47.62	ND	37.11	77.9		25 - 105
Hexachlorocyclopentadiene	47.62	ND	30.72	64.5		0 - 120
Hexachloroethane	47.62	ND	32.78	68.8		30 - 100
Indeno(1,2,3-cd)pyrene	47.62	ND	48.61	102		45 - 125
Isophorone	47.62	ND	38.59	81.0		50 - 110
1-Methylnaphthalene	47.62	ND	37.81	79.4		35 - 115
2-Methylnaphthalene	47.62	ND	38.86	81.6		45 - 105
2-Methylphenol	95.24	ND	54.92	57.7		40 - 110
3-Methylphenol/4-Methylphenol	95.24	ND	49.62	52.1		30 - 110
Naphthalene	47.62	ND	40.83	85.8		40 - 100
4-Nitroaniline	47.62	ND	32.54	68.3		35 - 120
3-Nitroaniline	47.62	ND	34.55	72.6		20 - 125
2-Nitroaniline	47.62	ND	49.53	104		50 - 115
Nitrobenzene	47.62	ND	43.86	92.1		45 - 110
4-Nitrophenol	95.24	ND	20.88	21.9		0 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8270D

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L21007

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
2-Nitrophenol	95.24	ND	82.74	86.9		40 - 115
N-Nitrosodimethylamine	47.62	ND	13.13	27.6		25 - 110
N-Nitrosodiphenylamine	47.62	ND	41.05	86.2		50 - 110
N-Nitroso-di-n-propylamine	47.62	ND	44.03	92.5		35 - 130
Pentachlorophenol	95.24	ND	74.22	77.9		40 - 115
Phenanthrene	47.62	ND	47.96	101		50 - 115
Phenol	95.24	ND	18.71	19.6		0 - 115
Pyrene	47.62	ND	49.02	103		50 - 130
1,2,4,5-Tetrachlorobenzene	47.62	ND	40.32	84.7		30 - 135
2,3,4,6-Tetrachlorophenol	47.62	ND	34.02	71.4		25 - 135
1,2,4-Trichlorobenzene	47.62	ND	37.28	78.3		35 - 105
2,4,6-Trichlorophenol	95.24	ND	81.98	86.1		50 - 115
2,4,5-Trichlorophenol	95.24	ND	91.31	95.9		50 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8270D

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L21007

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	47.62	47.92	101	2.56		30	45 - 110
Acenaphthylene	47.62	47.07	98.9	2.46		30	50 - 105
Acetophenone	47.62	38.24	80.3	6.59		30	45 - 130
Anthracene	47.62	46.84	98.4	0.695		30	55 - 110
Atrazine	47.62	48.40	102	4.23		30	40 - 150
Benzaldehyde	47.62	36.18	76.0	4.90		30	40 - 125
Benzo(a)anthracene	47.62	48.10	101	2.18		30	55 - 110
Benzo(a)pyrene	47.62	46.57	97.8	1.10		30	55 - 110
Benzo(b)fluoranthene	47.62	48.95	103	1.47		30	45 - 120
Benzo(g,h,i)perylene	47.62	48.32	101	0.0607		30	40 - 125
Benzoic acid	95.24	95.2 U	0			30	0 - 125
Benzo(k)fluoranthene	47.62	49.54	104	1.66		30	45 - 125
Benzyl alcohol	47.62	20.24	42.5	6.47		30	30 - 110
1,1-Biphenyl	47.62	43.21	90.7	1.20		30	45 - 135
4-Bromophenyl-phenylether	47.62	48.74	102	0.439		30	50 - 115
Butylbenzylphthalate	47.62	53.50	112	1.35		30	45 - 115
Caprolactam	47.62	5.314	11.2	4.58		30	5 - 110
Carbazole	47.62	47.48	99.7	1.36		30	50 - 115
4-Chloro-3-methylphenol	95.24	84.37	88.6	4.87		30	45 - 110
4-Chloroaniline	47.62	33.60	70.6	3.56		30	15 - 110
Bis(2-chloroethoxy)methane	47.62	43.99	92.4	0.699		30	45 - 105
Bis(2-chloroethyl)ether	47.62	39.96	83.9	3.82		30	35 - 110
2,2'-Oxybis-1-chloropropane	47.62	39.97	83.9	3.01		30	25 - 130
2-Chloronaphthalene	47.62	43.50	91.3	4.93		30	50 - 105
2-Chlorophenol	95.24	53.12	55.8	22.0		30	35 - 105
4-Chlorophenyl phenyl ether	47.62	47.91	101	0.952		30	50 - 110
Chrysene	47.62	50.00	105	0.811		30	55 - 110
Dibenz(a,h)anthracene	47.62	49.14	103	3.94		30	40 - 125
Dibenzofuran	47.62	44.78	94.0	2.11		30	55 - 105
Di-n-butylphthalate	47.62	52.20	110	0.125		30	55 - 115
1,4-Dichlorobenzene	47.62	34.47	72.4	2.84		30	30 - 100
1,3-Dichlorobenzene	47.62	33.51	70.4	1.15		30	30 - 100
1,2-Dichlorobenzene	47.62	35.17	73.9	1.19		30	35 - 100

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Project: Holloman AFB

Matrix: Water

Batch: 5L21007

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
3,3'-Dichlorobenzidine	47.62	24.85	52.2	16.4		30	20 - 110
2,6-Dichlorophenol	47.62	25.90	54.4	31.4	*	30	30 - 140
2,4-Dichlorophenol	95.24	70.03	73.5	12.8		30	50 - 105
Diethylphthalate	47.62	50.16	105	0.531		30	40 - 120
2,4-Dimethylphenol	95.24	77.67	81.5	2.41		30	30 - 110
Dimethyl phthalate	47.62	49.19	103	3.04		30	25 - 125
4,6-Dinitro-2-methylphenol	95.24	61.09	64.1	39.8	*	30	40 - 130
2,4-Dinitrophenol	95.24	53.08	55.7	44.1	*	30	15 - 140
2,4-Dinitrotoluene	47.62	52.44	110	2.06		30	50 - 120
2,6-Dinitrotoluene	47.62	50.13	105	2.00		30	50 - 115
Di-n-octylphthalate	47.62	56.14	118	1.35		30	35 - 135
1,2-Diphenylhydrazine (as Azobenzer	47.62	49.15	103	0.276		30	55 - 115
Bis(2-ethylhexyl)phthalate	47.62	52.46	110	0.847		30	40 - 125
Fluoranthene	47.62	48.06	101	0.571		30	55 - 115
Fluorene	47.62	47.75	100	0.462		30	50 - 110
Hexachlorobenzene	47.62	48.03	101	1.27		30	50 - 110
Hexachlorobutadiene	47.62	38.65	81.2	4.07		30	25 - 105
Hexachlorocyclopentadiene	47.62	30.99	65.1	0.857		30	0 - 120
Hexachloroethane	47.62	32.93	69.1	0.446		30	30 - 100
Indeno(1,2,3-cd)pyrene	47.62	47.72	100	1.85		30	45 - 125
Isophorone	47.62	38.62	81.1	0.0967		30	50 - 110
1-Methylnaphthalene	47.62	38.53	80.9	1.88		30	35 - 115
2-Methylnaphthalene	47.62	39.87	83.7	2.56		30	45 - 105
2-Methylphenol	95.24	47.59	50.0	14.3		30	40 - 110
3-Methylphenol/4-Methylphenol	95.24	41.72	43.8	17.3		30	30 - 110
Naphthalene	47.62	41.14	86.4	0.746		30	40 - 100
4-Nitroaniline	47.62	25.09	52.7	25.9		30	35 - 120
3-Nitroaniline	47.62	31.99	67.2	7.70		30	20 - 125
2-Nitroaniline	47.62	50.14	105	1.21		30	50 - 115
Nitrobenzene	47.62	44.82	94.1	2.17		30	45 - 110
4-Nitrophenol	95.24	12.28	12.9	51.9	*	30	0 - 125
2-Nitrophenol	95.24	70.79	74.3	15.6		30	40 - 115
N-Nitrosodimethylamine	47.62	11.19	23.5	15.9	*	30	25 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8270D

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L21007

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
N-Nitrosodiphenylamine	47.62	41.41	87.0	0.868		30	50 - 110
N-Nitroso-di-n-propylamine	47.62	41.99	88.2	4.76		30	35 - 130
Pentachlorophenol	95.24	52.00	54.6	35.2	*	30	40 - 115
Phenanthrene	47.62	47.61	100	0.744		30	50 - 115
Phenol	95.24	14.33	15.0	26.6		30	0 - 115
Pyrene	47.62	48.87	103	0.303		30	50 - 130
1,2,4,5-Tetrachlorobenzene	47.62	41.53	87.2	2.96		30	30 - 135
2,3,4,6-Tetrachlorophenol	47.62	21.82	45.8	43.7	*	30	25 - 135
1,2,4-Trichlorobenzene	47.62	38.28	80.4	2.65		30	35 - 105
2,4,6-Trichlorophenol	95.24	56.25	59.1	37.2	*	30	50 - 115
2,4,5-Trichlorophenol	95.24	70.80	74.3	25.3		30	50 - 110

PREPARATION BATCH SUMMARY

SW8270D

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L21007 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02	12/21/15 13:30	1,050.00	1.00
OTC537-GW-5371-151214	1512147-03	12/21/15 13:30	1,050.00	1.00
OTC537-GW-5371-FD-151214	1512147-04	12/21/15 13:30	1,050.00	1.00
Blank	5L21007-BLK1	12/21/15 13:30	1,000.00	1.00
LCS	5L21007-BS1	12/21/15 13:30	1,000.00	1.00
OTC537-GW-5371-151214	5L21007-MS1	12/21/15 13:30	1,050.00	1.00
OTC537-GW-5371-151214	5L21007-MSD1	12/21/15 13:30	1,050.00	1.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-BLK1 File ID: L21007B1.D

Sampled: Prepared: Analyzed: 12/30/15 19:13

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene		1.25	2.50	5.00	U
208-96-8	Acenaphthylene		1.25	2.50	5.00	U
98-86-2	Acetophenone		1.25	2.50	5.00	U
120-12-7	Anthracene		1.25	2.50	5.00	U
1912-24-9	Atrazine		1.25	2.50	5.00	U
100-52-7	Benzaldehyde		1.25	2.50	5.00	U
56-55-3	Benzo(a)anthracene		1.25	2.50	5.00	U
50-32-8	Benzo(a)pyrene		1.25	2.50	5.00	U
205-99-2	Benzo(b)fluoranthene		1.25	2.50	5.00	U
191-24-2	Benzo(g,h,i)perylene		1.25	2.50	5.00	U
65-85-0	Benzoic acid		12.5	50.0	100	U
207-08-9	Benzo(k)fluoranthene		1.25	2.50	5.00	U
100-51-6	Benzyl alcohol		1.25	2.50	5.00	U
92-52-4	1,1-Biphenyl		1.25	2.50	5.00	U
101-55-3	4-Bromophenyl-phenylether		1.25	2.50	5.00	U
85-68-7	Butylbenzylphthalate		1.25	2.50	5.00	U
105-60-2	Caprolactam		1.25	2.50	5.00	U
86-74-8	Carbazole		1.25	2.50	5.00	U
59-50-7	4-Chloro-3-methylphenol		1.25	2.50	5.00	U
106-47-8	4-Chloroaniline		1.25	2.50	5.00	U
111-91-1	Bis(2-chloroethoxy)methane		1.25	2.50	5.00	U
111-44-4	Bis(2-chloroethyl)ether		1.25	2.50	5.00	U
108-60-1	2,2'-Oxybis-1-chloropropane		1.25	2.50	5.00	U
91-58-7	2-Chloronaphthalene		1.25	2.50	5.00	U
95-57-8	2-Chlorophenol		1.25	2.50	5.00	U
7005-72-3	4-Chlorophenyl phenyl ether		1.25	2.50	5.00	U
218-01-9	Chrysene		1.25	2.50	5.00	U
53-70-3	Dibenz(a,h)anthracene		1.25	2.50	5.00	U
132-64-9	Dibenzofuran		1.25	2.50	5.00	U
84-74-2	Di-n-butylphthalate		1.25	2.50	5.00	U
106-46-7	1,4-Dichlorobenzene		1.25	2.50	5.00	U
541-73-1	1,3-Dichlorobenzene		1.25	2.50	5.00	U
95-50-1	1,2-Dichlorobenzene		1.25	2.50	5.00	U
91-94-1	3,3'-Dichlorobenzidine		1.25	2.50	5.00	U
87-65-0	2,6-Dichlorophenol		1.25	2.50	5.00	U
120-83-2	2,4-Dichlorophenol		1.25	2.50	5.00	U
84-66-2	Diethylphthalate		1.25	2.50	5.00	U
105-67-9	2,4-Dimethylphenol		5.00	10.0	20.0	U
131-11-3	Dimethyl phthalate		1.25	2.50	5.00	U
534-52-1	4,6-Dinitro-2-methylphenol		5.00	10.0	20.0	U

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-BLK1 File ID: L21007B1.D

Sampled: Prepared: Analyzed: 12/30/15 19:13

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
51-28-5	2,4-Dinitrophenol		8.33	25.0	50.0	UX
121-14-2	2,4-Dinitrotoluene		1.25	2.50	5.00	U
606-20-2	2,6-Dinitrotoluene		1.25	2.50	5.00	U
117-84-0	Di-n-octylphthalate		1.25	2.50	5.00	U
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)		1.25	2.50	5.00	U
117-81-7	Bis(2-ethylhexyl)phthalate		1.25	2.50	5.00	U
206-44-0	Fluoranthene		1.25	2.50	5.00	U
86-73-7	Fluorene		1.25	2.50	5.00	U
118-74-1	Hexachlorobenzene		1.25	2.50	5.00	U
87-68-3	Hexachlorobutadiene		1.25	2.50	5.00	U
77-47-4	Hexachlorocyclopentadiene		1.25	5.00	10.0	U
67-72-1	Hexachloroethane		1.25	2.50	5.00	U
193-39-5	Indeno(1,2,3-cd)pyrene		1.25	2.50	5.00	U
78-59-1	Isophorone		1.25	2.50	5.00	U
90-12-0	1-Methylnaphthalene		1.25	2.50	5.00	U
91-57-6	2-Methylnaphthalene		1.25	2.50	5.00	U
95-48-7	2-Methylphenol		1.25	2.50	5.00	U
108-39-4/106	3-Methylphenol/4-Methylphenol		1.25	2.50	5.00	U
91-20-3	Naphthalene		1.25	2.50	5.00	U
100-01-6	4-Nitroaniline		5.00	10.0	20.0	U
99-09-2	3-Nitroaniline		5.00	10.0	20.0	U
88-74-4	2-Nitroaniline		5.00	10.0	20.0	U
98-95-3	Nitrobenzene		1.25	2.50	5.00	U
100-02-7	4-Nitrophenol		5.00	10.0	20.0	U
88-75-5	2-Nitrophenol		1.25	2.50	5.00	U
62-75-9	N-Nitrosodimethylamine		1.25	2.50	5.00	U
86-30-6	N-Nitrosodiphenylamine		1.25	2.50	5.00	U
621-64-7	N-Nitroso-di-n-propylamine		1.25	2.50	5.00	U
87-86-5	Pentachlorophenol		5.00	10.0	20.0	U
85-01-8	Phenanthrene		1.25	2.50	5.00	U
108-95-2	Phenol		1.25	2.50	5.00	U
129-00-0	Pyrene		1.25	2.50	5.00	U
95-94-3	1,2,4,5-Tetrachlorobenzene		1.25	2.50	5.00	U
58-90-2	2,3,4,6-Tetrachlorophenol		2.50	5.00	10.0	U
120-82-1	1,2,4-Trichlorobenzene		1.25	2.50	5.00	U
88-06-2	2,4,6-Trichlorophenol		1.25	2.50	5.00	U
95-95-4	2,4,5-Trichlorophenol		1.25	2.50	5.00	U

Total Target Analytes Reported: 77

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.00	38.17	76.3	50 - 110	

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-BLK1 File ID: L21007B1.D

Sampled: Prepared: Analyzed: 12/30/15 19:13

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	100.0	30.24	30.2	20 - 110	
Nitrobenzene-d5	50.00	39.25	78.5	40 - 110	
Phenol-d6 (advisory)	100.0	17.02	17.0	10 - 110	
Terphenyl-d14	50.00	46.84	93.7	50 - 135	
2,4,6-Tribromophenol	100.0	86.21	86.2	40 - 125	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-BS1 File ID: L21007L1.D

Sampled: Prepared: Analyzed: 12/30/15 19:40

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene	**43.54**	1.25	2.50	5.00	
208-96-8	Acenaphthylene	**43.49**	1.25	2.50	5.00	
98-86-2	Acetophenone	**36.31**	1.25	2.50	5.00	
120-12-7	Anthracene	**45.33**	1.25	2.50	5.00	
1912-24-9	Atrazine	**46.32**	1.25	2.50	5.00	
100-52-7	Benzaldehyde	**33.44**	1.25	2.50	5.00	
56-55-3	Benzo(a)anthracene	**44.55**	1.25	2.50	5.00	
50-32-8	Benzo(a)pyrene	**43.19**	1.25	2.50	5.00	
205-99-2	Benzo(b)fluoranthene	**46.55**	1.25	2.50	5.00	
191-24-2	Benzo(g,h,i)perylene	**44.02**	1.25	2.50	5.00	
65-85-0	Benzoic acid		12.5	50.0	100	U
207-08-9	Benzo(k)fluoranthene	**46.20**	1.25	2.50	5.00	
100-51-6	Benzyl alcohol	**23.82**	1.25	2.50	5.00	
92-52-4	1,1-Biphenyl	**39.11**	1.25	2.50	5.00	
101-55-3	4-Bromophenyl-phenylether	**46.50**	1.25	2.50	5.00	
85-68-7	Butylbenzylphthalate	**49.21**	1.25	2.50	5.00	
105-60-2	Caprolactam	**7.689**	1.25	2.50	5.00	
86-74-8	Carbazole	**45.17**	1.25	2.50	5.00	
59-50-7	4-Chloro-3-methylphenol	**84.29**	1.25	2.50	5.00	
106-47-8	4-Chloroaniline	**36.38**	1.25	2.50	5.00	
111-91-1	Bis(2-chloroethoxy)methane	**39.98**	1.25	2.50	5.00	
111-44-4	Bis(2-chloroethyl)ether	**37.94**	1.25	2.50	5.00	
108-60-1	2,2'-Oxybis-1-chloropropane	**38.09**	1.25	2.50	5.00	
91-58-7	2-Chloronaphthalene	**39.84**	1.25	2.50	5.00	
95-57-8	2-Chlorophenol	**65.85**	1.25	2.50	5.00	
7005-72-3	4-Chlorophenyl phenyl ether	**43.82**	1.25	2.50	5.00	
218-01-9	Chrysene	**46.40**	1.25	2.50	5.00	
53-70-3	Dibenz(a,h)anthracene	**45.44**	1.25	2.50	5.00	
132-64-9	Dibenzofuran	**41.30**	1.25	2.50	5.00	
84-74-2	Di-n-butylphthalate	**49.15**	1.25	2.50	5.00	
106-46-7	1,4-Dichlorobenzene	**32.42**	1.25	2.50	5.00	
541-73-1	1,3-Dichlorobenzene	**31.67**	1.25	2.50	5.00	
95-50-1	1,2-Dichlorobenzene	**33.34**	1.25	2.50	5.00	
91-94-1	3,3'-Dichlorobenzidine	**39.68**	1.25	2.50	5.00	
87-65-0	2,6-Dichlorophenol	**39.25**	1.25	2.50	5.00	
120-83-2	2,4-Dichlorophenol	**82.54**	1.25	2.50	5.00	
84-66-2	Diethylphthalate	**45.20**	1.25	2.50	5.00	
105-67-9	2,4-Dimethylphenol	**76.66**	5.00	10.0	20.0	
131-11-3	Dimethyl phthalate	**45.42**	1.25	2.50	5.00	
534-52-1	4,6-Dinitro-2-methylphenol	**109.2**	5.00	10.0	20.0	E

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-BS1 File ID: L21007L1.D

Sampled: Prepared: Analyzed: 12/30/15 19:40

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
51-28-5	2,4-Dinitrophenol	**81.21**	8.33	25.0	50.0	X
121-14-2	2,4-Dinitrotoluene	**47.17**	1.25	2.50	5.00	
606-20-2	2,6-Dinitrotoluene	**44.96**	1.25	2.50	5.00	
117-84-0	Di-n-octylphthalate	**52.64**	1.25	2.50	5.00	
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)	**46.74**	1.25	2.50	5.00	
117-81-7	Bis(2-ethylhexyl)phthalate	**47.73**	1.25	2.50	5.00	
206-44-0	Fluoranthene	**45.17**	1.25	2.50	5.00	
86-73-7	Fluorene	**45.18**	1.25	2.50	5.00	
118-74-1	Hexachlorobenzene	**45.15**	1.25	2.50	5.00	
87-68-3	Hexachlorobutadiene	**35.04**	1.25	2.50	5.00	
77-47-4	Hexachlorocyclopentadiene	**28.07**	1.25	5.00	10.0	
67-72-1	Hexachloroethane	**30.17**	1.25	2.50	5.00	
193-39-5	Indeno(1,2,3-cd)pyrene	**43.23**	1.25	2.50	5.00	
78-59-1	Isophorone	**36.14**	1.25	2.50	5.00	
90-12-0	1-Methylnaphthalene	**35.36**	1.25	2.50	5.00	
91-57-6	2-Methylnaphthalene	**36.54**	1.25	2.50	5.00	
95-48-7	2-Methylphenol	**52.02**	1.25	2.50	5.00	
108-39-4/106	3-Methylphenol/4-Methylphenol	**46.16**	1.25	2.50	5.00	
91-20-3	Naphthalene	**38.26**	1.25	2.50	5.00	
100-01-6	4-Nitroaniline	**42.09**	5.00	10.0	20.0	
99-09-2	3-Nitroaniline	**41.66**	5.00	10.0	20.0	
88-74-4	2-Nitroaniline	**49.46**	5.00	10.0	20.0	
98-95-3	Nitrobenzene	**36.34**	1.25	2.50	5.00	
100-02-7	4-Nitrophenol	**24.55**	5.00	10.0	20.0	
88-75-5	2-Nitrophenol	**85.27**	1.25	2.50	5.00	
62-75-9	N-Nitrosodimethylamine	**13.44**	1.25	2.50	5.00	
86-30-6	N-Nitrosodiphenylamine	**38.32**	1.25	2.50	5.00	
621-64-7	N-Nitroso-di-n-propylamine	**39.55**	1.25	2.50	5.00	
87-86-5	Pentachlorophenol	**85.24**	5.00	10.0	20.0	E
85-01-8	Phenanthrene	**46.01**	1.25	2.50	5.00	
108-95-2	Phenol	**18.47**	1.25	2.50	5.00	
129-00-0	Pyrene	**44.63**	1.25	2.50	5.00	
95-94-3	1,2,4,5-Tetrachlorobenzene	**37.67**	1.25	2.50	5.00	
58-90-2	2,3,4,6-Tetrachlorophenol	**41.11**	2.50	5.00	10.0	
120-82-1	1,2,4-Trichlorobenzene	**34.60**	1.25	2.50	5.00	
88-06-2	2,4,6-Trichlorophenol	**94.47**	1.25	2.50	5.00	
95-95-4	2,4,5-Trichlorophenol	**99.40**	1.25	2.50	5.00	

Total Target Analytes Reported: 77

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.00	36.54	73.1	50 - 110	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-BS1 File ID: L21007L1.D

Sampled: Prepared: Analyzed: 12/30/15 19:40

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	100.0	27.47	27.5	20 - 110	
Nitrobenzene-d5	50.00	35.72	71.4	40 - 110	
Phenol-d6 (advisory)	100.0	14.88	14.9	10 - 110	
Terphenyl-d14	50.00	42.62	85.2	50 - 135	
2,4,6-Tribromophenol	100.0	87.82	87.8	40 - 125	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-MS1 File ID: 1214703M.D

Sampled: Prepared: Analyzed: 12/30/15 21:02

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene	**46.71**	1.19	2.38	4.76	
208-96-8	Acenaphthylene	**45.93**	1.19	2.38	4.76	
98-86-2	Acetophenone	**40.85**	1.19	2.38	4.76	
120-12-7	Anthracene	**47.17**	1.19	2.38	4.76	
1912-24-9	Atrazine	**50.49**	1.19	2.38	4.76	
100-52-7	Benzaldehyde	**38.00**	1.19	2.38	4.76	
56-55-3	Benzo(a)anthracene	**49.17**	1.19	2.38	4.76	
50-32-8	Benzo(a)pyrene	**47.08**	1.19	2.38	4.76	
205-99-2	Benzo(b)fluoranthene	**49.68**	1.19	2.38	4.76	
191-24-2	Benzo(g,h,i)perylene	**48.29**	1.19	2.38	4.76	
65-85-0	Benzoic acid	**14.49**	11.9	47.6	95.2	J
207-08-9	Benzo(k)fluoranthene	**50.37**	1.19	2.38	4.76	
100-51-6	Benzyl alcohol	**21.60**	1.19	2.38	4.76	
92-52-4	1,1-Biphenyl	**42.70**	1.19	2.38	4.76	
101-55-3	4-Bromophenyl-phenylether	**48.52**	1.19	2.38	4.76	
85-68-7	Butylbenzylphthalate	**52.78**	1.19	2.38	4.76	
105-60-2	Caprolactam	**5.563**	1.19	2.38	4.76	
86-74-8	Carbazole	**48.13**	1.19	2.38	4.76	
59-50-7	4-Chloro-3-methylphenol	**88.58**	1.19	2.38	4.76	
106-47-8	4-Chloroaniline	**32.43**	1.19	2.38	4.76	
111-91-1	Bis(2-chloroethoxy)methane	**44.30**	1.19	2.38	4.76	
111-44-4	Bis(2-chloroethyl)ether	**41.52**	1.19	2.38	4.76	
108-60-1	2,2'-Oxybis-1-chloropropane	**41.20**	1.19	2.38	4.76	
91-58-7	2-Chloronaphthalene	**41.40**	1.19	2.38	4.76	
95-57-8	2-Chlorophenol	**66.26**	1.19	2.38	4.76	
7005-72-3	4-Chlorophenyl phenyl ether	**47.46**	1.19	2.38	4.76	
218-01-9	Chrysene	**50.41**	1.19	2.38	4.76	
53-70-3	Dibenz(a,h)anthracene	**51.11**	1.19	2.38	4.76	
132-64-9	Dibenzofuran	**43.85**	1.19	2.38	4.76	
84-74-2	Di-n-butylphthalate	**52.27**	1.19	2.38	4.76	
106-46-7	1,4-Dichlorobenzene	**33.51**	1.19	2.38	4.76	
541-73-1	1,3-Dichlorobenzene	**33.89**	1.19	2.38	4.76	
95-50-1	1,2-Dichlorobenzene	**35.59**	1.19	2.38	4.76	
91-94-1	3,3'-Dichlorobenzidine	**29.31**	1.19	2.38	4.76	
87-65-0	2,6-Dichlorophenol	**35.55**	1.19	2.38	4.76	
120-83-2	2,4-Dichlorophenol	**79.59**	1.19	2.38	4.76	
84-66-2	Diethylphthalate	**49.89**	1.19	2.38	4.76	
105-67-9	2,4-Dimethylphenol	**79.56**	4.76	9.52	19.0	
131-11-3	Dimethyl phthalate	**47.72**	1.19	2.38	4.76	
534-52-1	4,6-Dinitro-2-methylphenol	**91.41**	4.76	9.52	19.0	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-MS1 File ID: 1214703M.D

Sampled: Prepared: Analyzed: 12/30/15 21:02

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
51-28-5	2,4-Dinitrophenol	**83.10**	7.93	23.8	47.6	X
121-14-2	2,4-Dinitrotoluene	**51.37**	1.19	2.38	4.76	
606-20-2	2,6-Dinitrotoluene	**49.14**	1.19	2.38	4.76	
117-84-0	Di-n-octylphthalate	**56.90**	1.19	2.38	4.76	
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)	**49.01**	1.19	2.38	4.76	
117-81-7	Bis(2-ethylhexyl)phthalate	**52.02**	1.19	2.38	4.76	
206-44-0	Fluoranthene	**48.33**	1.19	2.38	4.76	
86-73-7	Fluorene	**47.53**	1.19	2.38	4.76	
118-74-1	Hexachlorobenzene	**48.65**	1.19	2.38	4.76	
87-68-3	Hexachlorobutadiene	**37.11**	1.19	2.38	4.76	
77-47-4	Hexachlorocyclopentadiene	**30.72**	1.19	4.76	9.52	
67-72-1	Hexachloroethane	**32.78**	1.19	2.38	4.76	
193-39-5	Indeno(1,2,3-cd)pyrene	**48.61**	1.19	2.38	4.76	
78-59-1	Isophorone	**38.59**	1.19	2.38	4.76	
90-12-0	1-Methylnaphthalene	**37.81**	1.19	2.38	4.76	
91-57-6	2-Methylnaphthalene	**38.86**	1.19	2.38	4.76	
95-48-7	2-Methylphenol	**54.92**	1.19	2.38	4.76	
108-39-4/106	3-Methylphenol/4-Methylphenol	**49.62**	1.19	2.38	4.76	
91-20-3	Naphthalene	**40.83**	1.19	2.38	4.76	
100-01-6	4-Nitroaniline	**32.54**	4.76	9.52	19.0	
99-09-2	3-Nitroaniline	**34.55**	4.76	9.52	19.0	
88-74-4	2-Nitroaniline	**49.53**	4.76	9.52	19.0	
98-95-3	Nitrobenzene	**43.86**	1.19	2.38	4.76	
100-02-7	4-Nitrophenol	**20.88**	4.76	9.52	19.0	
88-75-5	2-Nitrophenol	**82.74**	1.19	2.38	4.76	
62-75-9	N-Nitrosodimethylamine	**13.13**	1.19	2.38	4.76	
86-30-6	N-Nitrosodiphenylamine	**41.05**	1.19	2.38	4.76	
621-64-7	N-Nitroso-di-n-propylamine	**44.03**	1.19	2.38	4.76	
87-86-5	Pentachlorophenol	**74.22**	4.76	9.52	19.0	
85-01-8	Phenanthrene	**47.96**	1.19	2.38	4.76	
108-95-2	Phenol	**18.71**	1.19	2.38	4.76	
129-00-0	Pyrene	**49.02**	1.19	2.38	4.76	
95-94-3	1,2,4,5-Tetrachlorobenzene	**40.32**	1.19	2.38	4.76	
58-90-2	2,3,4,6-Tetrachlorophenol	**34.02**	2.38	4.76	9.52	
120-82-1	1,2,4-Trichlorobenzene	**37.28**	1.19	2.38	4.76	
88-06-2	2,4,6-Trichlorophenol	**81.98**	1.19	2.38	4.76	
95-95-4	2,4,5-Trichlorophenol	**91.31**	1.19	2.38	4.76	

Total Target Analytes Reported: 77

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	47.62	38.12	80.1	50 - 110	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-MS1 File ID: 1214703M.D

Sampled: Prepared: Analyzed: 12/30/15 21:02

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	95.24	23.93	25.1	20 - 110	
Nitrobenzene-d5	47.62	37.13	78.0	40 - 110	
Phenol-d6 (advisory)	95.24	15.01	15.8	10 - 110	
Terphenyl-d14	47.62	45.31	95.2	50 - 135	
2,4,6-Tribromophenol	95.24	77.97	81.9	40 - 125	

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-MSD1 File ID: 1214703S.D

Sampled: Prepared: Analyzed: 12/30/15 21:30

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene	**47.92**	1.19	2.38	4.76	
208-96-8	Acenaphthylene	**47.07**	1.19	2.38	4.76	
98-86-2	Acetophenone	**38.24**	1.19	2.38	4.76	
120-12-7	Anthracene	**46.84**	1.19	2.38	4.76	
1912-24-9	Atrazine	**48.40**	1.19	2.38	4.76	
100-52-7	Benzaldehyde	**36.18**	1.19	2.38	4.76	
56-55-3	Benzo(a)anthracene	**48.10**	1.19	2.38	4.76	
50-32-8	Benzo(a)pyrene	**46.57**	1.19	2.38	4.76	
205-99-2	Benzo(b)fluoranthene	**48.95**	1.19	2.38	4.76	
191-24-2	Benzo(g,h,i)perylene	**48.32**	1.19	2.38	4.76	
65-85-0	Benzoic acid		11.9	47.6	95.2	U
207-08-9	Benzo(k)fluoranthene	**49.54**	1.19	2.38	4.76	
100-51-6	Benzyl alcohol	**20.24**	1.19	2.38	4.76	
92-52-4	1,1-Biphenyl	**43.21**	1.19	2.38	4.76	
101-55-3	4-Bromophenyl-phenylether	**48.74**	1.19	2.38	4.76	
85-68-7	Butylbenzylphthalate	**53.50**	1.19	2.38	4.76	
105-60-2	Caprolactam	**5.314**	1.19	2.38	4.76	
86-74-8	Carbazole	**47.48**	1.19	2.38	4.76	
59-50-7	4-Chloro-3-methylphenol	**84.37**	1.19	2.38	4.76	
106-47-8	4-Chloroaniline	**33.60**	1.19	2.38	4.76	
111-91-1	Bis(2-chloroethoxy)methane	**43.99**	1.19	2.38	4.76	
111-44-4	Bis(2-chloroethyl)ether	**39.96**	1.19	2.38	4.76	
108-60-1	2,2'-Oxybis-1-chloropropane	**39.97**	1.19	2.38	4.76	
91-58-7	2-Chloronaphthalene	**43.50**	1.19	2.38	4.76	
95-57-8	2-Chlorophenol	**53.12**	1.19	2.38	4.76	
7005-72-3	4-Chlorophenyl phenyl ether	**47.91**	1.19	2.38	4.76	
218-01-9	Chrysene	**50.00**	1.19	2.38	4.76	
53-70-3	Dibenz(a,h)anthracene	**49.14**	1.19	2.38	4.76	
132-64-9	Dibenzofuran	**44.78**	1.19	2.38	4.76	
84-74-2	Di-n-butylphthalate	**52.20**	1.19	2.38	4.76	
106-46-7	1,4-Dichlorobenzene	**34.47**	1.19	2.38	4.76	
541-73-1	1,3-Dichlorobenzene	**33.51**	1.19	2.38	4.76	
95-50-1	1,2-Dichlorobenzene	**35.17**	1.19	2.38	4.76	
91-94-1	3,3'-Dichlorobenzidine	**24.85**	1.19	2.38	4.76	
87-65-0	2,6-Dichlorophenol	**25.90**	1.19	2.38	4.76	
120-83-2	2,4-Dichlorophenol	**70.03**	1.19	2.38	4.76	
84-66-2	Diethylphthalate	**50.16**	1.19	2.38	4.76	
105-67-9	2,4-Dimethylphenol	**77.67**	4.76	9.52	19.0	
131-11-3	Dimethyl phthalate	**49.19**	1.19	2.38	4.76	
534-52-1	4,6-Dinitro-2-methylphenol	**61.09**	4.76	9.52	19.0	

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-MSD1 File ID: 1214703S.D

Sampled: Prepared: Analyzed: 12/30/15 21:30

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
51-28-5	2,4-Dinitrophenol	**53.08**	7.93	23.8	47.6	X
121-14-2	2,4-Dinitrotoluene	**52.44**	1.19	2.38	4.76	
606-20-2	2,6-Dinitrotoluene	**50.13**	1.19	2.38	4.76	
117-84-0	Di-n-octylphthalate	**56.14**	1.19	2.38	4.76	
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)	**49.15**	1.19	2.38	4.76	
117-81-7	Bis(2-ethylhexyl)phthalate	**52.46**	1.19	2.38	4.76	
206-44-0	Fluoranthene	**48.06**	1.19	2.38	4.76	
86-73-7	Fluorene	**47.75**	1.19	2.38	4.76	
118-74-1	Hexachlorobenzene	**48.03**	1.19	2.38	4.76	
87-68-3	Hexachlorobutadiene	**38.65**	1.19	2.38	4.76	
77-47-4	Hexachlorocyclopentadiene	**30.99**	1.19	4.76	9.52	
67-72-1	Hexachloroethane	**32.93**	1.19	2.38	4.76	
193-39-5	Indeno(1,2,3-cd)pyrene	**47.72**	1.19	2.38	4.76	
78-59-1	Isophorone	**38.62**	1.19	2.38	4.76	
90-12-0	1-Methylnaphthalene	**38.53**	1.19	2.38	4.76	
91-57-6	2-Methylnaphthalene	**39.87**	1.19	2.38	4.76	
95-48-7	2-Methylphenol	**47.59**	1.19	2.38	4.76	
108-39-4/106	3-Methylphenol/4-Methylphenol	**41.72**	1.19	2.38	4.76	
91-20-3	Naphthalene	**41.14**	1.19	2.38	4.76	
100-01-6	4-Nitroaniline	**25.09**	4.76	9.52	19.0	
99-09-2	3-Nitroaniline	**31.99**	4.76	9.52	19.0	
88-74-4	2-Nitroaniline	**50.14**	4.76	9.52	19.0	
98-95-3	Nitrobenzene	**44.82**	1.19	2.38	4.76	
100-02-7	4-Nitrophenol	**12.28**	4.76	9.52	19.0	J
88-75-5	2-Nitrophenol	**70.79**	1.19	2.38	4.76	
62-75-9	N-Nitrosodimethylamine	**11.19**	1.19	2.38	4.76	
86-30-6	N-Nitrosodiphenylamine	**41.41**	1.19	2.38	4.76	
621-64-7	N-Nitroso-di-n-propylamine	**41.99**	1.19	2.38	4.76	
87-86-5	Pentachlorophenol	**52.00**	4.76	9.52	19.0	
85-01-8	Phenanthrene	**47.61**	1.19	2.38	4.76	
108-95-2	Phenol	**14.33**	1.19	2.38	4.76	
129-00-0	Pyrene	**48.87**	1.19	2.38	4.76	
95-94-3	1,2,4,5-Tetrachlorobenzene	**41.53**	1.19	2.38	4.76	
58-90-2	2,3,4,6-Tetrachlorophenol	**21.82**	2.38	4.76	9.52	
120-82-1	1,2,4-Trichlorobenzene	**38.28**	1.19	2.38	4.76	
88-06-2	2,4,6-Trichlorophenol	**56.25**	1.19	2.38	4.76	
95-95-4	2,4,5-Trichlorophenol	**70.80**	1.19	2.38	4.76	

Total Target Analytes Reported: 77

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	47.62	38.96	81.8	50 - 110	

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L21007-MSD1 File ID: 1214703S.D

Sampled: Prepared: Analyzed: 12/30/15 21:30

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L21007 Sequence: 6A00413 Calibration: 5343002 Instrument: MS-BNA3

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	95.24	15.68	16.5	20 - 110	
Nitrobenzene-d5	47.62	37.27	78.3	40 - 110	
Phenol-d6 (advisory)	95.24	11.66	12.2	10 - 110	
Terphenyl-d14	47.62	44.77	94.0	50 - 135	
2,4,6-Tribromophenol	95.24	60.19	63.2	40 - 125	

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Lab File ID:	1124TUN1.D	Injection Date:	11/24/15
Instrument ID:	MS-BNA3	Injection Time:	12:19
Sequence:	5L34307	Lab Sample ID:	5L34307-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30 - 60% of 198	37.4	PASS
68	Less than 2% of 69	0	PASS
69	Less than 200% of 198	39.5	PASS
70	Less than 2% of 69	0.326	PASS
127	40 - 60% of 198	42.5	PASS
197	Less than 1% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.63	PASS
275	10 - 30% of 198	27	PASS
365	1 - 200% of 198	3.03	PASS
441	0.001 - 99.99% of 443	80.8	PASS
442	40 - 200% of 198	85.2	PASS
443	17 - 23% of 442	19.4	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Lab File ID:	1230TUN1.D	Injection Date:	12/30/15
Instrument ID:	MS-BNA3	Injection Time:	15:12
Sequence:	6A00413	Lab Sample ID:	6A00413-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30 - 60% of 198	40.3	PASS
68	Less than 2% of 69	0	PASS
69	Less than 200% of 198	44.1	PASS
70	Less than 2% of 69	0.405	PASS
127	40 - 60% of 198	44.6	PASS
197	Less than 1% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.15	PASS
275	10 - 30% of 198	24.4	PASS
365	1 - 200% of 198	2.49	PASS
441	0.001 - 99.99% of 443	75.6	PASS
442	40 - 200% of 198	66.7	PASS
443	17 - 23% of 442	20.4	PASS

ANALYSIS SEQUENCE SUMMARY

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L34307	Instrument:	MS-BNA3
Calibration:	5343002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L34307-TUN1	1124TUN1.D	11/24/15 12:19
Cal Standard	5L34307-CAL1	1124CAL1.D	11/24/15 12:40
Cal Standard	5L34307-CAL2	1124CAL2.D	11/24/15 13:08
Cal Standard	5L34307-CAL3	1124CAL3.D	11/24/15 13:36
Cal Standard	5L34307-CAL4	1124CAL4.D	11/24/15 14:04
Cal Standard	5L34307-CAL5	1124CAL5.D	11/24/15 14:32
Cal Standard	5L34307-CAL6	1124CAL6.D	11/24/15 15:00
Cal Standard	5L34307-CAL7	1124CAL7.D	11/24/15 15:28
Cal Standard	5L34307-CAL8	1124CAL8.D	11/24/15 15:56
Cal Standard	5L34307-CAL9	1124CAL9.D	11/24/15 16:24
Cal Standard	5L34307-CALA	1124CALA.D	11/24/15 16:51
Cal Standard	5L34307-CALB	1124CALB.D	11/24/15 17:19
Cal Standard	5L34307-CALC	1124CALC.D	11/24/15 17:47
Cal Standard	5L34307-CALD	1124CALD.D	11/24/15 18:14
Cal Standard	5L34307-CALE	1124CALE.D	11/24/15 18:41
Cal Standard	5L34307-CALF	1124CALF.D	11/24/15 19:09
Cal Standard	5L34307-CALG	1124CALG.D	11/24/15 19:36
Initial Cal Check	5L34307-ICV1	1124ICV1.D	11/24/15 20:03
Initial Cal Check	5L34307-ICV2	1124ICV2.D	11/24/15 20:31

ANALYSIS SEQUENCE SUMMARY

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	6A00413	Instrument:	MS-BNA3
Calibration:	5343002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	6A00413-TUN1	1230TUN1.D	12/30/15 15:12
Calibration Check	6A00413-CCV1	1230CCV1.D	12/30/15 15:33
Calibration Check	6A00413-CCV2	1230CCV2.D	12/30/15 16:01
Blank	5L21007-BLK1	L21007B1.D	12/30/15 19:13
LCS	5L21007-BS1	L21007L1.D	12/30/15 19:40
OTC538-GW-5382-151214	1512147-02	1214702.D	12/30/15 20:07
OTC537-GW-5371-151214	1512147-03	1214703.D	12/30/15 20:35
OTC537-GW-5371-151214	5L21007-MS1	1214703M.D	12/30/15 21:02
OTC537-GW-5371-151214	5L21007-MSD1	1214703S.D	12/30/15 21:30
OTC537-GW-5371-FD-151214	1512147-04	1214704.D	12/30/15 21:57

INTERNAL STANDARD AREA AND RT SUMMARY
SW8270D

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Sequence: 6A00413
Instrument: MS-BNA3
Calibration: 5343002

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (6A00413-CCV1)			Lab File ID: 1230CCV1.D				Analyzed: 12/30/15 15:33		
1,4-Dichlorobenzene-d4	514127	4.577	563137	4.58	91	50 - 200	-0.0030	+/-0.50	
Naphthalene-d8	2013141	5.981	2107047	5.98	96	50 - 200	0.0010	+/-0.50	
Acenaphthene-d10	1160862	8.078	1197975	8.08	97	50 - 200	-0.0020	+/-0.50	
Phenanthrene-d10	2489513	9.886	2665760	9.89	93	50 - 200	-0.0040	+/-0.50	
Chrysene-d12	2736741	13.53	2948482	13.53	93	50 - 200	0.0000	+/-0.50	
Perylene-d12	2478514	16.519	2693847	16.52	92	50 - 200	-0.0010	+/-0.50	
Calibration Check (6A00413-CCV2)			Lab File ID: 1230CCV2.D				Analyzed: 12/30/15 16:01		
1,4-Dichlorobenzene-d4	680702	4.571	563137	4.577	121	50 - 200	-0.0060	+/-0.50	
Naphthalene-d8	2680208	5.98	2107047	5.981	127	50 - 200	-0.0010	+/-0.50	
Acenaphthene-d10	1566673	8.078	1197975	8.078	131	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	3434696	9.881	2665760	9.886	129	50 - 200	-0.0050	+/-0.50	
Chrysene-d12	3844297	13.525	2948482	13.53	130	50 - 200	-0.0050	+/-0.50	
Perylene-d12	3537907	16.519	2693847	16.519	131	50 - 200	0.0000	+/-0.50	
Blank (5L21007-BLK1)			Lab File ID: L21007B1.D				Analyzed: 12/30/15 19:13		
1,4-Dichlorobenzene-d4	544309	4.576	563137	4.577	97	50 - 200	-0.0010	+/-0.50	
Naphthalene-d8	2060892	5.976	2107047	5.981	98	50 - 200	-0.0050	+/-0.50	
Acenaphthene-d10	1160246	8.078	1197975	8.078	97	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	2518425	9.881	2665760	9.886	94	50 - 200	-0.0050	+/-0.50	
Chrysene-d12	2736023	13.525	2948482	13.53	93	50 - 200	-0.0050	+/-0.50	
Perylene-d12	2410914	16.519	2693847	16.519	89	50 - 200	0.0000	+/-0.50	
LCS (5L21007-BS1)			Lab File ID: L21007L1.D				Analyzed: 12/30/15 19:40		
1,4-Dichlorobenzene-d4	556955	4.577	563137	4.577	99	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	2118425	5.981	2107047	5.981	101	50 - 200	0.0000	+/-0.50	
Acenaphthene-d10	1192354	8.079	1197975	8.078	100	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10	2498506	9.886	2665760	9.886	94	50 - 200	0.0000	+/-0.50	
Chrysene-d12	2796450	13.53	2948482	13.53	95	50 - 200	0.0000	+/-0.50	
Perylene-d12	2397571	16.52	2693847	16.519	89	50 - 200	0.0010	+/-0.50	
OTC538-GW-5382-151214 (1512147-02)			Lab File ID: 1214702.D				Analyzed: 12/30/15 20:07		
1,4-Dichlorobenzene-d4	607897	4.575	563137	4.577	108	50 - 200	-0.0020	+/-0.50	
Naphthalene-d8	2290574	5.979	2107047	5.981	109	50 - 200	-0.0020	+/-0.50	
Acenaphthene-d10	1288972	8.076	1197975	8.078	108	50 - 200	-0.0020	+/-0.50	
Phenanthrene-d10	2851596	9.884	2665760	9.886	107	50 - 200	-0.0020	+/-0.50	
Chrysene-d12	3088247	13.523	2948482	13.53	105	50 - 200	-0.0070	+/-0.50	
Perylene-d12	2729619	16.517	2693847	16.519	101	50 - 200	-0.0020	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SW8270D

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Sequence: 6A00413
Instrument: MS-BNA3
Calibration: 5343002

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
OTC537-GW-5371-151214 (1512147-03)			Lab File ID: 1214703.D				Analyzed: 12/30/15 20:35		
1,4-Dichlorobenzene-d4	630693	4.576	563137	4.577	112	50 - 200	-0.0010	+/-0.50	
Naphthalene-d8	2319488	5.981	2107047	5.981	110	50 - 200	0.0000	+/-0.50	
Acenaphthene-d10	1303331	8.078	1197975	8.078	109	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	2857229	9.881	2665760	9.886	107	50 - 200	-0.0050	+/-0.50	
Chrysene-d12	3148224	13.525	2948482	13.53	107	50 - 200	-0.0050	+/-0.50	
Perylene-d12	2736607	16.524	2693847	16.519	102	50 - 200	0.0050	+/-0.50	
Matrix Spike (5L21007-MS1)			Lab File ID: 1214703M.D				Analyzed: 12/30/15 21:02		
1,4-Dichlorobenzene-d4	579904	4.573	563137	4.577	103	50 - 200	-0.0040	+/-0.50	
Naphthalene-d8	2193465	5.982	2107047	5.981	104	50 - 200	0.0010	+/-0.50	
Acenaphthene-d10	1239240	8.079	1197975	8.078	103	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10	2641119	9.887	2665760	9.886	99	50 - 200	0.0010	+/-0.50	
Chrysene-d12	2857953	13.531	2948482	13.53	97	50 - 200	0.0010	+/-0.50	
Perylene-d12	2478598	16.52	2693847	16.519	92	50 - 200	0.0010	+/-0.50	
Matrix Spike Dup (5L21007-MSD1)			Lab File ID: 1214703S.D				Analyzed: 12/30/15 21:30		
1,4-Dichlorobenzene-d4	597804	4.577	563137	4.577	106	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	2213088	5.981	2107047	5.981	105	50 - 200	0.0000	+/-0.50	
Acenaphthene-d10	1244090	8.079	1197975	8.078	104	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10	2704495	9.886	2665760	9.886	101	50 - 200	0.0000	+/-0.50	
Chrysene-d12	2922914	13.53	2948482	13.53	99	50 - 200	0.0000	+/-0.50	
Perylene-d12	2573229	16.52	2693847	16.519	96	50 - 200	0.0010	+/-0.50	
OTC537-GW-5371-FD-151214 (1512147-04)			Lab File ID: 1214704.D				Analyzed: 12/30/15 21:57		
1,4-Dichlorobenzene-d4	644336	4.572	563137	4.577	114	50 - 200	-0.0050	+/-0.50	
Naphthalene-d8	2415269	5.976	2107047	5.981	115	50 - 200	-0.0050	+/-0.50	
Acenaphthene-d10	1342722	8.078	1197975	8.078	112	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	2920433	9.881	2665760	9.886	110	50 - 200	-0.0050	+/-0.50	
Chrysene-d12	3238167	13.525	2948482	13.53	110	50 - 200	-0.0050	+/-0.50	
Perylene-d12	2875448	16.519	2693847	16.519	107	50 - 200	0.0000	+/-0.50	

INITIAL CALIBRATION DATA

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5343002	Instrument:	MS-BNA3
Matrix:	Water	Calibration Dates:	11/24/15 12:40 11/24/15 19:36

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Acenaphthene	5	1.368514	10	1.312374	20	1.415214	40	1.376664	50	1.398042	60	1.410735
Acenaphthylene	5	2.01457	10	2.050713	20	2.193352	40	2.082779	50	2.089258	60	2.142185
Acetophenone	5	2.004251	10	1.981515	20	2.046913	40	1.978797	50	1.988937	60	2.010236
Aniline	5	2.113468	10	2.048238	20	2.160203	40	2.118528	50	2.105237	60	2.116047
Anthracene	5	1.103844	10	1.129476	20	1.207581	40	1.127214	50	1.141247	60	1.16418
Atrazine												
Benzaldehyde												
Benzidine	5	0.5183019	10	0.5663748	20	0.6649953	40	0.715321	50	0.73485	60	0.7561906
Benzo(a)anthracene	5	1.175409	10	1.166404	20	1.247052	40	1.233739	50	1.222539	60	1.219205
Benzo(a)pyrene	5	1.09201	10	1.128889	20	1.24519	40	1.255459	50	1.259348	60	1.282781
Benzo(b)fluoranthene	5	1.110442	10	1.168222	20	1.297738	40	1.297953	50	1.296737	60	1.311836
Benzo(g,h,i)perylene	5	1.008665	10	1.016754	20	1.119134	40	1.126418	50	1.135805	60	1.136719
Benzoic acid												
Benzo(k)fluoranthene	5	1.192157	10	1.237015	20	1.333969	40	1.294702	50	1.308268	60	1.306726
Benzyl alcohol	5	0.8156481	10	0.8533665	20	0.9303219	40	0.9233136	50	0.9352452	60	0.9595839
1,1-Biphenyl	5	1.68645	10	1.661047	20	1.789138	40	1.711137	50	1.721372	60	1.735121
4-Bromophenyl-phenylether	5	0.2436384	10	0.243878	20	0.2553654	40	0.2474207	50	0.250771	60	0.2595071
Butylbenzylphthalate	5	0.2914721	10	0.3427454	20	0.4114527	40	0.4468574	50	0.4617446	60	0.4765859
Caprolactam												
Carbazole	5	0.9912629	10	1.000013	20	1.098346	40	1.042289	50	1.049972	60	1.074625
4-Chloro-3-methylphenol	5	0.2693889	10	0.2958628	20	0.3212753	40	0.3298614	50	0.3412681	60	0.3533186
4-Chloroaniline	5	0.4381635	10	0.4357739	20	0.469873	40	0.4715575	50	0.4640299	60	0.4658972
Bis(2-chloroethoxy)methane	5	0.4124712	10	0.4105755	20	0.4421762	40	0.4255297	50	0.4225622	60	0.4285367
Bis(2-chloroethyl)ether	5	1.287928	10	1.227741	20	1.285101	40	1.244282	50	1.276962	60	1.272806
2,2'-Oxybis-1-chloropropane	5	1.976932	10	1.977482	20	2.057443	40	2.002574	50	1.996958	60	2.024128
2-Chloronaphthalene	5	1.308026	10	1.267041	20	1.373917	40	1.308837	50	1.314112	60	1.334503
2-Chlorophenol	5	1.225477	10	1.243135	20	1.341855	40	1.331327	50	1.374837	60	1.390966
4-Chlorophenyl phenyl ether	5	0.8317819	10	0.8090445	20	0.8626608	40	0.8433388	50	0.8394826	60	0.8653158
Chrysene	5	1.089182	10	1.080762	20	1.15878	40	1.121111	50	1.099944	60	1.124476
Dibenz(a,h)anthracene	5	0.8681885	10	0.9181496	20	1.011611	40	1.067707	50	1.054328	60	1.076628
Dibenzofuran	5	2.002864	10	1.977724	20	2.16182	40	2.007209	50	2.037836	60	2.04491

INITIAL CALIBRATION DATA

SW8270D

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Calibration: 5343002
Instrument: MS-BNA3
Matrix: Water
Calibration Dates: 11/24/15 12:40 11/24/15 19:36

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Di-n-butylphthalate	5	0.9440882	10	1.038221	20	1.162583	40	1.152443	50	1.158694	60	1.190158
1,4-Dichlorobenzene	5	1.644978	10	1.640223	20	1.695997	40	1.664862	50	1.66521	60	1.686387
1,3-Dichlorobenzene	5	1.620775	10	1.657399	20	1.732584	40	1.631599	50	1.613038	60	1.64709
1,2-Dichlorobenzene	5	1.52344	10	1.535093	20	1.615249	40	1.573579	50	1.573446	60	1.586807
3,3'-Dichlorobenzidine	5	0.3280619	10	0.3544356	20	0.4066944	40	0.4426295	50	0.4479083	60	0.4650716
2,6-Dichlorophenol	5	0.2870256	10	0.2817604	20	0.3225948	40	0.3189677	50	0.3182889	60	0.3264204
2,4-Dichlorophenol	5	0.2806251	10	0.2984081	20	0.3254599	40	0.3253469	50	0.3296318	60	0.3435686
Diethylphthalate	5	1.441883	10	1.414743	20	1.547015	40	1.528601	50	1.567982	60	1.593831
2,4-Dimethylphenol	5	0.3759596	10	0.3614282	20	0.4114283	40	0.4062757	50	0.4085722	60	0.415091
Dimethyl phthalate	5	1.470664	10	1.471554	20	1.588835	40	1.552396	50	1.580711	60	1.60568
4,6-Dinitro-2-methylphenol	5	6.930591E-02	10	7.537204E-02	20	9.053236E-02	40	0.1063206	50	0.118844	60	0.1284076
2,4-Dinitrophenol	5	9.238869E-02	10	0.1080446	20	0.1346911	40	0.1536375	50	0.1699454	60	0.1793637
2,4-Dinitrotoluene	5	0.374536	10	0.3854699	20	0.4635845	40	0.4829096	50	0.5004852	60	0.512509
2,6-Dinitrotoluene	5	0.3052687	10	0.3105891	20	0.3497958	40	0.3611785	50	0.3669299	60	0.3769827
Di-n-octylphthalate	5	0.6892614	10	0.8068233	20	0.9985912	40	1.09947	50	1.157177	60	1.190903
1,4-Dioxane	5	0.5889605	10	0.5462936	20	0.5705432	40	0.5395725	50	0.5398857	60	0.5528419
1,2-Diphenylhydrazine (as Azoben:	5	0.695314	10	0.6964389	20	0.7369669	40	0.7019598	50	0.7078483	60	0.7344326
Bis(2-ethylhexyl)phthalate	5	0.4460569	10	0.5025371	20	0.5783748	40	0.6307399	50	0.6583339	60	0.6680274
Fluoranthene	5	1.28836	10	1.31275	20	1.426096	40	1.330966	50	1.342136	60	1.371852
Fluorene	5	1.576419	10	1.543946	20	1.70603	40	1.636069	50	1.662316	60	1.671713
2-Fluorobiphenyl	5	1.532183	10	1.495239	20	1.630848	40	1.566831	50	1.575642	60	1.598397
2-Fluorophenol	10	1.098342	20	1.123756	40	1.190864	80	1.176683	100	1.16105	120	1.180218
Hexachlorobenzene	5	0.2642097	10	0.2475951	20	0.2607237	40	0.2562773	50	0.2613757	60	0.2712701
Hexachlorobutadiene	5	0.2650407	10	0.2598819	20	0.2856517	40	0.2704929	50	0.2727358	60	0.2778624
Hexachlorocyclopentadiene	5	0.4585742	10	0.4529244	20	0.5051236	40	0.5294211	50	0.5473156	60	0.5598756
Hexachloroethane	5	0.614743	10	0.574558	20	0.6369755	40	0.6102188	50	0.6241508	60	0.6311001
Indeno(1,2,3-cd)pyrene	5	0.7986385	10	0.8919357	20	0.98918	40	1.048804	50	1.05429	60	1.073985
Isophorone	5	0.7223348	10	0.7597578	20	0.8123567	40	0.7901486	50	0.7924664	60	0.8074007
1-Methylnaphthalene	5	0.7185448	10	0.7264409	20	0.7736744	40	0.7346263	50	0.7282624	60	0.7325865
2-Methylnaphthalene	5	0.7876996	10	0.7844034	20	0.8422717	40	0.8018606	50	0.8049776	60	0.8026968
2-Methylphenol	5	1.194661	10	1.246839	20	1.275665	40	1.269746	50	1.273964	60	1.294222

INITIAL CALIBRATION DATA

SW8270D

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Calibration: 5343002
Instrument: MS-BNA3
Matrix: Water
Calibration Dates: 11/24/15 12:40 11/24/15 19:36

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
3-Methylphenol	5	1.249518	10	1.263508	20	1.334484	40	1.327509	50	1.331027	60	1.363547
4-Methylphenol	5	1.249518	10	1.263508	20	1.334484	40	1.327509	50	1.331027	60	1.363547
3-Methylphenol/4-Methylphenol	5	1.249518	10	1.263508	20	1.334484	40	1.327509	50	1.331027	60	1.363547
Naphthalene	5	1.107706	10	1.078439	20	1.150619	40	1.08954	50	1.058758	60	1.093111
4-Nitroaniline	5	0.3608445	10	0.3358569	20	0.3862067	40	0.3747597	50	0.3937217	60	0.3965516
3-Nitroaniline	5	0.3167741	10	0.3295005	20	0.3600302	40	0.3656354	50	0.3813161	60	0.3983973
2-Nitroaniline	5	0.3130935	10	0.322688	20	0.3740586	40	0.3922782	50	0.4111578	60	0.4236481
Nitrobenzene	5	0.4213053	10	0.4159503	20	0.4622522	40	0.447456	50	0.4411687	60	0.4499922
Nitrobenzene-d5	5	0.4115788	10	0.3911529	20	0.4394041	40	0.4276564	50	0.4258103	60	0.4315872
4-Nitrophenol	5	0.1970161	10	0.2204799	20	0.2786073	40	0.3080715	50	0.3206845	60	0.3377594
2-Nitrophenol	5	0.1179405	10	0.1386287	20	0.1549421	40	0.166773	50	0.1669331	60	0.1785871
N-Nitrosodimethylamine	5	0.8164236	10	0.7882865	20	0.826845	40	0.8351599	50	0.8138595	60	0.8304262
N-Nitrosodiphenylamine	5	0.5969579	10	0.5969821	20	0.6565632	40	0.6218729	50	0.6304811	60	0.6451184
N-Nitroso-di-n-propylamine	5	1.07722	10	1.062834	20	1.124495	40	1.089058	50	1.077964	60	1.08578
Pentachlorophenol	5	8.997471E-02	10	0.1045511	20	0.1320892	40	0.143385	50	0.148498	60	0.1588315
Phenanthrene	5	1.150808	10	1.144425	20	1.206387	40	1.134471	50	1.13825	60	1.154372
Phenol	5	1.564455	10	1.570765	20	1.7033	40	1.632479	50	1.652595	60	1.658691
Phenol-d6	10	1.489829	20	1.479235	40	1.577431	80	1.546454	100	1.559956	120	1.5674
Phenol-d6 (advisory)	10	1.489829	20	1.479235	40	1.577431	80	1.546454	100	1.559956	120	1.5674
Pyrene	5	1.229445	10	1.246437	20	1.306807	40	1.267671	50	1.260387	60	1.269334
Pyridine	5	1.467324	10	1.454619	20	1.496621	40	1.486211	50	1.491688	60	1.519713
Terphenyl-d14	5	0.7960063	10	0.798181	20	0.8488365	40	0.833052	50	0.8369003	60	0.8361251
1,2,4,5-Tetrachlorobenzene	5	0.4372199	10	0.4293171	20	0.461533	40	0.4516638	50	0.447916	60	0.454282
2,3,4,6-Tetrachlorophenol	5	0.3402552	10	0.3683799	20	0.4203274	40	0.4376529	50	0.4637512	60	0.4715185
2,4,6-Tribromophenol	10	8.296298E-02	20	9.717967E-02	40	0.1058593	80	0.1112564	100	0.1168593	120	0.1223626
1,2,4-Trichlorobenzene	5	0.4016754	10	0.3832483	20	0.4323025	40	0.4077157	50	0.4080604	60	0.4114284
2,4,6-Trichlorophenol	5	0.3677352	10	0.3803916	20	0.4375723	40	0.4565405	50	0.4667029	60	0.4847373
2,4,5-Trichlorophenol	5	0.3721077	10	0.4042405	20	0.4627929	40	0.4769818	50	0.4956123	60	0.503341

INITIAL CALIBRATION DATA (Continued)

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5343002	Instrument:	MS-BNA3
Matrix:	Water	Calibration Dates:	11/24/15 12:40 11/24/15 19:36

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Acenaphthene	80	1.510884	100	1.342607								
Acenaphthylene	80	2.270014	100	1.989051								
Acetophenone	80	2.212579	100	2.010644								
Aniline	80	2.346145	100	2.089943								
Anthracene	80	1.241476	100	1.084341								
Atrazine					5	0.1934108	10	0.2075382	20	0.2154624	40	0.2225146
Benzaldehyde					5	1.08538	10	1.094372	20	1.072803	40	1.099839
Benzidine	80	0.8664375	100	0.7745903								
Benzo(a)anthracene	80	1.360697	100	1.205872								
Benzo(a)pyrene	80	1.385491	100	1.27876								
Benzo(b)fluoranthene	80	1.425006	100	1.295699								
Benzo(g,h,i)perylene	80	1.26498	100	1.119166								
Benzoic acid					5	0.1316996	10	0.135203	20	0.1696282	40	0.2003351
Benzo(k)fluoranthene	80	1.410166	100	1.274989								
Benzyl alcohol	80	1.041384	100	0.9355156								
1,1-Biphenyl	80	1.854657	100	1.619984								
4-Bromophenyl-phenylether	80	0.2828031	100	0.2518474								
Butylbenzylphthalate	80	0.5499993	100	0.4934885								
Caprolactam					5	7.330654E-02	10	7.530801E-02	20	7.995029E-02	40	9.070412E-02
Carbazole	80	1.143037	100	1.008986								
4-Chloro-3-methylphenol	80	0.3902398	100	0.3478624								
4-Chloroaniline	80	0.513396	100	0.4485261								
Bis(2-chloroethoxy)methane	80	0.4734449	100	0.4233599								
Bis(2-chloroethyl)ether	80	1.419258	100	1.251865								
2,2'-Oxybis-1-chloropropane	80	2.252538	100	1.998435								
2-Chloronaphthalene	80	1.433836	100	1.276994								
2-Chlorophenol	80	1.514808	100	1.343925								
4-Chlorophenyl phenyl ether	80	0.929803	100	0.8229851								
Chrysene	80	1.225056	100	1.089115								
Dibenz(a,h)anthracene	80	1.167408	100	1.059827								
Dibenzofuran	80	2.186564	100	1.897563								

INITIAL CALIBRATION DATA (Continued)

SW8270D

Laboratory:	Empirical Laboratories, LLC		SDG:	1512147	
Client:	CB&I		Project:	Holloman AFB	
Calibration:	5343002		Instrument:	MS-BNA3	
Matrix:	Water		Calibration Dates:	11/24/15 12:40	11/24/15 19:36

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Di-n-butylphthalate	80	1.29708	100	1.133816								
1,4-Dichlorobenzene	80	1.8156	100	1.644744								
1,3-Dichlorobenzene	80	1.804093	100	1.630237								
1,2-Dichlorobenzene	80	1.748027	100	1.555706								
3,3'-Dichlorobenzidine	80	0.5240868	100	0.4758661								
2,6-Dichlorophenol	80	0.3624578	100	0.3166668								
2,4-Dichlorophenol	80	0.380589	100	0.3364072								
Diethylphthalate	80	1.730103	100	1.534407								
2,4-Dimethylphenol	80	0.4649713	100	0.4170394								
Dimethyl phthalate	80	1.702791	100	1.488884								
4,6-Dinitro-2-methylphenol	80	0.1458152	100	0.1343131								
2,4-Dinitrophenol	80	0.2122521	100	0.1993372								
2,4-Dinitrotoluene	80	0.5568401	100	0.4949685								
2,6-Dinitrotoluene	80	0.4104822	100	0.3694987								
Di-n-octylphthalate	80	1.34525	100	1.242778								
1,4-Dioxane	80	0.5897253	100	0.5396048								
1,2-Diphenylhydrazine (as Azoben:	80	0.7849159	100	0.6944183								
Bis(2-ethylhexyl)phthalate	80	0.761749	100	0.6950573								
Fluoranthene	80	1.451787	100	1.258747								
Fluorene	80	1.798823	100	1.580105								
2-Fluorobiphenyl	80	1.689835	100	1.498037								
2-Fluorophenol	160	1.319488	200	1.169469								
Hexachlorobenzene	80	0.2938561	100	0.2622879								
Hexachlorobutadiene	80	0.3095885	100	0.2704182								
Hexachlorocyclopentadiene	80	0.6175972	100	0.558122								
Hexachloroethane	80	0.7173051	100	0.6250176								
Indeno(1,2,3-cd)pyrene	80	1.188443	100	1.08954								
Isophorone	80	0.8795273	100	0.7781479								
1-Methylnaphthalene	80	0.795139	100	0.7068568								
2-Methylnaphthalene	80	0.8840322	100	0.780991								
2-Methylphenol	80	1.430675	100	1.274957								

INITIAL CALIBRATION DATA (Continued)

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5343002	Instrument:	MS-BNA3
Matrix:	Water	Calibration Dates:	11/24/15 12:40 11/24/15 19:36

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
3-Methylphenol	80	1.532209	100	1.386598								
4-Methylphenol	80	1.532209	100	1.386598								
3-Methylphenol/4-Methylphenol	80	1.532209	100	1.386598								
Naphthalene	80	1.182977	100	1.047112								
4-Nitroaniline	80	0.4439107	100	0.3912214								
3-Nitroaniline	80	0.4270661	100	0.3739752								
2-Nitroaniline	80	0.4687043	100	0.4119443								
Nitrobenzene	80	0.49399	100	0.4373801								
Nitrobenzene-d5	80	0.4849757	100	0.4257118								
4-Nitrophenol	80	0.3772938	100	0.3416204								
2-Nitrophenol	80	0.2041413	100	0.1851914								
N-Nitrosodimethylamine	80	0.9448798	100	0.8359109								
N-Nitrosodiphenylamine	80	0.6985005	100	0.6149734								
N-Nitroso-di-n-propylamine	80	1.21623	100	1.081931								
Pentachlorophenol	80	0.1880045	100	~~0.1675251~~								
Phenanthrene	80	1.239992	100	1.084353								
Phenol	80	1.853027	100	1.674323								
Phenol-d6	160	1.740044	200	1.56823								
Phenol-d6 (advisory)	160	1.740044	200	1.56823								
Pyrene	80	1.390377	100	1.207546								
Pyridine	80	1.683427	100	1.469025								
Terphenyl-d14	80	0.9312958	100	0.8263403								
1,2,4,5-Tetrachlorobenzene	80	0.5055372	100	0.4425109								
2,3,4,6-Tetrachlorophenol	80	0.5247788	100	0.4645448								
2,4,6-Tribromophenol	160	0.1411847	200	~~0.125101~~								
1,2,4-Trichlorobenzene	80	0.45922	100	0.4041722								
2,4,6-Trichlorophenol	80	0.5298645	100	0.4824049								
2,4,5-Trichlorophenol	80	0.5577293	100	0.5087311								

INITIAL CALIBRATION DATA (Continued)

SW8270D

Laboratory:	Empirical Laboratories, LLC		SDG:	1512147	
Client:	CB&I		Project:	Holloman AFB	
Calibration:	5343002		Instrument:	MS-BNA3	
Matrix:	Water		Calibration Dates:	11/24/15 12:40	11/24/15 19:36

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Acenaphthene												
Acenaphthylene												
Acetophenone												
Aniline												
Anthracene												
Atrazine	50	0.2325552	60	0.2240781	80	0.2350257	100	0.2356847				
Benzaldehyde	50	1.167964	60	1.114653	80	1.120821	100	1.096566				
Benzidine												
Benzo(a)anthracene												
Benzo(a)pyrene												
Benzo(b)fluoranthene												
Benzo(g,h,i)perylene												
Benzoic acid	50	0.2137778	60	0.2228184	80	0.2399453	100	0.2523483				
Benzo(k)fluoranthene												
Benzyl alcohol												
1,1-Biphenyl												
4-Bromophenyl-phenylether												
Butylbenzylphthalate												
Caprolactam	50	9.672156E-02	60	9.754557E-02	80	0.1001025	100	9.676521E-02				
Carbazole												
4-Chloro-3-methylphenol												
4-Chloroaniline												
Bis(2-chloroethoxy)methane												
Bis(2-chloroethyl)ether												
2,2'-Oxybis-1-chloropropane												
2-Chloronaphthalene												
2-Chlorophenol												
4-Chlorophenyl phenyl ether												
Chrysene												
Dibenz(a,h)anthracene												
Dibenzofuran												

INITIAL CALIBRATION DATA (Continued)

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5343002	Instrument:	MS-BNA3	
Matrix:	Water	Calibration Dates:	11/24/15 12:40	11/24/15 19:36

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Di-n-butylphthalate												
1,4-Dichlorobenzene												
1,3-Dichlorobenzene												
1,2-Dichlorobenzene												
3,3'-Dichlorobenzidine												
2,6-Dichlorophenol												
2,4-Dichlorophenol												
Diethylphthalate												
2,4-Dimethylphenol												
Dimethyl phthalate												
4,6-Dinitro-2-methylphenol												
2,4-Dinitrophenol												
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
Di-n-octylphthalate												
1,4-Dioxane												
1,2-Diphenylhydrazine (as Azoben:												
Bis(2-ethylhexyl)phthalate												
Fluoranthene												
Fluorene												
2-Fluorobiphenyl												
2-Fluorophenol												
Hexachlorobenzene												
Hexachlorobutadiene												
Hexachlorocyclopentadiene												
Hexachloroethane												
Indeno(1,2,3-cd)pyrene												
Isophorone												
1-Methylnaphthalene												
2-Methylnaphthalene												
2-Methylphenol												

INITIAL CALIBRATION DATA (Continued)

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5343002	Instrument:	MS-BNA3	
Matrix:	Water	Calibration Dates:	11/24/15 12:40	11/24/15 19:36

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
3-Methylphenol												
4-Methylphenol												
3-Methylphenol/4-Methylphenol												
Naphthalene												
4-Nitroaniline												
3-Nitroaniline												
2-Nitroaniline												
Nitrobenzene												
Nitrobenzene-d5												
4-Nitrophenol												
2-Nitrophenol												
N-Nitrosodimethylamine												
N-Nitrosodiphenylamine												
N-Nitroso-di-n-propylamine												
Pentachlorophenol												
Phenanthrene												
Phenol												
Phenol-d6												
Phenol-d6 (advisory)												
Pyrene												
Pyridine												
Terphenyl-d14												
1,2,4,5-Tetrachlorobenzene												
2,3,4,6-Tetrachlorophenol												
2,4,6-Tribromophenol												
1,2,4-Trichlorobenzene												
2,4,6-Trichlorophenol												
2,4,5-Trichlorophenol												

INITIAL CALIBRATION DATA (Continued)

SW8270D

Laboratory:	Empirical Laboratories, LLC		SDG:	1512147	
Client:	CB&I		Project:	Holloman AFB	
Calibration:	5343002		Instrument:	MS-BNA3	
Matrix:	Water		Calibration Dates:	11/24/15 12:40	11/24/15 19:36

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acenaphthene	1.391879	4.261373	8.1225	5.271491E-02			SPCC (0.9)	
Acenaphthylene	2.10399	4.462931	7.91	1.613441E-02			SPCC (0.9)	
Acetophenone	2.029234	3.803694	5	0			SPCC (0.01)	
Aniline	2.137226	4.211647	4.23875	0.0839892			SPCC (0.01)	
Anthracene	1.14992	4.571358	9.98125	3.021172E-02			SPCC (0.7)	
Atrazine	0.2207837	6.696937	9.56625	0.0527507			SPCC (0.01)	
Benzaldehyde	1.10655	2.628352	4.13875	8.480705E-02			SPCC (0.01)	
Benzidine	0.6996327	16.20391	11.5525	4.457965E-02	0.9906862		SPCC (0.01)	
Benzo(a)anthracene	1.228865	4.878219	13.51875	6.195012E-02			SPCC (0.8)	
Benzo(a)pyrene	1.240991	7.421652	16.4	5.555404E-02			SPCC (0.7)	
Benzo(b)fluoranthene	1.275454	7.513346	15.69125	5.270657E-02			SPCC (0.7)	
Benzo(g,h,i)perylene	1.115955	7.145966	19.0625	0.0655057			SPCC (0.5)	
Benzoic acid	0.1957195	23.40288	5.67125	0.6352917	0.9938796		SPCC (0.01)	
Benzo(k)fluoranthene	1.294749	5.008322	15.755	7.592489E-02			SPCC (0.7)	
Benzyl alcohol	0.9242973	7.323365	4.7075	9.981663E-02			SPCC (0.01)	
1,1-Biphenyl	1.722363	4.265445	7.3925	6.374827E-02			SPCC (0.01)	
4-Bromophenyl-phenylether	0.2544039	4.991267	9.355	5.925723E-02			SPCC (0.1)	
Butylbenzylphthalate	0.4342932	19.24375	12.63875	2.731129E-02		0.990712	SPCC (0.01)	
Caprolactam	8.880048E-02	12.29522	6.4625	0.2836823			SPCC (0.01)	
Carbazole	1.051066	4.993247	10.18125	3.705446E-02			SPCC (0.01)	
4-Chloro-3-methylphenol	0.3311347	11.13898	6.63625	7.943091E-02			SPCC (0.2)	
4-Chloroaniline	0.4634021	5.308474	6.07125	5.848378E-02			SPCC (0.01)	
Bis(2-chloroethoxy)methane	0.429832	4.687415	5.70375	8.993964E-02			SPCC (0.3)	
Bis(2-chloroethyl)ether	1.283243	4.587322	4.295	0.1254264			SPCC (0.7)	
2,2'-Oxybis-1-chloropropane	2.035811	4.48876	4.85875	7.536159E-02			SPCC (0.01)	
2-Chloronaphthalene	1.327158	4.089811	7.40875	4.512656E-02			SPCC (0.8)	
2-Chlorophenol	1.345791	6.687114	4.35875	0.0822815			SPCC (0.8)	
4-Chlorophenyl phenyl ether	0.8505516	4.366447	8.76	1.626404E-02			SPCC (0.4)	
Chrysene	1.123553	4.295721	13.585	4.140682E-02			SPCC (0.7)	
Dibenz(a,h)anthracene	1.027981	9.225487	18.67875	4.676403E-02			SPCC (0.4)	
Dibenzofuran	2.039561	4.650266	8.33125	4.585923E-02			SPCC (0.8)	
Di-n-butylphthalate	1.134635	9.228722	10.64	1.644662E-02			SPCC (0.01)	

INITIAL CALIBRATION DATA (Continued)

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5343002	Instrument:	MS-BNA3
Matrix:	Water	Calibration Dates:	11/24/15 12:40 11/24/15 19:36

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,4-Dichlorobenzene	1.68225	3.418002	4.595	0.1177198			SPCC (0.01)	
1,3-Dichlorobenzene	1.667102	4.0071	4.52	2.226925E-02			SPCC (0.01)	
1,2-Dichlorobenzene	1.588918	4.435963	4.75375	0.1089885			SPCC (0.01)	
3,3'-Dichlorobenzidine	0.4305943	15.02709	13.5025	3.538616E-02	0.9926287		SPCC (0.01)	
2,6-Dichlorophenol	0.3167728	7.853193	6.07625	8.635452E-02			15	
2,4-Dichlorophenol	0.3275046	9.096639	5.8125	0.0803245			SPCC (0.2)	
Diethylphthalate	1.544821	6.245468	8.63875	7.260204E-02			SPCC (0.01)	
2,4-Dimethylphenol	0.4075957	7.526005	5.5875	8.318743E-02			SPCC (0.2)	
Dimethyl phthalate	1.557689	5.125052	7.77375	6.566722E-02			SPCC (0.01)	
4,6-Dinitro-2-methylphenol	0.1086138	25.86189	8.81	8.460851E-02		0.9906427	SPCC (0.01)	
2,4-Dinitrophenol	0.1562075	27.14753	8.1575	5.250402E-02		0.9920611	SPCC (0.01)	
2,4-Dinitrotoluene	0.4714129	13.2599	8.32125	0.0787753			SPCC (0.2)	
2,6-Dinitrotoluene	0.3563407	9.727382	7.835	6.863391E-02			SPCC (0.2)	
Di-n-octylphthalate	1.066282	20.90808	15.065	0.037163	0.9935406		SPCC (0.01)	
1,4-Dioxane	0.5584284	3.882612	2.18	1.605546E-02			15	
1,2-Diphenylhydrazine (as Azobenzene)	0.7190368	4.396325	8.95375	5.533214E-02			SPCC (0.01)	
Bis(2-ethylhexyl)phthalate	0.6176095	16.79977	13.6925	3.439662E-02	0.9926889		SPCC (0.01)	
Fluoranthene	1.347837	4.89974	11.365	4.829217E-02			SPCC (0.6)	
Fluorene	1.646928	5.0058	8.75	0			SPCC (0.9)	
2-Fluorobiphenyl	1.573377	4.230829	7.2725	6.524417E-02			SPCC (0.01)	
2-Fluorophenol	1.177484	5.544619	3.33	1.114616E-02			SPCC (0.01)	
Hexachlorobenzene	0.2646995	5.127922	9.4125	4.875539E-02			SPCC (0.1)	
Hexachlorobutadiene	0.276459	5.595637	6.155	8.808778E-02			SPCC (0.01)	
Hexachlorocyclopentadiene	0.5286192	10.4358	7.02	9.747451E-03			SPCC (0.05)	
Hexachloroethane	0.6292586	6.420118	5.12	1.490594E-02			SPCC (0.3)	
Indeno(1,2,3-cd)pyrene	1.016852	12.01005	18.6175	4.857023E-02			SPCC (0.5)	
Isophorone	0.7927675	5.72043	5.45375	9.381868E-02			SPCC (0.4)	
1-Methylnaphthalene	0.7395164	4.003773	6.94	5.498443E-03			SPCC (0.01)	
2-Methylnaphthalene	0.8111166	4.334148	6.8275	6.761853E-02			SPCC (0.4)	
2-Methylphenol	1.282591	5.223543	4.81625	0.1058542			SPCC (0.7)	
3-Methylphenol	1.34855	6.476123	4.98375	0.1025866			SPCC (0.01)	
4-Methylphenol	1.34855	6.476123	4.98375	0.1025866			SPCC (0.6)	

INITIAL CALIBRATION DATA (Continued)

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5343002	Instrument:	MS-BNA3
Matrix:	Water	Calibration Dates:	11/24/15 12:40 11/24/15 19:36

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
3-Methylphenol/4-Methylphenol	1.34855	6.476123	4.98375	0.1025866			15	
Naphthalene	1.101033	4.150458	6.00875	5.687251E-02			SPCC (0.7)	
4-Nitroaniline	0.3853841	8.100728	8.7725	0.1180892			SPCC (0.01)	
3-Nitroaniline	0.3690869	9.601978	8.03375	6.577498E-02			SPCC (0.01)	
2-Nitroaniline	0.3896966	13.35494	7.53375	7.087759E-02			SPCC (0.01)	
Nitrobenzene	0.4461869	5.486833	5.1875	8.772325E-02			SPCC (0.2)	
Nitrobenzene-d5	0.4297347	6.22083	5.16625	0.1007271			SPCC (0.01)	
4-Nitrophenol	0.2976916	20.85071	8.23	9.359161E-02	0.9922111		SPCC (0.01)	
2-Nitrophenol	0.1641422	16.50312	5.54125	0.0618675	0.990408		SPCC (0.1)	
N-Nitrosodimethylamine	0.8364739	5.555896	2.36	1.592526E-02			SPCC (0.01)	
N-Nitrosodiphenylamine	0.6326812	5.357672	8.90375	5.787908E-02			SPCC (0.01)	
N-Nitroso-di-n-propylamine	1.101939	4.487081	4.99875	0.1276577			SPCC (0.5)	
Pentachlorophenol	0.1379049	23.92905	9.65	1.842067E-02		0.998702	SPCC (0.05)	
Phenanthrene	1.156632	4.090073	9.91875	3.760994E-02			SPCC (0.7)	
Phenol	1.663704	5.430334	4.18375	0.124386			SPCC (0.8)	
Phenol-d6	1.566072	5.072706	4.1675	0.1117018			SPCC (0.01)	
Phenol-d6 (advisory)	1.566072	5.072706	4.1675	0.1117018			SPCC ()	
Pyrene	1.27225	4.406813	11.65375	4.295523E-02			SPCC (0.6)	
Pyridine	1.508579	4.871274	2.40125	0.1457213			SPCC (0.01)	
Terphenyl-d14	0.8383422	5.0072	11.8875	0.0316983			15	
1,2,4,5-Tetrachlorobenzene	0.4537475	5.119775	7.025	7.524304E-02			SPCC (0.01)	
2,3,4,6-Tetrachlorophenol	0.4364011	13.61581	8.47875	0.0428504			SPCC (0.01)	
2,4,6-Tribromophenol	0.111095	16.75171	9.04	2.250003E-02		0.9992046	SPCC (0.01)	
1,2,4-Trichlorobenzene	0.4134779	5.525021	5.9175	7.916094E-02			SPCC (0.01)	
2,4,6-Trichlorophenol	0.4507436	12.07017	7.16	0.0103678			SPCC (0.2)	
2,4,5-Trichlorophenol	0.4726921	12.62104	7.19875	4.766225E-02			SPCC (0.2)	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-BNA3	Calibration:	5343002
Lab File ID:	1124ICV1.D	Calibration Date:	11/24/15 00:00
Sequence:	5L34307	Injection Date:	11/24/15
Lab Sample ID:	5L34307-ICV1	Injection Time:	20:03

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Acenaphthene	A	50.00	52.65	1.391879	1.465601	0.9	5.3	20
Acenaphthylene	A	50.00	52.80	2.10399	2.221898	0.9	5.6	20
Anthracene	A	50.00	51.26	1.14992	1.178843	0.7	2.5	20
Benzo(a)anthracene	A	50.00	51.42	1.228865	1.263706	0.8	2.8	20
Benzo(a)pyrene	A	50.00	51.85	1.240991	1.286993	0.7	3.7	20
Benzo(b)fluoranthene	A	50.00	52.50	1.275454	1.339277	0.7	5.0	20
Benzo(g,h,i)perylene	A	50.00	54.35	1.115955	1.21294	0.5	8.7	20
Benzo(k)fluoranthene	A	50.00	53.08	1.294749	1.37446	0.7	6.2	20
Benzyl alcohol	A	50.00	52.87	0.9242973	0.97734	0.01	5.7	20
4-Bromophenyl-phenylether	A	50.00	50.87	0.2544039	0.2588473	0.1	1.7	20
Butylbenzylphthalate	Q	50.00	51.42	0.4342932	0.495412	0.01	2.8	20
Carbazole	A	50.00	50.97	1.051066	1.071357	0.01	1.9	20
4-Chloro-3-methylphenol	A	50.00	53.87	0.3311347	0.3567582	0.2	7.7	20
4-Chloroaniline	A	50.00	49.89	0.4634021	0.4623911	0.01	-0.2	20
Bis(2-chloroethoxy)methane	A	50.00	51.70	0.429832	0.4444405	0.3	3.4	20
Bis(2-chloroethyl)ether	A	50.00	50.58	1.283243	1.298141	0.7	1.2	20
2,2'-Oxybis-1-chloropropane	A	50.00	50.37	2.035811	2.050905	0.01	0.7	20
2-Chloronaphthalene	A	50.00	52.19	1.327158	1.385364	0.8	4.4	20
2-Chlorophenol	A	50.00	52.10	1.345791	1.402313	0.8	4.2	20
4-Chlorophenyl phenyl ether	A	50.00	51.57	0.8505516	0.8772092	0.4	3.1	20
Chrysene	A	50.00	53.90	1.123553	1.211235	0.7	7.8	20
Dibenz(a,h)anthracene	A	50.00	55.35	1.027981	1.137915	0.4	10.7	20
Dibenzofuran	A	50.00	50.35	2.039561	2.053802	0.8	0.7	20
Di-n-butylphthalate	A	50.00	52.71	1.134635	1.196139	0.01	5.4	20
1,4-Dichlorobenzene	A	50.00	50.74	1.68225	1.707278	0.01	1.5	20
1,3-Dichlorobenzene	A	50.00	49.65	1.667102	1.655285	0.01	-0.7	20
1,2-Dichlorobenzene	A	50.00	50.35	1.588918	1.599959	0.01	0.7	20
3,3'-Dichlorobenzidine	L	50.00	49.65	0.4305943	0.4677363	0.01	-0.7	20
2,4-Dichlorophenol	A	50.00	51.82	0.3275046	0.3394031	0.2	3.6	20

INITIAL CALIBRATION CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-BNA3	Calibration:	5343002
Lab File ID:	1124ICV1.D	Calibration Date:	11/24/15 00:00
Sequence:	5L34307	Injection Date:	11/24/15
Lab Sample ID:	5L34307-ICV1	Injection Time:	20:03

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Diethylphthalate	A	50.00	52.90	1.544821	1.634345	0.01	5.8	20
2,4-Dimethylphenol	A	50.00	52.51	0.4075957	0.4280271	0.2	5.0	20
Dimethyl phthalate	A	50.00	51.95	1.557689	1.618445	0.01	3.9	20
4,6-Dinitro-2-methylphenol	Q	50.00	53.37	0.1086138	0.1327526	0.01	6.7	20
2,4-Dinitrophenol	Q	50.00	54.86	0.1562075	0.1957554	0.01	9.7	20
2,4-Dinitrotoluene	A	50.00	55.13	0.4714129	0.5198112	0.2	10.3	20
2,6-Dinitrotoluene	A	50.00	54.25	0.3563407	0.3866157	0.2	8.5	20
Di-n-octylphthalate	L	50.00	51.50	1.066282	1.247153	0.01	3.0	20
1,2-Diphenylhydrazine (as Azobenzer	A	50.00	52.83	0.7190368	0.7597549	0.01	5.7	20
Bis(2-ethylhexyl)phthalate	L	50.00	50.59	0.6176095	0.6920009	0.01	1.2	20
Fluoranthene	A	50.00	50.77	1.347837	1.368598	0.6	1.5	20
Fluorene	A	50.00	53.23	1.646928	1.753398	0.9	6.5	20
Hexachlorobenzene	A	50.00	50.34	0.2646995	0.2664954	0.1	0.7	20
Hexachlorobutadiene	A	50.00	58.14	0.276459	0.3214673	0.01	16.3	20
Hexachlorocyclopentadiene	A	50.00	50.43	0.5286192	0.5331637	0.05	0.9	20
Hexachloroethane	A	50.00	51.04	0.6292586	0.642398	0.3	2.1	20
Indeno(1,2,3-cd)pyrene	A	50.00	52.95	1.016852	1.076909	0.5	5.9	20
Isophorone	A	50.00	50.46	0.7927675	0.8001005	0.4	0.9	20
1-Methylnaphthalene	A	50.00	51.04	0.7395164	0.7548371	0.01	2.1	20
2-Methylnaphthalene	A	50.00	49.59	0.8111166	0.8045436	0.4	-0.8	20
2-Methylphenol	A	50.00	52.48	1.282591	1.346079	0.7	4.9	20
3-Methylphenol/4-Methylphenol	A	50.00	50.95	1.34855	1.374301		1.9	20
Naphthalene	A	50.00	51.52	1.101033	1.134459	0.7	3.0	20
4-Nitroaniline	A	50.00	53.07	0.3853841	0.4090484	0.01	6.1	20
3-Nitroaniline	A	50.00	52.53	0.3690869	0.3877626	0.01	5.1	20
2-Nitroaniline	A	50.00	55.65	0.3896966	0.4337608	0.01	11.3	20
Nitrobenzene	A	50.00	51.33	0.4461869	0.4580993	0.2	2.7	20
4-Nitrophenol	L	50.00	51.34	0.2976916	0.3462614	0.01	2.7	20
2-Nitrophenol	L	50.00	49.08	0.1641422	0.1777329	0.1	-1.8	20

INITIAL CALIBRATION CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-BNA3	Calibration:	5343002
Lab File ID:	1124ICV1.D	Calibration Date:	11/24/15 00:00
Sequence:	5L34307	Injection Date:	11/24/15
Lab Sample ID:	5L34307-ICV1	Injection Time:	20:03

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
N-Nitrosodimethylamine	A	50.00	52.86	0.8364739	0.8843732	0.01	5.7	20
N-Nitrosodiphenylamine	A	50.00	50.48	0.6326812	0.6387415	0.01	1.0	20
N-Nitroso-di-n-propylamine	A	50.00	50.12	1.101939	1.104522	0.5	0.2	20
Pentachlorophenol	Q	50.00	58.75	0.1379049	0.1895662	0.05	17.5	20
Phenanthrene	A	50.00	50.51	1.156632	1.168359	0.7	1.0	20
Phenol	A	50.00	50.30	1.663704	1.67374	0.8	0.6	20
Pyrene	A	50.00	50.17	1.27225	1.276699	0.6	0.3	20
2,3,4,6-Tetrachlorophenol	A	50.00	51.38	0.4364011	0.4484289	0.01	2.8	20
1,2,4-Trichlorobenzene	A	50.00	50.96	0.4134779	0.4213934	0.01	1.9	20
2,4,6-Trichlorophenol	A	50.00	53.98	0.4507436	0.4865815	0.2	8.0	20
2,4,5-Trichlorophenol	A	50.00	55.32	0.4726921	0.5230084	0.2	10.6	20
2-Fluorobiphenyl	A	50.00	52.64	1.573377	1.656514	0.01	5.3	20
2-Fluorophenol	A	100.0	115.7	1.177484	1.362599	0.01	15.7	20
Nitrobenzene-d5	A	50.00	53.77	0.4297347	0.4621501	0.01	7.5	20
Phenol-d6 (advisory)	A	100.0	107.9	1.566072	1.690199		7.9	20
Terphenyl-d14	A	50.00	55.80	0.8383422	0.9355378		11.6	20
2,4,6-Tribromophenol	Q	100.0	104.2	0.111095	0.1239641	0.01	4.2	20

INITIAL CALIBRATION CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-BNA3	Calibration:	5343002
Lab File ID:	1124ICV2.D	Calibration Date:	11/24/15 00:00
Sequence:	5L34307	Injection Date:	11/24/15
Lab Sample ID:	5L34307-ICV2	Injection Time:	20:31

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Acetophenone	A	50.00	46.77	2.029234	1.898023	0.01	-6.5	20
Atrazine	A	50.00	50.46	0.2207837	0.2228256	0.01	0.9	20
Benzaldehyde	A	50.00	44.96	1.10655	0.9949096	0.01	-10.1	20
Benzoic acid	L	50.00	49.86	0.1957195	0.2267016	0.01	-0.3	20
1,1-Biphenyl	A	50.00	48.45	1.722363	1.668903	0.01	-3.1	20
Caprolactam	A	50.00	53.80	8.880048E-02	9.554884E-02	0.01	7.6	20
2,6-Dichlorophenol	A	50.00	48.39	0.3167728	0.3065899		-3.2	20
1,2,4,5-Tetrachlorobenzene	A	50.00	46.57	0.4537475	0.4225855	0.01	-6.9	20

CONTINUING CALIBRATION CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-BNA3	Calibration:	5343002
Lab File ID:	1230CCV1.D	Calibration Date:	11/24/15 00:00
Sequence:	6A00413	Injection Date:	12/30/15
Lab Sample ID:	6A00413-CCV1	Injection Time:	15:33

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acenaphthene	A	50.00	46.72	1.391879	1.300514	0.9	-6.6	20
Acenaphthylene	A	50.00	47.40	2.10399	1.994579	0.9	-5.2	20
Acetophenone	A	50.00	50.74	2.029234	2.059195	0.01	1.5	20
Anthracene	A	50.00	48.14	1.14992	1.107123	0.7	-3.7	20
Benzo(a)anthracene	A	50.00	48.51	1.228865	1.192347	0.8	-3.0	20
Benzo(a)pyrene	A	50.00	50.10	1.240991	1.243446	0.7	0.2	20
Benzo(b)fluoranthene	A	50.00	49.93	1.275454	1.273562	0.7	-0.1	20
Benzo(g,h,i)perylene	A	50.00	50.32	1.115955	1.123181	0.5	0.6	20
Benzo(k)fluoranthene	A	50.00	49.56	1.294749	1.283227	0.7	-0.9	20
Benzyl alcohol	A	50.00	50.96	0.9242973	0.9420505	0.01	1.9	20
1,1-Biphenyl	A	50.00	47.71	1.722363	1.643581	0.01	-4.6	20
4-Bromophenyl-phenylether	A	50.00	48.18	0.2544039	0.2451612	0.1	-3.6	20
Butylbenzylphthalate	Q	50.00	50.06	0.4342932	0.4810718	0.01	0.1	20
Carbazole	A	50.00	48.48	1.051066	1.019079	0.01	-3.0	20
4-Chloro-3-methylphenol	A	50.00	51.24	0.3311347	0.3393777	0.2	2.5	20
4-Chloroaniline	A	50.00	48.10	0.4634021	0.4458207	0.01	-3.8	20
Bis(2-chloroethoxy)methane	A	50.00	48.09	0.429832	0.4134367	0.3	-3.8	20
Bis(2-chloroethyl)ether	A	50.00	49.99	1.283243	1.283031	0.7	-0.02	20
2,2'-Oxybis-1-chloropropane	A	50.00	48.60	2.035811	1.978854	0.01	-2.8	20
2-Chloronaphthalene	A	50.00	47.44	1.327158	1.259308	0.8	-5.1	20
2-Chlorophenol	A	50.00	50.51	1.345791	1.359476	0.8	1.0	20
4-Chlorophenyl phenyl ether	A	50.00	46.82	0.8505516	0.7965364	0.4	-6.4	20
Chrysene	A	50.00	50.41	1.123553	1.132682	0.7	0.8	20
Dibenz(a,h)anthracene	A	50.00	51.02	1.027981	1.048851	0.4	2.0	20
Dibenzofuran	A	50.00	47.96	2.039561	1.956448	0.8	-4.1	20
Di-n-butylphthalate	A	50.00	50.92	1.134635	1.155466	0.01	1.8	20
1,4-Dichlorobenzene	A	50.00	47.17	1.68225	1.587111	0.01	-5.7	20
1,3-Dichlorobenzene	A	50.00	47.53	1.667102	1.584598	0.01	-4.9	20
1,2-Dichlorobenzene	A	50.00	49.09	1.588918	1.559915	0.01	-1.8	20

CONTINUING CALIBRATION CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-BNA3	Calibration:	5343002
Lab File ID:	1230CCV1.D	Calibration Date:	11/24/15 00:00
Sequence:	6A00413	Injection Date:	12/30/15
Lab Sample ID:	6A00413-CCV1	Injection Time:	15:33

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
3,3'-Dichlorobenzidine	L	50.00	47.30	0.4305943	0.4439768	0.01	-5.4	20
2,6-Dichlorophenol	A	50.00	50.57	0.3167728	0.3203619		1.1	20
2,4-Dichlorophenol	A	50.00	49.35	0.3275046	0.3232771	0.2	-1.3	20
Diethylphthalate	A	50.00	48.67	1.544821	1.503627	0.01	-2.7	20
2,4-Dimethylphenol	A	50.00	46.43	0.4075957	0.3784883	0.2	-7.1	20
Dimethyl phthalate	A	50.00	48.03	1.557689	1.496228	0.01	-3.9	20
4,6-Dinitro-2-methylphenol	Q	50.00	58.72	0.1086138	0.1485483	0.01	17.4	20
2,4-Dinitrophenol	Q	50.00	60.33	0.1562075	0.2198559	0.01	20.7	20 *
2,4-Dinitrotoluene	A	50.00	53.05	0.4714129	0.5001559	0.2	6.1	20
2,6-Dinitrotoluene	A	50.00	50.02	0.3563407	0.3564978	0.2	0.04	20
Di-n-octylphthalate	L	50.00	52.07	1.066282	1.262403	0.01	4.1	20
1,2-Diphenylhydrazine (as Azobenzer	A	50.00	49.73	0.7190368	0.7151448	0.01	-0.5	20
Bis(2-ethylhexyl)phthalate	L	50.00	49.34	0.6176095	0.6736246	0.01	-1.3	20
Fluoranthene	A	50.00	47.28	1.347837	1.27454	0.6	-5.4	20
Fluorene	A	50.00	48.16	1.646928	1.58643	0.9	-3.7	20
Hexachlorobenzene	A	50.00	47.83	0.2646995	0.2532026	0.1	-4.3	20
Hexachlorobutadiene	A	50.00	46.41	0.276459	0.2566314	0.01	-7.2	20
Hexachlorocyclopentadiene	A	50.00	46.72	0.5286192	0.4939653	0.05	-6.6	20
Hexachloroethane	A	50.00	49.66	0.6292586	0.6250129	0.3	-0.7	20
Indeno(1,2,3-cd)pyrene	A	50.00	51.50	1.016852	1.047362	0.5	3.0	20
Isophorone	A	50.00	47.99	0.7927675	0.7609732	0.4	-4.0	20
1-Methylnaphthalene	A	50.00	45.77	0.7395164	0.6768861	0.01	-8.5	20
2-Methylnaphthalene	A	50.00	48.23	0.8111166	0.7824759	0.4	-3.5	20
2-Methylphenol	A	50.00	50.82	1.282591	1.303753	0.7	1.6	20
3-Methylphenol/4-Methylphenol	A	50.00	51.29	1.34855	1.383367		2.6	20
Naphthalene	A	50.00	47.54	1.101033	1.04694	0.7	-4.9	20
4-Nitroaniline	A	50.00	48.65	0.3853841	0.3750089	0.01	-2.7	20
3-Nitroaniline	A	50.00	48.19	0.3690869	0.3557598	0.01	-3.6	20
2-Nitroaniline	A	50.00	53.02	0.3896966	0.4132302	0.01	6.0	20

CONTINUING CALIBRATION CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-BNA3	Calibration:	5343002
Lab File ID:	1230CCV1.D	Calibration Date:	11/24/15 00:00
Sequence:	6A00413	Injection Date:	12/30/15
Lab Sample ID:	6A00413-CCV1	Injection Time:	15:33

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Nitrobenzene	A	50.00	48.39	0.4461869	0.431839	0.2	-3.2	20
4-Nitrophenol	L	50.00	48.11	0.2976916	0.322532	0.01	-3.8	20
2-Nitrophenol	L	50.00	52.38	0.1641422	0.1907292	0.1	4.8	20
N-Nitrosodimethylamine	A	50.00	48.40	0.8364739	0.8096677	0.01	-3.2	20
N-Nitrosodiphenylamine	A	50.00	48.90	0.6326812	0.6187115	0.01	-2.2	20
N-Nitroso-di-n-propylamine	A	50.00	49.90	1.101939	1.099633	0.5	-0.2	20
Pentachlorophenol	Q	50.00	48.81	0.1379049	0.146169	0.05	-2.4	20
Phenanthrene	A	50.00	47.86	1.156632	1.107086	0.7	-4.3	20
Phenol	A	50.00	50.45	1.663704	1.678734	0.8	0.9	20
Pyrene	A	50.00	47.78	1.27225	1.215745	0.6	-4.4	20
1,2,4,5-Tetrachlorobenzene	A	50.00	48.52	0.4537475	0.4403292	0.01	-3.0	20
2,3,4,6-Tetrachlorophenol	A	50.00	51.40	0.4364011	0.4485908	0.01	2.8	20
1,2,4-Trichlorobenzene	A	50.00	47.28	0.4134779	0.3909664	0.01	-5.4	20
2,4,6-Trichlorophenol	A	50.00	49.73	0.4507436	0.4482807	0.2	-0.5	20
2,4,5-Trichlorophenol	A	50.00	51.11	0.4726921	0.4832313	0.2	2.2	20
2-Fluorobiphenyl	A	50.00	49.92	1.573377	1.570774	0.01	-0.2	20
2-Fluorophenol	A	100.0	105.7	1.177484	1.244868	0.01	5.7	20
Nitrobenzene-d5	A	50.00	51.46	0.4297347	0.4422864	0.01	2.9	20
Phenol-d6 (advisory)	A	100.0	102.0	1.566072	1.59811		2.0	20
Terphenyl-d14	A	50.00	53.92	0.8383422	0.9041335		7.8	20
2,4,6-Tribromophenol	Q	100.0	101.9	0.111095	0.1203572	0.01	1.9	20

CONTINUING CALIBRATION CHECK

SW8270D

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-BNA3	Calibration:	5343002
Lab File ID:	1230CCV2.D	Calibration Date:	11/24/15 00:00
Sequence:	6A00413	Injection Date:	12/30/15
Lab Sample ID:	6A00413-CCV2	Injection Time:	16:01

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Atrazine	A	50.00	50.63	0.2207837	0.2235812	0.01	1.3	20
Benzaldehyde	A	50.00	49.80	1.10655	1.102061	0.01	-0.4	20
Benzoic acid	L	50.00	51.06	0.1957195	0.2329133	0.01	2.1	20
Caprolactam	A	50.00	56.28	8.880048E-02	9.995941E-02	0.01	12.6	20

HOLDING TIME SUMMARY

SW8270D

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/21/15 13:30	7.24	7.00	12/30/15 20:07	9.28	40.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/21/15 13:30	7.10	7.00	12/30/15 20:35	9.30	40.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/21/15 13:30	7.10	7.00	12/30/15 21:57	9.35	40.00	

Data for SW8015C (DRO) Forms

Sample Extraction Data

Prep Method: EXT_3510-SW8015C DRO

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02 [OTC538-GW-5382-151214]	5L18018	1,000.00/1.00	950	1.00	1.00			12/18/15
1512147-03 [OTC537-GW-5371-151214]	5L18018	1,000.00/1.00	1070	1.00	1.00			12/18/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L18018	1,000.00/1.00	1070	1.00	1.00			12/18/15

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02	File ID:	060F6001.D
Sampled:	12/14/15 06:46	Prepared:	12/18/15 17:30	Analyzed:	12/26/15 01:28
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L18018 Sequence: 6A00406 Calibration: 5365001 Instrument: GL-GCFID2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
11-84-7	Diesel Range Organics (C10-C28)		0.105	0.105	0.211	U
TPH-ORO	Oil Range Organics (>C28-C36)		0.105	0.105	0.211	U

Total Target Analytes Reported 2 Project Analytes: 2

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
o-Terphenyl	0.02105	0.01744	82.8	30 - 140	

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-03	File ID:	061F6101.D
Sampled:	12/14/15 10:01	Prepared:	12/18/15 17:30	Analyzed:	12/26/15 02:01
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L18018 Sequence: 6A00406 Calibration: 5365001 Instrument: GL-GCFID2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
11-84-7	Diesel Range Organics (C10-C28)		0.0935	0.0935	0.187	U
TPH-ORO	Oil Range Organics (>C28-C36)		0.0935	0.0935	0.187	U

Total Target Analytes Reported 2 Project Analytes: 2

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
o-Terphenyl	0.01869	0.01705	91.2	30 - 140	

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-15121 4

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04	File ID:	066F6601.D
Sampled:	12/14/15 10:01	Prepared:	12/18/15 17:30	Analyzed:	12/26/15 04:48
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L18018 Sequence: 6A00406 Calibration: 5365001 Instrument: GL-GCFID2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
11-84-7	Diesel Range Organics (C10-C28)	**0.0937**	0.0935	0.0935	0.187	J
TPH-ORO	Oil Range Organics (>C28-C36)		0.0935	0.0935	0.187	U

Total Target Analytes Reported 2 Project Analytes: 2

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
o-Terphenyl	0.01869	0.01802	96.4	30 - 140	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	6A00406	Instrument:	GL-GCFID2
		Calibration:	5365001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (6A00406-CCV1) mg/L				Lab File ID: 049F4901.D		Analyzed: 12/25/15 19:22		
o-Terphenyl	50.00	112	80 - 120	10.186	10.186	0.0000	+/-1.000	
Blank (5L18018-BLK2) mg/L				Lab File ID: 058F5801.D		Analyzed: 12/26/15 00:21		
o-Terphenyl	0.02000	92.9	30 - 140	10.186	10.186	0.0000	+/-1.000	
LCS (5L18018-BS2) mg/L				Lab File ID: 059F5901.D		Analyzed: 12/26/15 00:54		
o-Terphenyl	0.02000	94.4	30 - 140	10.176	10.186	-0.0100	+/-1.000	
OTC538-GW-5382-151214 (1512147-02) mg/L				Lab File ID: 060F6001.D		Analyzed: 12/26/15 01:28		
o-Terphenyl	0.02105	82.8	30 - 140	10.18	10.186	-0.0060	+/-1.000	
OTC537-GW-5371-151214 (1512147-03) mg/L				Lab File ID: 061F6101.D		Analyzed: 12/26/15 02:01		
o-Terphenyl	0.01869	91.2	30 - 140	10.176	10.186	-0.0100	+/-1.000	
Matrix Spike (5L18018-MS1) mg/L				Lab File ID: 062F6201.D		Analyzed: 12/26/15 02:34		
o-Terphenyl	0.01852	99.9	30 - 140	10.173	10.186	-0.0130	+/-1.000	
Matrix Spike Dup (5L18018-MSD1) mg/L				Lab File ID: 063F6301.D		Analyzed: 12/26/15 03:08		
o-Terphenyl	0.01852	106	30 - 140	10.173	10.186	-0.0130	+/-1.000	
Calibration Check (6A00406-CCV2) mg/L				Lab File ID: 064F6401.D		Analyzed: 12/26/15 03:41		
o-Terphenyl	50.00	111	80 - 120	10.173	10.186	-0.0130	+/-1.000	
OTC537-GW-5371-FD-151214 (1512147-04) mg/L				Lab File ID: 066F6601.D		Analyzed: 12/26/15 04:48		
o-Terphenyl	0.01869	96.4	30 - 140	10.183	10.186	-0.0030	+/-1.000	
Calibration Check (6A00406-CCV3) mg/L				Lab File ID: 067F6701.D		Analyzed: 12/26/15 05:21		
o-Terphenyl	50.00	116	80 - 120	10.186	10.186	0.0000	+/-1.000	

LCS / LCS DUPLICATE RECOVERY

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L18018	Laboratory ID:	5L18018-BS2
Preparation:	EXT_3510	Initial/Final:	1000 mL / 1 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Diesel Range Organics (C10-C28)	1.000	0.7870	78.7	50 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8015C DRO

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L18018

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Diesel Range Organics (C10-C28)	0.9259	ND	0.9544	103		50 - 150

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Diesel Range Organics (C10-C28)	0.9259	0.9749	105	2.13		30	50 - 150

PREPARATION BATCH SUMMARY

SW8015C DRO

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L18018 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02	12/18/15 17:30	950.00	1.00
OTC537-GW-5371-151214	1512147-03	12/18/15 17:30	1,070.00	1.00
OTC537-GW-5371-FD-151214	1512147-04	12/18/15 17:30	1,070.00	1.00
Blank	5L18018-BLK2	12/18/15 17:30	1,000.00	1.00
LCS	5L18018-BS2	12/18/15 17:30	1,000.00	1.00
OTC537-GW-5371-151214	5L18018-MS1	12/18/15 17:30	1,080.00	1.00
OTC537-GW-5371-151214	5L18018-MSD1	12/18/15 17:30	1,080.00	1.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	1512147	
Client:	CB&I		Project:	Holloman AFB	
Matrix:		Laboratory ID:	5L18018-BLK2	File ID:	058F5801.D
Sampled:		Prepared:		Analyzed:	12/26/15 00:21
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 5L18018 Sequence: 6A00406 Calibration: 5365001 Instrument: GL-GCFID2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
11-84-7	Diesel Range Organics (C10-C28)		0.100	0.100	0.200	U
TPH-ORO	Oil Range Organics (>C28-C36)		0.100	0.100	0.200	U

Total Target Analytes Reported: 2

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
o-Terphenyl	0.02000	0.01859	92.9	30 - 140	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix:
Laboratory ID: 5L18018-BS2
File ID: 059F5901.D
Sampled:
Prepared:
Analyzed: 12/26/15 00:54
Solids:
Preparation: EXT_3510
Dilution:
Batch: 5L18018
Sequence: 6A00406
Calibration: 5365001
Instrument: GL-GCFID2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
11-84-7	Diesel Range Organics (C10-C28)	**0.7870**	0.100	0.100	0.200	
TPH-ORO	Oil Range Organics (>C28-C36)		0.100	0.100	0.200	U

Total Target Analytes Reported: 2

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
o-Terphenyl	0.02000	0.01888	94.4	30 - 140	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:		Laboratory ID:	5L18018-MS1	File ID:	062F6201.D
Sampled:		Prepared:		Analyzed:	12/26/15 02:34
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 5L18018 Sequence: 6A00406 Calibration: 5365001 Instrument: GL-GCFID2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
11-84-7	Diesel Range Organics (C10-C28)	**0.9544**	0.0926	0.0926	0.185	
TPH-ORO	Oil Range Organics (>C28-C36)		0.0926	0.0926	0.185	U

Total Target Analytes Reported: 2

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
o-Terphenyl	0.01852	0.01850	99.9	30 - 140	

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB

Matrix:		Laboratory ID:	5L18018-MSD1	File ID:	063F6301.D
Sampled:		Prepared:		Analyzed:	12/26/15 03:08
Solids:		Preparation:	EXT_3510	Dilution:	

Batch:	5L18018	Sequence:	6A00406	Calibration:	5365001	Instrument:	GL-GCFID2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
11-84-7	Diesel Range Organics (C10-C28)	**0.9749**	0.0926	0.0926	0.185	
TPH-ORO	Oil Range Organics (>C28-C36)		0.0926	0.0926	0.185	U

Total Target Analytes Reported: 2

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
o-Terphenyl	0.01852	0.01961	106	30 - 140	

INITIAL CALIBRATION STANDARDS

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36508	Instrument:	GL-GCFID2
Calibration:	5365001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15L0217	DRO/OTP Cal 1 (100/5ppm)	5L36508-CAL1	003F0301.D	12/16/15 20:00
15L0218	DRO/OTP Cal 2 (250/12.5ppm)	5L36508-CAL2	004F0401.D	12/16/15 20:33
15L0219	DRO/OTP Cal 3 (500/25ppm)	5L36508-CAL3	005F0501.D	12/16/15 21:06
15L0220	DRO/OTP Cal 4 (1000/50ppm)	5L36508-CAL4	006F0601.D	12/16/15 21:39
15L0221	DRO/OTP Cal 5 (2500/125ppm)	5L36508-CAL5	007F0701.D	12/16/15 22:13
15L0222	DRO/OTP Cal 6 (5000/250ppm)	5L36508-CAL6	008F0801.D	12/16/15 22:46
15L0223	DRO/OTP Cal 7 (10000 ppm)	5L36508-CAL7	009F0901.D	12/16/15 23:19

ANALYSIS SEQUENCE SUMMARY

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36508	Instrument:	GL-GCFID2
Calibration:	5365001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5L36508-CAL1	003F0301.D	12/16/15 20:00
Cal Standard	5L36508-CAL2	004F0401.D	12/16/15 20:33
Cal Standard	5L36508-CAL3	005F0501.D	12/16/15 21:06
Cal Standard	5L36508-CAL4	006F0601.D	12/16/15 21:39
Cal Standard	5L36508-CAL5	007F0701.D	12/16/15 22:13
Cal Standard	5L36508-CAL6	008F0801.D	12/16/15 22:46
Cal Standard	5L36508-CAL7	009F0901.D	12/16/15 23:19
Initial Cal Check	5L36508-ICV1	010F1001.D	12/16/15 23:53

ANALYSIS SEQUENCE SUMMARY

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	6A00406	Instrument:	GL-GCFID2
Calibration:	5365001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	6A00406-CCV1	049F4901.D	12/25/15 19:22
Blank	5L18018-BLK2	058F5801.D	12/26/15 00:21
LCS	5L18018-BS2	059F5901.D	12/26/15 00:54
OTC538-GW-5382-151214	1512147-02	060F6001.D	12/26/15 01:28
OTC537-GW-5371-151214	1512147-03	061F6101.D	12/26/15 02:01
OTC537-GW-5371-151214	5L18018-MS1	062F6201.D	12/26/15 02:34
OTC537-GW-5371-151214	5L18018-MSD1	063F6301.D	12/26/15 03:08
Calibration Check	6A00406-CCV2	064F6401.D	12/26/15 03:41
OTC537-GW-5371-FD-151214	1512147-04	066F6601.D	12/26/15 04:48
Calibration Check	6A00406-CCV3	067F6701.D	12/26/15 05:21

INITIAL CALIBRATION DATA

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5365001	Instrument:	GL-GCFID2	
Matrix:	Water	Calibration Dates:	12/16/15 20:00	12/16/15 23:19

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Diesel Range Organics (C10-C28)	100	477.36	250	704.068	500	751.994	1000	887.608	2500	986.3444	5000	983.0668
o-Terphenyl	5	1119	12.5	1137.44	25	1103	50	1187.16	125	1215.912	250	1173.044

INITIAL CALIBRATION DATA (Continued)

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5365001	Instrument:	GL-GCFID2
Matrix:	Water	Calibration Dates:	12/16/15 20:00 12/16/15 23:19

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Diesel Range Organics (C10-C28)	10000	851.9896										
o-Terphenyl												

INITIAL CALIBRATION DATA (Continued)

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5365001	Instrument:	GL-GCFID2	
Matrix:	Water	Calibration Dates:	12/16/15 20:00	12/16/15 23:19

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Diesel Range Organics (C10-C28)	806.0615	22.30567	5.093	7.209549E-03	0.993197		0.99	
o-Terphenyl	1155.926	3.745691	10.2235	6.724635E-02			20	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-GCFID2	Calibration:	5365001
Lab File ID:	010F1001.D	Calibration Date:	12/16/15 00:00
Sequence:	5L36508	Injection Date:	12/16/15
Lab Sample ID:	5L36508-ICV1	Injection Time:	23:53

		CONC. (mg/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Diesel Range Organics (C10-C28)	A	1000	1060	806.0615	939.585		6.0	20

CONTINUING CALIBRATION CHECK

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-GCFID2	Calibration:	5365001
Lab File ID:	049F4901.D	Calibration Date:	12/16/15 00:00
Sequence:	6A00406	Injection Date:	12/25/15
Lab Sample ID:	6A00406-CCV1	Injection Time:	19:22

		CONC. (mg/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Diesel Range Organics (C10-C28)	A	1000	1195	806.0615	1059.786		19.5	20
o-Terphenyl	A	50.00	55.99	1155.926	1294.42		12.0	20

CONTINUING CALIBRATION CHECK

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-GCFID2	Calibration:	5365001
Lab File ID:	064F6401.D	Calibration Date:	12/16/15 00:00
Sequence:	6A00406	Injection Date:	12/26/15
Lab Sample ID:	6A00406-CCV2	Injection Time:	03:41

		CONC. (mg/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Diesel Range Organics (C10-C28)	A	1000	1142	806.0615	1012.691		14.2	20
o-Terphenyl	A	50.00	55.64	1155.926	1286.38		11.3	20

CONTINUING CALIBRATION CHECK

SW8015C DRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-GCFID2	Calibration:	5365001
Lab File ID:	067F6701.D	Calibration Date:	12/16/15 00:00
Sequence:	6A00406	Injection Date:	12/26/15
Lab Sample ID:	6A00406-CCV3	Injection Time:	05:21

		CONC. (mg/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Diesel Range Organics (C10-C28)	A	1000	1143	806.0615	1013.847		14.3	20
o-Terphenyl	A	50.00	57.80	1155.926	1336.16		15.6	20

HOLDING TIME SUMMARY

SW8015C DRO

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/18/15 17:30	4.41	7.00	12/26/15 01:28	7.33	40.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/18/15 17:30	4.27	7.00	12/26/15 02:01	7.35	40.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/18/15 17:30	4.27	7.00	12/26/15 04:48	7.47	40.00	

Data for SW8015C (GRO) Forms

Sample Extraction Data

Prep Method: 8015GRO-SW8015C GRO

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02 [OTC538-GW-5382-151214]	5L15013	5.00/5.00	5.00	5.00	1.00			12/15/15
1512147-03 [OTC537-GW-5371-151214]	5L15013	5.00/5.00	5.00	5.00	1.00			12/15/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L15013	5.00/5.00	5.00	5.00	1.00			12/15/15

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02	File ID:	016F1601.D
Sampled:	12/14/15 06:46	Prepared:	12/15/15 12:48	Analyzed:	12/15/15 23:50
Solids:		Preparation:	8015GRO	Dilution:	1

Batch: 5L15013 Sequence: 5L35102 Calibration: 5302005 Instrument: GL-GCVOA2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
8006-61-9	Gasoline Range Organics (C6-C10)	**0.0720**	0.0500	0.100	0.150	J

Total Target Analytes Reported 1 Project Analytes: 1

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.05000	0.04200	84.0	50 - 150	Y

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-03	File ID:	017F1701.D
Sampled:	12/14/15 10:01	Prepared:	12/15/15 12:48	Analyzed:	12/16/15 00:30
Solids:		Preparation:	8015GRO	Dilution:	1

Batch: 5L15013 Sequence: 5L35102 Calibration: 5302005 Instrument: GL-GCVOA2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
8006-61-9	Gasoline Range Organics (C6-C10)	**0.0640**	0.0500	0.100	0.150	J

Total Target Analytes Reported 1 Project Analytes: 1

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.05000	0.04100	82.0	50 - 150	Y

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-15121 4

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04	File ID:	020F2001.D
Sampled:	12/14/15 10:01	Prepared:	12/15/15 12:48	Analyzed:	12/16/15 02:30
Solids:		Preparation:	8015GRO	Dilution:	1

Batch: 5L15013 Sequence: 5L35102 Calibration: 5302005 Instrument: GL-GCVOA2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
8006-61-9	Gasoline Range Organics (C6-C10)	**0.0560**	0.0500	0.100	0.150	J

Total Target Analytes Reported 1 Project Analytes: 1

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.05000	0.04000	80.0	50 - 150	Y

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L35102	Instrument:	GL-GCVOA2
		Calibration:	5302005

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (5L35102-CCV1) ug/mL				Lab File ID: 004F0401.D		Analyzed: 12/15/15 14:45		
Bromofluorobenzene	0.05000	78.0	80 - 120	20.324	20.324	0.0000	+/-0.210	*
Calibration Check (5L35102-CCV2) ug/mL				Lab File ID: 013F1301.D		Analyzed: 12/15/15 21:43		
Bromofluorobenzene	0.05000	80.0	80 - 120	20.317	20.324	-0.0070	+/-0.210	
Blank (5L15013-BLK1) mg/L				Lab File ID: 014F1401.D		Analyzed: 12/15/15 22:30		
Bromofluorobenzene	0.05000	82.0	50 - 150	20.314	20.324	-0.0100	+/-0.210	
LCS (5L15013-BS1) mg/L				Lab File ID: 015F1501.D		Analyzed: 12/15/15 23:10		
Bromofluorobenzene	0.05000	86.0	50 - 150	20.317	20.324	-0.0070	+/-0.210	
OTC538-GW-5382-151214 (1512147-02) mg/L				Lab File ID: 016F1601.D		Analyzed: 12/15/15 23:50		
Bromofluorobenzene	0.05000	84.0	50 - 150	20.321	20.324	-0.0030	+/-0.210	
OTC537-GW-5371-151214 (1512147-03) mg/L				Lab File ID: 017F1701.D		Analyzed: 12/16/15 00:30		
Bromofluorobenzene	0.05000	82.0	50 - 150	20.322	20.324	-0.0020	+/-0.210	
Matrix Spike (5L15013-MS1) mg/L				Lab File ID: 018F1801.D		Analyzed: 12/16/15 01:09		
Bromofluorobenzene	0.05000	86.0	50 - 150	20.323	20.324	-0.0010	+/-0.210	
Matrix Spike Dup (5L15013-MSD1) mg/L				Lab File ID: 019F1901.D		Analyzed: 12/16/15 01:50		
Bromofluorobenzene	0.05000	82.0	50 - 150	20.322	20.324	-0.0020	+/-0.210	
OTC537-GW-5371-FD-151214 (1512147-04) mg/L				Lab File ID: 020F2001.D		Analyzed: 12/16/15 02:30		
Bromofluorobenzene	0.05000	80.0	50 - 150	20.323	20.324	-0.0010	+/-0.210	
Calibration Check (5L35102-CCV3) ug/mL				Lab File ID: 021F2101.D		Analyzed: 12/16/15 03:09		
Bromofluorobenzene	0.05000	86.0	80 - 120	20.322	20.324	-0.0020	+/-0.210	

LCS / LCS DUPLICATE RECOVERY

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L15013	Laboratory ID:	5L15013-BS1
Preparation:	8015GRO	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Gasoline Range Organics (C6-C10)	0.5000	0.4410	88.2	50 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8015C GRO

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L15013

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Gasoline Range Organics (C6-C10)	0.5000	0.06400	0.4250	72.2		50 - 150

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Gasoline Range Organics (C6-C10)	0.5000	0.3890	65.0	8.85		30	50 - 150

PREPARATION BATCH SUMMARY

SW8015C GRO

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L15013 Batch Matrix: Water Preparation: 8015GRO

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02	12/15/15 12:48	5.00	5.00
OTC537-GW-5371-151214	1512147-03	12/15/15 12:48	5.00	5.00
OTC537-GW-5371-FD-151214	1512147-04	12/15/15 12:48	5.00	5.00
Blank	5L15013-BLK1	12/15/15 12:48	5.00	5.00
LCS	5L15013-BS1	12/15/15 12:48	5.00	5.00
OTC537-GW-5371-151214	5L15013-MS1	12/15/15 12:48	5.00	5.00
OTC537-GW-5371-151214	5L15013-MSD1	12/15/15 12:48	5.00	5.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L15013-BLK1 File ID: 014F1401.D

Sampled: Prepared: Analyzed: 12/15/15 22:30

Solids: Preparation: 8015GRO Dilution:

Batch: 5L15013 Sequence: 5L35102 Calibration: 5302005 Instrument: GL-GCVOA2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
8006-61-9	Gasoline Range Organics (C6-C10)		0.0500	0.100	0.150	U

Total Target Analytes Reported: 1

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.05000	0.04100	82.0	50 - 150	Y

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix:
Laboratory ID: 5L15013-BS1
File ID: 015F1501.D
Sampled:
Prepared:
Analyzed: 12/15/15 23:10
Solids:
Preparation: 8015GRO
Dilution:
Batch: 5L15013
Sequence: 5L35102
Calibration: 5302005
Instrument: GL-GCVOA2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
8006-61-9	Gasoline Range Organics (C6-C10)	**0.4410**	0.0500	0.100	0.150	

Total Target Analytes Reported: 1

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.05000	0.04300	86.0	50 - 150	Y

ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB

Matrix:		Laboratory ID:	5L15013-MS1	File ID:	018F1801.D
Sampled:		Prepared:		Analyzed:	12/16/15 01:09
Solids:		Preparation:	8015GRO	Dilution:	

Batch:	5L15013	Sequence:	5L35102	Calibration:	5302005	Instrument:	GL-GCVOA2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
8006-61-9	Gasoline Range Organics (C6-C10)	**0.4250**	0.0500	0.100	0.150	

Total Target Analytes Reported: 1

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.05000	0.04300	86.0	50 - 150	Y

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L15013-MSD1 File ID: 019F1901.D

Sampled: Prepared: Analyzed: 12/16/15 01:50

Solids: Preparation: 8015GRO Dilution:

Batch: 5L15013 Sequence: 5L35102 Calibration: 5302005 Instrument: GL-GCVOA2

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
8006-61-9	Gasoline Range Organics (C6-C10)	**0.3890**	0.0500	0.100	0.150	

Total Target Analytes Reported: 1

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.05000	0.04100	82.0	50 - 150	Y

INITIAL CALIBRATION STANDARDS

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5J30224	Instrument:	GL-GCVOA2
Calibration:	5302005		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15J0702	GRO Cal 0.10ppm	5J30224-CAL1	009F0901.D	10/22/15 17:12
15J0703	GRO Cal 0.20ppm	5J30224-CAL2	010F1001.D	10/22/15 17:52
15J0704	GRO Cal 0.50ppm	5J30224-CAL3	011F1101.D	10/22/15 18:31
15J0705	GRO Cal 1.0ppm	5J30224-CAL4	012F1201.D	10/22/15 19:11
15J0706	GRO Cal 2.0ppm	5J30224-CAL5	014F1401.D	10/22/15 20:30
15J0707	GRO Cal 5.0ppm	5J30224-CAL6	016F1601.D	10/22/15 21:49

ANALYSIS SEQUENCE SUMMARY

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5J30224	Instrument:	GL-GCVOA2
Calibration:	5302005		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5J30224-CAL1	009F0901.D	10/22/15 17:12
Cal Standard	5J30224-CAL2	010F1001.D	10/22/15 17:52
Cal Standard	5J30224-CAL3	011F1101.D	10/22/15 18:31
Cal Standard	5J30224-CAL4	012F1201.D	10/22/15 19:11
Cal Standard	5J30224-CAL5	014F1401.D	10/22/15 20:30
Cal Standard	5J30224-CAL6	016F1601.D	10/22/15 21:49
Initial Cal Check	5J30224-ICV1	018F1801.D	10/22/15 23:10

ANALYSIS SEQUENCE SUMMARY

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L35102	Instrument:	GL-GCVOA2
Calibration:	5302005		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L35102-CCV1	004F0401.D	12/15/15 14:45
Calibration Check	5L35102-CCV2	013F1301.D	12/15/15 21:43
Blank	5L15013-BLK1	014F1401.D	12/15/15 22:30
LCS	5L15013-BS1	015F1501.D	12/15/15 23:10
OTC538-GW-5382-151214	1512147-02	016F1601.D	12/15/15 23:50
OTC537-GW-5371-151214	1512147-03	017F1701.D	12/16/15 00:30
OTC537-GW-5371-151214	5L15013-MS1	018F1801.D	12/16/15 01:09
OTC537-GW-5371-151214	5L15013-MSD1	019F1901.D	12/16/15 01:50
OTC537-GW-5371-FD-151214	1512147-04	020F2001.D	12/16/15 02:30
Calibration Check	5L35102-CCV3	021F2101.D	12/16/15 03:09

INITIAL CALIBRATION DATA

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5302005	Instrument:	GL-GCVOA2	
Matrix:	Solid	Calibration Dates:	10/22/15 17:12	10/22/15 21:49

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Gasoline Range Organics (C6-C10)	0.1	1.217712E+07	0.2	1.158526E+07	0.5	1.155458E+07	1	1.122877E+07	2	1.217506E+07	5	1.134673E+07
Bromofluorobenzene	0.01	9294900	0.02	8262150	0.05	8065600	0.1	8403560	0.2	7970215	0.5	~~8180436~~
Gasoline Range Organics (C5-C12)	0.1		0.2		0.5		1		2		5	

INITIAL CALIBRATION DATA (Continued)

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5302005	Instrument:	GL-GCVOA2	
Matrix:	Solid	Calibration Dates:	10/22/15 17:12	10/22/15 21:49

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Gasoline Range Organics (C6-C10)	1.167792E+07	3.492185	13.803	0.0189842			20	
Bromofluorobenzene	8399285	6.289803	20.3336	8.936709E-03			20	
Gasoline Range Organics (C5-C12)							20	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-GCVOA2	Calibration:	5302005
Lab File ID:	018F1801.D	Calibration Date:	10/22/15 00:00
Sequence:	5J30224	Injection Date:	10/22/15
Lab Sample ID:	5J30224-ICV1	Injection Time:	23:10

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Gasoline Range Organics (C6-C10)	A	0.5000	0.5090	1.167792E+07	1.189144E+07		1.8	20

CONTINUING CALIBRATION CHECK

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-GCVOA2	Calibration:	5302005
Lab File ID:	004F0401.D	Calibration Date:	10/22/15 00:00
Sequence:	5L35102	Injection Date:	12/15/15
Lab Sample ID:	5L35102-CCV1	Injection Time:	14:45

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Gasoline Range Organics (C6-C10)	A	0.5000	0.4880	1.167792E+07	1.1393E+07		-2.4	20
Bromofluorobenzene	A	0.05000	0.03900	8399285	6538940		-22.1	20 *

CONTINUING CALIBRATION CHECK

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-GCVOA2	Calibration:	5302005
Lab File ID:	013F1301.D	Calibration Date:	10/22/15 00:00
Sequence:	5L35102	Injection Date:	12/15/15
Lab Sample ID:	5L35102-CCV2	Injection Time:	21:43

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Gasoline Range Organics (C6-C10)	A	0.5000	0.4530	1.167792E+07	1.058672E+07		-9.3	20
Bromofluorobenzene	A	0.05000	0.04000	8399285	6621600		-21.2	20 *

CONTINUING CALIBRATION CHECK

SW8015C GRO

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-GCVOA2	Calibration:	5302005
Lab File ID:	021F2101.D	Calibration Date:	10/22/15 00:00
Sequence:	5L35102	Injection Date:	12/16/15
Lab Sample ID:	5L35102-CCV3	Injection Time:	03:09

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Gasoline Range Organics (C6-C10)	A	0.5000	0.5110	1.167792E+07	1.192581E+07		2.1	20
Bromofluorobenzene	A	0.05000	0.04300	8399285	7183040		-14.5	20

HOLDING TIME SUMMARY

SW8015C GRO

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/15/15 12:48	N/A	14.00	12/15/15 23:50	1.67	14.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/15/15 12:48	N/A	14.00	12/16/15 00:30	1.56	14.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/15/15 12:48	N/A	14.00	12/16/15 02:30	1.65	14.00	

Data for SW8330 Forms

Sample Extraction Data

Prep Method: EXT_EXPL_W-SW8330A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02 [OTC538-GW-5382-151214]	5L18007	1,000.00/8.00	1070	8.00	1.00			12/18/15
1512147-02RE1 [OTC538-GW-5382-151214]	5L18007	1,000.00/8.00	1070	8.00	1.00			12/18/15
1512147-03 [OTC537-GW-5371-151214]	5L18007	1,000.00/8.00	1040	8.00	1.00			12/18/15
1512147-03RE1 [OTC537-GW-5371-151214]	5L18007	1,000.00/8.00	1040	8.00	1.00			12/18/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L18007	1,000.00/8.00	1070	8.00	1.00			12/18/15
1512147-04RE1 [OTC537-GW-5371-FD-151214]	5L18007	1,000.00/8.00	1070	8.00	1.00			12/18/15

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC		SDG:	1512147	
Client:	CB&I		Project:	Holloman AFB	
Matrix:	Water	Prepared:	12/18/15 11:20	Dilution:	1
Sampled:	12/14/15 06:46	Preparation:	EXT_EXPL_W	Batch:	5L18007
Solids:					
Laboratory ID:	1512147-02			File ID:	104V0401.D.Report.TXT
Sequence:	5L36303			Analyzed:	12/19/15 20:42
Calibration:	5285001			Instrument:	HPLC1-[C1]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
118-96-7	2,4,6-Trinitrotoluene		0.0748	0.150	0.299	U
121-14-2	2,4-Dinitrotoluene		0.0748	0.150	0.299	U
606-20-2	2,6-Dinitrotoluene		0.0748	0.150	0.299	U
35572-78-2	2-Amino-4,6-dinitrotoluene	**0.148**	0.0748	0.150	0.299	J
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0748	0.150	0.299	U
99-99-0	4-Nitrotoluene		0.0748	0.150	0.299	U
2691-41-0	HMX		0.0748	0.150	0.299	U
98-95-3	Nitrobenzene		0.0748	0.150	0.299	U
55-63-0	Nitroglycerin		0.187	0.374	0.748	U
78-11-5	PETN		0.187	0.374	0.748	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	1.869	1.742	93	40 - 145	

Laboratory ID:	1512147-02RE1	**Second Column Analysis**	File ID:	003V0301.D.Report.TXT
Sequence:	5L36304		Analyzed:	12/19/15 21:21
Calibration:	5245003		Instrument:	HPLC2-[C2]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0748	0.150	0.299	U
99-65-0	1,3-Dinitrobenzene		0.0748	0.150	0.299	U
88-72-2	2-Nitrotoluene		0.0748	0.150	0.299	U
99-08-1	3-Nitrotoluene		0.0748	0.150	0.299	U
121-82-4	RDX		0.0748	0.150	0.299	U
479-45-8	Tetryl		0.0748	0.150	0.299	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	1.869	1.984	106	40 - 145	

Explosive sample dual column analysis do not conform to normal dual column analysis, such as Pesticides, due to the fact that separate instrument systems are used for each column. When dual column analyses are required, each injection has a different date/time/instrument reference. Lab ID's appended with RE# indicate subsequent analysis for the original sample.If analytes are previously confirmed on both columns, sample dilutions may not have a confirmatory analytical run.

Total Target Analytes Reported: 16 Project Analytes: 16

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Prepared: 12/18/15 11:20
Dilution: 1
Sampled: 12/14/15 10:01
Preparation: EXT_EXPL_W
Batch: 5L18007
Solids:
Laboratory ID: 1512147-03
File ID: 105V0501.D.Report.TXT
Sequence: 5L36303
Analyzed: 12/19/15 21:11
Calibration: 5285001
Instrument: HPLC1-[C1]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
88-72-2	2-Nitrotoluene	**0.474**	0.0769	0.154	0.308	P
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0769	0.154	0.308	U
2691-41-0	HMX		0.0769	0.154	0.308	U
55-63-0	Nitroglycerin		0.192	0.385	0.769	U
78-11-5	PETN		0.192	0.385	0.769	U
479-45-8	Tetryl		0.0769	0.154	0.308	UX

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	1.923	1.735	90	40 - 145	

Laboratory ID: 1512147-03RE1
Second Column Analysis
File ID: 004V0401.D.Report.TXT
Sequence: 5L36304
Analyzed: 12/19/15 22:24
Calibration: 5245003
Instrument: HPLC2-[C2]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0769	0.154	0.308	U
99-65-0	1,3-Dinitrobenzene		0.0769	0.154	0.308	U
118-96-7	2,4,6-Trinitrotoluene		0.0769	0.154	0.308	U
121-14-2	2,4-Dinitrotoluene		0.0769	0.154	0.308	U
606-20-2	2,6-Dinitrotoluene		0.0769	0.154	0.308	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0769	0.154	0.308	U
99-08-1	3-Nitrotoluene		0.0769	0.154	0.308	U
99-99-0	4-Nitrotoluene		0.0769	0.154	0.308	U
98-95-3	Nitrobenzene		0.0769	0.154	0.308	U
121-82-4	RDX		0.0769	0.154	0.308	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	1.923	1.892	98	40 - 145	

Explosive sample dual column analysis do not conform to normal dual column analysis, such as Pesticides, due to the fact that separate instrument systems are used for each column. When dual column analyses are required, each injection has a different date/time/instrument reference. Lab ID's appended with RE# indicate subsequent analysis for the original sample.If analytes are previously confirmed on both columns, sample dilutions may not have a confirmatory analytical run.

Total Target Analytes Reported: 16 Project Analytes: 16

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-15121 4

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Water Prepared: 12/18/15 11:20 Dilution: 1

Sampled: 12/14/15 10:01 Preparation: EXT_EXPL_W Batch: 5L18007

Solids:

Laboratory ID: 1512147-04 File ID: 108V0801.D.Report.TXT

Sequence: 5L36303 Analyzed: 12/19/15 22:38

Calibration: 5285001 Instrument: HPLC1-[C1]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
118-96-7	2,4,6-Trinitrotoluene		0.0748	0.150	0.299	U
606-20-2	2,6-Dinitrotoluene		0.0748	0.150	0.299	U
88-72-2	2-Nitrotoluene	**0.211**	0.0748	0.150	0.299	J P
99-08-1	3-Nitrotoluene		0.0748	0.150	0.299	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0748	0.150	0.299	U
2691-41-0	HMX		0.0748	0.150	0.299	U
55-63-0	Nitroglycerin		0.187	0.374	0.748	U
78-11-5	PETN		0.187	0.374	0.748	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	1.869	1.586	85	40 - 145	

Laboratory ID: 1512147-04RE1 **Second Column Analysis** File ID: 005V0501.D.Report.TXT

Sequence: 5L36304 Analyzed: 12/19/15 23:27

Calibration: 5245003 Instrument: HPLC2-[C2]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0748	0.150	0.299	U
99-65-0	1,3-Dinitrobenzene		0.0748	0.150	0.299	U
121-14-2	2,4-Dinitrotoluene		0.0748	0.150	0.299	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0748	0.150	0.299	U
99-99-0	4-Nitrotoluene		0.0748	0.150	0.299	U
98-95-3	Nitrobenzene		0.0748	0.150	0.299	U
121-82-4	RDX	**0.761**	0.0748	0.150	0.299	M P
479-45-8	Tetryl		0.0748	0.150	0.299	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	1.869	1.683	90	40 - 145	

Explosive sample dual column analysis do not conform to normal dual column analysis, such as Pesticides, due to the fact that separate instrument systems are used for each column. When dual column analyses are required, each injection has a different date/time/instrument reference. Lab ID's appended with RE# indicate subsequent analysis for the original sample.If analytes are previously confirmed on both columns, sample dilutions may not have a confirmatory analytical run.

Total Target Analytes Reported: 16 Project Analytes: 16

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36303	Instrument:	HPLC1-[C1]
		Calibration:	5285001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (5L36303-CCV1) ug/L				Lab File ID: 101V0101.D.Repor		Analyzed: 12/19/15 19:14		
1-Chloro-3-nitrobenzene	1000	99	85 - 115	17.107	17.107	0.0000	+/-1.270	
Blank (5L18007-BLK1) ug/L				Lab File ID: 102V0201.D.Repor		Analyzed: 12/19/15 19:43		
1-Chloro-3-nitrobenzene	2.000	87	40 - 145	17.166	17.107	0.0590	+/-1.270	
LCS (5L18007-BS1) ug/L				Lab File ID: 103V0301.D.Repor		Analyzed: 12/19/15 20:12		
1-Chloro-3-nitrobenzene	2.000	101	40 - 145	17.235	17.107	0.1280	+/-1.270	
OTC538-GW-5382-151214 (1512147-02) ug/L				Lab File ID: 104V0401.D.Repor		Analyzed: 12/19/15 20:42		
1-Chloro-3-nitrobenzene	1.869	93	40 - 145	17.139	17.107	0.0320	+/-1.270	
OTC537-GW-5371-151214 (1512147-03) ug/L				Lab File ID: 105V0501.D.Repor		Analyzed: 12/19/15 21:11		
1-Chloro-3-nitrobenzene	1.923	90	40 - 145	17.219	17.107	0.1120	+/-1.270	
Matrix Spike (5L18007-MS1) ug/L				Lab File ID: 106V0601.D.Repor		Analyzed: 12/19/15 21:40		
1-Chloro-3-nitrobenzene	1.852	97	40 - 145	17.132	17.107	0.0250	+/-1.270	
Matrix Spike Dup (5L18007-MSD1) ug/L				Lab File ID: 107V0701.D.Repor		Analyzed: 12/19/15 22:09		
1-Chloro-3-nitrobenzene	1.887	91	40 - 145	17.138	17.107	0.0310	+/-1.270	
OTC537-GW-5371-FD-151214 (1512147-04) ug/L				Lab File ID: 108V0801.D.Repor		Analyzed: 12/19/15 22:38		
1-Chloro-3-nitrobenzene	1.869	85	40 - 145	17.192	17.107	0.0850	+/-1.270	
Calibration Check (5L36303-CCV2) ug/L				Lab File ID: 118V1801.D.Repor		Analyzed: 12/20/15 03:30		
1-Chloro-3-nitrobenzene	1000	103	85 - 115	17.077	17.107	-0.0300	+/-1.270	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36304	Instrument:	HPLC2-[C2]
		Calibration:	5245003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (5L36304-CCV1) ug/L				Lab File ID: 001V0101.D.Repor		Analyzed: 12/19/15 19:15		
1-Chloro-3-nitrobenzene	1000	102	85 - 115	18.625	18.625	0.0000	+/-1.270	
OTC538-GW-5382-151214 (1512147-02RE1) ug/L				Lab File ID: 003V0301.D.Repor		Analyzed: 12/19/15 21:21		
1-Chloro-3-nitrobenzene	1.869	106	40 - 145	18.533	18.625	-0.0920	+/-1.270	
OTC537-GW-5371-151214 (1512147-03RE1) ug/L				Lab File ID: 004V0401.D.Repor		Analyzed: 12/19/15 22:24		
1-Chloro-3-nitrobenzene	1.923	98	40 - 145	18.522	18.625	-0.1030	+/-1.270	
OTC537-GW-5371-FD-151214 (1512147-04RE1) ug/L				Lab File ID: 005V0501.D.Repor		Analyzed: 12/19/15 23:27		
1-Chloro-3-nitrobenzene	1.869	90	40 - 145	18.537	18.625	-0.0880	+/-1.270	
Calibration Check (5L36304-CCV2) ug/L				Lab File ID: 013V1301.D.Repor		Analyzed: 12/20/15 07:50		
1-Chloro-3-nitrobenzene	1000	102	85 - 115	18.499	18.625	-0.1260	+/-1.270	

LCS / LCS DUPLICATE RECOVERY

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L18007	Laboratory ID:	5L18007-BS1
Preparation:	EXT_EXPL_W	Initial/Final:	1000 mL / 8 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
1,3,5-Trinitrobenzene	10.00	10.64	106	65 - 140
1,3-Dinitrobenzene	10.00	10.01	100	45 - 160
2,4,6-Trinitrotoluene	10.00	8.648	86	50 - 145
2,4-Dinitrotoluene	10.00	10.33	103	60 - 135
2,6-Dinitrotoluene	10.00	10.26	103	60 - 135
2-Amino-4,6-dinitrotoluene	10.00	10.70	107	50 - 155
2-Nitrotoluene	10.00	9.633	96	45 - 135
3-Nitrotoluene	10.00	9.598	96	50 - 130
4-Amino-2,6-dinitrotoluene	10.00	10.67	107	55 - 155
4-Nitrotoluene	10.00	9.800	98	50 - 130
HMX	10.00	9.698	97	80 - 115
Nitrobenzene	10.00	10.03	100	50 - 140
Nitroglycerin	10.00	9.572	96	60 - 120
PETN	10.00	9.641	96	60 - 120
RDX	10.00	9.973	100	50 - 160
Tetryl	10.00	11.27	113	20 - 175

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8330A

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L18007

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
1,3,5-Trinitrobenzene	9.259	ND	8.936	97		65 - 140
1,3-Dinitrobenzene	9.259	ND	8.444	91		45 - 160
2,4,6-Trinitrotoluene	9.259	ND	7.063	76		50 - 145
2,4-Dinitrotoluene	9.259	ND	8.766	95		60 - 135
2,6-Dinitrotoluene	9.259	ND	9.094	98		60 - 135
2-Amino-4,6-dinitrotoluene	9.259	ND	17.47	189	*	50 - 155
2-Nitrotoluene	9.259	0.4744	7.936	81		45 - 135
3-Nitrotoluene	9.259	ND	8.143	88		50 - 130
4-Amino-2,6-dinitrotoluene	9.259	ND	8.996	97		55 - 155
4-Nitrotoluene	9.259	ND	8.322	90		50 - 130
HMX	9.259	ND	7.505	81		80 - 115
Nitrobenzene	9.259	ND	8.371	90		50 - 140
Nitroglycerin	9.259	ND	7.683	83		60 - 120
PETN	9.259	ND	7.821	84		60 - 120
RDX	9.259	ND	7.772	84		50 - 160
Tetryl	9.259	ND	10.24	111		20 - 175

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8330A

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L18007

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
1,3,5-Trinitrobenzene	9.434	9.170	97	3		30	65 - 140
1,3-Dinitrobenzene	9.434	8.281	88	2		30	45 - 160
2,4,6-Trinitrotoluene	9.434	6.986	74	1		30	50 - 145
2,4-Dinitrotoluene	9.434	8.628	91	2		30	60 - 135
2,6-Dinitrotoluene	9.434	9.013	96	0.9		30	60 - 135
2-Amino-4,6-dinitrotoluene	9.434	17.32	184	0.8	*	30	50 - 155
2-Nitrotoluene	9.434	7.794	78	2		30	45 - 135
3-Nitrotoluene	9.434	7.894	84	3		30	50 - 130
4-Amino-2,6-dinitrotoluene	9.434	9.044	96	0.5		30	55 - 155
4-Nitrotoluene	9.434	8.345	88	0.3		30	50 - 130
HMX	9.434	7.596	81	1		30	80 - 115
Nitrobenzene	9.434	8.081	86	4		30	50 - 140
Nitroglycerin	9.434	7.712	82	0.4		30	60 - 120
PETN	9.434	7.643	81	2		30	60 - 120
RDX	9.434	7.900	84	2		30	50 - 160
Tetryl	9.434	9.887	105	3		30	20 - 175

PREPARATION BATCH SUMMARY

SW8330A

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L18007 Batch Matrix: Water Preparation: EXT_EXPL_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02	12/18/15 11:20	1,070.00	8.00
OTC538-GW-5382-151214	1512147-02RE1	12/18/15 11:20	1,070.00	8.00
OTC537-GW-5371-151214	1512147-03	12/18/15 11:20	1,040.00	8.00
OTC537-GW-5371-151214	1512147-03RE1	12/18/15 11:20	1,040.00	8.00
OTC537-GW-5371-FD-151214	1512147-04	12/18/15 11:20	1,070.00	8.00
OTC537-GW-5371-FD-151214	1512147-04RE1	12/18/15 11:20	1,070.00	8.00
Blank	5L18007-BLK1	12/18/15 11:20	1,000.00	8.00
LCS	5L18007-BS1	12/18/15 11:20	1,000.00	8.00
OTC537-GW-5371-151214	5L18007-MS1	12/18/15 11:20	1,080.00	8.00
OTC537-GW-5371-151214	5L18007-MSD1	12/18/15 11:20	1,060.00	8.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Laboratory ID: 5L18007-BLK1 Preparation: EXT_EXPL_W File ID: 102V0201.D.Report.TXT

Prepared: 12/18/15 11:20 Analyzed: 12/19/15 19:43

Batch: 5L18007 Sequence: 5L36303 Calibration: 5285001 Instrument: HPLC1-[C1]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene		0.0800	0.160	0.320	U
99-65-0	1,3-Dinitrobenzene		0.0800	0.160	0.320	U
118-96-7	2,4,6-Trinitrotoluene		0.0800	0.160	0.320	U
121-14-2	2,4-Dinitrotoluene		0.0800	0.160	0.320	U
606-20-2	2,6-Dinitrotoluene		0.0800	0.160	0.320	U
35572-78-2	2-Amino-4,6-dinitrotoluene		0.0800	0.160	0.320	U
88-72-2	2-Nitrotoluene		0.0800	0.160	0.320	U
99-08-1	3-Nitrotoluene		0.0800	0.160	0.320	U
19406-51-0	4-Amino-2,6-dinitrotoluene		0.0800	0.160	0.320	U
99-99-0	4-Nitrotoluene		0.0800	0.160	0.320	U
2691-41-0	HMX		0.0800	0.160	0.320	U
98-95-3	Nitrobenzene		0.0800	0.160	0.320	U
55-63-0	Nitroglycerin		0.200	0.400	0.800	U
78-11-5	PETN		0.200	0.400	0.800	U
121-82-4	RDX		0.0800	0.160	0.320	U
479-45-8	Tetryl		0.0800	0.160	0.320	UX

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	2.000	1.738	87	40 - 145	

Explosive sample dual column analysis do not conform to normal dual column analysis, such as Pesticides, due to the fact that separate instrument systems are used for each column. When dual column analyses are required, each injection has a different date/time/instrument reference. Lab ID's appended with RE# indicate subsequent analysis for the original sample.

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L18007-BS1 File ID: 103V0301.D.Report.TXT

Sampled: Prepared: Analyzed: 12/19/15 20:12

Solids: Preparation: EXT_EXPL_W Dilution:

Batch: 5L18007 Sequence: 5L36303 Calibration: 5285001 Instrument: HPLC1-[C1]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene	**10.64**	0.0800	0.160	0.320	
99-65-0	1,3-Dinitrobenzene	**10.01**	0.0800	0.160	0.320	
118-96-7	2,4,6-Trinitrotoluene	**8.648**	0.0800	0.160	0.320	
121-14-2	2,4-Dinitrotoluene	**10.33**	0.0800	0.160	0.320	
606-20-2	2,6-Dinitrotoluene	**10.26**	0.0800	0.160	0.320	
35572-78-2	2-Amino-4,6-dinitrotoluene	**10.70**	0.0800	0.160	0.320	
88-72-2	2-Nitrotoluene	**9.633**	0.0800	0.160	0.320	
99-08-1	3-Nitrotoluene	**9.598**	0.0800	0.160	0.320	
19406-51-0	4-Amino-2,6-dinitrotoluene	**10.67**	0.0800	0.160	0.320	
99-99-0	4-Nitrotoluene	**9.800**	0.0800	0.160	0.320	
2691-41-0	HMX	**9.698**	0.0800	0.160	0.320	
98-95-3	Nitrobenzene	**10.03**	0.0800	0.160	0.320	
55-63-0	Nitroglycerin	**9.572**	0.200	0.400	0.800	
78-11-5	PETN	**9.641**	0.200	0.400	0.800	
121-82-4	RDX	**9.973**	0.0800	0.160	0.320	
479-45-8	Tetryl	**11.27**	0.0800	0.160	0.320	X

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	2.000	2.023	101	40 - 145	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L18007-MS1 File ID: 106V0601.D.Report.TXT

Sampled: Prepared: Analyzed: 12/19/15 21:40

Solids: Preparation: EXT_EXPL_W Dilution:

Batch: 5L18007 Sequence: 5L36303 Calibration: 5285001 Instrument: HPLC1-[C1]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene	**8.936**	0.0741	0.148	0.296	
99-65-0	1,3-Dinitrobenzene	**8.444**	0.0741	0.148	0.296	
118-96-7	2,4,6-Trinitrotoluene	**7.063**	0.0741	0.148	0.296	
121-14-2	2,4-Dinitrotoluene	**8.766**	0.0741	0.148	0.296	
606-20-2	2,6-Dinitrotoluene	**9.094**	0.0741	0.148	0.296	
35572-78-2	2-Amino-4,6-dinitrotoluene	**17.47**	0.0741	0.148	0.296	
88-72-2	2-Nitrotoluene	**7.936**	0.0741	0.148	0.296	
99-08-1	3-Nitrotoluene	**8.143**	0.0741	0.148	0.296	
19406-51-0	4-Amino-2,6-dinitrotoluene	**8.996**	0.0741	0.148	0.296	
99-99-0	4-Nitrotoluene	**8.322**	0.0741	0.148	0.296	
2691-41-0	HMX	**7.505**	0.0741	0.148	0.296	
98-95-3	Nitrobenzene	**8.371**	0.0741	0.148	0.296	
55-63-0	Nitroglycerin	**7.683**	0.185	0.370	0.741	
78-11-5	PETN	**7.821**	0.185	0.370	0.741	
121-82-4	RDX	**7.772**	0.0741	0.148	0.296	
479-45-8	Tetryl	**10.24**	0.0741	0.148	0.296	X

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	1.852	1.792	97	40 - 145	

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L18007-MSD1 File ID: 107V0701.D.Report.TXT

Sampled: Prepared: Analyzed: 12/19/15 22:09

Solids: Preparation: EXT_EXPL_W Dilution:

Batch: 5L18007 Sequence: 5L36303 Calibration: 5285001 Instrument: HPLC1-[C1]

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
99-35-4	1,3,5-Trinitrobenzene	**9.170**	0.0755	0.151	0.302	
99-65-0	1,3-Dinitrobenzene	**8.281**	0.0755	0.151	0.302	
118-96-7	2,4,6-Trinitrotoluene	**6.986**	0.0755	0.151	0.302	
121-14-2	2,4-Dinitrotoluene	**8.628**	0.0755	0.151	0.302	
606-20-2	2,6-Dinitrotoluene	**9.013**	0.0755	0.151	0.302	
35572-78-2	2-Amino-4,6-dinitrotoluene	**17.32**	0.0755	0.151	0.302	
88-72-2	2-Nitrotoluene	**7.794**	0.0755	0.151	0.302	
99-08-1	3-Nitrotoluene	**7.894**	0.0755	0.151	0.302	
19406-51-0	4-Amino-2,6-dinitrotoluene	**9.044**	0.0755	0.151	0.302	
99-99-0	4-Nitrotoluene	**8.345**	0.0755	0.151	0.302	
2691-41-0	HMX	**7.596**	0.0755	0.151	0.302	
98-95-3	Nitrobenzene	**8.081**	0.0755	0.151	0.302	
55-63-0	Nitroglycerin	**7.712**	0.189	0.377	0.755	
78-11-5	PETN	**7.643**	0.189	0.377	0.755	
121-82-4	RDX	**7.900**	0.0755	0.151	0.302	
479-45-8	Tetryl	**9.887**	0.0755	0.151	0.302	X

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1-Chloro-3-nitrobenzene	1.887	1.713	91	40 - 145	

INITIAL CALIBRATION STANDARDS

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5I24511	Instrument:	HPLC2-[C2]
Calibration:	5245003		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15H0622	Expl/3,5-DNA Cal 1 @ 0.01/0.05ppm	5I24511-CAL1	002V0201.D.Report.TXT	08/28/15 21:16
15H0621	Expl/3,5-DNA Cal 2 @ 0.02/0.1ppm	5I24511-CAL2	003V0301.D.Report.TXT	08/28/15 22:19
15H0620	Expl/3,5-DNA Cal 3 @ 0.1/0.5ppm	5I24511-CAL3	004V0401.D.Report.TXT	08/28/15 23:22
15H0619	Expl/3,5-DNA Cal 4 @ 0.5/2.5ppm	5I24511-CAL4	005V0501.D.Report.TXT	08/29/15 00:24
15H0618	Expl/3,5-DNA Cal 5 @ 1.0/5ppm	5I24511-CAL5	006V0601.D.Report.TXT	08/29/15 01:27
15H0617	Expl/3,5-DNA Cal 6 @ 2.5/12.5ppm	5I24511-CAL6	007V0701.D.Report.TXT	08/29/15 02:30
15H0615	Expl/3,5-DNA Cal 7 @ 5/25ppm	5I24511-CAL7	008V0801.D.Report.TXT	08/29/15 03:33
15H0614	Expl. Cal 8 @ 10/50ppm	5I24511-CAL8	009V0901.D.Report.TXT	08/29/15 04:36
15H0613	Expl. Cal 9 @ 10ppm, 3,5-DNA	5I24511-CAL9	010V1001.D.Report.TXT	08/29/15 05:39

INITIAL CALIBRATION STANDARDS

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5J28505	Instrument:	HPLC1-[C1]
Calibration:	5285001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15J0186	Expl. Cal 1 @ 0.01/0.05ppm (no 3,5-DNA)	5J28505-CAL1	102V0201.D.Report.TXT	10/08/15 18:38
15J0187	Expl. Cal 2 @ 0.02/0.1ppm (no 3,5-DNA)	5J28505-CAL2	103V0301.D.Report.TXT	10/08/15 19:08
15J0188	Expl. Cal 3 @ 0.1/0.5ppm (no 3,5-DNA)	5J28505-CAL3	104V0401.D.Report.TXT	10/08/15 19:37
15J0189	Expl. Cal 4 @ 0.5/2.5ppm (no 3,5-DNA)	5J28505-CAL4	105V0501.D.Report.TXT	10/08/15 20:06
15J0190	Expl. Cal 5 @ 1.0/5.0ppm (no 3,5-DNA)	5J28505-CAL5	106V0601.D.Report.TXT	10/08/15 20:35
15J0191	Expl. Cal 6 @ 2.5/12.5ppm (no 3,5-DNA)	5J28505-CAL6	107V0701.D.Report.TXT	10/08/15 21:04
15J0192	Expl. Cal 7 @ 5.0/25.0ppm (no 3,5-DNA)	5J28505-CAL7	108V0801.D.Report.TXT	10/08/15 21:34
15J0193	Expl. Cal 8 @ 10.0/50.0ppm (no 3,5-DNA)	5J28505-CAL8	109V0901.D.Report.TXT	10/08/15 22:03
15K0002	Expl. Cal 9 @ 0.02ppm, 3,5-DNA	5J28505-CAL9	101V0101.D.Report.TXT	10/30/15 17:06
15K0003	Expl. Cal A @ 0.10ppm, 3,5-DNA	5J28505-CALA	102V0201.D.Report.TXT	10/30/15 17:35
15K0004	Expl. Cal B @ 0.50ppm, 3,5-DNA	5J28505-CALB	103V0301.D.Report.TXT	10/30/15 18:04
15K0005	Expl. Cal C @ 1.0ppm, 3,5-DNA	5J28505-CALC	104V0401.D.Report.TXT	10/30/15 18:33
15K0006	Expl. Cal D @ 2.5ppm, 3,5-DNA	5J28505-CALD	105V0501.D.Report.TXT	10/30/15 19:03
15K0007	Expl. Cal E @ 5ppm, 3,5-DNA	5J28505-CALE	106V0601.D.Report.TXT	10/30/15 19:32
15K0008	Expl. Cal F @ 10ppm, 3,5-DNA	5J28505-CALF	107V0701.D.Report.TXT	10/30/15 20:01

ANALYSIS SEQUENCE SUMMARY

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5I24511	Instrument:	HPLC2-[C2]
Calibration:	5245003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5I24511-CAL1	002V0201.D.Report.TXT	08/28/15 21:16
Cal Standard	5I24511-CAL2	003V0301.D.Report.TXT	08/28/15 22:19
Cal Standard	5I24511-CAL3	004V0401.D.Report.TXT	08/28/15 23:22
Cal Standard	5I24511-CAL4	005V0501.D.Report.TXT	08/29/15 00:24
Cal Standard	5I24511-CAL5	006V0601.D.Report.TXT	08/29/15 01:27
Cal Standard	5I24511-CAL6	007V0701.D.Report.TXT	08/29/15 02:30
Cal Standard	5I24511-CAL7	008V0801.D.Report.TXT	08/29/15 03:33
Cal Standard	5I24511-CAL8	009V0901.D.Report.TXT	08/29/15 04:36
Initial Cal Check	5I24511-ICV1	011V1101.D.Report.TXT	08/29/15 06:42

ANALYSIS SEQUENCE SUMMARY

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5J28505	Instrument:	HPLC1-[C1]
Calibration:	5285001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5J28505-CAL1	102V0201.D.Report.TXT	10/08/15 18:38
Cal Standard	5J28505-CAL2	103V0301.D.Report.TXT	10/08/15 19:08
Cal Standard	5J28505-CAL3	104V0401.D.Report.TXT	10/08/15 19:37
Cal Standard	5J28505-CAL4	105V0501.D.Report.TXT	10/08/15 20:06
Cal Standard	5J28505-CAL5	106V0601.D.Report.TXT	10/08/15 20:35
Cal Standard	5J28505-CAL6	107V0701.D.Report.TXT	10/08/15 21:04
Cal Standard	5J28505-CAL7	108V0801.D.Report.TXT	10/08/15 21:34
Cal Standard	5J28505-CAL8	109V0901.D.Report.TXT	10/08/15 22:03
Initial Cal Check	5J28505-ICV1	110V1001.D.Report.TXT	10/08/15 22:32

ANALYSIS SEQUENCE SUMMARY

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36303	Instrument:	HPLC1-[C1]
Calibration:	5285001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L36303-CCV1	101V0101.D.Report.TXT	12/19/15 19:14
Blank	5L18007-BLK1	102V0201.D.Report.TXT	12/19/15 19:43
LCS	5L18007-BS1	103V0301.D.Report.TXT	12/19/15 20:12
OTC538-GW-5382-151214	1512147-02	104V0401.D.Report.TXT	12/19/15 20:42
OTC537-GW-5371-151214	1512147-03	105V0501.D.Report.TXT	12/19/15 21:11
OTC537-GW-5371-151214	5L18007-MS1	106V0601.D.Report.TXT	12/19/15 21:40
OTC537-GW-5371-151214	5L18007-MSD1	107V0701.D.Report.TXT	12/19/15 22:09
OTC537-GW-5371-FD-151214	1512147-04	108V0801.D.Report.TXT	12/19/15 22:38
Calibration Check	5L36303-CCV2	118V1801.D.Report.TXT	12/20/15 03:30

ANALYSIS SEQUENCE SUMMARY

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36304	Instrument:	HPLC2-[C2]
Calibration:	5245003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L36304-CCV1	001V0101.D.Report.TXT	12/19/15 19:15
OTC538-GW-5382-151214	1512147-02RE1	003V0301.D.Report.TXT	12/19/15 21:21
OTC537-GW-5371-151214	1512147-03RE1	004V0401.D.Report.TXT	12/19/15 22:24
OTC537-GW-5371-FD-151214	1512147-04RE1	005V0501.D.Report.TXT	12/19/15 23:27
Calibration Check	5L36304-CCV2	013V1301.D.Report.TXT	12/20/15 07:50

INITIAL CALIBRATION DATA

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5245003	Instrument:	HPLC2-[C2]
Matrix:	Water	Calibration Dates:	8/28/15 21:16 8/29/15 5:39

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,3,5-Trinitrobenzene	10	0	20	0.381699	100	0.4574541	500	0.4804812	1000	0.4769691	2500	0.45852
1,3-Dinitrobenzene	10	0	20	0.2323165	100	0.244712	500	0.276111	1000	0.2726497	2500	0.264521
2,4,6-Trinitrotoluene	10	0	20	0.369779	100	0.2824656	500	0.3253484	1000	0.3384448	2500	0.3359517
2,4-Dinitrotoluene	10	0	20	0.3050555	100	0.2171288	500	0.2864158	1000	0.2974128	2500	0.2852657
2,6-Dinitrotoluene	10	0	20	0.2957665	100	0.2876077	500	0.3387554	1000	0.3306051	2500	0.3215977
2-Amino-4,6-dinitrotoluene	10	0	20	0.261	100	0.2701846	500	0.330286	1000	0.3379008	2500	0.32366
2-Nitrotoluene	10	0	20	0.3319265	100	0.3153036	500	0.3157376	1000	0.3192581	2500	0.3030435
3,5-Dinitroaniline	10	0	20	0.4649005	100	0.4768388	500	0.517895	1000	0.5141827	2500	0.5094784
3-Nitrotoluene	10	0	20	0.459591	100	0.3559182	500	0.378301	1000	0.381016	2500	0.3617275
4-Amino-2,6-dinitrotoluene	10	0	20	0.2849315	100	0.2905198	500	0.3142314	1000	0.3192164	2500	0.3018536
4-Nitrotoluene	10	0	20	0.233495	100	0.2192673	500	0.2272454	1000	0.2333576	2500	0.2206626
HMX	10	0	20	0.3098595	100	0.2885473	500	0.3105838	1000	0.3217598	2500	0.3108264
Nitrobenzene	10	0	20	0.222797	100	0.2197592	500	0.2511694	1000	0.2658905	2500	0.2635167
Nitroglycerin	50	0.1515938	100	0.148891	500	0.1326627	2500	0.1382376	5000	0.1408862	12500	0.1340848
PETN	50	0.1178568	100	0.1381026	500	0.1278765	2500	0.135745	5000	0.1368654	12500	0.1304718
RDX	10	0	20	0.2660265	100	0.2529888	500	0.2596446	1000	0.2683993	2500	0.258955
Tetryl	10	0	20	0.357893	100	0.2862122	500	0.343826	1000	0.3475569	2500	0.3319324
1-Chloro-3-nitrobenzene	10	0	20	0.5446125	100	0.5257911	500	0.572752	1000	0.5740739	2500	0.5478776

INITIAL CALIBRATION DATA (Continued)

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5245003	Instrument:	HPLC2-[C2]
Matrix:	Water	Calibration Dates:	8/28/15 21:16 8/29/15 5:39

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,3,5-Trinitrobenzene	5000	0.475069	10000	0.4774046								
1,3-Dinitrobenzene	5000	0.272559	10000	0.2761162								
2,4,6-Trinitrotoluene	5000	0.3467064	10000	0.3494895								
2,4-Dinitrotoluene	5000	0.29472	10000	0.2982045								
2,6-Dinitrotoluene	5000	0.3358592	10000	0.3383837								
2-Amino-4,6-dinitrotoluene	5000	0.3349636	10000	0.3387743								
2-Nitrotoluene	5000	0.3116678	10000	0.3184537								
3,5-Dinitroaniline	5000	0.509414			10000	0.4742971						
3-Nitrotoluene	5000	0.3719922	10000	0.3748476								
4-Amino-2,6-dinitrotoluene	5000	0.3192506	10000	0.3680411								
4-Nitrotoluene	5000	0.2298512	10000	0.2321011								
HMX	5000	0.3195018	10000	0.3239281								
Nitrobenzene	5000	0.2663806	10000	0.2683188								
Nitroglycerin	25000	0.136428	50000	0.1364702								
PETN	25000	0.1346959	50000	0.1349617								
RDX	5000	0.2665388	10000	0.2701336								
Tetryl	5000	0.3366308	10000	0.3244143								
1-Chloro-3-nitrobenzene	5000	0.5613166	10000	0.5702059								

INITIAL CALIBRATION DATA (Continued)

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5245003	Instrument:	HPLC2-[C2]
Matrix:	Water	Calibration Dates:	8/28/15 21:16 8/29/15 5:39

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,3,5-Trinitrobenzene	0.4582281	7.640802	44.25043	0.1656857			20	
1,3-Dinitrobenzene	0.2627122	6.604096	19.58986	0.1768431			20	
2,4,6-Trinitrotoluene	0.3354551	8.091807	50.21129	0.1951752			20	
2,4-Dinitrotoluene	0.2834576	10.6003	34.18571	0.1694033			20	
2,6-Dinitrotoluene	0.321225	6.582138	20.41743	0.1217212			20	
2-Amino-4,6-dinitrotoluene	0.3138242	10.6574	14.54957	0.2476939			20	
2-Nitrotoluene	0.3164844	2.754084	13.04443	0.1024496			20	
3,5-Dinitroaniline	0.4952866	4.494627	11.43929	0.1514691			20	
3-Nitrotoluene	0.3833419	9.077256	15.68929	0.1267457			20	
4-Amino-2,6-dinitrotoluene	0.3140063	8.740016	11.18671	0.150126			20	
4-Nitrotoluene	0.2279972	2.593641	17.35814	0.1542997			20	
HMX	0.3121438	3.816828	4.869143	6.956692E-02			20	
Nitrobenzene	0.2511189	8.425897	9.242857	7.313954E-02			20	
Nitroglycerin	0.1399068	4.917499	8.31675	8.214817E-02			20	
PETN	0.132072	5.041213	17.907	8.664634E-02			20	
RDX	0.2632409	2.347697	5.517429	6.871657E-02			20	
Tetryl	0.3326379	6.969737	32.93171	0.2296914			20	
1-Chloro-3-nitrobenzene	0.5566614	3.232345	18.55386	0.1119729			20	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5285001	Instrument:	HPLC1-[C1]	
Matrix:	Water	Calibration Dates:	10/8/15 18:38	10/30/15 20:01

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,3,5-Trinitrobenzene	10	~~3.309657~~	20	0.464527	100	0.5266095	500	0.522396	1000	0.5388315	2500	0.5502112
1,3-Dinitrobenzene	10	~~1.029827~~	20	0.27437	100	0.3167586	500	0.295185	1000	0.3045542	2500	0.3046289
2,4,6-Trinitrotoluene	10	~~0.595995~~	20	0.42897	100	0.4650733	500	0.405798	1000	0.4099648	2500	0.4061132
2,4-Dinitrotoluene	10	~~0.584451~~	20	0.3377085	100	0.4149784	500	0.3839884	1000	0.389647	2500	0.383333
2,6-Dinitrotoluene	10	~~0.562183~~	20	0.3894875	100	0.464586	500	0.3962078	1000	0.404618	2500	0.3968204
2-Amino-4,6-dinitrotoluene	10	~~0.506561~~	20	0.3468205	100	0.3943906	500	0.3765604	1000	0.3684167	2500	0.3800242
2-Nitrotoluene	10	~~0.448545~~	20	0.4314435	100	0.4284692	500	0.3857708	1000	0.395997	2500	0.3881739
3,5-Dinitroaniline												
3-Nitrotoluene	10	~~0.595641~~	20	0.5458965	100	0.5136894	500	0.4605724	1000	0.4779134	2500	0.4696756
4-Amino-2,6-dinitrotoluene	10	~~0.622535~~	20	0.4494825	100	0.5128232	500	0.4758806	1000	0.4684813	2500	0.477968
4-Nitrotoluene	10	~~0~~	20	0.4141515	100	0.32162	500	0.2842746	1000	0.2963488	2500	0.2890365
HMX	10	~~0.548919~~	20	0.3682395	100	0.424138	500	0.3765448	1000	0.3797161	2500	0.381098
Nitrobenzene	10	~~0.635352~~	20	0.2715735	100	0.3627763	500	0.3492678	1000	0.3704404	2500	0.3706023
Nitroglycerin	50	0.1698868	100	0.1609397	500	0.174294	2500	0.1548753	5000	0.1541802	12500	0.1539825
PETN	50	0.2095086	100	0.1811508	500	0.1903372	2500	0.1694672	5000	0.1735895	12500	0.1720664
RDX	10	~~0.568208~~	20	0.419904	100	0.3483979	500	0.3118964	1000	0.3108622	2500	0.3138814
Tetryl	10	~~0.762226~~	20	0.347492	100	0.412194	500	0.383977	1000	0.3894864	2500	0.3961452
1-Chloro-3-nitrobenzene	10	~~0.958077~~	20	0.684948	100	0.7459888	500	0.6479376	1000	0.6608673	2500	0.6582588

INITIAL CALIBRATION DATA (Continued)

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5285001	Instrument:	HPLC1-[C1]	
Matrix:	Water	Calibration Dates:	10/8/15 18:38	10/30/15 20:01

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,3,5-Trinitrobenzene	5000	0.5455484	10000	0.5532389								
1,3-Dinitrobenzene	5000	0.3006888	10000	0.3038168								
2,4,6-Trinitrotoluene	5000	0.4056058	10000	0.4118899								
2,4-Dinitrotoluene	5000	0.3830286	10000	0.3891171								
2,6-Dinitrotoluene	5000	0.3987036	10000	0.4110889								
2-Amino-4,6-dinitrotoluene	5000	0.371394	10000	0.367821								
2-Nitrotoluene	5000	0.3883774	10000	0.3920921								
3,5-Dinitroaniline					20	0.4513185	100	0.4361915	500	0.5188378	1000	0.5423477
3-Nitrotoluene	5000	0.4711796	10000	0.4763551								
4-Amino-2,6-dinitrotoluene	5000	0.4706576	10000	0.4742779								
4-Nitrotoluene	5000	0.2902374	10000	0.2936796								
HMX	5000	0.3787694	10000	0.381176								
Nitrobenzene	5000	0.368467	10000	0.3765182								
Nitroglycerin	25000	0.1516886	50000	0.1517351								
PETN	25000	0.1710678	50000	0.172239								
RDX	5000	0.3092466	10000	0.311741								
Tetryl	5000	0.3900314	10000	0.3915887								
1-Chloro-3-nitrobenzene	5000	0.657332	10000	0.6643924								

INITIAL CALIBRATION DATA (Continued)

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5285001	Instrument:	HPLC1-[C1]	
Matrix:	Water	Calibration Dates:	10/8/15 18:38	10/30/15 20:01

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,3,5-Trinitrobenzene												
1,3-Dinitrobenzene												
2,4,6-Trinitrotoluene												
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
2-Amino-4,6-dinitrotoluene												
2-Nitrotoluene												
3,5-Dinitroaniline	2500	0.5221868	5000	0.5313038	10000	0.5357667						
3-Nitrotoluene												
4-Amino-2,6-dinitrotoluene												
4-Nitrotoluene												
HMX												
Nitrobenzene												
Nitroglycerin												
PETN												
RDX												
Tetryl												
1-Chloro-3-nitrobenzene												

INITIAL CALIBRATION DATA (Continued)

SW8330A

Laboratory:	Empirical Laboratories, LLC		SDG:	1512147	
Client:	CB&I		Project:	Holloman AFB	
Calibration:	5285001		Instrument:	HPLC1-[C1]	
Matrix:	Water		Calibration Dates:	10/8/15 18:38	10/30/15 20:01

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,3,5-Trinitrobenzene	0.5287661	5.78474	6.438714	0.3403157			20	
1,3-Dinitrobenzene	0.3000003	4.342168	7.595429	0.3756621			20	
2,4,6-Trinitrotoluene	0.4190593	5.22274	9.760143	0.4091586			20	
2,4-Dinitrotoluene	0.3831144	5.986891	11.36057	0.4814842			20	
2,6-Dinitrotoluene	0.4087875	6.246179	10.95771	0.4336735			20	
2-Amino-4,6-dinitrotoluene	0.3722039	3.87933	10.628	0.6711329			20	
2-Nitrotoluene	0.4014748	4.918897	13.01229	0.4120663			20	
3,5-Dinitroaniline	0.5054218	8.523556	8.260571	0.147556			20	
3-Nitrotoluene	0.4878974	6.27295	14.92143	0.4263316			20	
4-Amino-2,6-dinitrotoluene	0.475653	3.97992	10.07043	0.6645333			20	
4-Nitrotoluene	0.312764	14.81009	13.96643	0.4785071			20	
HMX	0.3842403	4.723846	3.162857	0.3175974			20	
Nitrobenzene	0.3528065	10.44374	8.396143	0.3284249			20	
Nitroglycerin	0.1589478	5.463114	9.432375	0.4011116			20	
PETN	0.1799283	7.672052	16.28888	0.4303999			20	
RDX	0.3322756	12.34946	4.782571	0.4149431			20	
Tetryl	0.3872735	5.082207	8.063143	0.491051			20	
1-Chloro-3-nitrobenzene	0.6742464	4.982491	17.794	0.4603003			20	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	HPLC2-[C2]	Calibration:	5245003
Lab File ID:	011V1101.D.Report.TXT	Calibration Date:	08/28/15 14:31
Sequence:	5I24511	Injection Date:	08/29/15
Lab Sample ID:	5I24511-ICV1	Injection Time:	06:42

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
1,3,5-Trinitrobenzene	A	1000	1050	0.4582281	0.4813293		5.0	15
1,3-Dinitrobenzene	A	1000	1047	0.2627122	0.2751875		4.7	15
2,4,6-Trinitrotoluene	A	1000	1070	0.3354551	0.3587921		7.0	15
2,4-Dinitrotoluene	A	1000	1054	0.2834576	0.2987733		5.4	15
2,6-Dinitrotoluene	A	1000	1061	0.321225	0.3407346		6.1	15
2-Amino-4,6-dinitrotoluene	A	1000	1084	0.3138242	0.3402614		8.4	15
2-Nitrotoluene	A	1000	1012	0.3164844	0.3203799		1.2	15
3-Nitrotoluene	A	1000	991.8	0.3833419	0.3802079		-0.8	15
4-Amino-2,6-dinitrotoluene	A	1000	1055	0.3140063	0.331342		5.5	15
4-Nitrotoluene	A	1000	1067	0.2279972	0.2433193		6.7	15
HMX	A	1000	963.4	0.3121438	0.3007223		-3.7	15
Nitrobenzene	A	1000	1145	0.2511189	0.2875565		14.5	15
Nitroglycerin	A	5000	4986	0.1399068	0.1395098		-0.3	15
PETN	A	5000	5508	0.132072	0.1455009		10.2	15
RDX	A	1000	1038	0.2632409	0.273191		3.8	15
Tetryl	A	1000	1014	0.3326379	0.337235		1.4	15

INITIAL CALIBRATION CHECK

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	HPLC1-[C1]	Calibration:	5285001
Lab File ID:	110V1001.D.Report.TXT	Calibration Date:	10/08/15 00:00
Sequence:	5J28505	Injection Date:	10/08/15
Lab Sample ID:	5J28505-ICV1	Injection Time:	22:32

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
1,3,5-Trinitrobenzene	A	1000	1008	0.5287661	0.5329257		0.8	15
1,3-Dinitrobenzene	A	1000	1013	0.3000003	0.3039921		1.3	15
2,4,6-Trinitrotoluene	A	1000	965.5	0.4190593	0.4046192		-3.4	15
2,4-Dinitrotoluene	A	1000	985.7	0.3831144	0.3776387		-1.4	15
2,6-Dinitrotoluene	A	1000	980.2	0.4087875	0.4006786		-2.0	15
2-Amino-4,6-dinitrotoluene	A	1000	976.3	0.3722039	0.3633741		-2.4	15
2-Nitrotoluene	A	1000	963.9	0.4014748	0.386973		-3.6	15
3-Nitrotoluene	A	1000	943.2	0.4878974	0.4601755		-5.7	15
4-Amino-2,6-dinitrotoluene	A	1000	990.7	0.475653	0.4712455		-0.9	15
4-Nitrotoluene	A	1000	947.6	0.312764	0.2963713		-5.2	15
HMX	A	1000	877.4	0.3842403	0.3371212		-12.3	15
Nitrobenzene	A	1000	1021	0.3528065	0.360174		2.1	15
Nitroglycerin	A	5000	4655	0.1589478	0.1479659		-6.9	15
PETN	A	5000	4744	0.1799283	0.1707084		-5.1	15
RDX	A	1000	924.0	0.3322756	0.3070238		-7.6	15
Tetryl	A	1000	950.8	0.3872735	0.3682009		-4.9	15

CONTINUING CALIBRATION CHECK

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	HPLC1-[C1]	Calibration:	5285001
Lab File ID:	101V0101.D.Report.TXT	Calibration Date:	10/08/15 00:00
Sequence:	5L36303	Injection Date:	12/19/15
Lab Sample ID:	5L36303-CCV1	Injection Time:	19:14

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,3,5-Trinitrobenzene	A	1000	1036	0.5287661	0.5479895		3.6	15
1,3-Dinitrobenzene	A	1000	920.7	0.3000003	0.2761986		-7.9	15
2,4,6-Trinitrotoluene	A	1000	929.9	0.4190593	0.3896918		-7.0	15
2,4-Dinitrotoluene	A	1000	963.9	0.3831144	0.3692972		-3.6	15
2,6-Dinitrotoluene	A	1000	993.4	0.4087875	0.4060843		-0.7	15
2-Amino-4,6-dinitrotoluene	A	1000	1011	0.3722039	0.3762264		1.1	15
2-Nitrotoluene	A	1000	933.0	0.4014748	0.3745588		-6.7	15
3-Nitrotoluene	A	1000	951.2	0.4878974	0.4641057		-4.9	15
4-Amino-2,6-dinitrotoluene	A	1000	1032	0.475653	0.4906609		3.2	15
4-Nitrotoluene	A	1000	905.5	0.312764	0.2832015		-9.5	15
HMX	A	1000	976.9	0.3842403	0.3753645		-2.3	15
Nitrobenzene	A	1000	998.2	0.3528065	0.3521707		-0.2	15
Nitroglycerin	A	5000	4682	0.1589478	0.1488459		-6.4	15
PETN	A	5000	4647	0.1799283	0.1672093		-7.1	15
RDX	A	1000	938.4	0.3322756	0.3118138		-6.2	15
Tetryl	A	1000	1132	0.3872735	0.438316		13.2	15
1-Chloro-3-nitrobenzene	A	1000	990.1	0.6742464	0.667602		-1.0	15

CONTINUING CALIBRATION CHECK

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	HPLC1-[C1]	Calibration:	5285001
Lab File ID:	118V1801.D.Report.TXT	Calibration Date:	10/08/15 00:00
Sequence:	5L36303	Injection Date:	12/20/15
Lab Sample ID:	5L36303-CCV2	Injection Time:	03:30

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,3,5-Trinitrobenzene	A	1000	1064	0.5287661	0.5626033		6.4	15
1,3-Dinitrobenzene	A	1000	935.7	0.3000003	0.2806994		-6.4	15
2,4,6-Trinitrotoluene	A	1000	933.0	0.4190593	0.3909649		-6.7	15
2,4-Dinitrotoluene	A	1000	1017	0.3831144	0.3896024		1.7	15
2,6-Dinitrotoluene	A	1000	1015	0.4087875	0.4150983		1.5	15
2-Amino-4,6-dinitrotoluene	A	1000	1086	0.3722039	0.4040568		8.6	15
2-Nitrotoluene	A	1000	1008	0.4014748	0.4045085		0.8	15
3-Nitrotoluene	A	1000	991.3	0.4878974	0.4836641		-0.9	15
4-Amino-2,6-dinitrotoluene	A	1000	1107	0.475653	0.5263895		10.7	15
4-Nitrotoluene	A	1000	969.6	0.312764	0.3032416		-3.0	15
HMX	A	1000	1005	0.3842403	0.3863437		0.5	15
Nitrobenzene	A	1000	990.9	0.3528065	0.349612		-0.9	15
Nitroglycerin	A	5000	4884	0.1589478	0.1552485		-2.3	15
PETN	A	5000	4828	0.1799283	0.1737243		-3.4	15
RDX	A	1000	972.5	0.3322756	0.3231295		-2.8	15
Tetryl	A	1000	1152	0.3872735	0.4462103		15.2	15 *
1-Chloro-3-nitrobenzene	A	1000	1029	0.6742464	0.6936006		2.9	15

CONTINUING CALIBRATION CHECK

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	HPLC2-[C2]	Calibration:	5245003
Lab File ID:	001V0101.D.Report.TXT	Calibration Date:	08/28/15 14:31
Sequence:	5L36304	Injection Date:	12/19/15
Lab Sample ID:	5L36304-CCV1	Injection Time:	19:15

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,3,5-Trinitrobenzene	A	1000	1049	0.4582281	0.4808094		4.9	15
1,3-Dinitrobenzene	A	1000	982.1	0.2627122	0.2580116		-1.8	15
2,4,6-Trinitrotoluene	A	1000	1128	0.3354551	0.378372		12.8	15
2,4-Dinitrotoluene	A	1000	1034	0.2834576	0.2930874		3.4	15
2,6-Dinitrotoluene	A	1000	991.2	0.321225	0.3184099		-0.9	15
2-Amino-4,6-dinitrotoluene	A	1000	1040	0.3138242	0.3262266		4.0	15
2-Nitrotoluene	A	1000	996.1	0.3164844	0.3152495		-0.4	15
3-Nitrotoluene	A	1000	962.8	0.3833419	0.3690824		-3.7	15
4-Amino-2,6-dinitrotoluene	A	1000	939.7	0.3140063	0.2950634		-6.0	15
4-Nitrotoluene	A	1000	1009	0.2279972	0.2300138		0.9	15
HMX	A	1000	1002	0.3121438	0.3128298		0.2	15
Nitrobenzene	A	1000	993.9	0.2511189	0.2495946		-0.6	15
Nitroglycerin	A	5000	4834	0.1399068	0.1352712		-3.3	15
PETN	A	5000	5109	0.132072	0.1349637		2.2	15
RDX	A	1000	987.9	0.2632409	0.2600618		-1.2	15
Tetryl	A	1000	1140	0.3326379	0.379278		14.0	15
1-Chloro-3-nitrobenzene	A	1000	1016	0.5566614	0.565341		1.6	15

CONTINUING CALIBRATION CHECK

SW8330A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	HPLC2-[C2]	Calibration:	5245003
Lab File ID:	013V1301.D.Report.TXT	Calibration Date:	08/28/15 14:31
Sequence:	5L36304	Injection Date:	12/20/15
Lab Sample ID:	5L36304-CCV2	Injection Time:	07:50

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,3,5-Trinitrobenzene	A	1000	1048	0.4582281	0.4803233		4.8	15
1,3-Dinitrobenzene	A	1000	977.0	0.2627122	0.2566666		-2.3	15
2,4,6-Trinitrotoluene	A	1000	1035	0.3354551	0.3471964		3.5	15
2,4-Dinitrotoluene	A	1000	1013	0.2834576	0.2872155		1.3	15
2,6-Dinitrotoluene	A	1000	995.2	0.321225	0.3196741		-0.5	15
2-Amino-4,6-dinitrotoluene	A	1000	1075	0.3138242	0.3372528		7.5	15
2-Nitrotoluene	A	1000	998.8	0.3164844	0.3160892		-0.1	15
3-Nitrotoluene	A	1000	978.1	0.3833419	0.3749605		-2.2	15
4-Amino-2,6-dinitrotoluene	A	1000	1046	0.3140063	0.3285764		4.6	15
4-Nitrotoluene	A	1000	1024	0.2279972	0.2333769		2.4	15
HMX	A	1000	1023	0.3121438	0.31926		2.3	15
Nitrobenzene	A	1000	1015	0.2511189	0.2549647		1.5	15
Nitroglycerin	A	5000	4938	0.1399068	0.1381668		-1.2	15
PETN	A	5000	5239	0.132072	0.1383918		4.8	15
RDX	A	1000	1012	0.2632409	0.2663279		1.2	15
Tetryl	A	1000	1119	0.3326379	0.3723		11.9	15
1-Chloro-3-nitrobenzene	A	1000	1023	0.5566614	0.5697007		2.3	15

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

OTC538-GW-5382-151214

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 1512147-02 Date(s) Analyzed: 12/19/2015 12/19/2015

Instrument ID (1): HPLC1-[C1] Instrument ID (2): HPLC1-[C2]

GC Column (1): ULTRA C-18 ID: 4.6mm (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
2-Amino-4,6-dinitrotoluene	1	10.34	9.509	11.009	0.148	
	2	14.55	14.339	14.899	0.196	28

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

OTC537-GW-5371-151214

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 1512147-03 Date(s) Analyzed: 12/19/2015 12/19/2015

Instrument ID (1): HPLC1-[C1] Instrument ID (2): HPLC1-[C2]

GC Column (1): ULTRA C-18 ID: 4.6mm (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
2-Nitrotoluene	1	12.12	11.645	13.445	0.474	
	2	13.37	12.912	13.392	0.269	55

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

OTC537-GW-5371-FD-151214

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 1512147-04 Date(s) Analyzed: 12/19/2015 12/19/2015

Instrument ID (1): HPLC1-[C1] Instrument ID (2): HPLC1-[C2]

GC Column (1): ULTRA C-18 ID: 4.6mm (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
2-Nitrotoluene	1	12.12	11.645	13.445	0.211	
	2	13.35	12.912	13.392	0.0905	80
RDX	1	4.53	4.509	4.889	3.05	
	2	5.53	5.527	5.647	0.761	120

HOLDING TIME SUMMARY

SW8330A

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/18/15 11:20	4.15	7.00	12/19/15 20:42	1.39	40.00	
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/18/15 11:20	4.15	7.00	12/19/15 21:21	1.42	40.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/18/15 11:20	4.01	7.00	12/19/15 21:11	1.41	40.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/18/15 11:20	4.01	7.00	12/19/15 22:24	1.46	40.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/18/15 11:20	4.01	7.00	12/19/15 22:38	1.47	40.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/18/15 11:20	4.01	7.00	12/19/15 23:27	1.51	40.00	

Data for SW8082A Forms

Sample Extraction Data

Prep Method: EXT_3510-SW8082A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02 [OTC538-GW-5382-151214]	5L16008	1,000.00/10.00	1030	10.0	1.00			12/16/15
1512147-03 [OTC537-GW-5371-151214]	5L16008	1,000.00/10.00	1080	10.0	1.00			12/16/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L16008	1,000.00/10.00	1080	10.0	1.00			12/16/15

C5: Sulfuric Acid Clean-up per SW3665
C8: Copper Clean-up per SW3660

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02	File ID:	014O1401.D
Sampled:	12/14/15 06:46	Prepared:	12/16/15 17:30	Analyzed:	12/18/15 19:18
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L16008 Sequence: 5L36309 Calibration: 5349001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016		0.117	0.243	0.485	U
11104-28-2	Aroclor-1221		0.117	0.243	0.485	U
11141-16-5	Aroclor-1232		0.117	0.243	0.485	U
53469-21-9	Aroclor-1242		0.117	0.243	0.485	U
12672-29-6	Aroclor-1248		0.117	0.243	0.485	U
11097-69-1	Aroclor-1254		0.117	0.243	0.485	U
11096-82-5	Aroclor-1260		0.117	0.243	0.485	U

Total Target Analytes Reported 7 Project Analytes: 7

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4854	0.4351	89.6	25 - 140	
Tetrachloro-m-xylene [2C]	0.4854	0.4631	95.4	25 - 140	
Decachlorobiphenyl	0.4854	0.1955	40.3	40 - 135	Y
Decachlorobiphenyl [2C]	0.4854	0.2026	41.7	40 - 135	

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-03	File ID:	015O1501.D
Sampled:	12/14/15 10:01	Prepared:	12/16/15 17:30	Analyzed:	12/18/15 19:33
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L16008 Sequence: 5L36309 Calibration: 5349001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016		0.111	0.231	0.463	U
11104-28-2	Aroclor-1221		0.111	0.231	0.463	U
11141-16-5	Aroclor-1232		0.111	0.231	0.463	U
53469-21-9	Aroclor-1242		0.111	0.231	0.463	U
12672-29-6	Aroclor-1248		0.111	0.231	0.463	U
11097-69-1	Aroclor-1254		0.111	0.231	0.463	U
11096-82-5	Aroclor-1260		0.111	0.231	0.463	U

Total Target Analytes Reported 7 Project Analytes: 7

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4630	0.3567	77.0	25 - 140	
Tetrachloro-m-xylene [2C]	0.4630	0.3736	80.7	25 - 140	
Decachlorobiphenyl	0.4630	0.3237	69.9	40 - 135	Y
Decachlorobiphenyl [2C]	0.4630	0.3317	71.7	40 - 135	

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-15121 4

Laboratory:	Empirical Laboratories, LLC			SDG:	1512147
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04	File ID:	018O1801.D
Sampled:	12/14/15 10:01	Prepared:	12/16/15 17:30	Analyzed:	12/18/15 20:17
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 5L16008 Sequence: 5L36309 Calibration: 5349001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016		0.112	0.233	0.465	U
11104-28-2	Aroclor-1221		0.112	0.233	0.465	U
11141-16-5	Aroclor-1232		0.112	0.233	0.465	U
53469-21-9	Aroclor-1242		0.112	0.233	0.465	U
12672-29-6	Aroclor-1248		0.112	0.233	0.465	U
11097-69-1	Aroclor-1254		0.112	0.233	0.465	U
11096-82-5	Aroclor-1260		0.112	0.233	0.465	U

Total Target Analytes Reported 7 Project Analytes: 7

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4651	0.3719	79.9	25 - 140	
Tetrachloro-m-xylene [2C]	0.4651	0.3718	79.9	25 - 140	
Decachlorobiphenyl	0.4651	0.3560	76.5	40 - 135	Y
Decachlorobiphenyl [2C]	0.4651	0.3650	78.5	40 - 135	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36309	Instrument:	GL-ECD3
		Calibration:	5349001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (5L36309-CCV1) ug/L				Lab File ID: 003O0301.D		Analyzed: 12/18/15 16:37		
Tetrachloro-m-xylene	100.0	82.8	80 - 120	2.756	2.756	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	91.8	80 - 120	3.162	3.162	0.0000	+/-0.030	
Decachlorobiphenyl	100.0	79.2	80 - 120	7.362	7.362	0.0000	+/-0.030	*
Decachlorobiphenyl [2C]	100.0	83.8	80 - 120	8.017	8.017	0.0000	+/-0.030	
Blank (5L16008-BLK2) ug/L				Lab File ID: 009O0901.D		Analyzed: 12/18/15 18:05		
Tetrachloro-m-xylene	0.5000	73.9	25 - 140	2.753	2.756	-0.0030	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	82.8	25 - 140	3.162	3.162	0.0000	+/-0.030	
Decachlorobiphenyl	0.5000	59.4	40 - 135	7.358	7.362	-0.0040	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	68.9	40 - 135	8.016	8.017	-0.0010	+/-0.030	
LCS (5L16008-BS1) ug/L				Lab File ID: 010O1001.D		Analyzed: 12/18/15 18:20		
Tetrachloro-m-xylene	0.5000	71.6	25 - 140	2.755	2.756	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	81.9	25 - 140	3.163	3.162	0.0010	+/-0.030	
Decachlorobiphenyl	0.5000	63.1	40 - 135	7.358	7.362	-0.0040	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	69.1	40 - 135	8.016	8.017	-0.0010	+/-0.030	
OTC538-GW-5382-151214 (1512147-02) ug/L				Lab File ID: 014O1401.D		Analyzed: 12/18/15 19:18		
Tetrachloro-m-xylene	0.4854	89.6	25 - 140	2.754	2.756	-0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4854	95.4	25 - 140	3.162	3.162	0.0000	+/-0.030	
Decachlorobiphenyl	0.4854	40.3	40 - 135	7.357	7.362	-0.0050	+/-0.030	
Decachlorobiphenyl [2C]	0.4854	41.7	40 - 135	8.017	8.017	0.0000	+/-0.030	
OTC537-GW-5371-151214 (1512147-03) ug/L				Lab File ID: 015O1501.D		Analyzed: 12/18/15 19:33		
Tetrachloro-m-xylene	0.4630	77.0	25 - 140	2.754	2.756	-0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	80.7	25 - 140	3.162	3.162	0.0000	+/-0.030	
Decachlorobiphenyl	0.4630	69.9	40 - 135	7.359	7.362	-0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	71.7	40 - 135	8.015	8.017	-0.0020	+/-0.030	
Matrix Spike (5L16008-MS1) ug/L				Lab File ID: 016O1601.D		Analyzed: 12/18/15 19:47		
Tetrachloro-m-xylene	0.4630	73.5	25 - 140	2.754	2.756	-0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	75.1	25 - 140	3.161	3.162	-0.0010	+/-0.030	
Decachlorobiphenyl	0.4630	66.0	40 - 135	7.359	7.362	-0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	69.0	40 - 135	8.015	8.017	-0.0020	+/-0.030	
Matrix Spike Dup (5L16008-MSD1) ug/L				Lab File ID: 017O1701.D		Analyzed: 12/18/15 20:02		
Tetrachloro-m-xylene	0.4630	78.8	25 - 140	2.754	2.756	-0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	81.8	25 - 140	3.161	3.162	-0.0010	+/-0.030	
Decachlorobiphenyl	0.4630	74.3	40 - 135	7.359	7.362	-0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	77.0	40 - 135	8.016	8.017	-0.0010	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36309	Instrument:	GL-ECD3
		Calibration:	5349001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
OTC537-GW-5371-FD-151214 (1512147-04) ug/L				Lab File ID: 018O1801.D		Analyzed: 12/18/15 20:17		
Tetrachloro-m-xylene	0.4651	79.9	25 - 140	2.754	2.756	-0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4651	79.9	25 - 140	3.162	3.162	0.0000	+/-0.030	
Decachlorobiphenyl	0.4651	76.5	40 - 135	7.359	7.362	-0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.4651	78.5	40 - 135	8.015	8.017	-0.0020	+/-0.030	
Calibration Check (5L36309-CCVA) ug/L				Lab File ID: 028O2801.D		Analyzed: 12/18/15 22:43		
Tetrachloro-m-xylene	100.0	98.8	80 - 120	2.754	2.756	-0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	108	80 - 120	3.162	3.162	0.0000	+/-0.030	
Decachlorobiphenyl	100.0	97.9	80 - 120	7.359	7.362	-0.0030	+/-0.030	
Decachlorobiphenyl [2C]	100.0	101	80 - 120	8.017	8.017	0.0000	+/-0.030	

LCS / LCS DUPLICATE RECOVERY

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L16008	Laboratory ID:	5L16008-BS1
Preparation:	EXT_3510	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Aroclor-1016	5.015	4.051	80.8	25 - 145
Aroclor-1016 [2C]	5.015	4.157	82.9	25 - 145
Aroclor-1260	5.000	4.374	87.5	30 - 145
Aroclor-1260 [2C]	5.000	4.424	88.5	30 - 145

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8082A

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L16008

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Aroclor-1016	4.644	ND	4.153	89.4		25 - 145
Aroclor-1016 [2C]	4.644	ND	4.443	95.7		25 - 145
Aroclor-1260	4.630	ND	3.888	84.0		30 - 145
Aroclor-1260 [2C]	4.630	ND	4.035	87.2		30 - 145

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	4.644	3.678	79.2	12.1		30	25 - 145
Aroclor-1016 [2C]	4.644	3.755	80.9	16.8		30	25 - 145
Aroclor-1260	4.630	3.858	83.3	0.775		30	30 - 145
Aroclor-1260 [2C]	4.630	3.995	86.3	1.00		30	30 - 145

PREPARATION BATCH SUMMARY

SW8082A

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L16008 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02	12/16/15 17:30	1,030.00	10.00
OTC537-GW-5371-151214	1512147-03	12/16/15 17:30	1,080.00	10.00
OTC537-GW-5371-FD-151214	1512147-04	12/16/15 17:30	1,075.00	10.00
Blank	5L16008-BLK2	12/16/15 17:30	1,000.00	10.00
LCS	5L16008-BS1	12/16/15 17:30	1,000.00	10.00
OTC537-GW-5371-151214	5L16008-MS1	12/16/15 17:30	1,080.00	10.00
OTC537-GW-5371-151214	5L16008-MSD1	12/16/15 17:30	1,080.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB

Matrix:		Laboratory ID:	5L16008-BLK2	File ID:	009O0901.D
Sampled:		Prepared:	12/16/15 17:30	Analyzed:	12/18/15 18:05
Solids:		Preparation:	EXT_3510	Dilution:	

Batch:	5L16008	Sequence:	5L36309	Calibration:	5349001	Instrument:	GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016		0.120	0.250	0.500	U
11104-28-2	Aroclor-1221		0.120	0.250	0.500	U
11141-16-5	Aroclor-1232		0.120	0.250	0.500	U
53469-21-9	Aroclor-1242		0.120	0.250	0.500	U
12672-29-6	Aroclor-1248		0.120	0.250	0.500	U
11097-69-1	Aroclor-1254		0.120	0.250	0.500	U
11096-82-5	Aroclor-1260		0.120	0.250	0.500	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.5000	0.3694	73.9	25 - 140	
Tetrachloro-m-xylene [2C]	0.5000	0.4138	82.8	25 - 140	
Decachlorobiphenyl	0.5000	0.2970	59.4	40 - 135	Y
Decachlorobiphenyl [2C]	0.5000	0.3444	68.9	40 - 135	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L16008-BS1 File ID: 010O1001.D

Sampled: Prepared: Analyzed: 12/18/15 18:20

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L16008 Sequence: 5L36309 Calibration: 5349001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016	**4.051**	0.120	0.250	0.500	
11104-28-2	Aroclor-1221		0.120	0.250	0.500	U
11141-16-5	Aroclor-1232		0.120	0.250	0.500	U
53469-21-9	Aroclor-1242		0.120	0.250	0.500	U
12672-29-6	Aroclor-1248		0.120	0.250	0.500	U
11097-69-1	Aroclor-1254		0.120	0.250	0.500	U
11096-82-5	Aroclor-1260	**4.374**	0.120	0.250	0.500	

Total Target Analytes Reported: 14

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.5000	0.3580	71.6	25 - 140	
Decachlorobiphenyl	0.5000	0.3154	63.1	40 - 135	Y

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L16008-BS1 File ID: 010O1001.D

Sampled: Prepared: Analyzed: 12/18/15 18:20

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L16008 Sequence: 5L36309 Calibration: 5349001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016 [2C]	**4.157**	0.120	0.250	0.500	
11104-28-2	Aroclor-1221 [2C]		0.120	0.250	0.500	U
11141-16-5	Aroclor-1232 [2C]		0.120	0.250	0.500	U
53469-21-9	Aroclor-1242 [2C]		0.120	0.250	0.500	U
12672-29-6	Aroclor-1248 [2C]		0.120	0.250	0.500	U
11097-69-1	Aroclor-1254 [2C]		0.120	0.250	0.500	U
11096-82-5	Aroclor-1260 [2C]	**4.424**	0.120	0.250	0.500	

Total Target Analytes Reported: 14

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene [2C]	0.5000	0.4097	81.9	25 - 140	
Decachlorobiphenyl [2C]	0.5000	0.3454	69.1	40 - 135	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L16008-MS1 File ID: 016O1601.D

Sampled: Prepared: Analyzed: 12/18/15 19:47

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L16008 Sequence: 5L36309 Calibration: 5349001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016	**4.153**	0.111	0.231	0.463	
11104-28-2	Aroclor-1221		0.111	0.231	0.463	U
11141-16-5	Aroclor-1232		0.111	0.231	0.463	U
53469-21-9	Aroclor-1242		0.111	0.231	0.463	U
12672-29-6	Aroclor-1248		0.111	0.231	0.463	U
11097-69-1	Aroclor-1254		0.111	0.231	0.463	U
11096-82-5	Aroclor-1260	**3.888**	0.111	0.231	0.463	

Total Target Analytes Reported: 14

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4630	0.3401	73.5	25 - 140	
Decachlorobiphenyl	0.4630	0.3054	66.0	40 - 135	Y

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L16008-MS1 File ID: 016O1601.D

Sampled: Prepared: Analyzed: 12/18/15 19:47

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L16008 Sequence: 5L36309 Calibration: 5349001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016 [2C]	**4.443**	0.111	0.231	0.463	
11104-28-2	Aroclor-1221 [2C]		0.111	0.231	0.463	U
11141-16-5	Aroclor-1232 [2C]		0.111	0.231	0.463	U
53469-21-9	Aroclor-1242 [2C]		0.111	0.231	0.463	U
12672-29-6	Aroclor-1248 [2C]		0.111	0.231	0.463	U
11097-69-1	Aroclor-1254 [2C]		0.111	0.231	0.463	U
11096-82-5	Aroclor-1260 [2C]	**4.035**	0.111	0.231	0.463	

Total Target Analytes Reported: 14

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene [2C]	0.4630	0.3476	75.1	25 - 140	
Decachlorobiphenyl [2C]	0.4630	0.3194	69.0	40 - 135	

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L16008-MSD1 File ID: 017O1701.D

Sampled: Prepared: Analyzed: 12/18/15 20:02

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L16008 Sequence: 5L36309 Calibration: 5349001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016	**3.678**	0.111	0.231	0.463	
11104-28-2	Aroclor-1221		0.111	0.231	0.463	U
11141-16-5	Aroclor-1232		0.111	0.231	0.463	U
53469-21-9	Aroclor-1242		0.111	0.231	0.463	U
12672-29-6	Aroclor-1248		0.111	0.231	0.463	U
11097-69-1	Aroclor-1254		0.111	0.231	0.463	U
11096-82-5	Aroclor-1260	**3.858**	0.111	0.231	0.463	

Total Target Analytes Reported: 14

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4630	0.3648	78.8	25 - 140	
Decachlorobiphenyl	0.4630	0.3442	74.3	40 - 135	Y

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 5L16008-MSD1 File ID: 017O1701.D

Sampled: Prepared: Analyzed: 12/18/15 20:02

Solids: Preparation: EXT_3510 Dilution:

Batch: 5L16008 Sequence: 5L36309 Calibration: 5349001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016 [2C]	**3.755**	0.111	0.231	0.463	
11104-28-2	Aroclor-1221 [2C]		0.111	0.231	0.463	U
11141-16-5	Aroclor-1232 [2C]		0.111	0.231	0.463	U
53469-21-9	Aroclor-1242 [2C]		0.111	0.231	0.463	U
12672-29-6	Aroclor-1248 [2C]		0.111	0.231	0.463	U
11097-69-1	Aroclor-1254 [2C]		0.111	0.231	0.463	U
11096-82-5	Aroclor-1260 [2C]	**3.995**	0.111	0.231	0.463	

Total Target Analytes Reported: 14

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene [2C]	0.4630	0.3788	81.8	25 - 140	
Decachlorobiphenyl [2C]	0.4630	0.3564	77.0	40 - 135	

INITIAL CALIBRATION STANDARDS

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5J28608	Instrument:	GL-ECD3
Calibration:	5349001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15F0178	Aro-1660 Cal6@50/5	5J28608-CAL6	007O0701.D	10/10/15 00:00
15F0173	Aro-1660 Cal1@2500/250	5J28608-CAL1	002O0201.D	10/10/15 22:46
15F0174	Aro-1660 Cal2@1000/100 (CCV)	5J28608-CAL2	003O0301.D	10/10/15 23:01
15F0175	Aro-1660 Cal3@750/75	5J28608-CAL3	004O0401.D	10/10/15 23:15
15F0176	Aro-1660 Cal4@500/50	5J28608-CAL4	005O0501.D	10/10/15 23:30
15F0177	Aro-1660 Cal5@100/10	5J28608-CAL5	006O0601.D	10/10/15 23:45
15F0179	Aroclor-1242 cal 1@2500ppb	5J28608-CAL7	009O0901.D	10/11/15 00:29
15F0180	Aroclor-1242 cal 2@1000ppb	5J28608-CAL8	010O1001.D	10/11/15 00:44
15F0181	Aroclor-1242 cal 3@750ppb	5J28608-CAL9	011O1101.D	10/11/15 00:59
15F0182	Aroclor-1242 cal 4@500ppb	5J28608-CALA	012O1201.D	10/11/15 01:14
15F0183	Aroclor-1242 cal 5@100ppb	5J28608-CALB	013O1301.D	10/11/15 01:28
15F0184	Aroclor-1242 cal 6@50ppb	5J28608-CALC	014O1401.D	10/11/15 01:43
15E0427	Aroclor 1248 CAL1 (2500ppb)	5J28608-CALD	016O1601.D	10/11/15 02:12
15E0428	Aroclor 1248 CAL2 (1000ppb)	5J28608-CALE	017O1701.D	10/11/15 02:27
15E0429	Aroclor 1248 CAL3 (750ppb)	5J28608-CALF	018O1801.D	10/11/15 02:42
15E0430	Aroclor 1248 CAL4 (500ppb)	5J28608-CALG	019O1901.D	10/11/15 02:57
15E0431	Aroclor 1248 CAL5 (100ppb)	5J28608-CALH	020O2001.D	10/11/15 03:11
15E0432	Aroclor 1248 CAL6 (50ppb)	5J28608-CALI	021O2101.D	10/11/15 03:26
15G0477	Aroclor-1254 CAL 1 (2500 ppb)	5J28608-CALJ	023O2301.D	10/11/15 03:56
15G0478	Aroclor-1254 Cal 2 1000ppb	5J28608-CALK	024O2401.D	10/11/15 04:10
15G0479	Aroclor-1254 CAL 3 (750 ppb)	5J28608-CALL	025O2501.D	10/11/15 04:24
15G0480	Aroclor-1254 CAL 4 (500 ppb)	5J28608-CALM	026O2601.D	10/11/15 04:39
15G0481	Aroclor-1254 CAL 5 (100 ppb)	5J28608-CALN	027O2701.D	10/11/15 04:54
15G0482	Aroclor-1254 CAL 6 (50 ppb)	5J28608-CALO	028O2801.D	10/11/15 05:08

INITIAL CALIBRATION STANDARDS

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5J29609	Instrument:	GL-ECD3
Calibration:	5349001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15F0154	Pest. AB/Sur Cal 1 @ 200ppb	5J29609-CAL1		
15F0155	Pest. AB/Sur Cal 2 @ 100ppb	5J29609-CAL2		
15F0160	Pest. AB/Sur Cal 3 @ 50ppb	5J29609-CAL3		
15F0156	Pest. AB/Sur Cal 4 @ 25ppb	5J29609-CAL4		
15F0157	Pest. AB/Sur Cal 5 @ 10ppb	5J29609-CAL5		
15F0158	Pest. AB/Sur Cal 6 @ 5ppb	5J29609-CAL6		
15F0159	Pest. AB/Sur Cal 7 @ 1ppb	5J29609-CAL7		

ANALYSIS SEQUENCE SUMMARY

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5J28608	Instrument:	GL-ECD3
Calibration:	5349001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5J28608-CAL6	007O0701.D	10/10/15 00:00
Cal Standard	5J28608-CAL1	002O0201.D	10/10/15 22:46
Cal Standard	5J28608-CAL2	003O0301.D	10/10/15 23:01
Cal Standard	5J28608-CAL3	004O0401.D	10/10/15 23:15
Cal Standard	5J28608-CAL4	005O0501.D	10/10/15 23:30
Cal Standard	5J28608-CAL5	006O0601.D	10/10/15 23:45
Initial Cal Check	5J28608-ICV1	008O0801.D	10/11/15 00:15
Cal Standard	5J28608-CAL7	009O0901.D	10/11/15 00:29
Cal Standard	5J28608-CAL8	010O1001.D	10/11/15 00:44
Cal Standard	5J28608-CAL9	011O1101.D	10/11/15 00:59
Cal Standard	5J28608-CALA	012O1201.D	10/11/15 01:14
Cal Standard	5J28608-CALB	013O1301.D	10/11/15 01:28
Cal Standard	5J28608-CALC	014O1401.D	10/11/15 01:43
Initial Cal Check	5J28608-ICV2	015O1501.D	10/11/15 01:57
Cal Standard	5J28608-CALJ	023O2301.D	10/11/15 03:56
Cal Standard	5J28608-CALK	024O2401.D	10/11/15 04:10
Cal Standard	5J28608-CALL	025O2501.D	10/11/15 04:24
Cal Standard	5J28608-CALM	026O2601.D	10/11/15 04:39
Cal Standard	5J28608-CALN	027O2701.D	10/11/15 04:54
Cal Standard	5J28608-CALO	028O2801.D	10/11/15 05:08
Initial Cal Check	5J28608-ICV4	029O2901.D	10/11/15 05:23

ANALYSIS SEQUENCE SUMMARY

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36309	Instrument:	GL-ECD3
Calibration:	5349001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L36309-CCV1	003O0301.D	12/18/15 16:37
Calibration Check	5L36309-CCV4	006O0601.D	12/18/15 17:21
Calibration Check	5L36309-CCV5	007O0701.D	12/18/15 17:36
Calibration Check	5L36309-CCV6	008O0801.D	12/18/15 17:50
Blank	5L16008-BLK2	009O0901.D	12/18/15 18:05
LCS	5L16008-BS1	010O1001.D	12/18/15 18:20
OTC538-GW-5382-151214	1512147-02	014O1401.D	12/18/15 19:18
OTC537-GW-5371-151214	1512147-03	015O1501.D	12/18/15 19:33
OTC537-GW-5371-151214	5L16008-MS1	016O1601.D	12/18/15 19:47
OTC537-GW-5371-151214	5L16008-MSD1	017O1701.D	12/18/15 20:02
OTC537-GW-5371-FD-151214	1512147-04	018O1801.D	12/18/15 20:17
Calibration Check	5L36309-CCVA	028O2801.D	12/18/15 22:43

INITIAL CALIBRATION DATA

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1016												
Aroclor-1016 (1)												
Aroclor-1016 (2)												
Aroclor-1016 (3)												
Aroclor-1016 (4)												
Aroclor-1016 (5)												
Aroclor-1016 [2C]												
Aroclor-1016 (1) [2C]												
Aroclor-1016 (2) [2C]												
Aroclor-1016 (3) [2C]												
Aroclor-1016 (4) [2C]												
Aroclor-1016 (5) [2C]												
Aroclor-1242												
Aroclor-1242 (1)												
Aroclor-1242 (2)												
Aroclor-1242 (3)												
Aroclor-1242 (4)												
Aroclor-1242 (5)												
Aroclor-1242 [2C]												
Aroclor-1242 (1) [2C]												
Aroclor-1242 (2) [2C]												
Aroclor-1242 (3) [2C]												
Aroclor-1242 (4) [2C]												
Aroclor-1242 (5) [2C]												
Aroclor-1248												
Aroclor-1248 (1)												
Aroclor-1248 (2)												
Aroclor-1248 (3)												
Aroclor-1248 (4)												
Aroclor-1248 (5)												
Aroclor-1248 [2C]												

INITIAL CALIBRATION DATA

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1248 (1) [2C]												
Aroclor-1248 (2) [2C]												
Aroclor-1248 (3) [2C]												
Aroclor-1248 (4) [2C]												
Aroclor-1248 (5) [2C]												
Aroclor-1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1260												
Aroclor-1260 (1)												
Aroclor-1260 (2)												
Aroclor-1260 (3)												
Aroclor-1260 (4)												
Aroclor-1260 (5)												
Aroclor-1260 [2C]												
Aroclor-1260 (1) [2C]												
Aroclor-1260 (2) [2C]												
Aroclor-1260 (3) [2C]												
Aroclor-1260 (4) [2C]												
Aroclor-1260 (5) [2C]												
Tetrachloro-m-xylene												
Tetrachloro-m-xylene [2C]												

INITIAL CALIBRATION DATA

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Decachlorobiphenyl												
Decachlorobiphenyl [2C]												

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1016												
Aroclor-1016 (1)												
Aroclor-1016 (2)												
Aroclor-1016 (3)												
Aroclor-1016 (4)												
Aroclor-1016 (5)												
Aroclor-1016 [2C]												
Aroclor-1016 (1) [2C]												
Aroclor-1016 (2) [2C]												
Aroclor-1016 (3) [2C]												
Aroclor-1016 (4) [2C]												
Aroclor-1016 (5) [2C]												
Aroclor-1242												
Aroclor-1242 (1)												
Aroclor-1242 (2)												
Aroclor-1242 (3)												
Aroclor-1242 (4)												
Aroclor-1242 (5)												
Aroclor-1242 [2C]												
Aroclor-1242 (1) [2C]												
Aroclor-1242 (2) [2C]												
Aroclor-1242 (3) [2C]												
Aroclor-1242 (4) [2C]												
Aroclor-1242 (5) [2C]												
Aroclor-1248												
Aroclor-1248 (1)												
Aroclor-1248 (2)												
Aroclor-1248 (3)												
Aroclor-1248 (4)												
Aroclor-1248 (5)												
Aroclor-1248 [2C]												

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5349001	Instrument:	GL-ECD3	
Matrix:	Water	Calibration Dates:	10/10/15 0:00	10/11/15 5:08

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1248 (1) [2C]												
Aroclor-1248 (2) [2C]												
Aroclor-1248 (3) [2C]												
Aroclor-1248 (4) [2C]												
Aroclor-1248 (5) [2C]												
Aroclor-1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1260												
Aroclor-1260 (1)												
Aroclor-1260 (2)												
Aroclor-1260 (3)												
Aroclor-1260 (4)												
Aroclor-1260 (5)												
Aroclor-1260 [2C]												
Aroclor-1260 (1) [2C]												
Aroclor-1260 (2) [2C]												
Aroclor-1260 (3) [2C]												
Aroclor-1260 (4) [2C]												
Aroclor-1260 (5) [2C]												
Tetrachloro-m-xylene												
Tetrachloro-m-xylene [2C]												

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Decachlorobiphenyl												
Decachlorobiphenyl [2C]												

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1016												
Aroclor-1016 (1)												
Aroclor-1016 (2)												
Aroclor-1016 (3)												
Aroclor-1016 (4)												
Aroclor-1016 (5)												
Aroclor-1016 [2C]												
Aroclor-1016 (1) [2C]												
Aroclor-1016 (2) [2C]												
Aroclor-1016 (3) [2C]												
Aroclor-1016 (4) [2C]												
Aroclor-1016 (5) [2C]												
Aroclor-1242												
Aroclor-1242 (1)												
Aroclor-1242 (2)												
Aroclor-1242 (3)												
Aroclor-1242 (4)												
Aroclor-1242 (5)												
Aroclor-1242 [2C]												
Aroclor-1242 (1) [2C]												
Aroclor-1242 (2) [2C]												
Aroclor-1242 (3) [2C]												
Aroclor-1242 (4) [2C]												
Aroclor-1242 (5) [2C]												
Aroclor-1248												
Aroclor-1248 (1)												
Aroclor-1248 (2)												
Aroclor-1248 (3)												
Aroclor-1248 (4)												
Aroclor-1248 (5)												
Aroclor-1248 [2C]												

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1248 (1) [2C]												
Aroclor-1248 (2) [2C]												
Aroclor-1248 (3) [2C]												
Aroclor-1248 (4) [2C]												
Aroclor-1248 (5) [2C]												
Aroclor-1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1260												
Aroclor-1260 (1)												
Aroclor-1260 (2)												
Aroclor-1260 (3)												
Aroclor-1260 (4)												
Aroclor-1260 (5)												
Aroclor-1260 [2C]												
Aroclor-1260 (1) [2C]												
Aroclor-1260 (2) [2C]												
Aroclor-1260 (3) [2C]												
Aroclor-1260 (4) [2C]												
Aroclor-1260 (5) [2C]												
Tetrachloro-m-xylene												
Tetrachloro-m-xylene [2C]												

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5349001	Instrument:	GL-ECD3	
Matrix:	Water	Calibration Dates:	10/10/15 0:00	10/11/15 5:08

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Decachlorobiphenyl												
Decachlorobiphenyl [2C]												

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1016			2500	21701.04	1000	22451.75	750	22385.47	500	22138	100	22602.62
Aroclor-1016 (1)			2500	15779.12	1000	16390.51	750	16677.41	500	16832.86	100	17789.06
Aroclor-1016 (2)			2500	28961.96	1000	30156.91	750	30141.24	500	30092.06	100	31371.09
Aroclor-1016 (3)			2500	18761.36	1000	19151.1	750	18907.8	500	18117.22	100	17949.75
Aroclor-1016 (4)			2500	23645.89	1000	24505.96	750	24374.44	500	24193	100	24903.21
Aroclor-1016 (5)			2500	21356.85	1000	22054.3	750	21826.45	500	21454.88	100	20999.98
Aroclor-1016 [2C]			2500	18488.87	1000	20521.93	750	21039.81	500	21754.12	100	24656.91
Aroclor-1016 (1) [2C]			2500	11192.77	1000	12608.13	750	13022.5	500	13732.69	100	15895.02
Aroclor-1016 (2) [2C]			2500	23070.37	1000	24852.88	750	26373.47	500	26464.2	100	29886.44
Aroclor-1016 (3) [2C]			2500	28437.03	1000	32331.98	750	32230.83	500	33983.72	100	38414.1
Aroclor-1016 (4) [2C]			2500	15827.55	1000	17453.49	750	17806.16	500	18418.31	100	20647.09
Aroclor-1016 (5) [2C]			2500	13916.64	1000	15363.17	750	15766.12	500	16171.66	100	18441.92
Aroclor-1242												
Aroclor-1242 (1)												
Aroclor-1242 (2)												
Aroclor-1242 (3)												
Aroclor-1242 (4)												
Aroclor-1242 (5)												
Aroclor-1242 [2C]												
Aroclor-1242 (1) [2C]												
Aroclor-1242 (2) [2C]												
Aroclor-1242 (3) [2C]												
Aroclor-1242 (4) [2C]												
Aroclor-1242 (5) [2C]												
Aroclor-1248												
Aroclor-1248 (1)												
Aroclor-1248 (2)												
Aroclor-1248 (3)												
Aroclor-1248 (4)												
Aroclor-1248 (5)												
Aroclor-1248 [2C]												

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1248 (1) [2C]												
Aroclor-1248 (2) [2C]												
Aroclor-1248 (3) [2C]												
Aroclor-1248 (4) [2C]												
Aroclor-1248 (5) [2C]												
Aroclor-1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1260			2500	58179.96	1000	60051.75	750	59736.03	500	58076.4	100	58807.97
Aroclor-1260 (1)			2500	47163.16	1000	49398.68	750	49309.87	500	48478.92	100	50030.41
Aroclor-1260 (2)			2500	60577.96	1000	63982.16	750	63327.56	500	62553.2	100	64237.75
Aroclor-1260 (3)			2500	92181.36	1000	94016.67	750	93810.37	500	90156.44	100	89626.72
Aroclor-1260 (4)			2500	70418.72	1000	71781	750	70983.25	500	69136.4	100	69762.67
Aroclor-1260 (5)			2500	20558.5	1000	21080.26	750	21249.09	500	20057.06	100	20382.3
Aroclor-1260 [2C]			2500	38418.07	1000	41738.58	750	42599.65	500	42467.14	100	48418.88
Aroclor-1260 (1) [2C]			2500	30101.16	1000	33416.74	750	34138.77	500	34656.84	100	40899.46
Aroclor-1260 (2) [2C]			2500	35682.18	1000	39018.93	750	40075.07	500	40082.6	100	46598.4
Aroclor-1260 (3) [2C]			2500	43915.64	1000	47513.07	750	48264.65	500	48137.78	100	54674.16
Aroclor-1260 (4) [2C]			2500	51583.2	1000	55566.58	750	56686.52	500	56069.72	100	62067.35
Aroclor-1260 (5) [2C]			2500	30808.15	1000	33177.58	750	33833.27	500	33388.74	100	37855.05
Tetrachloro-m-xylene			250	1089525	100	1080557	75	1087630	50	1083762	10	1067930
Tetrachloro-m-xylene [2C]			250	682565.6	100	729211.1	75	749844.6	50	767386.3	10	821127.6

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Decachlorobiphenyl			250	763146.8	100	807407.3	75	813053.8	50	777494.8	10	811894.4
Decachlorobiphenyl [2C]			250	400106	100	446969.1	75	458201.9	50	446594.6	10	518940.9

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1016	50	23086.06										
Aroclor-1016 (1)	50	19164.66										
Aroclor-1016 (2)	50	31399.48										
Aroclor-1016 (3)	50	17749.14										
Aroclor-1016 (4)	50	25655.18										
Aroclor-1016 (5)	50	21461.88										
Aroclor-1016 [2C]	50	25678.24										
Aroclor-1016 (1) [2C]	50	16790										
Aroclor-1016 (2) [2C]	50	31456.16										
Aroclor-1016 (3) [2C]	50	40319.42										
Aroclor-1016 (4) [2C]	50	20829.22										
Aroclor-1016 (5) [2C]	50	18996.36										
Aroclor-1242			2500	19267.94	1000	21543.61	750	20891.23	500	20912.94	100	21025.43
Aroclor-1242 (1)			2500	13058.72	1000	14659.7	750	14265.41	500	14421.81	100	15462.39
Aroclor-1242 (2)			2500	23537.98	1000	26203.89	750	25424.35	500	25652.04	100	25853.83
Aroclor-1242 (3)			2500	19193.3	1000	21650.8	750	20942.09	500	20867.24	100	21208.14
Aroclor-1242 (4)			2500	18243.54	1000	20257.96	750	19605.45	500	19392.45	100	18521.31
Aroclor-1242 (5)			2500	22306.16	1000	24945.69	750	24218.81	500	24231.14	100	24081.47
Aroclor-1242 [2C]			2500	11495.87	1000	13495.29	750	13304.05	500	13754.59	100	15452.13
Aroclor-1242 (1) [2C]			2500	9795.44	1000	11528.64	750	11437.43	500	12059.88	100	13769.68
Aroclor-1242 (2) [2C]			2500	13265.49	1000	15523.65	750	15290.69	500	15726.44	100	17328.65
Aroclor-1242 (3) [2C]			2500	10323.08	1000	12168.01	750	12061.74	500	12440.07	100	14137.59
Aroclor-1242 (4) [2C]			2500	11808.4	1000	13864.37	750	13625.76	500	14040.99	100	15740.11
Aroclor-1242 (5) [2C]			2500	12286.94	1000	14391.8	750	14104.63	500	14505.56	100	16284.6
Aroclor-1248												
Aroclor-1248 (1)												
Aroclor-1248 (2)												
Aroclor-1248 (3)												
Aroclor-1248 (4)												
Aroclor-1248 (5)												
Aroclor-1248 [2C]												

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1248 (1) [2C]												
Aroclor-1248 (2) [2C]												
Aroclor-1248 (3) [2C]												
Aroclor-1248 (4) [2C]												
Aroclor-1248 (5) [2C]												
Aroclor-1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1260	50	59199.34										
Aroclor-1260 (1)	50	51395.94										
Aroclor-1260 (2)	50	65679.38										
Aroclor-1260 (3)	50	91420.62										
Aroclor-1260 (4)	50	67214.34										
Aroclor-1260 (5)	50	20286.4										
Aroclor-1260 [2C]	50	51178.14										
Aroclor-1260 (1) [2C]	50	42231.46										
Aroclor-1260 (2) [2C]	50	49809.84										
Aroclor-1260 (3) [2C]	50	57495.54										
Aroclor-1260 (4) [2C]	50	65779.42										
Aroclor-1260 (5) [2C]	50	40574.46										
Tetrachloro-m-xylene	5	1065461	250		100		75		50		10	
Tetrachloro-m-xylene [2C]	5	850146.4	250		100		75		50		10	

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5349001	Instrument:	GL-ECD3	
Matrix:	Water	Calibration Dates:	10/10/15 0:00	10/11/15 5:08

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Decachlorobiphenyl	5	844335.8	250		100		75		50		10	
Decachlorobiphenyl [2C]	5	577014.2	250		100		75		50		10	

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Calibration: 5349001
Instrument: GL-ECD3
Matrix: Water
Calibration Dates: 10/10/15 0:00 10/11/15 5:08

Compound	Level 31		Level 32		Level 33		Level 34		Level 35		Level 36	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1016												
Aroclor-1016 (1)												
Aroclor-1016 (2)												
Aroclor-1016 (3)												
Aroclor-1016 (4)												
Aroclor-1016 (5)												
Aroclor-1016 [2C]												
Aroclor-1016 (1) [2C]												
Aroclor-1016 (2) [2C]												
Aroclor-1016 (3) [2C]												
Aroclor-1016 (4) [2C]												
Aroclor-1016 (5) [2C]												
Aroclor-1242	50	21520.62										
Aroclor-1242 (1)	50	15890.82										
Aroclor-1242 (2)	50	26295.38										
Aroclor-1242 (3)	50	21901.88										
Aroclor-1242 (4)	50	18875.8										
Aroclor-1242 (5)	50	24639.24										
Aroclor-1242 [2C]	50	16337.29										
Aroclor-1242 (1) [2C]	50	14529.48										
Aroclor-1242 (2) [2C]	50	18131.14										
Aroclor-1242 (3) [2C]	50	14989.66										
Aroclor-1242 (4) [2C]	50	16636.7										
Aroclor-1242 (5) [2C]	50	17399.48										
Aroclor-1248			2500	30861.66	1000	32547.68	750	31912.32	500	32666.52	100	31943.3
Aroclor-1248 (1)			2500	31684.74	1000	33462.89	750	33221.69	500	34090.86	100	33834.61
Aroclor-1248 (2)			2500	26679.41	1000	28032.99	750	27391.63	500	28058.94	100	26706.84
Aroclor-1248 (3)			2500	34532.83	1000	36334.62	750	35361.49	500	36088.62	100	35784.49
Aroclor-1248 (4)			2500	40582.72	1000	42972.38	750	42580.23	500	43279.68	100	42842.27
Aroclor-1248 (5)			2500	20828.58	1000	21935.5	750	21006.53	500	21814.48	100	20548.31
Aroclor-1248 [2C]			2500	18947.69	1000	21159.15	750	21364.44	500	22260.5	100	24261.93

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 31		Level 32		Level 33		Level 34		Level 35		Level 36	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1248 (1) [2C]			2500	18187.08	1000	20453.95	750	20774.11	500	21589.76	100	23985.12
Aroclor-1248 (2) [2C]			2500	17023.26	1000	19102.86	750	19231.01	500	20124.3	100	22124.03
Aroclor-1248 (3) [2C]			2500	20478.51	1000	22759.08	750	23133.55	500	24115.6	100	26559.6
Aroclor-1248 (4) [2C]			2500	23228.57	1000	25998.84	750	26167.08	500	27311.7	100	29531.3
Aroclor-1248 (5) [2C]			2500	15821.02	1000	17481	750	17516.41	500	18161.12	100	19109.6
Aroclor-1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1260												
Aroclor-1260 (1)												
Aroclor-1260 (2)												
Aroclor-1260 (3)												
Aroclor-1260 (4)												
Aroclor-1260 (5)												
Aroclor-1260 [2C]												
Aroclor-1260 (1) [2C]												
Aroclor-1260 (2) [2C]												
Aroclor-1260 (3) [2C]												
Aroclor-1260 (4) [2C]												
Aroclor-1260 (5) [2C]												
Tetrachloro-m-xylene	5		250		100		75		50		10	
Tetrachloro-m-xylene [2C]	5		250		100		75		50		10	

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 31		Level 32		Level 33		Level 34		Level 35		Level 36	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Decachlorobiphenyl	5		250		100		75		50		10	
Decachlorobiphenyl [2C]	5		250		100		75		50		10	

INITIAL CALIBRATION DATA (Continued)
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 37		Level 38		Level 39		Level 40		Level 41		Level 42	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1016												
Aroclor-1016 (1)												
Aroclor-1016 (1) [2C]												
Aroclor-1016 (2)												
Aroclor-1016 (2) [2C]												
Aroclor-1016 (3)												
Aroclor-1016 (3) [2C]												
Aroclor-1016 (4)												
Aroclor-1016 (4) [2C]												
Aroclor-1016 (5)												
Aroclor-1016 (5) [2C]												
Aroclor-1016 [2C]												
Aroclor-1242												
Aroclor-1242 (1)												
Aroclor-1242 (1) [2C]												
Aroclor-1242 (2)												
Aroclor-1242 (2) [2C]												
Aroclor-1242 (3)												
Aroclor-1242 (3) [2C]												
Aroclor-1242 (4)												
Aroclor-1242 (4) [2C]												
Aroclor-1242 (5)												
Aroclor-1242 (5) [2C]												
Aroclor-1242 [2C]												
Aroclor-1248	50	31839.5										
Aroclor-1248 (1)	50	34709.72										
Aroclor-1248 (1) [2C]	50	26108.78										
Aroclor-1248 (2)	50	27024.52										
Aroclor-1248 (2) [2C]	50	23434.72										
Aroclor-1248 (3)	50	35819.5										
Aroclor-1248 (3) [2C]	50	28327.26										

INITIAL CALIBRATION DATA (Continued)
SW8082A

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Calibration: 5349001
Instrument: GL-ECD3
Matrix: Water
Calibration Dates: 10/10/15 0:00 10/11/15 5:08

Compound	Level 37		Level 38		Level 39		Level 40		Level 41		Level 42	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aroclor-1248 (4)	50	43464.46										
Aroclor-1248 (4) [2C]	50	31184.12										
Aroclor-1248 (5)	50	18179.28										
Aroclor-1248 (5) [2C]	50	19456.14										
Aroclor-1248 [2C]	50	25702.2										
Aroclor-1254			2500	49051.96	1000	47590.17	750	48403.36	500	48369.24	100	55248.37
Aroclor-1254 (1)			2500	39164.26	1000	39245.77	750	40131.39	500	40677.06	100	47440.72
Aroclor-1254 (1) [2C]			2500	14531.62	1000	15522.86	750	16030.79	500	16615.11	100	21217.78
Aroclor-1254 (2)			2500	43782.04	1000	43208.28	750	44205.17	500	44224.72	100	51496.91
Aroclor-1254 (2) [2C]			2500	39879.39	1000	41917.6	750	43256.01	500	44630.58	100	57310.39
Aroclor-1254 (3)			2500	37127.06	1000	35666.88	750	36501.6	500	36334.4	100	40418.76
Aroclor-1254 (3) [2C]			2500	41733.12	1000	42586.46	750	44181.43	500	44867.04	100	55151.68
Aroclor-1254 (4)			2500	74306.92	1000	71064.7	750	72639.57	500	72238.73	100	82508.02
Aroclor-1254 (4) [2C]			2500	31412.51	1000	31708.6	750	32881.46	500	33482.7	100	41776.63
Aroclor-1254 (5)			2500	50879.48	1000	48765.22	750	48539.09	500	48371.34	100	54377.43
Aroclor-1254 (5) [2C]			2500	33032.34	1000	32729.35	750	33882.03	500	34358.38	100	42530.9
Aroclor-1254 [2C]			2500	32117.8	1000	32892.97	750	34046.35	500	34790.76	100	43597.48
Aroclor-1260												
Aroclor-1260 (1)												
Aroclor-1260 (1) [2C]												
Aroclor-1260 (2)												
Aroclor-1260 (2) [2C]												
Aroclor-1260 (3)												
Aroclor-1260 (3) [2C]												
Aroclor-1260 (4)												
Aroclor-1260 (4) [2C]												
Aroclor-1260 (5)												
Aroclor-1260 (5) [2C]												
Aroclor-1260 [2C]												
Decachlorobiphenyl	5		250		100		75		50		10	
Decachlorobiphenyl [2C]	5		250		100		75		50		10	

INITIAL CALIBRATION DATA (Continued)
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Level 37		Level 38		Level 39		Level 40		Level 41		Level 42	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Tetrachloro-m-xylene	5		250		100		75		50		10	
Tetrachloro-m-xylene [2C]	5		250		100		75		50		10	

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aroclor-1016	22394.16	2.067278	4.125	2.117489E-02			20	
Aroclor-1016 (1)	17105.6	7.032514	3.174333	3.008505E-02			20	
Aroclor-1016 (2)	30353.79	3.025907	3.728	1.572028E-02			20	
Aroclor-1016 (3)	18439.4	3.114986	3.813667	2.217734E-02			20	
Aroclor-1016 (4)	24546.28	2.77729	4.0185	9.274938E-03			20	
Aroclor-1016 (5)	21525.72	1.71806	4.125	2.117489E-02			20	
Aroclor-1016 [2C]	22023.31	12.19744	4.342833	1.978086E-02			20	
Aroclor-1016 (1) [2C]	13873.52	15.16214	3.519167	3.513033E-02			20	
Aroclor-1016 (2) [2C]	27017.25	11.57743	4.098833	3.178072E-02			20	
Aroclor-1016 (3) [2C]	34286.18	12.76584	4.121833	2.465984E-02			20	
Aroclor-1016 (4) [2C]	18496.97	10.47216	4.235	2.048935E-02			20	
Aroclor-1016 (5) [2C]	16442.65	11.72867	4.342833	1.978086E-02			20	
Aroclor-1242	20860.29	3.99329	4.302	1.389365E-02			20	
Aroclor-1242 (1)	14626.48	6.787871	3.174833	2.165322E-02			20	
Aroclor-1242 (2)	25494.58	3.97363	3.728333	1.714218E-02			20	
Aroclor-1242 (3)	20960.58	4.554137	4.018833	3.157083E-02			20	
Aroclor-1242 (4)	19149.42	3.898003	4.125667	2.740908E-02			20	
Aroclor-1242 (5)	24070.42	3.830352	4.302	1.389365E-02			20	
Aroclor-1242 [2C]	13973.2	12.24474	4.463	1.178451E-02			20	
Aroclor-1242 (1) [2C]	12186.76	14.08077	3.519667	0.0200208			20	
Aroclor-1242 (2) [2C]	15877.68	10.72525	4.236167	0.0248684			20	
Aroclor-1242 (3) [2C]	12686.69	13.05503	4.302333	2.173815E-02			20	
Aroclor-1242 (4) [2C]	14286.05	11.90074	4.344	1.699405E-02			20	
Aroclor-1242 (5) [2C]	14828.83	12.06664	4.463	1.178451E-02			20	
Aroclor-1248	31961.83	2.012113	4.772333	1.298858E-02			20	
Aroclor-1248 (1)	33500.75	3.072816	4.019167	1.803194E-02			20	
Aroclor-1248 (2)	27315.72	2.276264	4.125667	2.295958E-02			20	
Aroclor-1248 (3)	35653.59	1.79116	4.266833	5.137804E-03			20	
Aroclor-1248 (4)	42620.29	2.454988	4.302333	7.769917E-03			20	
Aroclor-1248 (5)	20718.78	6.566202	4.772333	1.298858E-02			20	
Aroclor-1248 [2C]	22282.65	10.77794	5.039833	1.816635E-02			20	
Aroclor-1248 (1) [2C]	21849.8	12.829	4.302167	1.282385E-02			20	

INITIAL CALIBRATION DATA (Continued)

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5349001	Instrument:	GL-ECD3
Matrix:	Water	Calibration Dates:	10/10/15 0:00 10/11/15 5:08

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aroclor-1248 (2) [2C]	20173.36	11.39064	4.343833	1.439591E-02			20	
Aroclor-1248 (3) [2C]	24228.93	11.62509	4.4635	4.57112E-03			20	
Aroclor-1248 (4) [2C]	27236.94	10.33174	4.861667	1.277086E-02			20	
Aroclor-1248 (5) [2C]	17924.22	7.314388	5.039833	1.816635E-02			20	
Aroclor-1254	52093.68	12.33167	4.949667	2.638336E-02			20	
Aroclor-1254 (1)	43769.21	15.37602	4.298833	3.878678E-02			20	
Aroclor-1254 (2)	47849.52	14.16967	4.396167	1.693383E-02			20	
Aroclor-1254 (3)	38678.56	10.25571	4.688	3.140578E-02			20	
Aroclor-1254 (4)	77946.6	11.9017	4.772667	2.869334E-02			20	
Aroclor-1254 (5)	52224.49	10.51138	4.949667	2.638336E-02			20	
Aroclor-1254 [2C]	38419.2	21.58934	6.078333	2.771895E-02	0.9985287		0.99	
Aroclor-1254 (1) [2C]	18291.9	23.85024	4.302	1.389365E-02	0.9959486		0.99	
Aroclor-1254 (2) [2C]	49667.49	24.43268	4.9855	1.803617E-02	0.9971025		0.99	
Aroclor-1254 (3) [2C]	49130.03	19.73213	5.345833	2.048241E-02	0.9987558		0.99	
Aroclor-1254 (4) [2C]	37015.46	21.01889	5.637333	1.773463E-02	0.9989778		0.99	
Aroclor-1254 (5) [2C]	37991.09	19.8073	6.078333	2.771895E-02	0.9993926		0.99	
Aroclor-1260	59008.58	1.366199	6.992833	2.151516E-02			20	
Aroclor-1260 (1)	49296.16	2.894012	4.898833	0.0122786			20	
Aroclor-1260 (2)	63393	2.725153	5.045167	2.481623E-02			20	
Aroclor-1260 (3)	91868.7	1.98579	5.972	2.484428E-02			20	
Aroclor-1260 (4)	69882.73	2.288977	6.400833	1.697633E-02			20	
Aroclor-1260 (5)	20602.27	2.270624	6.992833	2.151516E-02			20	
Aroclor-1260 [2C]	44136.74	10.70031	7.117667	1.492235E-02			20	
Aroclor-1260 (1) [2C]	35907.41	13.03413	5.506333	0.0188383			20	
Aroclor-1260 (2) [2C]	41877.84	12.55557	5.764667	2.188132E-02			20	
Aroclor-1260 (3) [2C]	50000.14	10.10797	6.079167	2.799871E-02			20	
Aroclor-1260 (4) [2C]	57958.8	8.784137	6.771	1.987208E-02			20	
Aroclor-1260 (5) [2C]	34939.54	10.24405	7.117667	1.492235E-02			20	
Tetrachloro-m-xylene	1079144	0.9414509	2.882833	2.217106E-02			20	
Tetrachloro-m-xylene [2C]	766713.6	7.975096	3.313167	1.842708E-02			20	
Decachlorobiphenyl	802888.8	3.586951	7.581167	1.238576E-02			20	
Decachlorobiphenyl [2C]	474637.8	13.26518	8.269667	0.0099149			20	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-ECD3	Calibration:	5349001
Lab File ID:	008O0801.D	Calibration Date:	12/09/15 00:00
Sequence:	5J28608	Injection Date:	10/11/15
Lab Sample ID:	5J28608-ICV1	Injection Time:	00:15

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Aroclor-1016 (1)	A	1000	1054	17105.6	18033.71		5.4	20
Aroclor-1016 (2)	A	1000	1029	30353.79	31248.06		2.9	20
Aroclor-1016 (3)	A	1000	1079	18439.4	19895.28		7.9	20
Aroclor-1016 (4)	A	1000	1040	24546.28	25533.12		4.0	20
Aroclor-1016 (5)	A	1000	1034	21525.72	22252.82		3.4	20
Aroclor-1016 (1) [2C]	A	1000	919.1	13873.52	12750.81		-8.1	20
Aroclor-1016 (2) [2C]	A	1000	969.1	27017.25	26182.25		-3.1	20
Aroclor-1016 (3) [2C]	A	1000	983.3	34286.18	33714.12		-1.7	20
Aroclor-1016 (4) [2C]	A	1000	1000	18496.97	18503.67		0.04	20
Aroclor-1016 (5) [2C]	A	1000	988.5	16442.65	16252.97		-1.2	20
Aroclor-1260 (1)	A	1000	1077	49296.16	53090.76		7.7	20
Aroclor-1260 (2)	A	1000	1069	63393	67794.64		6.9	20
Aroclor-1260 (3)	A	1000	1145	91868.7	105173.7		14.5	20
Aroclor-1260 (4)	A	1000	1127	69882.73	78744.42		12.7	20
Aroclor-1260 (5)	A	1000	1182	20602.27	24349.04		18.2	20
Aroclor-1260 (1) [2C]	A	1000	1019	35907.41	36581.43		1.9	20
Aroclor-1260 (2) [2C]	A	1000	1010	41877.84	42311.74		1.0	20
Aroclor-1260 (3) [2C]	A	1000	998.0	50000.14	49899.6		-0.2	20
Aroclor-1260 (4) [2C]	A	1000	1076	57958.8	62352.6		7.6	20
Aroclor-1260 (5) [2C]	A	1000	1067	34939.54	37279.31		6.7	20

INITIAL CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-ECD3	Calibration:	5349001
Lab File ID:	015O1501.D	Calibration Date:	12/09/15 00:00
Sequence:	5J28608	Injection Date:	10/11/15
Lab Sample ID:	5J28608-ICV2	Injection Time:	01:57

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Aroclor-1242 (1)	A	1000	924.8	14626.48	13525.9		-7.5	20
Aroclor-1242 (2)	A	1000	943.7	25494.58	24059.75		-5.6	20
Aroclor-1242 (3)	A	1000	967.3	20960.58	20274.38		-3.3	20
Aroclor-1242 (4)	A	1000	963.8	19149.42	18456.59		-3.6	20
Aroclor-1242 (5)	A	1000	985.7	24070.42	23725.95		-1.4	20
Aroclor-1242 (1) [2C]	A	1000	806.5	12186.76	9829.16		-19.3	20
Aroclor-1242 (2) [2C]	A	1000	896.7	15877.68	14236.75		-10.3	20
Aroclor-1242 (3) [2C]	A	1000	931.1	12686.69	11812.85		-6.9	20
Aroclor-1242 (4) [2C]	A	1000	899.6	14286.05	12851.26		-10.0	20
Aroclor-1242 (5) [2C]	A	1000	910.1	14828.83	13495.11		-9.0	20

INITIAL CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-ECD3	Calibration:	5349001
Lab File ID:	029O2901.D	Calibration Date:	12/09/15 00:00
Sequence:	5J28608	Injection Date:	10/11/15
Lab Sample ID:	5J28608-ICV4	Injection Time:	05:23

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Aroclor-1254 (1)	A	1000	968.8	43769.21	42402.14		-3.1	20
Aroclor-1254 (2)	A	1000	974.1	47849.52	46611.09		-2.6	20
Aroclor-1254 (3)	A	1000	1008	38678.56	38981.3		0.8	20
Aroclor-1254 (4)	A	1000	986.8	77946.6	76918.2		-1.3	20
Aroclor-1254 (5)	A	1000	1003	52224.49	52400.37		0.3	20
Aroclor-1254 (1) [2C]	A	1000	1110	18291.9	16464.69		11.0	20
Aroclor-1254 (2) [2C]	A	1000	1103	49667.49	44706.22		10.3	20
Aroclor-1254 (3) [2C]	A	1000	1089	49130.03	45863.09		8.9	20
Aroclor-1254 (4) [2C]	A	1000	1086	37015.46	34352.99		8.6	20
Aroclor-1254 (5) [2C]	A	1000	1077	37991.09	35663.2		7.7	20

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-ECD3	Calibration:	5349001
Lab File ID:	003O0301.D	Calibration Date:	12/09/15 00:00
Sequence:	5L36309	Injection Date:	12/18/15
Lab Sample ID:	5L36309-CCV1	Injection Time:	16:37

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Tetrachloro-m-xylene	A	100.0	82.80	1079144	893493.8		-17.2	20
Tetrachloro-m-xylene [2C]	A	100.0	91.77	766713.6	703635.5		-8.2	20
Decachlorobiphenyl	A	100.0	79.19	802888.8	635809.2		-20.8	20 *
Decachlorobiphenyl [2C]	A	100.0	83.79	474637.8	397680.5		-16.2	20

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-ECD3	Calibration:	5349001
Lab File ID:	006O0601.D	Calibration Date:	12/09/15 00:00
Sequence:	5L36309	Injection Date:	12/18/15
Lab Sample ID:	5L36309-CCV4	Injection Time:	17:21

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1016 (1)	A	1000	888.6	17105.6	15200.6		-11.1	20
Aroclor-1016 (2)	A	1000	903.8	30353.79	27433.3		-9.6	20
Aroclor-1016 (3)	A	1000	910.7	18439.4	16792.24		-8.9	20
Aroclor-1016 (4)	A	1000	927.4	24546.28	22764.89		-7.3	20
Aroclor-1016 (5)	A	1000	962.7	21525.72	20721.75		-3.7	20
Aroclor-1016 (1) [2C]	A	1000	987.1	13873.52	13695.09		-1.3	20
Aroclor-1016 (2) [2C]	A	1000	939.0	27017.25	25368.14		-6.1	20
Aroclor-1016 (3) [2C]	A	1000	956.4	34286.18	32791.04		-4.4	20
Aroclor-1016 (4) [2C]	A	1000	980.2	18496.97	18130.67		-2.0	20
Aroclor-1016 (5) [2C]	A	1000	998.1	16442.65	16411.9		-0.2	20
Aroclor-1260 (1)	A	1000	967.8	49296.16	47708.44		-3.2	20
Aroclor-1260 (2)	A	1000	1085	63393	68809.42		8.5	20
Aroclor-1260 (3)	A	1000	1072	91868.7	98438.92		7.2	20
Aroclor-1260 (4)	A	1000	1056	69882.73	73826.29		5.6	20
Aroclor-1260 (5)	A	1000	903.8	20602.27	18619.79		-9.6	20
Aroclor-1260 (1) [2C]	A	1000	1018	35907.41	36540.54		1.8	20
Aroclor-1260 (2) [2C]	A	1000	949.2	41877.84	39752.17		-5.1	20
Aroclor-1260 (3) [2C]	A	1000	950.0	50000.14	47497.99		-5.0	20
Aroclor-1260 (4) [2C]	A	1000	967.0	57958.8	56045.52		-3.3	20
Aroclor-1260 (5) [2C]	A	1000	951.9	34939.54	33260.49		-4.8	20

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-ECD3	Calibration:	5349001
Lab File ID:	007O0701.D	Calibration Date:	12/09/15 00:00
Sequence:	5L36309	Injection Date:	12/18/15
Lab Sample ID:	5L36309-CCV5	Injection Time:	17:36

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1242 (1)	A	1000	814.4	14626.48	11911.76		-18.6	20
Aroclor-1242 (2)	A	1000	822.9	25494.58	20978.34		-17.7	20
Aroclor-1242 (3)	A	1000	849.3	20960.58	17801.92		-15.1	20
Aroclor-1242 (4)	A	1000	855.3	19149.42	16377.63		-14.5	20
Aroclor-1242 (5)	A	1000	814.5	24070.42	19606.31		-18.5	20
Aroclor-1242 (1) [2C]	A	1000	919.0	12186.76	11199.48		-8.1	20
Aroclor-1242 (2) [2C]	A	1000	878.6	15877.68	13949.49		-12.1	20
Aroclor-1242 (3) [2C]	A	1000	903.2	12686.69	11458.13		-9.7	20
Aroclor-1242 (4) [2C]	A	1000	913.5	14286.05	13050.08		-8.7	20
Aroclor-1242 (5) [2C]	A	1000	910.7	14828.83	13505.15		-8.9	20

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-ECD3	Calibration:	5349001
Lab File ID:	008O0801.D	Calibration Date:	12/09/15 00:00
Sequence:	5L36309	Injection Date:	12/18/15
Lab Sample ID:	5L36309-CCV6	Injection Time:	17:50

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1254 (1)	A	1000	779.0	43769.21	34095.38		-22.1	20 *
Aroclor-1254 (2)	A	1000	796.5	47849.52	38110.79		-20.4	20 *
Aroclor-1254 (3)	A	1000	790.2	38678.56	30562.38		-21.0	20 *
Aroclor-1254 (4)	A	1000	796.6	77946.6	62089.15		-20.3	20 *
Aroclor-1254 (5)	A	1000	856.6	52224.49	44732.99		-14.3	20
Aroclor-1254 (1) [2C]	A	1000	1024	18291.9	15187.91		2.4	20
Aroclor-1254 (2) [2C]	A	1000	1004	49667.49	40690.57		0.4	20
Aroclor-1254 (3) [2C]	A	1000	967.9	49130.03	40777.22		-3.2	20
Aroclor-1254 (4) [2C]	A	1000	882.3	37015.46	27910.71		-11.8	20
Aroclor-1254 (5) [2C]	A	1000	930.0	37991.09	30794.45		-7.0	20

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	GL-ECD3	Calibration:	5349001
Lab File ID:	028O2801.D	Calibration Date:	12/09/15 00:00
Sequence:	5L36309	Injection Date:	12/18/15
Lab Sample ID:	5L36309-CCVA	Injection Time:	22:43

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1016 (1)	A	1000	936.6	17105.6	16020.72		-6.3	20
Aroclor-1016 (2)	A	1000	966.2	30353.79	29329.02		-3.4	20
Aroclor-1016 (3)	A	1000	989.7	18439.4	18248.74		-1.0	20
Aroclor-1016 (4)	A	1000	973.9	24546.28	23906.74		-2.6	20
Aroclor-1016 (5)	A	1000	990.0	21525.72	21310.29		-1.0	20
Aroclor-1016 (1) [2C]	A	1000	1047	13873.52	14532.13		4.7	20
Aroclor-1016 (2) [2C]	A	1000	998.4	27017.25	26974.28		-0.2	20
Aroclor-1016 (3) [2C]	A	1000	988.6	34286.18	33895.58		-1.1	20
Aroclor-1016 (4) [2C]	A	1000	1009	18496.97	18659		0.9	20
Aroclor-1016 (5) [2C]	A	1000	927.3	16442.65	15247.22		-7.3	20
Aroclor-1260 (1)	A	1000	1001	49296.16	49328.37		0.07	20
Aroclor-1260 (2)	A	1000	1104	63393	69995.04		10.4	20
Aroclor-1260 (3)	A	1000	1104	91868.7	101409.6		10.4	20
Aroclor-1260 (4)	A	1000	1054	69882.73	73689.03		5.4	20
Aroclor-1260 (5)	A	1000	922.4	20602.27	19002.82		-7.8	20
Aroclor-1260 (1) [2C]	A	1000	986.3	35907.41	35414.89		-1.4	20
Aroclor-1260 (2) [2C]	A	1000	989.9	41877.84	41454.88		-1.0	20
Aroclor-1260 (3) [2C]	A	1000	1006	50000.14	50298.09		0.6	20
Aroclor-1260 (4) [2C]	A	1000	1024	57958.8	59343.27		2.4	20
Aroclor-1260 (5) [2C]	A	1000	1004	34939.54	35095.81		0.4	20
Tetrachloro-m-xylene	A	100.0	98.78	1079144	1065993		-1.2	20
Tetrachloro-m-xylene [2C]	A	100.0	107.7	766713.6	825418.9		7.7	20
Decachlorobiphenyl	A	100.0	97.87	802888.8	785784.6		-2.1	20
Decachlorobiphenyl [2C]	A	100.0	101.3	474637.8	480696.5		1.3	20

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

LCS

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 5L16008-BS1 Date(s) Analyzed: 12/18/2015 12/18/2015

Instrument ID (1): GL-ECD3 Instrument ID (2): GL-ECD3

GC Column (1): DB-CLP1 ID: 0.32mm (mm) GC Column (2): DB-CLP2 ID: 0.32mm (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	3.96	4.10	4.16	4.051	
	2	4.15	4.31	4.37	4.157	3
Aroclor-1260	1	6.75	6.96	7.02	4.374	
	2	6.85	7.09	7.15	4.424	1

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Matrix Spike

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 5L16008-MS1 Date(s) Analyzed: 12/18/2015 12/18/2015

Instrument ID (1): GL-ECD3 Instrument ID (2): GL-ECD3

GC Column (1): DB-CLP1 ID: 0.32mm (mm) GC Column (2): DB-CLP2 ID: 0.32mm (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	3.95	4.10	4.16	4.153	
	2	4.15	4.31	4.37	4.443	7
Aroclor-1260	1	6.75	6.96	7.02	3.888	
	2	6.85	7.09	7.15	4.035	4

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Matrix Spike Dup

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 5L16008-MSD1 Date(s) Analyzed: 12/18/2015 12/18/2015

Instrument ID (1): GL-ECD3 Instrument ID (2): GL-ECD3

GC Column (1): DB-CLP1 ID: 0.32mm (mm) GC Column (2): DB-CLP2 ID: 0.32mm (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	3.95	4.10	4.16	3.678	
	2	4.15	4.31	4.37	3.755	2
Aroclor-1260	1	6.74	6.96	7.02	3.858	
	2	6.85	7.09	7.15	3.995	3

HOLDING TIME SUMMARY

SW8082A

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/16/15 17:30	2.41	7.00	12/18/15 19:18	2.08	40.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/16/15 17:30	2.27	7.00	12/18/15 19:33	2.09	40.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/16/15 17:30	2.27	7.00	12/18/15 20:17	2.12	40.00	

Data for SW6010C / SW7470A Forms

Sample Extraction Data

Prep Method: MET_HG_W_E-SW7470A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02 [OTC538-GW-5382-151214]	5L16010	30.00/30.00	30.0	30.0	1.00			12/16/15
1512147-03 [OTC537-GW-5371-151214]	5L16010	30.00/30.00	30.0	30.0	1.00			12/16/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L16010	30.00/30.00	30.0	30.0	1.00			12/16/15

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02 [OTC538-GW-5382-151214]	5L22012	100.00/25.00	100	25.0	5.00			12/22/15
1512147-02RE1 [OTC538-GW-5382-151214]	5L22012	100.00/25.00	100	25.0	10.00			12/22/15
1512147-02RE2 [OTC538-GW-5382-151214]	5L22012	100.00/25.00	100	25.0	25.00			12/22/15
1512147-03 [OTC537-GW-5371-151214]	5L22012	100.00/25.00	100	25.0	1.00			12/22/15
1512147-03RE1 [OTC537-GW-5371-151214]	5L22012	100.00/25.00	100	25.0	10.00			12/22/15
1512147-03RE2 [OTC537-GW-5371-151214]	5L22012	100.00/25.00	100	25.0	10.00			12/22/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L22012	100.00/25.00	100	25.0	1.00			12/22/15
1512147-04RE1 [OTC537-GW-5371-FD-151214]	5L22012	100.00/25.00	100	25.0	10.00			12/22/15
1512147-04RE2 [OTC537-GW-5371-FD-151214]	5L22012	100.00/25.00	100	25.0	10.00			12/22/15

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02
Sampled:	12/14/15 06:46	Received:	12/15/15 09:35

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.160	0.200	1	U	SW7470A	5L16010	12/21/15 09:40
7429-90-5	Aluminum	**35900**	**125**	250	500	10	D	SW6010C	5L22012	12/29/15 19:33
7440-36-0	Antimony	**6.57**	**6.25**	10.0	12.5	5	DJ	SW6010C	5L22012	12/29/15 12:17
7440-38-2	Arsenic	**12.4**	**3.75**	7.50	12.5	5	DJN	SW6010C	5L22012	12/29/15 12:17
7440-39-3	Barium	**125**	**6.25**	12.5	50.0	5	DN	SW6010C	5L22012	12/29/15 12:17
7440-41-7	Beryllium	**3.00**	**1.25**	2.50	6.25	5	DJ	SW6010C	5L22012	12/29/15 12:17
7440-43-9	Cadmium		2.50	5.00	12.5	10	U	SW6010C	5L22012	12/29/15 19:33
7440-70-2	Calcium	**728000**	**2500**	5000	12500	10	D	SW6010C	5L22012	12/29/15 19:33
7440-47-3	Chromium	**68.8**	**2.50**	5.00	12.5	5	D	SW6010C	5L22012	12/29/15 12:17
7440-48-4	Cobalt	**27.5**	**6.25**	12.5	15.6	5	D	SW6010C	5L22012	12/29/15 12:17
7440-50-8	Copper	**46.5**	**5.00**	10.0	12.5	5	D	SW6010C	5L22012	12/29/15 12:17
7439-89-6	Iron	**45100**	**37.5**	75.0	125	5	D	SW6010C	5L22012	12/29/15 12:17
7439-92-1	Lead	**27.3**	**1.88**	3.75	6.25	5	DN	SW6010C	5L22012	12/29/15 12:17
7439-95-4	Magnesium	**377000**	**1250**	3750	6250	5	D	SW6010C	5L22012	12/29/15 12:17
7439-96-5	Manganese	**1730**	**3.75**	7.50	18.8	5	D	SW6010C	5L22012	12/29/15 12:17
7440-02-0	Nickel	**64.6**	**3.75**	7.50	12.5	5	D	SW6010C	5L22012	12/29/15 12:17
7440-09-7	Potassium	**15400**	**1250**	3750	6250	5	D	SW6010C	5L22012	12/29/15 12:17
7782-49-2	Selenium		7.50	12.5	25.0	10	U	SW6010C	5L22012	12/29/15 19:33
7440-22-4	Silver		1.25	2.50	12.5	5	U	SW6010C	5L22012	12/29/15 12:17
7440-23-5	Sodium	**1780000**	**6250**	18800	31200	25	D	SW6010C	5L22012	12/30/15 15:25
7440-28-0	Thallium		3.75	5.00	10.0	5	U	SW6010C	5L22012	12/29/15 12:17
7440-62-2	Vanadium	**124**	**6.25**	12.5	15.6	5	D	SW6010C	5L22012	12/29/15 12:17
7440-66-6	Zinc	**117**	**12.5**	25.0	50.0	10	D	SW6010C	5L22012	12/29/15 19:33

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-03
Sampled:	12/14/15 10:01	Received:	12/15/15 09:35

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.160	0.200	1	U	SW7470A	5L16010	12/21/15 09:41
7429-90-5	Aluminum	**400**	**125**	250	500	10	DJ	SW6010C	5L22012	12/29/15 19:38
7440-36-0	Antimony		12.5	20.0	25.0	10	U	SW6010C	5L22012	01/05/16 15:03
7440-38-2	Arsenic		10.0	15.0	25.0	10	MNU	SW6010C	5L22012	12/29/15 19:38
7440-39-3	Barium	**36.3**	**12.5**	25.0	100	10	DJN	SW6010C	5L22012	12/29/15 19:38
7440-41-7	Beryllium		2.50	5.00	12.5	10	U	SW6010C	5L22012	12/29/15 19:38
7440-43-9	Cadmium		2.50	5.00	12.5	10	U	SW6010C	5L22012	12/29/15 19:38
7440-70-2	Calcium	**490000**	**2500**	5000	12500	10	D	SW6010C	5L22012	12/29/15 19:38
7440-47-3	Chromium		5.00	10.0	25.0	10	U	SW6010C	5L22012	12/29/15 19:38
7440-48-4	Cobalt		12.5	25.0	31.2	10	U	SW6010C	5L22012	12/29/15 19:38
7440-50-8	Copper		10.0	20.0	25.0	10	U	SW6010C	5L22012	12/29/15 19:38
7439-89-6	Iron		75.0	150	250	10	U	SW6010C	5L22012	12/29/15 19:38
7439-92-1	Lead		3.75	7.50	12.5	10	NU	SW6010C	5L22012	12/29/15 19:38
7439-95-4	Magnesium	**286000**	**2500**	7500	12500	10	D	SW6010C	5L22012	12/29/15 19:38
7439-96-5	Manganese	**562**	**7.50**	15.0	37.5	10	D	SW6010C	5L22012	12/29/15 19:38
7440-02-0	Nickel		7.50	15.0	25.0	10	U	SW6010C	5L22012	12/29/15 19:38
7440-09-7	Potassium	**14400**	**250**	750	1250	1		SW6010C	5L22012	12/29/15 12:23
7782-49-2	Selenium		7.50	12.5	25.0	10	U	SW6010C	5L22012	12/29/15 19:38
7440-22-4	Silver		2.50	5.00	25.0	10	U	SW6010C	5L22012	12/29/15 19:38
7440-23-5	Sodium	**1160000**	**2500**	7500	12500	10	D	SW6010C	5L22012	12/29/15 19:38
7440-28-0	Thallium		7.50	10.0	20.0	10	U	SW6010C	5L22012	01/05/16 15:03
7440-62-2	Vanadium		12.5	25.0	31.2	10	U	SW6010C	5L22012	12/29/15 19:38
7440-66-6	Zinc		12.5	25.0	50.0	10	U	SW6010C	5L22012	12/29/15 19:38

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-151214

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04
Sampled:	12/14/15 10:01	Received:	12/15/15 09:35

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.160	0.200	1	U	SW7470A	5L16010	12/21/15 09:44
7429-90-5	Aluminum	**427**	**125**	250	500	10	DJ	SW6010C	5L22012	12/29/15 19:57
7440-36-0	Antimony		12.5	20.0	25.0	10	U	SW6010C	5L22012	01/05/16 15:12
7440-38-2	Arsenic		7.50	15.0	25.0	10	NU	SW6010C	5L22012	12/29/15 19:57
7440-39-3	Barium	**37.4**	**12.5**	25.0	100	10	DJN	SW6010C	5L22012	12/29/15 19:57
7440-41-7	Beryllium		2.50	5.00	12.5	10	U	SW6010C	5L22012	12/29/15 19:57
7440-43-9	Cadmium		2.50	5.00	12.5	10	U	SW6010C	5L22012	12/29/15 19:57
7440-70-2	Calcium	**489000**	**2500**	5000	12500	10	D	SW6010C	5L22012	12/29/15 19:57
7440-47-3	Chromium		5.00	10.0	25.0	10	U	SW6010C	5L22012	12/29/15 19:57
7440-48-4	Cobalt		12.5	25.0	31.2	10	U	SW6010C	5L22012	12/29/15 19:57
7440-50-8	Copper		10.0	20.0	25.0	10	U	SW6010C	5L22012	12/29/15 19:57
7439-89-6	Iron		75.0	150	250	10	U	SW6010C	5L22012	12/29/15 19:57
7439-92-1	Lead		3.75	7.50	12.5	10	NU	SW6010C	5L22012	12/29/15 19:57
7439-95-4	Magnesium	**292000**	**2500**	7500	12500	10	D	SW6010C	5L22012	12/29/15 19:57
7439-96-5	Manganese	**595**	**7.50**	15.0	37.5	10	D	SW6010C	5L22012	12/29/15 19:57
7440-02-0	Nickel		7.50	15.0	25.0	10	U	SW6010C	5L22012	12/29/15 19:57
7440-09-7	Potassium	**15500**	**250**	750	1250	1		SW6010C	5L22012	12/29/15 12:39
7782-49-2	Selenium		7.50	12.5	25.0	10	U	SW6010C	5L22012	12/29/15 19:57
7440-22-4	Silver		2.50	5.00	25.0	10	U	SW6010C	5L22012	12/29/15 19:57
7440-23-5	Sodium	**1190000**	**2500**	7500	12500	10	D	SW6010C	5L22012	12/29/15 19:57
7440-28-0	Thallium		7.50	10.0	20.0	10	U	SW6010C	5L22012	01/05/16 15:12
7440-62-2	Vanadium		12.5	25.0	31.2	10	U	SW6010C	5L22012	12/29/15 19:57
7440-66-6	Zinc		12.5	25.0	50.0	10	U	SW6010C	5L22012	12/29/15 19:57

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L16010-BLK1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	ND	0.0800	0.160	0.200	1	U	SW7470A	5L16010	12/21/15 09:30

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L16010-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	**2.040**	**0.0800**	0.160	0.200	1		SW7470A	5L16010	12/21/15 09:31

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L16010-MS2

% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	**1.761**	**0.0800**	0.160	0.200	1		SW7470A	5L16010	12/21/15 09:42

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L16010-MSD2

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	**1.870**	**0.0800**	0.160	0.200	1		SW7470A	5L16010	12/21/15 09:43

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5L22012-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	ND	12.5	25.0	50.0	1	U	SW6010C	5L22012	12/24/15 13:52
7440-36-0	Antimony	ND	1.25	2.00	2.50	1	U	SW6010C	5L22012	12/24/15 13:52
7440-38-2	Arsenic	ND	0.750	1.50	2.50	1	U	SW6010C	5L22012	12/24/15 13:52
7440-39-3	Barium	ND	1.25	2.50	10.0	1	U	SW6010C	5L22012	12/24/15 13:52
7440-41-7	Beryllium	ND	0.250	0.500	1.25	1	U	SW6010C	5L22012	12/24/15 13:52
7440-43-9	Cadmium	ND	0.250	0.500	1.25	1	U	SW6010C	5L22012	12/24/15 13:52
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	5L22012	12/24/15 13:52
7440-47-3	Chromium	ND	0.500	1.00	2.50	1	U	SW6010C	5L22012	12/24/15 13:52
7440-48-4	Cobalt	ND	1.25	2.50	3.12	1	U	SW6010C	5L22012	12/24/15 13:52
7440-50-8	Copper	ND	1.00	2.00	2.50	1	U	SW6010C	5L22012	12/24/15 13:52
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	5L22012	12/24/15 13:52
7439-92-1	Lead	ND	0.375	0.750	1.25	1	U	SW6010C	5L22012	12/24/15 13:52
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	5L22012	12/24/15 13:52
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	5L22012	12/24/15 13:52
7440-02-0	Nickel	ND	0.750	1.50	2.50	1	U	SW6010C	5L22012	12/24/15 13:52
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	5L22012	12/24/15 13:52
7782-49-2	Selenium	ND	0.750	1.25	2.50	1	U	SW6010C	5L22012	12/24/15 13:52
7440-22-4	Silver	ND	0.250	0.500	2.50	1	U	SW6010C	5L22012	12/24/15 13:52
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	5L22012	12/24/15 13:52
7440-28-0	Thallium	ND	0.750	1.00	2.00	1	U	SW6010C	5L22012	12/24/15 13:52
7440-62-2	Vanadium	ND	1.25	2.50	3.12	1	U	SW6010C	5L22012	12/24/15 13:52
7440-66-6	Zinc	ND	1.25	2.50	5.00	1	U	SW6010C	5L22012	12/24/15 13:52

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5L22012-BS1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	**38.04**	**12.5**	25.0	50.0	1	J	SW6010C	5L22012	12/24/15 13:57
7440-36-0	Antimony	**4.888**	**1.25**	2.00	2.50	1		SW6010C	5L22012	12/24/15 13:57
7440-38-2	Arsenic	**4.848**	**0.750**	1.50	2.50	1		SW6010C	5L22012	12/24/15 13:57
7440-39-3	Barium	**36.61**	**1.25**	2.50	10.0	1		SW6010C	5L22012	12/24/15 13:57
7440-41-7	Beryllium	**0.8780**	**0.250**	0.500	1.25	1	J	SW6010C	5L22012	12/24/15 13:57
7440-43-9	Cadmium	**2.508**	**0.250**	0.500	1.25	1		SW6010C	5L22012	12/24/15 13:57
7440-70-2	Calcium	**597.2**	**250**	500	1250	1	J	SW6010C	5L22012	12/24/15 13:57
7440-47-3	Chromium	**3.738**	**0.500**	1.00	2.50	1		SW6010C	5L22012	12/24/15 13:57
7440-48-4	Cobalt	**9.389**	**1.25**	2.50	3.12	1		SW6010C	5L22012	12/24/15 13:57
7440-50-8	Copper	**4.780**	**1.00**	2.00	2.50	1		SW6010C	5L22012	12/24/15 13:57
7439-89-6	Iron	**20.72**	**7.50**	15.0	25.0	1	J	SW6010C	5L22012	12/24/15 13:57
7439-92-1	Lead	**4.742**	**0.375**	0.750	1.25	1		SW6010C	5L22012	12/24/15 13:57
7439-95-4	Magnesium	**597.4**	**250**	750	1250	1	J	SW6010C	5L22012	12/24/15 13:57
7439-96-5	Manganese	**9.713**	**0.750**	1.50	3.75	1		SW6010C	5L22012	12/24/15 13:57
7440-02-0	Nickel	**9.226**	**0.750**	1.50	2.50	1		SW6010C	5L22012	12/24/15 13:57
7440-09-7	Potassium	**592.2**	**250**	750	1250	1	J	SW6010C	5L22012	12/24/15 13:57
7782-49-2	Selenium	**4.549**	**0.750**	1.25	2.50	1		SW6010C	5L22012	12/24/15 13:57
7440-22-4	Silver	**4.576**	**0.250**	0.500	2.50	1		SW6010C	5L22012	12/24/15 13:57
7440-23-5	Sodium	**575.8**	**250**	750	1250	1	J	SW6010C	5L22012	12/24/15 13:57
7440-28-0	Thallium	**4.751**	**0.750**	1.00	2.00	1		SW6010C	5L22012	12/24/15 13:57
7440-62-2	Vanadium	**9.168**	**1.25**	2.50	3.12	1		SW6010C	5L22012	12/24/15 13:57
7440-66-6	Zinc	**9.372**	**1.25**	2.50	5.00	1		SW6010C	5L22012	12/24/15 13:57

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L22012-DUP1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-09-7	Potassium	**13000**	**1250**	3750	6250	5	D	SW6010C	5L22012	12/29/15 12:33

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5L22012-DUP2
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	ND	625	1250	2500	50	U	SW6010C	5L22012	12/29/15 19:52
7440-38-2	Arsenic	ND	37.5	75.0	125	50	U	SW6010C	5L22012	12/29/15 19:52
7440-39-3	Barium	ND	62.5	125	500	50	U	SW6010C	5L22012	12/29/15 19:52
7440-41-7	Beryllium	ND	12.5	25.0	62.5	50	U	SW6010C	5L22012	12/29/15 19:52
7440-43-9	Cadmium	ND	12.5	25.0	62.5	50	U	SW6010C	5L22012	12/29/15 19:52
7440-70-2	Calcium	**251100**	**12500**	25000	62500	50	D	SW6010C	5L22012	12/29/15 19:52
7440-47-3	Chromium	ND	25.0	50.0	125	50	U	SW6010C	5L22012	12/29/15 19:52
7440-48-4	Cobalt	ND	62.5	125	156	50	U	SW6010C	5L22012	12/29/15 19:52
7440-50-8	Copper	ND	50.0	100	125	50	U	SW6010C	5L22012	12/29/15 19:52
7439-89-6	Iron	ND	375	750	1250	50	U	SW6010C	5L22012	12/29/15 19:52
7439-92-1	Lead	ND	18.8	37.5	62.5	50	U	SW6010C	5L22012	12/29/15 19:52
7439-95-4	Magnesium	**150000**	**12500**	37500	62500	50	D	SW6010C	5L22012	12/29/15 19:52
7439-96-5	Manganese	**291.6**	**37.5**	75.0	188	50	D	SW6010C	5L22012	12/29/15 19:52
7440-02-0	Nickel	ND	37.5	75.0	125	50	U	SW6010C	5L22012	12/29/15 19:52
7782-49-2	Selenium	ND	37.5	62.5	125	50	U	SW6010C	5L22012	12/29/15 19:52
7440-22-4	Silver	ND	12.5	25.0	125	50	U	SW6010C	5L22012	12/29/15 19:52
7440-23-5	Sodium	**707200**	**12500**	37500	62500	50	D	SW6010C	5L22012	12/29/15 19:52
7440-62-2	Vanadium	ND	62.5	125	156	50	U	SW6010C	5L22012	12/29/15 19:52
7440-66-6	Zinc	ND	62.5	125	250	50	U	SW6010C	5L22012	12/29/15 19:52

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L22012-DUP3

% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-36-0	Antimony	ND	62.5	100	125	50	U	SW6010C	5L22012	01/05/16 15:07
7440-28-0	Thallium	ND	37.5	50.0	100	50	U	SW6010C	5L22012	01/05/16 15:07

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L22012-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-09-7	Potassium	**16320**	**250**	750	1250	1		SW6010C	5L22012	12/29/15 12:28

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5L22012-MS2
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	**890.2**	**125**	250	500	10	D	SW6010C	5L22012	12/29/15 19:43
7440-36-0	Antimony	**123.6**	**12.5**	20.0	25.0	10	DY	SW6010C	5L22012	12/29/15 19:43
7440-38-2	Arsenic	**109.9**	**7.50**	15.0	25.0	10	D	SW6010C	5L22012	12/29/15 19:43
7440-39-3	Barium	**181.7**	**12.5**	25.0	100	10	D	SW6010C	5L22012	12/29/15 19:43
7440-41-7	Beryllium	**10.52**	**2.50**	5.00	12.5	10	DJ	SW6010C	5L22012	12/29/15 19:43
7440-43-9	Cadmium	**57.62**	**2.50**	5.00	12.5	10	D	SW6010C	5L22012	12/29/15 19:43
7440-70-2	Calcium	**492800**	**2500**	5000	12500	10	D	SW6010C	5L22012	12/29/15 19:43
7440-47-3	Chromium	**43.32**	**5.00**	10.0	25.0	10	D	SW6010C	5L22012	12/29/15 19:43
7440-48-4	Cobalt	**121.7**	**12.5**	25.0	31.2	10	D	SW6010C	5L22012	12/29/15 19:43
7440-50-8	Copper	**56.66**	**10.0**	20.0	25.0	10	D	SW6010C	5L22012	12/29/15 19:43
7439-89-6	Iron	**223.3**	**75.0**	150	250	10	DJ	SW6010C	5L22012	12/29/15 19:43
7439-92-1	Lead	**106.0**	**3.75**	7.50	12.5	10	D	SW6010C	5L22012	12/29/15 19:43
7439-95-4	Magnesium	**292600**	**2500**	7500	12500	10	D	SW6010C	5L22012	12/29/15 19:43
7439-96-5	Manganese	**673.3**	**7.50**	15.0	37.5	10	D	SW6010C	5L22012	12/29/15 19:43
7440-02-0	Nickel	**109.0**	**7.50**	15.0	25.0	10	D	SW6010C	5L22012	12/29/15 19:43
7782-49-2	Selenium	**116.3**	**7.50**	12.5	25.0	10	D	SW6010C	5L22012	12/29/15 19:43
7440-22-4	Silver	**53.68**	**2.50**	5.00	25.0	10	D	SW6010C	5L22012	12/29/15 19:43
7440-23-5	Sodium	**1160000**	**2500**	7500	12500	10	D	SW6010C	5L22012	12/29/15 19:43
7440-28-0	Thallium	**97.69**	**7.50**	10.0	20.0	10	DY	SW6010C	5L22012	12/29/15 19:43
7440-62-2	Vanadium	**114.0**	**12.5**	25.0	31.2	10	D	SW6010C	5L22012	12/29/15 19:43
7440-66-6	Zinc	**123.4**	**12.5**	25.0	50.0	10	D	SW6010C	5L22012	12/29/15 19:43

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5L22012-MSD2
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	**828.3**	**125**	250	500	10	D	SW6010C	5L22012	12/29/15 19:47
7440-36-0	Antimony	**117.6**	**12.5**	20.0	25.0	10	DY	SW6010C	5L22012	12/29/15 19:47
7440-38-2	Arsenic	**99.80**	**7.50**	15.0	25.0	10	D	SW6010C	5L22012	12/29/15 19:47
7440-39-3	Barium	**185.0**	**12.5**	25.0	100	10	D	SW6010C	5L22012	12/29/15 19:47
7440-41-7	Beryllium	**10.10**	**2.50**	5.00	12.5	10	DJ	SW6010C	5L22012	12/29/15 19:47
7440-43-9	Cadmium	**54.66**	**2.50**	5.00	12.5	10	D	SW6010C	5L22012	12/29/15 19:47
7440-70-2	Calcium	**482700**	**2500**	5000	12500	10	D	SW6010C	5L22012	12/29/15 19:47
7440-47-3	Chromium	**40.95**	**5.00**	10.0	25.0	10	D	SW6010C	5L22012	12/29/15 19:47
7440-48-4	Cobalt	**115.4**	**12.5**	25.0	31.2	10	D	SW6010C	5L22012	12/29/15 19:47
7440-50-8	Copper	**55.32**	**10.0**	20.0	25.0	10	D	SW6010C	5L22012	12/29/15 19:47
7439-89-6	Iron	**209.8**	**75.0**	150	250	10	DJ	SW6010C	5L22012	12/29/15 19:47
7439-92-1	Lead	**99.00**	**3.75**	7.50	12.5	10	D	SW6010C	5L22012	12/29/15 19:47
7439-95-4	Magnesium	**284800**	**2500**	7500	12500	10	D	SW6010C	5L22012	12/29/15 19:47
7439-96-5	Manganese	**647.7**	**7.50**	15.0	37.5	10	D	SW6010C	5L22012	12/29/15 19:47
7440-02-0	Nickel	**103.3**	**7.50**	15.0	25.0	10	D	SW6010C	5L22012	12/29/15 19:47
7782-49-2	Selenium	**112.8**	**7.50**	12.5	25.0	10	D	SW6010C	5L22012	12/29/15 19:47
7440-22-4	Silver	**50.20**	**2.50**	5.00	25.0	10	D	SW6010C	5L22012	12/29/15 19:47
7440-23-5	Sodium	**1132000**	**2500**	7500	12500	10	D	SW6010C	5L22012	12/29/15 19:47
7440-28-0	Thallium	**91.14**	**7.50**	10.0	20.0	10	DY	SW6010C	5L22012	12/29/15 19:47
7440-62-2	Vanadium	**111.3**	**12.5**	25.0	31.2	10	D	SW6010C	5L22012	12/29/15 19:47
7440-66-6	Zinc	**117.1**	**12.5**	25.0	50.0	10	D	SW6010C	5L22012	12/29/15 19:47

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-FIMS

SDG: 1512147
Project: Holloman AFB
Calibration: 5355001
Sequence: 5L35510

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L35510-ICV1	Mercury	4.000	4.073	102	ug/L	+/- 20.00%
5L35510-CCV1	Mercury	2.000	2.000	100	ug/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1512147
Project: Holloman AFB
Calibration: 5362001
Sequence: 5L36205

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L36205-ICV1	Aluminum	10000	10120	101	ug/L	+/- 10.00%
	Antimony	1000	990.7	99.1	ug/L	+/- 10.00%
	Arsenic	1000	986.7	98.7	ug/L	+/- 10.00%
	Barium	1000	990.5	99.0	ug/L	+/- 10.00%
	Beryllium	1000	970.9	97.1	ug/L	+/- 10.00%
	Cadmium	1000	1025	102	ug/L	+/- 10.00%
	Calcium	50000	52590	105	ug/L	+/- 10.00%
	Chromium	1000	972.3	97.2	ug/L	+/- 10.00%
	Cobalt	1000	940.2	94.0	ug/L	+/- 10.00%
	Copper	1000	966.0	96.6	ug/L	+/- 10.00%
	Iron	10000	10220	102	ug/L	+/- 10.00%
	Lead	1000	939.6	94.0	ug/L	+/- 10.00%
	Magnesium	50000	52120	104	ug/L	+/- 10.00%
	Manganese	1000	991.5	99.2	ug/L	+/- 10.00%
	Nickel	1000	946.2	94.6	ug/L	+/- 10.00%
	Potassium	10000	9946	99.5	ug/L	+/- 10.00%
	Selenium	1000	1016	102	ug/L	+/- 10.00%
	Silver	500.0	483.1	96.6	ug/L	+/- 10.00%
	Sodium	50000	47320	94.6	ug/L	+/- 10.00%
	Thallium	1000	939.9	94.0	ug/L	+/- 10.00%
	Vanadium	1000	1005	101	ug/L	+/- 10.00%
	Zinc	1000	1004	100	ug/L	+/- 10.00%
5L36205-CCV1	Aluminum	10000	9710	97.1	ug/L	+/- 10.00%
	Antimony	1000	977.9	97.8	ug/L	+/- 10.00%
	Arsenic	1000	943.8	94.4	ug/L	+/- 10.00%
	Barium	1000	929.9	93.0	ug/L	+/- 10.00%
	Beryllium	1000	943.6	94.4	ug/L	+/- 10.00%
	Cadmium	1000	991.8	99.2	ug/L	+/- 10.00%
	Calcium	50000	48690	97.4	ug/L	+/- 10.00%
	Chromium	1000	956.0	95.6	ug/L	+/- 10.00%
	Cobalt	1000	934.5	93.5	ug/L	+/- 10.00%
	Copper	1000	961.7	96.2	ug/L	+/- 10.00%
	Iron	10000	9644	96.4	ug/L	+/- 10.00%
	Lead	1000	920.5	92.1	ug/L	+/- 10.00%
	Magnesium	50000	47170	94.3	ug/L	+/- 10.00%
	Manganese	1000	978.9	97.9	ug/L	+/- 10.00%
	Nickel	1000	941.0	94.1	ug/L	+/- 10.00%
	Potassium	10000	9571	95.7	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1512147
Project: Holloman AFB
Calibration: 5362001
Sequence: 5L36205

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L36205-CCV1	Selenium	1000	983.1	98.3	ug/L	+/- 10.00%
	Silver	500.0	455.4	91.1	ug/L	+/- 10.00%
	Sodium	50000	45040	90.1	ug/L	+/- 10.00%
	Thallium	**1000**	**899.2**	**89.9**	**ug/L**	+/- 10.00%
	Vanadium	1000	1003	100	ug/L	+/- 10.00%
	Zinc	1000	963.9	96.4	ug/L	+/- 10.00%
5L36205-CCV2	Aluminum	10000	10140	101	ug/L	+/- 10.00%
	Antimony	1000	1018	102	ug/L	+/- 10.00%
	Arsenic	1000	1002	100	ug/L	+/- 10.00%
	Barium	1000	1007	101	ug/L	+/- 10.00%
	Beryllium	1000	991.3	99.1	ug/L	+/- 10.00%
	Cadmium	1000	1034	103	ug/L	+/- 10.00%
	Calcium	50000	52670	105	ug/L	+/- 10.00%
	Chromium	1000	1007	101	ug/L	+/- 10.00%
	Cobalt	1000	960.9	96.1	ug/L	+/- 10.00%
	Copper	1000	989.2	98.9	ug/L	+/- 10.00%
	Iron	10000	10160	102	ug/L	+/- 10.00%
	Lead	1000	952.5	95.2	ug/L	+/- 10.00%
	Magnesium	50000	50950	102	ug/L	+/- 10.00%
	Manganese	1000	1022	102	ug/L	+/- 10.00%
	Nickel	1000	972.0	97.2	ug/L	+/- 10.00%
	Potassium	10000	10240	102	ug/L	+/- 10.00%
	Selenium	1000	1030	103	ug/L	+/- 10.00%
	Silver	500.0	490.1	98.0	ug/L	+/- 10.00%
	Sodium	50000	48310	96.6	ug/L	+/- 10.00%
	Thallium	1000	941.0	94.1	ug/L	+/- 10.00%
	Vanadium	1000	1025	103	ug/L	+/- 10.00%
	Zinc	1000	1032	103	ug/L	+/- 10.00%
5L36205-CCV3	Aluminum	10000	10170	102	ug/L	+/- 10.00%
	Antimony	1000	1011	101	ug/L	+/- 10.00%
	Arsenic	1000	978.2	97.8	ug/L	+/- 10.00%
	Barium	1000	988.2	98.8	ug/L	+/- 10.00%
	Beryllium	1000	973.4	97.3	ug/L	+/- 10.00%
	Cadmium	1000	1025	102	ug/L	+/- 10.00%
	Calcium	50000	50680	101	ug/L	+/- 10.00%
	Chromium	1000	971.4	97.1	ug/L	+/- 10.00%
	Cobalt	1000	961.7	96.2	ug/L	+/- 10.00%
	Copper	1000	976.1	97.6	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1512147
Project: Holloman AFB
Calibration: 5362001
Sequence: 5L36205

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L36205-CCV3	Iron	10000	10100	101	ug/L	+/- 10.00%
	Lead	1000	948.9	94.9	ug/L	+/- 10.00%
	Magnesium	50000	48860	97.7	ug/L	+/- 10.00%
	Manganese	1000	999.6	100	ug/L	+/- 10.00%
	Nickel	1000	969.5	97.0	ug/L	+/- 10.00%
	Potassium	10000	10250	103	ug/L	+/- 10.00%
	Selenium	1000	1016	102	ug/L	+/- 10.00%
	Silver	500.0	472.5	94.5	ug/L	+/- 10.00%
	Sodium	50000	46720	93.4	ug/L	+/- 10.00%
	Thallium	1000	928.2	92.8	ug/L	+/- 10.00%
	Vanadium	1000	1019	102	ug/L	+/- 10.00%
	Zinc	1000	998.8	99.9	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1512147
Project: Holloman AFB
Calibration: 5364001
Sequence: 5L36409

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L36409-ICV1	Sodium	50000	50460	101	ug/L	+/- 10.00%
5L36409-CCV1	Sodium	50000	49910	99.8	ug/L	+/- 10.00%
5L36409-CCV3	Sodium	50000	50630	101	ug/L	+/- 10.00%
5L36409-CCV4	Sodium	50000	49360	98.7	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1512147
Project: Holloman AFB
Calibration: 6004002
Sequence: 6A00404

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6A00404-ICV1	Aluminum	10000	9641	96.4	ug/L	+/- 10.00%
	Antimony	1000	918.8	91.9	ug/L	+/- 10.00%
	Arsenic	1000	968.6	96.9	ug/L	+/- 10.00%
	Barium	1000	956.8	95.7	ug/L	+/- 10.00%
	Beryllium	1000	980.3	98.0	ug/L	+/- 10.00%
	Cadmium	1000	1008	101	ug/L	+/- 10.00%
	Calcium	50000	45190	90.4	ug/L	+/- 10.00%
	Chromium	1000	957.4	95.7	ug/L	+/- 10.00%
	Cobalt	1000	936.9	93.7	ug/L	+/- 10.00%
	Copper	1000	972.5	97.2	ug/L	+/- 10.00%
	Iron	10000	9164	91.6	ug/L	+/- 10.00%
	Lead	1000	933.2	93.3	ug/L	+/- 10.00%
	Magnesium	50000	48960	97.9	ug/L	+/- 10.00%
	Manganese	1000	982.9	98.3	ug/L	+/- 10.00%
	Nickel	1000	924.3	92.4	ug/L	+/- 10.00%
	Potassium	10000	9777	97.8	ug/L	+/- 10.00%
	Selenium	1000	1014	101	ug/L	+/- 10.00%
	Silver	500.0	465.4	93.1	ug/L	+/- 10.00%
	Sodium	50000	50420	101	ug/L	+/- 10.00%
	Thallium	1000	921.4	92.1	ug/L	+/- 10.00%
	Vanadium	1000	1002	100	ug/L	+/- 10.00%
	Zinc	1000	987.2	98.7	ug/L	+/- 10.00%
6A00404-CCV1	Aluminum	10000	9522	95.2	ug/L	+/- 10.00%
	Antimony	1000	929.8	93.0	ug/L	+/- 10.00%
	Arsenic	1000	959.1	95.9	ug/L	+/- 10.00%
	Barium	1000	957.8	95.8	ug/L	+/- 10.00%
	Beryllium	1000	978.3	97.8	ug/L	+/- 10.00%
	Cadmium	1000	1006	101	ug/L	+/- 10.00%
	Calcium	50000	45230	90.5	ug/L	+/- 10.00%
	Chromium	1000	988.2	98.8	ug/L	+/- 10.00%
	Cobalt	1000	951.6	95.2	ug/L	+/- 10.00%
	Copper	1000	964.1	96.4	ug/L	+/- 10.00%
	Iron	10000	9034	90.3	ug/L	+/- 10.00%
	Lead	1000	931.7	93.2	ug/L	+/- 10.00%
	Magnesium	50000	49250	98.5	ug/L	+/- 10.00%
	Manganese	1000	992.2	99.2	ug/L	+/- 10.00%
	Nickel	1000	925.4	92.5	ug/L	+/- 10.00%
	Potassium	10000	9610	96.1	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1512147
Project: Holloman AFB
Calibration: 6004002
Sequence: 6A00404

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6A00404-CCV1	Selenium	1000	1010	101	ug/L	+/- 10.00%
	Silver	500.0	478.7	95.7	ug/L	+/- 10.00%
	Sodium	50000	51100	102	ug/L	+/- 10.00%
	Thallium	1000	903.1	90.3	ug/L	+/- 10.00%
	Vanadium	1000	983.4	98.3	ug/L	+/- 10.00%
	Zinc	1000	975.7	97.6	ug/L	+/- 10.00%
6A00404-CCV2	Aluminum	10000	10320	103	ug/L	+/- 10.00%
	Antimony	1000	926.2	92.6	ug/L	+/- 10.00%
	Arsenic	1000	953.9	95.4	ug/L	+/- 10.00%
	Barium	1000	966.9	96.7	ug/L	+/- 10.00%
	Beryllium	1000	997.6	99.8	ug/L	+/- 10.00%
	Cadmium	1000	1016	102	ug/L	+/- 10.00%
	Calcium	50000	46790	93.6	ug/L	+/- 10.00%
	Chromium	1000	993.2	99.3	ug/L	+/- 10.00%
	Cobalt	1000	965.4	96.5	ug/L	+/- 10.00%
	Copper	1000	967.6	96.8	ug/L	+/- 10.00%
	Iron	10000	10290	103	ug/L	+/- 10.00%
	Lead	1000	948.2	94.8	ug/L	+/- 10.00%
	Magnesium	50000	52660	105	ug/L	+/- 10.00%
	Manganese	1000	1008	101	ug/L	+/- 10.00%
	Nickel	1000	932.0	93.2	ug/L	+/- 10.00%
	Potassium	10000	10040	100	ug/L	+/- 10.00%
	Selenium	1000	1013	101	ug/L	+/- 10.00%
	Silver	500.0	477.5	95.5	ug/L	+/- 10.00%
	Sodium	50000	48620	97.2	ug/L	+/- 10.00%
	Thallium	1000	902.9	90.3	ug/L	+/- 10.00%
	Vanadium	1000	1012	101	ug/L	+/- 10.00%
	Zinc	1000	981.2	98.1	ug/L	+/- 10.00%
6A00404-CCV7	Aluminum	10000	10250	102	ug/L	+/- 10.00%
	Antimony	**1000**	**886.3**	**88.6**	**ug/L**	+/- 10.00%
	Arsenic	1000	905.0	90.5	ug/L	+/- 10.00%
	Barium	1000	933.2	93.3	ug/L	+/- 10.00%
	Beryllium	1000	958.8	95.9	ug/L	+/- 10.00%
	Cadmium	1000	992.3	99.2	ug/L	+/- 10.00%
	Calcium	50000	45200	90.4	ug/L	+/- 10.00%
	Chromium	1000	956.5	95.7	ug/L	+/- 10.00%
	Cobalt	1000	952.4	95.2	ug/L	+/- 10.00%
	Copper	1000	945.6	94.6	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1512147
Project: Holloman AFB
Calibration: 6004002
Sequence: 6A00404

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6A00404-CCV7	Iron	10000	10130	101	ug/L	+/- 10.00%
	Lead	1000	938.0	93.8	ug/L	+/- 10.00%
	Magnesium	50000	53160	106	ug/L	+/- 10.00%
	Manganese	1000	991.3	99.1	ug/L	+/- 10.00%
	Nickel	1000	903.2	90.3	ug/L	+/- 10.00%
	Potassium	10000	10010	100	ug/L	+/- 10.00%
	Selenium	1000	986.1	98.6	ug/L	+/- 10.00%
	Silver	500.0	461.4	92.3	ug/L	+/- 10.00%
	Sodium	50000	52740	105	ug/L	+/- 10.00%
	Thallium	**1000**	**858.8**	**85.9**	**ug/L**	+/- 10.00%
	Vanadium	1000	1002	100	ug/L	+/- 10.00%
	Zinc	1000	954.1	95.4	ug/L	+/- 10.00%
6A00404-CCV8	Aluminum	10000	10000	100	ug/L	+/- 10.00%
	Antimony	**1000**	**898.9**	**89.9**	**ug/L**	+/- 10.00%
	Arsenic	1000	920.6	92.1	ug/L	+/- 10.00%
	Barium	1000	942.2	94.2	ug/L	+/- 10.00%
	Beryllium	1000	956.8	95.7	ug/L	+/- 10.00%
	Cadmium	1000	1006	101	ug/L	+/- 10.00%
	Calcium	50000	45160	90.3	ug/L	+/- 10.00%
	Chromium	1000	978.1	97.8	ug/L	+/- 10.00%
	Cobalt	1000	967.6	96.8	ug/L	+/- 10.00%
	Copper	1000	935.3	93.5	ug/L	+/- 10.00%
	Iron	10000	9860	98.6	ug/L	+/- 10.00%
	Lead	1000	948.4	94.8	ug/L	+/- 10.00%
	Magnesium	50000	52830	106	ug/L	+/- 10.00%
	Manganese	1000	990.7	99.1	ug/L	+/- 10.00%
	Nickel	1000	917.2	91.7	ug/L	+/- 10.00%
	Potassium	10000	9726	97.3	ug/L	+/- 10.00%
	Selenium	1000	1002	100	ug/L	+/- 10.00%
	Silver	500.0	469.9	94.0	ug/L	+/- 10.00%
	Sodium	50000	52360	105	ug/L	+/- 10.00%
	Thallium	**1000**	**866.1**	**86.6**	**ug/L**	+/- 10.00%
	Vanadium	1000	981.2	98.1	ug/L	+/- 10.00%
	Zinc	1000	969.2	96.9	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1512147
Project: Holloman AFB
Calibration: 6005001
Sequence: 6A00511

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6A00511-ICV1	Antimony	1000	1002	100	ug/L	+/- 10.00%
	Thallium	1000	1015	102	ug/L	+/- 10.00%
6A00511-CCV1	Antimony	1000	983.2	98.3	ug/L	+/- 10.00%
	Thallium	1000	968.5	96.9	ug/L	+/- 10.00%
6A00511-CCV3	Antimony	1000	989.0	98.9	ug/L	+/- 10.00%
	Thallium	1000	971.6	97.2	ug/L	+/- 10.00%
6A00511-CCV4	Antimony	1000	991.6	99.2	ug/L	+/- 10.00%
	Thallium	1000	978.3	97.8	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 5362001
Sequence: 5L36205

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L36205-CRL1	Aluminum	200.0	195.0	97.5	ug/L	80 - 120
	Antimony	10.00	10.13	101	ug/L	80 - 120
	Arsenic	5.000	4.833	96.7	ug/L	80 - 120
	Barium	10.00	10.20	102	ug/L	80 - 120
	Beryllium	2.000	1.925	96.2	ug/L	80 - 120
	Cadmium	2.000	2.154	108	ug/L	80 - 120
	Calcium	2000	2172	109	ug/L	80 - 120
	Chromium	4.000	4.116	103	ug/L	80 - 120
	Cobalt	10.00	10.25	102	ug/L	80 - 120
	Copper	10.00	10.45	104	ug/L	80 - 120
	Iron	100.0	107.5	108	ug/L	80 - 120
	Lead	3.000	3.503	117	ug/L	80 - 120
	Magnesium	3000	3260	109	ug/L	80 - 120
	Manganese	6.000	6.437	107	ug/L	80 - 120
	Nickel	6.000	5.761	96.0	ug/L	80 - 120
	Potassium	3000	3184	106	ug/L	80 - 120
	Selenium	5.000	5.549	111	ug/L	80 - 120
	Silver	3.000	2.889	96.3	ug/L	80 - 120
	Sodium	3000	3120	104	ug/L	80 - 120
	Thallium	8.000	6.947	86.8	ug/L	80 - 120
	Vanadium	10.00	9.822	98.2	ug/L	80 - 120
	Zinc	10.00	10.03	100	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Instrument ID: ME-ICP

Calibration: 5364001

Sequence: 5L36409

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L36409-CRL1	Sodium	3000	3185	106	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6004002
Sequence: 6A00404

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6A00404-CRL1	Aluminum	200.0	183.1	91.6	ug/L	80 - 120
	Antimony	10.00	10.86	109	ug/L	80 - 120
	Arsenic	5.000	4.476	89.5	ug/L	80 - 120
	Barium	10.00	9.653	96.5	ug/L	80 - 120
	Beryllium	2.000	2.038	102	ug/L	80 - 120
	Cadmium	2.000	2.022	101	ug/L	80 - 120
	Calcium	2000	1937	96.8	ug/L	80 - 120
	Chromium	4.000	4.350	109	ug/L	80 - 120
	Cobalt	10.00	9.998	100	ug/L	80 - 120
	Copper	10.00	10.09	101	ug/L	80 - 120
	Iron	100.0	97.00	97.0	ug/L	80 - 120
	Lead	3.000	2.814	93.8	ug/L	80 - 120
	Magnesium	3000	3152	105	ug/L	80 - 120
	Manganese	6.000	6.320	105	ug/L	80 - 120
	Nickel	6.000	5.262	87.7	ug/L	80 - 120
	Potassium	3000	3084	103	ug/L	80 - 120
	Selenium	5.000	4.416	88.3	ug/L	80 - 120
	Silver	3.000	2.969	99.0	ug/L	80 - 120
	Sodium	3000	3204	107	ug/L	80 - 120
	Thallium	8.000	7.678	96.0	ug/L	80 - 120
	Vanadium	10.00	9.143	91.4	ug/L	80 - 120
	Zinc	10.00	9.849	98.5	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Instrument ID: ME-ICP

Calibration: 6005001

Sequence: 6A00511

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6A00511-CRL1	Antimony	10.00	9.032	90.3	ug/L	80 - 120
	Thallium	8.000	8.134	102	ug/L	80 - 120

BLANKS
SW7470A

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-FIMS
Project: Holloman AFB
Sequence: 5L35510
Calibration: 5355001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L35510-ICB1	Mercury	0.01487	0.0800	0.200	ug/L	U	SW7470A
5L16010-BLK1	Mercury	-0.0261	0.0800	0.200	ug/L	U	SW7470A
5L35510-CCB1	Mercury	0.00831	0.0800	0.200	ug/L	U	SW7470A

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 5L36205
Calibration: 5362001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L36205-ICB1	Aluminum	-4.166	50.0	200	ug/L	U	SW6010C
	Antimony	0.5063	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.7829	3.00	10.0	ug/L	U	SW6010C
	Barium	0.1965	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.07174	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.1324	1.00	5.00	ug/L	U	SW6010C
	Calcium	-4.490	1000	5000	ug/L	U	SW6010C
	Chromium	0.03841	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.2639	5.00	12.5	ug/L	U	SW6010C
	Copper	0.7784	4.00	10.0	ug/L	U	SW6010C
	Iron	10.79	30.0	100	ug/L	U	SW6010C
	Lead	0.9002	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-5.840	1000	5000	ug/L	U	SW6010C
	Manganese	0.03631	3.00	15.0	ug/L	U	SW6010C
	Nickel	0.1076	3.00	10.0	ug/L	U	SW6010C
	Potassium	16.05	1000	5000	ug/L	U	SW6010C
	Selenium	-2.196	3.00	10.0	ug/L	U	SW6010C
	Silver	0.2758	1.00	10.0	ug/L	U	SW6010C
	Sodium	55.23	1000	5000	ug/L	U	SW6010C
	Thallium	-1.373	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.05824	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.1995	5.00	20.0	ug/L	U	SW6010C
5L36205-CCB1	Aluminum	-7.10	50.0	200	ug/L	U	SW6010C
	Antimony	1.70	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.280	3.00	10.0	ug/L	U	SW6010C
	Barium	0.235	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0141	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.148	1.00	5.00	ug/L	U	SW6010C
	Calcium	-3.96	1000	5000	ug/L	U	SW6010C
	Chromium	0.0440	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.186	5.00	12.5	ug/L	U	SW6010C
	Copper	0.763	4.00	10.0	ug/L	U	SW6010C
	Iron	3.88	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 5L36205
Calibration: 5362001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L36205-CCB1	Lead	0.527	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-15.2	1000	5000	ug/L	U	SW6010C
	Manganese	0.0360	3.00	15.0	ug/L	U	SW6010C
	Nickel	0.219	3.00	10.0	ug/L	U	SW6010C
	Potassium	-5.06	1000	5000	ug/L	U	SW6010C
	Selenium	-1.25	3.00	10.0	ug/L	U	SW6010C
	Silver	0.209	1.00	10.0	ug/L	U	SW6010C
	Sodium	35.7	1000	5000	ug/L	U	SW6010C
	Thallium	-0.927	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.185	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.365	5.00	20.0	ug/L	U	SW6010C
5L36205-CCB2	Aluminum	3.37	50.0	200	ug/L	U	SW6010C
	Antimony	-0.0715	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.863	3.00	10.0	ug/L	U	SW6010C
	Barium	0.355	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0553	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.324	1.00	5.00	ug/L	U	SW6010C
	Calcium	-1.57	1000	5000	ug/L	U	SW6010C
	Chromium	0.209	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.379	5.00	12.5	ug/L	U	SW6010C
	Copper	0.467	4.00	10.0	ug/L	U	SW6010C
	Iron	7.09	30.0	100	ug/L	U	SW6010C
	Lead	0.615	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-3.74	1000	5000	ug/L	U	SW6010C
	Manganese	0.173	3.00	15.0	ug/L	U	SW6010C
	Nickel	0.155	3.00	10.0	ug/L	U	SW6010C
	Potassium	10.0	1000	5000	ug/L	U	SW6010C
	Selenium	-1.49	3.00	10.0	ug/L	U	SW6010C
	Silver	0.202	1.00	10.0	ug/L	U	SW6010C
	Sodium	41.0	1000	5000	ug/L	U	SW6010C
	Thallium	-0.729	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.0688	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.627	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 5L36205
Calibration: 5362001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L22012-BLK1	Aluminum	0.00692	12.5	50.0	ug/L	U	SW6010C
	Antimony	-0.0946	1.25	2.50	ug/L	U	SW6010C
	Arsenic	0.200	0.750	2.50	ug/L	U	SW6010C
	Barium	-0.0800	1.25	10.0	ug/L	U	SW6010C
	Beryllium	0.0124	0.250	1.25	ug/L	U	SW6010C
	Cadmium	0.0115	0.250	1.25	ug/L	U	SW6010C
	Calcium	1.39	250	1250	ug/L	U	SW6010C
	Chromium	0.0845	0.500	2.50	ug/L	U	SW6010C
	Cobalt	0.0212	1.25	3.12	ug/L	U	SW6010C
	Copper	0.0578	1.00	2.50	ug/L	U	SW6010C
	Iron	1.06	7.50	25.0	ug/L	U	SW6010C
	Lead	-0.0169	0.375	1.25	ug/L	U	SW6010C
	Magnesium	-1.12	250	1250	ug/L	U	SW6010C
	Manganese	0.0371	0.750	3.75	ug/L	U	SW6010C
	Nickel	-0.0754	0.750	2.50	ug/L	U	SW6010C
	Potassium	-1.72	250	1250	ug/L	U	SW6010C
	Selenium	-0.502	0.750	2.50	ug/L	U	SW6010C
	Silver	0.0357	0.250	2.50	ug/L	U	SW6010C
	Sodium	13.8	250	1250	ug/L	U	SW6010C
	Thallium	0.00732	0.750	2.00	ug/L	U	SW6010C
	Vanadium	-0.0450	1.25	3.12	ug/L	U	SW6010C
	Zinc	-0.130	1.25	5.00	ug/L	U	SW6010C
5L36205-CCB3	Aluminum	-3.61	50.0	200	ug/L	U	SW6010C
	Antimony	0.510	5.00	10.0	ug/L	U	SW6010C
	Arsenic	1.53	3.00	10.0	ug/L	U	SW6010C
	Barium	0.246	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0412	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.125	1.00	5.00	ug/L	U	SW6010C
	Calcium	-0.870	1000	5000	ug/L	U	SW6010C
	Chromium	0.143	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.287	5.00	12.5	ug/L	U	SW6010C
	Copper	0.615	4.00	10.0	ug/L	U	SW6010C
	Iron	-4.61	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 5L36205
Calibration: 5362001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L36205-CCB3	Lead	-0.112	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-13.1	1000	5000	ug/L	U	SW6010C
	Manganese	0.277	3.00	15.0	ug/L	U	SW6010C
	Nickel	0.416	3.00	10.0	ug/L	U	SW6010C
	Potassium	35.1	1000	5000	ug/L	U	SW6010C
	Selenium	-0.149	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.0394	1.00	10.0	ug/L	U	SW6010C
	Sodium	85.0	1000	5000	ug/L	U	SW6010C
	Thallium	0.0205	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.334	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.232	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 5L36409
Calibration: 5364001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L36409-ICB1	Sodium	-13.98	1000	5000	ug/L	U	SW6010C
5L36409-CCB1	Sodium	-33.6	1000	5000	ug/L	U	SW6010C
5L36409-CCB3	Sodium	-69.3	1000	5000	ug/L	U	SW6010C
5L36409-CCB4	Sodium	19.9	1000	5000	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6A00404
Calibration: 6004002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6A00404-ICB1	Aluminum	-3.775	50.0	200	ug/L	U	SW6010C
	Antimony	2.007	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-1.664	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.1757	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.09584	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.07416	1.00	5.00	ug/L	U	SW6010C
	Calcium	-3.250	1000	5000	ug/L	U	SW6010C
	Chromium	0.1649	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.01717	5.00	12.5	ug/L	U	SW6010C
	Copper	0.8121	4.00	10.0	ug/L	U	SW6010C
	Iron	1.461	30.0	100	ug/L	U	SW6010C
	Lead	0.2858	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-5.940	1000	5000	ug/L	U	SW6010C
	Manganese	0.05372	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.5125	3.00	10.0	ug/L	U	SW6010C
	Potassium	6.280	1000	5000	ug/L	U	SW6010C
	Selenium	-2.292	3.00	10.0	ug/L	U	SW6010C
	Silver	0.1762	1.00	10.0	ug/L	U	SW6010C
	Sodium	-71.50	1000	5000	ug/L	U	SW6010C
	Thallium	-0.1732	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.3567	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.003930	5.00	20.0	ug/L	U	SW6010C
6A00404-CCB1	Aluminum	-9.28	50.0	200	ug/L	U	SW6010C
	Antimony	3.61	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.549	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.240	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.141	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.0213	1.00	5.00	ug/L	U	SW6010C
	Calcium	-1.18	1000	5000	ug/L	U	SW6010C
	Chromium	0.437	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.000880	5.00	12.5	ug/L	U	SW6010C
	Copper	0.862	4.00	10.0	ug/L	U	SW6010C
	Iron	4.29	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6A00404
Calibration: 6004002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6A00404-CCB1	Lead	0.0759	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-5.77	1000	5000	ug/L	U	SW6010C
	Manganese	0.0910	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.673	3.00	10.0	ug/L	U	SW6010C
	Potassium	13.3	1000	5000	ug/L	U	SW6010C
	Selenium	-1.63	3.00	10.0	ug/L	U	SW6010C
	Silver	0.307	1.00	10.0	ug/L	U	SW6010C
	Sodium	-106	1000	5000	ug/L	U	SW6010C
	Thallium	0.174	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.475	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.0634	5.00	20.0	ug/L	U	SW6010C
6A00404-CCB2	Aluminum	-7.20	50.0	200	ug/L	U	SW6010C
	Antimony	1.80	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-2.62	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.140	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.102	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.0575	1.00	5.00	ug/L	U	SW6010C
	Calcium	-2.94	1000	5000	ug/L	U	SW6010C
	Chromium	0.263	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.0530	5.00	12.5	ug/L	U	SW6010C
	Copper	0.584	4.00	10.0	ug/L	U	SW6010C
	Iron	-2.22	30.0	100	ug/L	U	SW6010C
	Lead	0.360	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-8.12	1000	5000	ug/L	U	SW6010C
	Manganese	0.305	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.822	3.00	10.0	ug/L	U	SW6010C
	Potassium	15.3	1000	5000	ug/L	U	SW6010C
	Selenium	-2.51	3.00	10.0	ug/L	U	SW6010C
	Silver	0.402	1.00	10.0	ug/L	U	SW6010C
	Sodium	615	1000	5000	ug/L	U	SW6010C
	Thallium	0.158	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.366	5.00	12.5	ug/L	U	SW6010C
	Zinc	-0.246	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6A00404
Calibration: 6004002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6A00404-CCB7	Aluminum	-12.8	50.0	200	ug/L	U	SW6010C
	Antimony	4.31	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-2.61	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.0457	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.162	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.0806	1.00	5.00	ug/L	U	SW6010C
	Calcium	-4.09	1000	5000	ug/L	U	SW6010C
	Chromium	0.183	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.137	5.00	12.5	ug/L	U	SW6010C
	Copper	0.862	4.00	10.0	ug/L	U	SW6010C
	Iron	-2.54	30.0	100	ug/L	U	SW6010C
	Lead	0.141	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-7.14	1000	5000	ug/L	U	SW6010C
	Manganese	0.815	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.778	3.00	10.0	ug/L	U	SW6010C
	Potassium	-27.2	1000	5000	ug/L	U	SW6010C
	Selenium	-0.617	3.00	10.0	ug/L	U	SW6010C
	Silver	0.340	1.00	10.0	ug/L	U	SW6010C
	Sodium	-160	1000	5000	ug/L	U	SW6010C
	Thallium	0.114	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.00279	5.00	12.5	ug/L	U	SW6010C
	Zinc	-0.0332	5.00	20.0	ug/L	U	SW6010C
6A00404-CCB8	Aluminum	-10.6	50.0	200	ug/L	U	SW6010C
	Antimony	5.22	5.00	10.0	ug/L	J	SW6010C
	Arsenic	-2.46	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.199	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.145	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.00400	1.00	5.00	ug/L	U	SW6010C
	Calcium	-4.17	1000	5000	ug/L	U	SW6010C
	Chromium	0.194	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.109	5.00	12.5	ug/L	U	SW6010C
	Copper	0.862	4.00	10.0	ug/L	U	SW6010C
	Iron	-8.55	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6A00404
Calibration: 6004002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6A00404-CCB8	Lead	0.0978	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-15.1	1000	5000	ug/L	U	SW6010C
	Manganese	0.432	3.00	15.0	ug/L	U	SW6010C
	Nickel	-1.00	3.00	10.0	ug/L	U	SW6010C
	Potassium	-39.6	1000	5000	ug/L	U	SW6010C
	Selenium	-1.79	3.00	10.0	ug/L	U	SW6010C
	Silver	0.138	1.00	10.0	ug/L	U	SW6010C
	Sodium	-103	1000	5000	ug/L	U	SW6010C
	Thallium	0.237	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.0359	5.00	12.5	ug/L	U	SW6010C
	Zinc	-0.194	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6A00511
Calibration: 6005001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6A00511-ICB1	Antimony	-0.6374	5.00	10.0	ug/L	U	SW6010C
	Thallium	-0.1253	3.00	8.00	ug/L	U	SW6010C
6A00511-CCB1	Antimony	-0.925	5.00	10.0	ug/L	U	SW6010C
	Thallium	0.0398	3.00	8.00	ug/L	U	SW6010C
6A00511-CCB3	Antimony	-1.92	5.00	10.0	ug/L	U	SW6010C
	Thallium	0.329	3.00	8.00	ug/L	U	SW6010C
6A00511-CCB4	Antimony	0.0558	5.00	10.0	ug/L	U	SW6010C
	Thallium	0.660	3.00	8.00	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 5362001
Sequence: 5L36205

Lab Sample ID	Analyte	True	Found	%R	Units
5L36205-IFA1	Aluminum	500000	504,770.00	101	ug/L
	Antimony		-0.36		ug/L
	Arsenic		-3.64		ug/L
	Barium		1.27		ug/L
	Beryllium		0.02		ug/L
	Cadmium		-1.12		ug/L
	Calcium	500000	485,470.00	97.1	ug/L
	Chromium		-1.70		ug/L
	Cobalt		-1.78		ug/L
	Copper		-0.91		ug/L
	Iron	200000	194,160.00	97.1	ug/L
	Lead		-2.98		ug/L
	Magnesium	500000	476,660.00	95.3	ug/L
	Manganese		-2.92		ug/L
	Nickel		-0.23		ug/L
	Potassium		-158.76		ug/L
	Selenium		5.44		ug/L
	Silver		-0.09		ug/L
	Sodium		93.55		ug/L
	Thallium		-1.14		ug/L
	Vanadium		1.77		ug/L
	Zinc		-4.36		ug/L
5L36205-IFB1	Aluminum	500000	510,530.00	102	ug/L
	Antimony	600.0	654.63	109	ug/L
	Arsenic	100.0	100.98	101	ug/L
	Barium	500.0	545.31	109	ug/L
	Beryllium	500.0	485.31	97.1	ug/L
	Cadmium	1000	1,034.00	103	ug/L
	Calcium	500000	495,370.00	99.1	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 5362001
Sequence: 5L36205

Lab Sample ID	Analyte	True	Found	%R	Units
5L36205-IFB1	Chromium	500.0	470.80	94.2	ug/L
	Cobalt	500.0	479.28	95.9	ug/L
	Copper	500.0	495.41	99.1	ug/L
	Iron	200000	198,290.00	99.1	ug/L
	Lead	50.00	44.85	89.7	ug/L
	Magnesium	500000	479,210.00	95.8	ug/L
	Manganese	500.0	458.34	91.7	ug/L
	Nickel	1000	937.15	93.7	ug/L
	Potassium		-163.16		ug/L
	Selenium	50.00	58.23	116	ug/L
	Silver	200.0	199.81	99.9	ug/L
	Sodium		108.44		ug/L
	Thallium	100.0	94.48	94.5	ug/L
	Vanadium	500.0	500.60	100	ug/L
	Zinc	1000	990.43	99.0	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Instrument ID: ME-ICP

Calibration: 5364001

Sequence: 5L36409

Lab Sample ID	Analyte	True	Found	%R	Units
5L36409-IFA1	Sodium		49.72		ug/L
5L36409-IFB1	Sodium		47.04		ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6004002
Sequence: 6A00404

Lab Sample ID	Analyte	True	Found	%R	Units
6A00404-IFA1	Aluminum	500000	487,960.00	97.6	ug/L
	Antimony		2.54		ug/L
	Arsenic		-2.28		ug/L
	Barium		1.50		ug/L
	Beryllium		0.11		ug/L
	Cadmium		-0.99		ug/L
	Calcium	500000	432,530.00	86.5	ug/L
	Chromium		-1.51		ug/L
	Cobalt		-2.31		ug/L
	Copper		-1.21		ug/L
	Iron	200000	189,840.00	94.9	ug/L
	Lead		-1.34		ug/L
	Magnesium	500000	462,480.00	92.5	ug/L
	Manganese		-2.79		ug/L
	Nickel		-2.21		ug/L
	Potassium		-102.09		ug/L
	Selenium		2.55		ug/L
	Silver		-0.19		ug/L
	Sodium		77.16		ug/L
	Thallium		-1.81		ug/L
	Vanadium		1.45		ug/L
	Zinc		-4.77		ug/L
6A00404-IFB1	Aluminum	500000	481,270.00	96.3	ug/L
	Antimony	600.0	603.91	101	ug/L
	Arsenic	100.0	96.18	96.2	ug/L
	Barium	500.0	519.30	104	ug/L
	Beryllium	500.0	491.40	98.3	ug/L
	Cadmium	1000	1,003.40	100	ug/L
	Calcium	500000	436,710.00	87.3	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6004002
Sequence: 6A00404

Lab Sample ID	Analyte	True	Found	%R	Units
6A00404-IFB1	Chromium	500.0	468.03	93.6	ug/L
	Cobalt	500.0	473.63	94.7	ug/L
	Copper	500.0	486.00	97.2	ug/L
	Iron	200000	189,790.00	94.9	ug/L
	Lead	50.00	43.90	87.8	ug/L
	Magnesium	500000	468,520.00	93.7	ug/L
	Manganese	500.0	449.16	89.8	ug/L
	Nickel	1000	891.05	89.1	ug/L
	Potassium		-108.03		ug/L
	Selenium	50.00	53.35	107	ug/L
	Silver	200.0	197.60	98.8	ug/L
	Sodium		102.19		ug/L
	Thallium	100.0	87.73	87.7	ug/L
	Vanadium	500.0	481.59	96.3	ug/L
	Zinc	1000	958.53	95.9	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Instrument ID: ME-ICP

Calibration: 6005001

Sequence: 6A00511

Lab Sample ID	Analyte	True	Found	%R	Units
6A00511-IFA1	Antimony		-1.33		ug/L
	Thallium		-2.64		ug/L
6A00511-IFB1	Antimony	600.0	608.47	101	ug/L
	Thallium	100.0	96.22	96.2	ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW7470A

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L16010

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Mercury	2.000	ND	1.761	88.1		80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Mercury	2.000	1.870	93.5	5.98		20	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L22012

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Potassium	1250	14370	16320	155	4x	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L22012

% Solids:

Source Sample Name: **1512147-03RE1**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Aluminum	500.0	399.8	890.2	98.1		80 - 120
Antimony	125.0	14.29	123.6	87.4		80 - 120
Arsenic	125.0	ND	109.9	87.9		80 - 120
Barium	500.0	36.26	181.7	29.1	N	80 - 120
Beryllium	12.50	ND	10.52	84.1		80 - 120
Cadmium	62.50	ND	57.62	92.2		80 - 120
Calcium	1250	489700	492800	246	4x	80 - 120
Chromium	50.00	ND	43.32	86.6		80 - 120
Cobalt	125.0	ND	121.7	97.4		80 - 120
Copper	62.50	ND	56.66	90.6		80 - 120
Iron	250.0	ND	223.3	89.3		80 - 120
Lead	125.0	ND	106.0	84.8		80 - 120
Magnesium	1250	285600	292600	560	4x	80 - 120
Manganese	125.0	562.3	673.3	88.8		80 - 120
Nickel	125.0	ND	109.0	87.2		80 - 120
Selenium	125.0	ND	116.3	93.1		80 - 120
Silver	62.50	ND	53.68	85.9		80 - 120
Sodium	1250	1160000	1160000	2.00	4x	80 - 120
Thallium	125.0	ND	97.69	78.2	N	80 - 120
Vanadium	125.0	ND	114.0	91.2		80 - 120
Zinc	125.0	ND	123.4	98.7		80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L22012

% Solids:

Source Sample Name: **1512147-03RE1**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Aluminum	500.0	828.3	85.7	7.21		20	80 - 120
Antimony	125.0	117.6	82.6	4.97		20	80 - 120
Arsenic	125.0	99.80	79.8	9.66	N	20	80 - 120
Barium	500.0	185.0	29.7	1.80	N	20	80 - 120
Beryllium	12.50	10.10	80.8	4.00		20	80 - 120
Cadmium	62.50	54.66	87.5	5.26		20	80 - 120
Calcium	1250	482700	-562	2.07	4x	20	80 - 120
Chromium	50.00	40.95	81.9	5.63		20	80 - 120
Cobalt	125.0	115.4	92.3	5.36		20	80 - 120
Copper	62.50	55.32	88.5	2.39		20	80 - 120
Iron	250.0	209.8	83.9	6.20		20	80 - 120
Lead	125.0	99.00	79.2	6.87	N	20	80 - 120
Magnesium	1250	284800	-66.0	2.71	4x	20	80 - 120
Manganese	125.0	647.7	68.3	3.88	4x	20	80 - 120
Nickel	125.0	103.3	82.6	5.38		20	80 - 120
Selenium	125.0	112.8	90.2	3.12		20	80 - 120
Silver	62.50	50.20	80.3	6.71		20	80 - 120
Sodium	1250	1132000	-2230	2.43	4x	20	80 - 120
Thallium	125.0	91.14	72.9	6.93	N	20	80 - 120
Vanadium	125.0	111.3	89.0	2.38		20	80 - 120
Zinc	125.0	117.1	93.7	5.23		20	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L16010	Laboratory ID:	5L16010-BS1
Preparation:	MET_HG_W_E	Initial/Final:	30 mL / 30 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Mercury	2.000	2.040	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L22012	Laboratory ID:	5L22012-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Aluminum	40.00	38.04	95.1	80 - 120
Antimony	5.000	4.888	97.8	80 - 120
Arsenic	5.000	4.848	97.0	80 - 120
Barium	40.00	36.61	91.5	80 - 120
Beryllium	1.000	0.8780	87.8	80 - 120
Cadmium	2.500	2.508	100	80 - 120
Calcium	600.0	597.2	99.5	80 - 120
Chromium	4.000	3.738	93.4	80 - 120
Cobalt	10.00	9.389	93.9	80 - 120
Copper	5.000	4.780	95.6	80 - 120
Iron	20.00	20.72	104	80 - 120
Lead	5.000	4.742	94.8	80 - 120
Magnesium	600.0	597.4	99.6	80 - 120
Manganese	10.00	9.713	97.1	80 - 120
Nickel	10.00	9.226	92.3	80 - 120
Potassium	600.0	592.2	98.7	80 - 120
Selenium	5.000	4.549	91.0	80 - 120
Silver	5.000	4.576	91.5	80 - 120
Sodium	600.0	575.8	96.0	80 - 120
Thallium	5.000	4.751	95.0	80 - 120
Vanadium	10.00	9.168	91.7	80 - 120
Zinc	10.00	9.372	93.7	80 - 120

SERIAL DILUTION

SW6010C

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sequence: 6A00404
Preparation: MET_3005A_LOW

SDG: 1512147
Project: Holloman AFB
Laboratory ID: 5L22012-DUP1
Lab Source ID: 1512147-03
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Potassium	57494	52015	-9.53		SW6010C	10.00

SERIAL DILUTION

SW6010C

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sequence: 6A00404
Preparation: MET_3005A_LOW

SDG: 1512147
Project: Holloman AFB
Laboratory ID: 5L22012-DUP2
Lab Source ID: 1512147-03RE1
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Aluminum	159.93	ND			SW6010C	10.00
Arsenic	ND	ND			SW6010C	10.00
Barium	14.506	ND			SW6010C	10.00
Beryllium	ND	ND			SW6010C	10.00
Cadmium	ND	ND			SW6010C	10.00
Calcium	195890	100460	-48.7		SW6010C	10.00
Chromium	ND	ND			SW6010C	10.00
Cobalt	ND	ND			SW6010C	10.00
Copper	ND	ND			SW6010C	10.00
Iron	ND	ND			SW6010C	10.00
Lead	ND	ND			SW6010C	10.00
Magnesium	114230	60020	-47.5		SW6010C	10.00
Manganese	224.92	116.63	-48.1		SW6010C	10.00
Nickel	ND	ND			SW6010C	10.00
Selenium	ND	ND			SW6010C	10.00
Silver	ND	ND			SW6010C	10.00
Sodium	464020	282870	-39		SW6010C	10.00
Vanadium	ND	ND			SW6010C	10.00
Zinc	ND	ND			SW6010C	10.00

SERIAL DILUTION

SW6010C

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sequence: 6A00511
Preparation: MET_3005A_LOW

SDG: 1512147
Project: Holloman AFB
Laboratory ID: 5L22012-DUP3
Lab Source ID: 1512147-03RE2
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Antimony	ND	ND			SW6010C	10.00
Thallium	ND	ND			SW6010C	10.00

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1512147

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Aluminum	396.152	0.000000	0.997239	0.000043	0.000000	0.000000
Antimony	206.833	0.000000	0.000000	0.000015	0.000000	0.000000
Arsenic	189.042	-0.000016	0.000000	-0.00007	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	0.000000	0.003803	0.000019	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.005608	0.000000
Cobalt	228.616	0.000000	0.000000	0.000041	0.000000	0.000000
Copper	324.754	0.000000	0.000000	-0.000044	0.001001	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.353	-0.000194	0.000000	0.000035	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000025	0.000000	0.000000
Nickel	231.604	0.000000	0.000000	0.000024	0.002042	0.000000
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.00002	-0.003538	0.000000	0.000000	0.000000
Silver	328.068	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000000	0.000000	0.000019	0.000000	0.000000
Vanadium	292.402	0.000000	0.000000	0.000000	0.000000	0.000000
Zinc	206.200	0.000014	0.000827	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1512147

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Aluminum	396.152	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	-0.000021	0.000000	0.000000	0.000000	0.000000
Arsenic	189.042	0.000000	0.000000	0.000000	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	-0.000125	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.000000	0.000043
Cobalt	228.616	0.000000	0.000000	0.000000	0.000000	0.000000
Copper	324.754	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.353	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	0.000000	0.000000	0.000000	-0.000039	0.000000
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000000	0.000000	0.000000	0.000000	0.000000
Silver	328.068	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000000	0.000000	0.000000	0.000000	0.000000
Vanadium	292.402	0.000000	0.000000	0.000000	0.000000	0.000000
Zinc	206.200	0.000000	0.000000	0.000000	0.001494	0.000729

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1512147

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Aluminum	396.152	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	0.000000	0.023282	0.000000	0.000000	0.000000
Arsenic	189.042	0.000000	0.000195	0.000000	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	0.000000	-0.00009	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.000000	0.000412
Cobalt	228.616	0.000000	-0.000032	0.000000	0.000000	0.000000
Copper	324.754	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	-0.00372	0.000000	0.000000	-0.000794
Lead	220.353	0.000000	0.000000	0.000535	0.000000	0.000116
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	-0.000486	-0.000079	0.000000	0.000000	0.000000
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000000	0.000000	0.000000	0.000000	0.00061
Silver	328.068	0.000000	0.000000	0.000000	0.000000	0.000319
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.003819	0.000203	0.000000	0.000000	0.001269
Vanadium	292.402	0.000000	-0.009679	0.000000	0.000000	-0.000386
Zinc	206.200	0.000000	0.000078	0.0003	0.000000	0.000688

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1512147

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Aluminum	396.152	0.047589	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	-0.001234	0.000000	0.000000	0.000000	0.000000
Arsenic	189.042	0.003155	0.000000	0.000000	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	-0.000025	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	-0.000105	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.000000	0.000000
Cobalt	228.616	-0.001642	0.000000	0.000049	0.000000	0.000000
Copper	324.754	0.000505	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	-0.000713	0.000000	0.000000
Lead	220.353	-0.001390	0.000000	0.000151	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	-0.000735	0.000000	0.000000	0.000017	-0.00003
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000166	0.000000	-0.000022	0.000000	0.000000
Silver	328.068	-0.000046	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000230	0.000000	0.000000	0.000000	0.000000
Vanadium	292.402	-0.000106	0.000000	0.000000	0.000000	0.000000
Zinc	206.200	0.000173	0.000000	0.000366	0.000000	0.000004

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1512147

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Aluminum	396.152	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	0.000000	0.000000	0.000252	0.000000	0.000048
Arsenic	189.042	0.000000	0.000000	-0.00007	0.000000	0.000084
Barium	233.527	0.000000	0.000000	0.000000	0.000000	-0.0002594
Beryllium	313.042	0.000000	0.000000	-0.000956	0.000000	-0.000417
Cadmium	214.438	0.000000	0.000000	0.000000	0.000000	0.00003
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000123	0.000000	-0.000018
Cobalt	228.616	0.000000	0.000000	0.002252	0.000000	0.000000
Copper	324.754	0.000000	0.000000	-0.001215	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.353	0.000000	0.000000	0.000092	0.000000	-0.00007
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	0.000000	0.000000	0.000078	0.000281	0.000104
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000000	0.000000	0.0000022	0.000000	0.00018
Silver	328.068	0.000000	0.000000	0.000000	0.000000	-0.00427
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000000	0.000000	-0.001356	0.000000	0.000464
Vanadium	292.402	0.000000	0.000000	0.000000	0.000682	0.000000
Zinc	206.200	0.000000	0.000000	0.000000	0.000000	0.000226

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1512147

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Aluminum	396.152	0.000000				
Antimony	206.833	0.000000				
Arsenic	189.042	-0.000011				
Barium	233.527	0.000000				
Beryllium	313.042	0.000000				
Cadmium	214.438	0.000000				
Calcium	317.933	0.000000				
Chromium	267.716	0.000000				
Cobalt	228.616	0.000000				
Copper	324.754	0.000000				
Iron	261.187	0.000000				
Lead	220.353	0.000000				
Magnesium	279.079	0.000000				
Manganese	257.610	0.000000				
Nickel	231.604	0.000063				
Potassium	766.490	0.000000				
Selenium	196.090	0.000000				
Silver	328.068	0.000000				
Sodium	589.592	0.000000				
Thallium	190.856	0.000000				
Vanadium	292.402	0.000000				
Zinc	206.200	0.000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: CB&I SDG: 1512147

Project: Holloman AFB

ICP Instrument ID: ME-ICP Date: 03/26/2015

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Manganese	15	20000	P

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: CB&I SDG: 1512147

Project: Holloman AFB

ICP Instrument ID: ME-ICP Date: 07/10/2015

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Aluminum	15	500000	P
Antimony	15	2000	P
Arsenic	15	10000	P
Barium	15	10000	P
Beryllium	15	50000	P
Cadmium	15	500000	P
Calcium	15	10000	P
Chromium	15	10000	P
Cobalt	15	10000	P
Copper	15	25000	P
Iron	15	500000	P
Lead	15	10000	P
Magnesium	15	500000	P
Nickel	15	100000	P
Potassium	15	25000	P
Selenium	15	500000	P
Silver	15	25000	P
Sodium	15	50000	P
Thallium	15	25000	P
Vanadium	15	20000	P
Zinc	15	20000	P

PREPARATION BATCH SUMMARY

SW7470A

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L16010 Batch Matrix: Water Preparation: MET_HG_W_E

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02	12/16/15 13:15	30.00	30.00
OTC537-GW-5371-151214	1512147-03	12/16/15 13:15	30.00	30.00
OTC537-GW-5371-FD-151214	1512147-04	12/16/15 13:15	30.00	30.00
Blank	5L16010-BLK1	12/16/15 13:15	30.00	30.00
LCS	5L16010-BS1	12/16/15 13:15	30.00	30.00
OTC537-GW-5371-151214	5L16010-MS2	12/16/15 13:15	30.00	30.00
OTC537-GW-5371-151214	5L16010-MSD2	12/16/15 13:15	30.00	30.00

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L22012 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02	12/22/15 09:20	100.00	25.00
OTC538-GW-5382-151214	1512147-02RE1	12/22/15 09:20	100.00	25.00
OTC538-GW-5382-151214	1512147-02RE2	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-151214	1512147-03	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-151214	1512147-03RE1	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-151214	1512147-03RE2	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-FD-151214	1512147-04	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-FD-151214	1512147-04RE1	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-FD-151214	1512147-04RE2	12/22/15 09:20	100.00	25.00
Blank	5L22012-BLK1	12/22/15 09:20	100.00	25.00
LCS	5L22012-BS1	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-151214	5L22012-DUP1	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-151214	5L22012-DUP2	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-151214	5L22012-DUP3	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-151214	5L22012-MS1	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-151214	5L22012-MS2	12/22/15 09:20	100.00	25.00
OTC537-GW-5371-151214	5L22012-MSD2	12/22/15 09:20	100.00	25.00

ANALYSIS SEQUENCE SUMMARY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L35510	Instrument:	ME-FIMS
Calibration:	5355001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5L35510-CAL1	122115W-001	12/21/15 09:17
Cal Standard	5L35510-CAL2	122115W-002	12/21/15 09:18
Cal Standard	5L35510-CAL3	122115W-003	12/21/15 09:19
Cal Standard	5L35510-CAL4	122115W-004	12/21/15 09:20
Cal Standard	5L35510-CAL5	122115W-005	12/21/15 09:21
Cal Standard	5L35510-CAL6	122115W-006	12/21/15 09:23
Cal Standard	5L35510-CAL7	122115W-007	12/21/15 09:24
Cal Standard	5L35510-CAL8	122115W-008	12/21/15 09:25
Initial Cal Check	5L35510-ICV1	122115W-009	12/21/15 09:28
Initial Cal Blank	5L35510-ICB1	122115W-010	12/21/15 09:29
Blank	5L16010-BLK1	122115W-011	12/21/15 09:30
LCS	5L16010-BS1	122115W-012	12/21/15 09:31
OTC538-GW-5382-151214	1512147-02	122115W-019	12/21/15 09:40
OTC537-GW-5371-151214	1512147-03	122115W-020	12/21/15 09:41
OTC537-GW-5371-151214	5L16010-MS2	122115W-021	12/21/15 09:42
OTC537-GW-5371-151214	5L16010-MSD2	122115W-022	12/21/15 09:43
OTC537-GW-5371-FD-151214	1512147-04	122115W-023	12/21/15 09:44
Calibration Check	5L35510-CCV1	122115W-027	12/21/15 09:49
Calibration Blank	5L35510-CCB1	122115W-028	12/21/15 09:51

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36205	Instrument:	ME-ICP
Calibration:	5362001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5L36205-CAL1	12-24-15A-001	12/24/15 10:45
Cal Standard	5L36205-CAL2	12-24-15A-002	12/24/15 10:50
Cal Standard	5L36205-CAL3	12-24-15A-003	12/24/15 10:55
Cal Standard	5L36205-CAL4	12-24-15A-004	12/24/15 11:00
Cal Standard	5L36205-CAL5	12-24-15A-005	12/24/15 11:10
Cal Standard	5L36205-CAL6	12-24-15A-006	12/24/15 11:17
Cal Standard	5L36205-CAL7	12-24-15A-010	12/24/15 11:44
Cal Standard	5L36205-CAL8	12-24-15A-011	12/24/15 11:49
Initial Cal Check	5L36205-ICV1	12-24-15B-001	12/24/15 12:33
Initial Cal Blank	5L36205-ICB1	12-24-15B-002	12/24/15 12:38
Instrument RL Check	5L36205-CRL1	12-24-15B-003	12/24/15 12:43
Interference Check A	5L36205-IFA1	12-24-15B-005	12/24/15 13:09
Interference Check B	5L36205-IFB1	12-24-15B-006	12/24/15 13:14
Calibration Check	5L36205-CCV1	12-24-15B-009	12/24/15 13:30
Calibration Blank	5L36205-CCB1	12-24-15B-010	12/24/15 13:34
Calibration Check	5L36205-CCV2	12-24-15B-012	12/24/15 13:43
Calibration Blank	5L36205-CCB2	12-24-15B-013	12/24/15 13:47
Blank	5L22012-BLK1	12-24-15B-014	12/24/15 13:52
LCS	5L22012-BS1	12-24-15B-015	12/24/15 13:57
Calibration Check	5L36205-CCV3	12-24-15B-026	12/24/15 14:47
Calibration Blank	5L36205-CCB3	12-24-15B-027	12/24/15 14:51

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36409	Instrument:	ME-ICP
Calibration:	5364001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5L36409-CAL1	12-30-15A-001	12/30/15 10:06
Cal Standard	5L36409-CAL2	12-30-15A-002	12/30/15 10:10
Cal Standard	5L36409-CAL3	12-30-15A-003	12/30/15 10:13
Cal Standard	5L36409-CAL4	12-30-15A-004	12/30/15 10:22
Cal Standard	5L36409-CAL5	12-30-15A-005	12/30/15 10:26
Cal Standard	5L36409-CAL6	12-30-15A-006	12/30/15 10:30
Cal Standard	5L36409-CAL7	12-30-15A-007	12/30/15 10:35
Cal Standard	5L36409-CAL8	12-30-15A-008	12/30/15 10:39
Initial Cal Check	5L36409-ICV1	12-30-15B-001	12/30/15 11:09
Initial Cal Blank	5L36409-ICB1	12-30-15B-002	12/30/15 11:15
Instrument RL Check	5L36409-CRL1	12-30-15B-004	12/30/15 11:24
Interference Check A	5L36409-IFA1	12-30-15B-008	12/30/15 11:42
Interference Check B	5L36409-IFB1	12-30-15B-009	12/30/15 11:47
Calibration Check	5L36409-CCV1	12-30-15B-013	12/30/15 12:15
Calibration Blank	5L36409-CCB1	12-30-15B-014	12/30/15 12:20
Calibration Check	5L36409-CCV3	12-30-15C-017	12/30/15 14:22
Calibration Blank	5L36409-CCB3	12-30-15C-018	12/30/15 14:26
OTC538-GW-5382-151214	1512147-02RE2	12-30-15C-031	12/30/15 15:25
Calibration Check	5L36409-CCV4	12-30-15C-032	12/30/15 15:29
Calibration Blank	5L36409-CCB4	12-30-15C-033	12/30/15 15:34

ANALYSIS SEQUENCE SUMMARY
SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	6A00404	Instrument:	ME-ICP
Calibration:	6004002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6A00404-CAL1	12-29-15A-001	12/29/15 09:19
Cal Standard	6A00404-CAL2	12-29-15A-002	12/29/15 09:24
Cal Standard	6A00404-CAL3	12-29-15A-003	12/29/15 09:26
Cal Standard	6A00404-CAL4	12-29-15A-004	12/29/15 09:30
Cal Standard	6A00404-CAL5	12-29-15A-005	12/29/15 09:34
Cal Standard	6A00404-CAL6	12-29-15A-006	12/29/15 09:38
Cal Standard	6A00404-CAL7	12-29-15A-007	12/29/15 09:43
Cal Standard	6A00404-CAL8	12-29-15A-012	12/29/15 10:21
Initial Cal Check	6A00404-ICV1	12-29-15B-001	12/29/15 11:04
Initial Cal Blank	6A00404-ICB1	12-29-15B-002	12/29/15 11:09
Instrument RL Check	6A00404-CRL1	12-29-15B-003	12/29/15 11:14
Interference Check A	6A00404-IFA1	12-29-15B-004	12/29/15 11:19
Interference Check B	6A00404-IFB1	12-29-15B-005	12/29/15 11:24
Calibration Check	6A00404-CCV1	12-29-15B-007	12/29/15 11:34
Calibration Blank	6A00404-CCB1	12-29-15B-008	12/29/15 11:38
OTC538-GW-5382-151214	1512147-02	12-29-15C-008	12/29/15 12:17
OTC537-GW-5371-151214	1512147-03	12-29-15C-009	12/29/15 12:23
OTC537-GW-5371-151214	5L22012-MS1	12-29-15C-010	12/29/15 12:28
OTC537-GW-5371-151214	5L22012-DUP1	12-29-15C-011	12/29/15 12:33
OTC537-GW-5371-FD-151214	1512147-04	12-29-15C-012	12/29/15 12:39
Calibration Check	6A00404-CCV2	12-29-15C-013	12/29/15 12:51
Calibration Blank	6A00404-CCB2	12-29-15C-014	12/29/15 12:56
Calibration Check	6A00404-CCV7	12-29-15D-031	12/29/15 19:07
Calibration Blank	6A00404-CCB7	12-29-15D-032	12/29/15 19:11
OTC538-GW-5382-151214	1512147-02RE1	12-29-15D-037	12/29/15 19:33
OTC537-GW-5371-151214	1512147-03RE1	12-29-15D-038	12/29/15 19:38
OTC537-GW-5371-151214	5L22012-MS2	12-29-15D-039	12/29/15 19:43
OTC537-GW-5371-151214	5L22012-MSD2	12-29-15D-040	12/29/15 19:47
OTC537-GW-5371-151214	5L22012-DUP2	12-29-15D-041	12/29/15 19:52
OTC537-GW-5371-FD-151214	1512147-04RE1	12-29-15D-042	12/29/15 19:57
Calibration Check	6A00404-CCV8	12-29-15D-047	12/29/15 20:20
Calibration Blank	6A00404-CCB8	12-29-15D-048	12/29/15 20:24

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	6A00511	Instrument:	ME-ICP
Calibration:	6005001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6A00511-CAL1	01-05-16A-001	01/05/16 09:23
Cal Standard	6A00511-CAL2	01-05-16A-002	01/05/16 09:27
Cal Standard	6A00511-CAL3	01-05-16A-003	01/05/16 09:31
Cal Standard	6A00511-CAL4	01-05-16A-004	01/05/16 09:34
Cal Standard	6A00511-CAL5	01-05-16A-005	01/05/16 09:38
Cal Standard	6A00511-CAL6	01-05-16A-006	01/05/16 09:42
Cal Standard	6A00511-CAL7	01-05-16A-007	01/05/16 09:47
Cal Standard	6A00511-CAL8	01-05-16A-008	01/05/16 09:51
Initial Cal Check	6A00511-ICV1	01-05-16B-001	01/05/16 10:50
Initial Cal Blank	6A00511-ICB1	01-05-16B-005	01/05/16 11:08
Instrument RL Check	6A00511-CRL1	01-05-16B-006	01/05/16 11:11
Interference Check A	6A00511-IFA1	01-05-16B-017	01/05/16 12:00
Interference Check B	6A00511-IFB1	01-05-16B-018	01/05/16 12:04
Calibration Check	6A00511-CCV1	01-05-16C-001	01/05/16 12:14
Calibration Blank	6A00511-CCB1	01-05-16C-002	01/05/16 12:18
Calibration Check	6A00511-CCV3	01-05-16C-027	01/05/16 14:09
Calibration Blank	6A00511-CCB3	01-05-16C-028	01/05/16 14:13
OTC537-GW-5371-151214	1512147-03RE2	01-05-16C-039	01/05/16 15:03
OTC537-GW-5371-151214	5L22012-DUP3	01-05-16C-040	01/05/16 15:07
OTC537-GW-5371-FD-151214	1512147-04RE2	01-05-16C-041	01/05/16 15:12
Calibration Check	6A00511-CCV4	01-05-16C-042	01/05/16 15:18
Calibration Blank	6A00511-CCB4	01-05-16C-043	01/05/16 15:23

INITIAL CALIBRATION DATA

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5355001	Instrument:	ME-FIMS	
Matrix:	Water	Calibration Dates:	12/21/15 9:17	12/21/15 9:25

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Mercury	0	0	0.2	0.014415	0.5	0.00911	1	0.010145	2	0.009712	4	0.0094495

INITIAL CALIBRATION DATA (Continued)

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5355001	Instrument:	ME-FIMS	
Matrix:	Water	Calibration Dates:	12/21/15 9:17	12/21/15 9:25

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Mercury	6	9.134834E-03	10	0.0091297								

INITIAL CALIBRATION DATA (Continued)

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5355001	Instrument:	ME-FIMS	
Matrix:	Water	Calibration Dates:	12/21/15 9:17	12/21/15 9:25

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Mercury	8.887004E-03	45.06722	0	0	0.9997682		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5362001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/24/15 10:45 12/24/15 11:49

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	3.1414E-05	10000	3.125E-05			500000	0.0000298		
Antimony	0	0	100	0.0007718	1000	7.8755E-04					10000	7.5769E-04
Arsenic	0	0	100	0.0002594	1000	2.8765E-04					10000	2.7477E-04
Barium	0	0	50	0.0151012	1000	0.013855	5000	0.0131722				
Beryllium	0	0	100	0.0018414	1000	0.0018789					10000	0.0018182
Boron	0	0	50	0.0000152	1000	1.476E-05					5000	1.4342E-05
Cadmium	0	0	100	0.033263	1000	0.033298					10000	0.03114
Calcium	0	0	1100	5.867273E-05	50000	5.5908E-05					10000	
Chromium	0	0	100	0.0000575	1000	5.726E-05					10000	5.6591E-05
Cobalt	0	0	100	8.127401E-03	1000	0.0078185					10000	0.0080244
Copper	0	0	100	0.0000679	1000	6.265E-05					10000	6.2211E-05
Iron	0	0	5100	1.022549E-05	10000	9.944E-06			500000	9.4288E-06	10000	
Lead	0	0	100	0.0017473	1000	0.0017443					10000	0.0018099
Magnesium	0	0	5100		50000	2.38E-06			500000	2.3608E-06	10000	
Manganese	0	0	100	0.0002712	1000	2.5845E-04	10000	2.5183E-04			10000	
Molybdenum	0	0	100	0.004511	1000	0.0047393					10000	0.0045361
Nickel	0	0	100	0.0046975	1000	0.0041544					10000	0.004159
Potassium	0	0	1000	1.334E-05	10000	1.427E-05						
Selenium	0	0	100	0.0004519	1000	4.3835E-04					10000	4.1049E-04
Silver	0	0	20	0.0000635	500	6.394E-05	2000	6.605E-05				
Sodium	0	0	1000		50000	6.5992E-05						
Thallium	0	0	100	0.0004974	1000	5.0907E-04					10000	5.1343E-04
Tin	0	0	50	0.0014046	1000	0.0014991					5000	1.42166E-03
Titanium	0	0	100	0.000178	1000	1.7921E-04					10000	1.7547E-04
Vanadium	0	0	100	0.0000453	1000	4.773E-05					10000	4.6384E-05
Zinc	0	0	100	0.01422	1000	0.012883					10000	0.012272
Strontium	0	0	100	0.001936	1000	0.001916					10000	0.001914
Lithium (outside certification)	0	0	100	0.0000061	1000	7.12E-06					10000	7.143999E-06

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5362001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/24/15 10:45 12/24/15 11:49

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	5.025E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	1.9761E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.3501E-05										
Selenium												
Silver												
Sodium	100000	6.1926E-05	500000	6.8972E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5362001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/24/15 10:45 12/24/15 11:49

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.3116E-05	66.74046	7.11438	191.9412	0.9999995		0.998	
Antimony	5.7926E-04	66.69991	15.8947	186.1946	0.9999856		0.998	
Arsenic	2.05455E-04	66.90318	8.436755	176.2209	0.9999721		0.998	
Barium	0.0105321	67.09652	1.059603	131.6859	0.9998998		0.998	
Beryllium	1.384625E-03	66.69113	12.9975	195.9648	0.9999892		0.998	
Boron	1.10755E-05	66.74166	5.58465	160.8346	0.9999686		0.998	
Cadmium	2.442525E-02	66.79457	3.148957	166.6062	0.9999557		0.998	
Calcium	4.120768E-05	67.20724	3.825552	182.3103	0.9998764		0.998	
Chromium	4.283775E-05	66.67271	2.579847	122.441	0.9999985		0.998	
Cobalt	5.992575E-03	66.7011	2.80726	150.7024	0.9999927		0.998	
Copper	4.819025E-05	66.88205	0.9686925	56.42395	1		0.998	
Iron	7.399572E-06	66.81556	39.00611	195.8323	0.9999991		0.998	
Lead	1.325375E-03	66.7057	8.482845	180.6643	0.9999883		0.998	
Magnesium	1.679225E-06	67.58097	46.49618	199.5201	0.9987634		0.998	
Manganese	1.9537E-04	66.79352	3.707583	147.3154	0.9999944		0.998	
Molybdenum	0.0034466	66.73261	21.98302	194.721	0.9999795		0.998	
Nickel	3.252725E-03	67.12582	0.7932525	45.97454	0.9999985		0.998	
Potassium	1.027775E-05	66.78349	5.62616	139.4872	0.9999614		0.998	
Selenium	3.25185E-04	66.8771	3.467837	156.9581	0.9999642		0.998	
Silver	4.83725E-05	66.70636	19.42705	191.5076	0.9999319		0.998	
Sodium	4.92225E-05	66.92433	1.279445	158.6807	0.9995885		0.998	
Thallium	3.79975E-04	66.69045	7.187333	171.6048	0.9999997		0.998	
Tin	1.08134E-03	66.77503	4.24154	172.1725	0.9998672		0.998	
Titanium	1.3317E-04	66.67693	8.712233	193.6553	0.9999963		0.998	
Vanadium	3.48535E-05	66.72764	4.714713	154.587	0.9999903		0.998	
Zinc	9.84375E-03	67.1769	0.78121	93.18599	0.9999829		0.998	
Strontium	0.0014415	66.67023	6.12415	191.3347	1		0.998	
Lithium (outside certification)	5.091E-06	67.34832	3.598163	87.84437	0.9999986		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5364001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/30/15 10:06 12/30/15 10:39

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.6876E-05	10000	2.7031E-05			500000	2.6538E-05		
Antimony	0	0	100	0.0008102	1000	8.1534E-04					10000	7.9305E-04
Arsenic	0	0	100	0.0002443	1000	2.6707E-04					10000	2.6325E-04
Barium	0	0	50	0.0140178	1000	0.012815	5000	0.012233				
Beryllium	0	0	100	0.0019295	1000	0.0019702					10000	0.0018941
Boron	0	0	50	0.0000154	1000	1.508E-05					5000	1.4506E-05
Cadmium	0	0	100	0.032865	1000	0.032488					10000	0.031143
Calcium	0	0	1100	9.485455E-05	50000	9.1968E-05					10000	
Chromium	0	0	100	0.0000582	1000	5.734E-05					10000	5.7277E-05
Cobalt	0	0	100	0.008139	1000	0.0078223					10000	0.008145
Copper	0	0	100	0.0000643	1000	6.013E-05					10000	5.8049E-05
Iron	0	0	5100	1.526471E-05	10000	1.4862E-05			500000	1.3767E-05	10000	
Lead	0	0	100	0.0017751	1000	0.0017409					10000	0.0018252
Magnesium	0	0	5100		50000	3.0848E-06			500000	3.0286E-06	10000	
Manganese	0	0	100	0.0002685	1000	2.5884E-04	10000	2.5056E-04			10000	
Molybdenum	0	0	100	0.0045527	1000	0.0047575					10000	0.0046318
Nickel	0	0	100	0.0046099	1000	0.0041363					10000	0.004204
Potassium	0	0	1000	7.87E-06	10000	1.2163E-05						
Selenium	0	0	100	0.0004646	1000	4.4432E-04					10000	0.0004206
Silver	0	0	20	0.0000655	500	6.496E-05	2000	6.7075E-05				
Sodium	0	0	1000		50000	5.241E-05						
Thallium	0	0	100	0.0004354	1000	4.5043E-04					10000	4.6685E-04
Tin	0	0	50	0.001401	1000	0.0014904					5000	1.42698E-03
Titanium	0	0	100	0.0001763	1000	1.7702E-04					10000	1.7371E-04
Vanadium	0	0	100	0.0000577	1000	5.663E-05					10000	5.5362E-05
Zinc	0	0	100	0.014298	1000	0.012702					10000	0.012448
Strontium	0	0	100	0.001629	1000	0.00161					10000	0.001621
Lithium (outside certification)	0	0	100	0.0000103	1000	1.052E-05					10000	1.0574E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5364001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/30/15 10:06 12/30/15 10:39

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.760199E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.3136E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.2203E-05										
Selenium												
Silver												
Sodium	100000	4.9907E-05	500000	5.2204E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5364001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/30/15 10:06 12/30/15 10:39

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.011125E-05	66.67452	3.485212	156.6923	0.9999999		0.998	
Antimony	6.046475E-04	66.68529	7.265287	192.6685	0.9999933		0.998	
Arsenic	1.93655E-04	66.86462	4.243475	176.9821	0.9999954		0.998	
Barium	9.76645E-03	67.09956	0.370665	103.6953	0.9999173		0.998	
Beryllium	1.44845E-03	66.70122	7.419295	185.0135	0.9999845		0.998	
Boron	1.12465E-05	66.74773	8.458415	181.5221	0.9999394		0.998	
Cadmium	0.024124	66.73703	2.044157	173.7361	0.9999832		0.998	
Calcium	7.110614E-05	66.74511	1.460415	125.5529	0.9999669		0.998	
Chromium	4.320425E-05	66.67379	4.717798	179.3966	0.9999999		0.998	
Cobalt	6.026575E-03	66.71356	1.392805	171.6853	0.9999837		0.998	
Copper	4.561975E-05	66.90966	1.481333	130.3756	0.9999924		0.998	
Iron	1.097343E-05	66.91561	9.688717	187.1625	0.9999981		0.998	
Lead	0.0013353	66.71706	20.30731	197.8834	0.99998		0.998	
Magnesium	2.35675E-06	66.8715	47.63628	199.2932	0.9996163		0.998	
Manganese	1.94475E-04	66.77316	2.230312	138.158	0.9999908		0.998	
Molybdenum	0.0034855	66.71055	184.7215	199.803	0.9999921		0.998	
Nickel	3.23755E-03	66.97889	0.55268	126.4031	0.9999938		0.998	
Potassium	8.059E-06	71.28088	2.33021	101.4131	0.999991		0.998	
Selenium	3.3238E-04	66.8858	6.353515	175.2295	0.9999763		0.998	
Silver	4.938375E-05	66.69142	13.30736	184.5938	0.9999317		0.998	
Sodium	3.863025E-05	66.73132	1.483228	122.9376	0.999906		0.998	
Thallium	3.3817E-04	66.77476	3.777568	163.7554	0.9999917		0.998	
Tin	1.079595E-03	66.75734	3.212403	176.7054	0.9999095		0.998	
Titanium	1.317575E-04	66.6754	2.554937	166.2352	0.9999972		0.998	
Vanadium	4.2423E-05	66.70472	1.794925	127.4238	0.9999966		0.998	
Zinc	0.009862	67.1817	0.57568	96.74854	0.9999981		0.998	
Strontium	0.001215	66.66974	2.149325	135.8773	0.9999995		0.998	
Lithium (outside certification)	7.8485E-06	66.68376	5.819918	172.0538	0.9999998		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Calibration: 6004002
Instrument: ME-ICP
Matrix: Water
Calibration Dates: 12/29/15 9:19 12/29/15 10:21

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.9716E-05	10000	2.9386E-05			500000	2.8232E-05		
Antimony	0	0	100	0.0006161	1000	0.0006239					10000	5.8284E-04
Arsenic	0	0	100	0.0002827	1000	3.0823E-04					10000	2.8556E-04
Barium	0	0	50	0.0156924	1000	0.01437	5000	0.0135638				
Beryllium	0	0	100	0.0021863	1000	0.0022276					10000	0.002014
Boron	0	0	50	0.0000158	1000	1.523E-05					5000	1.4792E-05
Cadmium	0	0	100	0.035174	1000	0.03462					10000	0.032135
Calcium	0	0	1100	7.003637E-05	50000	6.6496E-05					10000	
Chromium	0	0	100	0.0000614	1000	6.092E-05					10000	5.8806E-05
Cobalt	0	0	100	0.0082487	1000	0.0079586					10000	0.0082073
Copper	0	0	100	0.0000696	1000	6.448E-05					10000	6.2166E-05
Iron	0	0	5100	1.417255E-05	10000	1.3485E-05			500000	1.26828E-05	10000	
Lead	0	0	100	0.0018278	1000	0.0017917					10000	0.0018609
Magnesium	0	0	5100		50000	3.0484E-06			500000	3.0058E-06	10000	
Manganese	0	0	100	0.00028	1000	2.6405E-04	10000	2.5693E-04			10000	
Molybdenum	0	0	100	0.0048194	1000	0.005034					10000	0.0047914
Nickel	0	0	100	0.0040813	1000	0.0038074					10000	0.0038001
Potassium	0	0	1000	9.83E-06	10000	1.1046E-05						
Selenium	0	0	100	0.0004847	1000	4.6094E-04					10000	4.3056E-04
Silver	0	0	20	0.000069	500	0.0000678	2000	6.962E-05				
Sodium	0	0	1000		50000	5.3148E-05						
Thallium	0	0	100	0.0005274	1000	5.3358E-04					10000	0.0005193
Tin	0	0	50	0.0014378	1000	0.0015242					5000	1.45026E-03
Titanium	0	0	100	0.0001989	1000	1.9541E-04					10000	1.8613E-04
Vanadium	0	0	100	0.0000451	1000	4.769E-05					10000	4.6184E-05
Zinc	0	0	100	0.01519	1000	0.013459					10000	0.01278
Strontium	0	0	100	0.00186	1000	0.001842					10000	0.001736
Lithium (outside certification)	0	0	100	0.0000106	1000	1.107E-05					10000	1.0796E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	6004002	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/29/15 9:19 12/29/15 10:21

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	6.4638E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.2645E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.052E-05										
Selenium												
Silver												
Sodium	100000	5.0345E-05	500000	5.1236E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	6004002	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	12/29/15 9:19 12/29/15 10:21

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.18335E-05	66.73032	4.25504	178.0699	0.9999996		0.998	
Antimony	4.5571E-04	66.78105	39.89782	198.3103	0.9999526		0.998	
Arsenic	2.191225E-04	66.87009	5.88749	159.0607	0.9999304		0.998	
Barium	1.090655E-02	67.15037	0.3077425	15.43447	0.9998667		0.998	
Beryllium	1.606975E-03	66.91474	13.11378	197.124	0.9998941		0.998	
Boron	1.14555E-05	66.76394	8.42419	178.4559	0.9999678		0.998	
Cadmium	2.548225E-02	66.86807	1.943803	180.0035	0.9999457		0.998	
Calcium	5.029259E-05	66.81519	2.192103	157.886	0.9999923		0.998	
Chromium	4.52815E-05	66.7131	2.611427	137.1297	0.9999879		0.998	
Cobalt	6.10365E-03	66.6997	2.371003	183.5255	0.9999902		0.998	
Copper	4.90615E-05	66.96662	1.357253	61.96839	0.9999915		0.998	
Iron	1.008509E-05	66.93938	23.28349	192.3561	0.9999986		0.998	
Lead	0.0013701	66.69857	9.523292	194.454	0.9999871		0.998	
Magnesium	2.329675E-06	66.84368	25.20973	198.9187	0.9996761		0.998	
Manganese	2.00245E-04	66.84045	7.12649	159.451	0.9999939		0.998	
Molybdenum	0.0036612	66.73234	30.45039	198.5739	0.9999745		0.998	
Nickel	0.0029222	66.81693	0.82777	150.0907	0.9999998		0.998	
Potassium	7.849E-06	66.96782	7.122737	166.5238	0.9999603		0.998	
Selenium	3.4405E-04	66.97702	8.103372	186.6644	0.9999611		0.998	
Silver	5.1605E-05	66.68274	31.58227	188.5777	0.9999524		0.998	
Sodium	3.868225E-05	66.73517	0.9013575	165.7766	0.9999591		0.998	
Thallium	3.9507E-04	66.68309	2.6059	164.4955	0.9999906		0.998	
Tin	1.103065E-03	66.75624	2.07076	165.4573	0.9998838		0.998	
Titanium	1.4511E-04	66.77003	2.872617	171.0263	0.9999792		0.998	
Vanadium	3.47435E-05	66.73671	3.31902	146.3734	0.9999878		0.998	
Zinc	1.035725E-02	67.3826	0.6926825	84.39839	0.9999809		0.998	
Strontium	0.0013595	66.78801	1.6214	143.3259	0.9999654		0.998	
Lithium (outside certification)	8.1165E-06	66.70895	1.63107	97.20677	0.9999896		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	6005001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	1/5/16 9:23 1/5/16 9:51

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	2.472E-05	10000	2.5076E-05			500000	2.417E-05		
Antimony	0	0	100	0.0009002	1000	8.7948E-04					10000	8.7277E-04
Arsenic	0	0	100	0.0003859	1000	4.1942E-04					10000	4.1216E-04
Barium	0	0	50	0.0119844	1000	0.010914	5000	0.0105254				
Beryllium	0	0	100	0.0027695	1000	0.0028781					10000	0.0027904
Boron	0	0	50	0.0000168	1000	1.636E-05					5000	1.581E-05
Cadmium	0	0	100	0.030946	1000	0.030616					10000	0.02959
Calcium	0	0	1100	9.259091E-05	50000	9.0978E-05					10000	
Chromium	0	0	100	0.0000533	1000	0.0000543					10000	5.3505E-05
Cobalt	0	0	100	0.0078133	1000	0.0075468					10000	0.0080858
Copper	0	0	100	6.329999E-05	1000	5.668E-05					10000	5.3535E-05
Iron	0	0	5100	2.254902E-05	10000	2.2635E-05			500000	2.1592E-05	10000	
Lead	0	0	100	0.001693	1000	0.0016998					10000	0.001824
Magnesium	0	0	5100		50000	3.0562E-06			500000	3.0458E-06	10000	
Manganese	0	0	100	0.0002589	1000	2.4959E-04	10000	2.4355E-04			10000	
Molybdenum	0	0	100	0.0041585	1000	0.0043829					10000	0.0043328
Nickel	0	0	100	0.0046078	1000	0.004118					10000	0.00431
Potassium	0	0	1000	0.0000077	10000	1.1893E-05						
Selenium	0	0	100	0.0005053	1000	4.8167E-04					10000	4.5684E-04
Silver	0	0	20	0.000068	500	6.418E-05	2000	6.3295E-05				
Sodium	0	0	1000		50000	5.4396E-05						
Thallium	0	0	100	0.0006251	1000	6.6018E-04					10000	6.7551E-04
Tin	0	0	50	0.0013266	1000	0.0014502					5000	0.0014149
Titanium	0	0	100	0.0001544	1000	1.5235E-04					10000	1.4709E-04
Vanadium	0	0	100	0.0000548	1000	0.0000541					10000	5.2021E-05
Zinc	0	0	100	0.013476	1000	0.011996					10000	0.011887
Strontium	0	0	100	0.002231	1000	0.002241					10000	0.002279
Lithium (outside certification)	0	0	100	0.0000127	1000	1.362E-05					10000	1.2764E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	6005001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	1/5/16 9:23 1/5/16 9:51

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.6414E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.2767E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.1587E-05										
Selenium												
Silver												
Sodium	100000	5.1599E-05	500000	5.588E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	6005001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	1/5/16 9:23 1/5/16 9:51

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	1.84915E-05	66.69712	4.60282	170.432	0.9999997		0.998	
Antimony	6.631125E-04	66.68991	0.7052725	50.17394	0.9999998		0.998	
Arsenic	3.0437E-04	66.8343	8.79255	187.8639	0.9999946		0.998	
Barium	8.35595E-03	67.07425	1.25459	157.0257	0.9999534		0.998	
Beryllium	0.0021095	66.70396	11.77594	187.1271	0.9999899		0.998	
Boron	1.22425E-05	66.74869	5.874797	158.3669	0.9999545		0.998	
Cadmium	0.022788	66.7148	1.351275	176.012	0.9999894		0.998	
Calcium	6.999573E-05	66.74616	2.124998	169.8533	0.9999686		0.998	
Chromium	4.027625E-05	66.67527	7.972345	182.3046	0.9999975		0.998	
Cobalt	5.861475E-03	66.77229	2.37853	171.0159	0.9999562		0.998	
Copper	4.337875E-05	67.3236	1.18956	50.31389	0.9999823		0.998	
Iron	1.6694E-05	66.72679	13.65644	194.0775	0.9999993		0.998	
Lead	0.0013042	66.82635	22.75656	192.5434	0.9999586		0.998	
Magnesium	2.344675E-06	66.82117	29.52531	198.7555	0.9997374		0.998	
Manganese	1.8801E-04	66.75119	10.08252	183.8749	0.9999949		0.998	
Molybdenum	3.21855E-03	66.7336	7.823982	184.3357	0.9999981		0.998	
Nickel	3.25895E-03	66.95279	0.7791625	101.3586	0.9999722		0.998	
Potassium	7.795E-06	71.02067	2.059498	132.6622	0.999966		0.998	
Selenium	3.609525E-04	66.89164	2.296167	138.6708	0.9999794		0.998	
Silver	4.886875E-05	66.79744	1.215815	59.76253	0.9999905		0.998	
Sodium	4.046875E-05	66.81078	6.90181	180.1276	0.9997627		0.998	
Thallium	4.901975E-04	66.80547	2.47087	158.4651	0.9999971		0.998	
Tin	1.047925E-03	66.85097	6.256265	176.9138	0.9999686		0.998	
Titanium	1.1346E-04	66.72186	7.00128	179.6613	0.9999907		0.998	
Vanadium	4.023025E-05	66.73118	1.551655	101.913	0.9999884		0.998	
Zinc	9.33975E-03	67.11675	0.59942	89.98628	0.9999995		0.998	
Strontium	1.68775E-03	66.67792	3.8904	183.5769	0.9999976		0.998	
Lithium (outside certification)	9.771E-06	66.80472	4.026632	146.1439	0.9999466		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/22/15 09:20	N/A	180.00	12/29/15 12:17	15.19	180.00	
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/22/15 09:20	N/A	180.00	12/29/15 19:33	15.49	180.00	
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/22/15 09:20	N/A	180.00	12/30/15 15:25	16.32	180.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/22/15 09:20	N/A	180.00	12/29/15 12:23	15.06	180.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/22/15 09:20	N/A	180.00	12/29/15 19:38	15.36	180.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/22/15 09:20	N/A	180.00	01/05/16 15:03	22.17	180.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/22/15 09:20	N/A	180.00	12/29/15 12:39	15.07	180.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/22/15 09:20	N/A	180.00	12/29/15 19:57	15.37	180.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/22/15 09:20	N/A	180.00	01/05/16 15:12	22.17	180.00	

HOLDING TIME SUMMARY

SW7470A

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/16/15 13:15	2.23	28.00	12/21/15 09:40	4.85	28.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/16/15 13:15	2.09	28.00	12/21/15 09:41	4.85	28.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/16/15 13:15	2.09	28.00	12/21/15 09:44	4.85	28.00	

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02RE1 [OTC538-GW-5382-151214]	5L15010	5.00/5.00	5.00	5.00	2.00			12/15/15
1512147-03 [OTC537-GW-5371-151214]	5L15010	5.00/5.00	5.00	5.00	1.00			12/15/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L15010	5.00/5.00	5.00	5.00	1.00			12/15/15

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02 [OTC538-GW-5382-151214]	5L17012	100.00/100.00	100	100	1.00			12/18/15
1512147-03 [OTC537-GW-5371-151214]	5L17012	100.00/100.00	100	100	1.00			12/18/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L17012	100.00/100.00	100	100	1.00			12/18/15

Sample Extraction Data

Prep Method: pCyanide-SW9012B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02 [OTC538-GW-5382-151214]	5L21003	25.00/25.00	25.0	25.0	1.00			12/21/15
1512147-03 [OTC537-GW-5371-151214]	5L21003	25.00/25.00	25.0	25.0	1.00			12/21/15
1512147-04 [OTC537-GW-5371-FD-151214]	5L21003	25.00/25.00	25.0	25.0	1.00			12/21/15

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-SW9056A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1512147-02RE2 [OTC538-GW-5382-151214]	5L24001	5.00/5.00	5.00	5.00	20.00			12/24/15
1512147-03RE1 [OTC537-GW-5371-151214]	5L24001	5.00/5.00	5.00	5.00	20.00			12/24/15
1512147-04RE1 [OTC537-GW-5371-FD-151214]	5L24001	5.00/5.00	5.00	5.00	20.00			12/24/15

ANALYSIS DATA SHEET

OTC538-GW-5382-151214

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-02
Sampled:	12/14/15 06:46	Received:	12/15/15 09:35

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
57-12-5	Cyanide		0.00500	0.0100	0.0200	1	U	SW9012B	5L21003	12/21/15 14:41
TDS	Total Dissolved Solids	**9460**	**20.0**	20.0	20.0	1		SM2540C	5L17012	12/18/15 15:45
16887-00-6	Chloride	**2860**	**3.40**	6.60	10.0	20	D	SW9056A	5L24001	12/24/15 14:44
14797-55-8	Nitrate as N	**26.6**	**0.0660**	0.200	0.500	2	DX	E300.0	5L15010	12/15/15 16:48

ANALYSIS DATA SHEET

OTC537-GW-5371-151214

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-03
Sampled:	12/14/15 10:01	Received:	12/15/15 09:35

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
57-12-5	Cyanide	**0.00550**	**0.00500**	0.0100	0.0200	1	J	SW9012B	5L21003	12/21/15 14:44
TDS	Total Dissolved Solids	**8060**	**20.0**	20.0	20.0	1		SM2540C	5L17012	12/18/15 15:45
16887-00-6	Chloride	**2010**	**3.40**	6.60	10.0	20	D	SW9056A	5L24001	12/24/15 15:02
14797-55-8	Nitrate as N	**16.9**	**0.0330**	0.100	0.250	1	X	E300.0	5L15010	12/15/15 13:18

ANALYSIS DATA SHEET

OTC537-GW-5371-FD-151214

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1512147-04
Sampled:	12/14/15 10:01	Received:	12/15/15 09:35

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
57-12-5	Cyanide		0.00500	0.0100	0.0200	1	U	SW9012B	5L21003	12/21/15 14:47
TDS	Total Dissolved Solids	**8160**	**20.0**	20.0	20.0	1		SM2540C	5L17012	12/18/15 15:45
16887-00-6	Chloride	**2050**	**3.40**	6.60	10.0	20	D	SW9056A	5L24001	12/24/15 16:13
14797-55-8	Nitrate as N	**17.0**	**0.0330**	0.100	0.250	1	X	E300.0	5L15010	12/15/15 14:43

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5L15010-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	UX	E300.0	5L15010	12/15/15 11:14

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
% Solids:

SDG: 1512147
Project: Holloman AFB
Laboratory ID: 5L15010-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**2.723**	**0.0330**	0.100	0.250	1	X	E300.0	5L15010	12/15/15 11:32

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L15010-DUP1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**16.99**	**0.0330**	0.100	0.250	1		E300.0	5L15010	12/15/15 14:25

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L15010-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**19.25**	**0.0367**	0.111	0.278	1	X	E300.0	5L15010	12/15/15 13:36

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L15010-MSD1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**19.22**	**0.0367**	0.111	0.278	1	X	E300.0	5L15010	12/15/15 14:07

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5L17012-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	ND	20.0	20.0	20.0	1	U	SM2540C	5L17012	12/18/15 15:45

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L17012-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**870.0**	**20.0**	20.0	20.0	1		SM2540C	5L17012	12/18/15 15:45

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L17012-BS2

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**960.0**	**20.0**	20.0	20.0	1		SM2540C	5L17012	12/18/15 15:45

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L17012-BS3

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**980.0**	**20.0**	20.0	20.0	1		SM2540C	5L17012	12/18/15 15:45

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L17012-BS4

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**965.0**	**20.0**	20.0	20.0	1		SM2540C	5L17012	12/18/15 15:45

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
% Solids:

SDG: 1512147
Project: Holloman AFB
Laboratory ID: 5L17012-BS5

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**990.0**	**20.0**	20.0	20.0	1		SM2540C	5L17012	12/18/15 15:45

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L17012-DUP1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**7971**	**20.0**	20.0	20.0	1		SM2540C	5L17012	12/18/15 15:45

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L21003-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
57-12-5	Cyanide	**0.00571**	**0.00500**	0.0100	0.0200	1	J	SW9012B	5L21003	12/21/15 14:33

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L21003-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
57-12-5	Cyanide	**0.7544**	**0.00500**	0.0100	0.0200	1		SW9012B	5L21003	12/21/15 14:34

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L21003-MS1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
57-12-5	Cyanide	**0.02425**	**0.00500**	0.0100	0.0200	1		SW9012B	5L21003	12/21/15 14:45

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5L21003-MSD1
% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
57-12-5	Cyanide	**0.02319**	**0.00500**	0.0100	0.0200	1		SW9012B	5L21003	12/21/15 14:46

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L24001-BLK1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	ND	0.170	0.330	0.500	1	U	SW9056A	5L24001	12/24/15 09:40

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1512147

Project: Holloman AFB

Laboratory ID: 5L24001-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**24.85**	**0.170**	0.330	0.500	1		SW9056A	5L24001	12/24/15 09:58

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L24001-DUP3

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**1947**	**3.40**	6.60	10.0	20	D	SW9056A	5L24001	12/24/15 15:56

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 5L24001-MS3

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**2526**	**3.78**	7.33	11.1	20	D	SW9056A	5L24001	12/24/15 15:20

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 5L24001-MSD3
% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
16887-00-6	Chloride	**2525**	**3.78**	7.33	11.1	20	D	SW9056A	5L24001	12/24/15 15:38

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1512147
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Nitrate as N	3.164	2.881	91.1	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1512147
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Chloride	4.200	4.093	97.5	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1512147
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L35111

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L35111-CCV1	Nitrate as N	2.500	2.704	108	mg/L	+/- 10.00%
5L35111-CCV2	**Nitrate as N**	**2.500**	**2.856**	**114**	**mg/L**	+/- 10.00%
5L35111-CCV3	**Nitrate as N**	**2.500**	**2.860**	**114**	**mg/L**	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9012B

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-Lachat

SDG: 1512147
Project: Holloman AFB
Calibration: 5355003
Sequence: 5L35513

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L35513-ICV1	Cyanide	0.7960	0.7609	95.6	mg/L	+/- 10.00%
5L35513-CCV1	Cyanide	0.2000	0.2090	104	mg/L	+/- 10.00%
5L35513-CCV2	Cyanide	0.2000	0.2140	107	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1512147
Project: Holloman AFB
Calibration: 5323007
Sequence: 5L36203

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5L36203-CCV1	Chloride	25.00	24.85	99.4	mg/L	+/- 10.00%
5L36203-CCV2	Chloride	25.00	24.89	99.5	mg/L	+/- 10.00%
5L36203-CCV3	Chloride	25.00	24.95	99.8	mg/L	+/- 10.00%

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW9012B

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Calibration: 5355003
Laboratory ID: 5L35513-LCV1
Sequence: 5L35513
Standard ID: 15L0609

ANALYTE	EXPECTED (mg/L)	FOUND (mg/L)	% DRIFT	QC LIMIT
Cyanide	0.1094	0.09902	-9.5	15.00

HIGH-CONCENTRATION CALIBRATION VERIFICATION

SW9012B

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Calibration: 5355003

Laboratory ID: 5L35513-HCV1

Sequence: 5L35513

Standard ID: 15L0610

ANALYTE	EXPECTED (mg/L)	FOUND (mg/L)	% DRIFT	QC LIMIT
Cyanide	0.2091	0.2091	0.0	15.00

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L35111

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L35111-CRL2	Nitrate as N	0.1000	0.1285	128	mg/L	50 - 150

CRDL STANDARD

SW9056A

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 5L36203

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
5L36203-CRL1	Chloride	0.5000	0.4558	91.2	mg/L	50 - 150

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Batch: 5L15010

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L15010-BLK1	Nitrate as N	0.00360	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Batch: 5L17012

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L17012-BLK1	Total Dissolved Solids	-6.00	20.0	20.0	mg/L	U	SM2540C

METHOD BLANKS
SW9012B

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Batch: 5L21003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L21003-BLK1	Cyanide	0.00571	0.00500	0.0200	mg/L	J	SW9012B

METHOD BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Batch: 5L24001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L24001-BLK1	Chloride	0.000900	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Nitrate as N	0.001700	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Chloride	0.03020	0.170	0.500	mg/L	U	SW9056A

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Sequence: 5L35111
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L35111-CCB1	Nitrate as N	0.00200	0.0330	0.250	mg/L	U	E300.0
5L35111-CCB2	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0
5L35111-CCB3	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0

BLANKS
SW9012B

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Sequence: 5L35513
Calibration: 5355003
Instrument ID: WC-Lachat

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L35513-ICB1	Cyanide	0.004458	0.00500	0.0200	mg/L	U	SW9012B
5L35513-CCB1	Cyanide	0.00396	0.00500	0.0200	mg/L	U	SW9012B
5L35513-CCB2	Cyanide	0.00434	0.00500	0.0200	mg/L	U	SW9012B

BLANKS
SW9056A

Laboratory: Empirical Laboratories, LLC
SDG: 1512147
Client: CB&I
Project: Holloman AFB
Sequence: 5L36203
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5L36203-CCB1	Chloride	0.00130	0.170	0.500	mg/L	U	SW9056A
5L36203-CCB2	Chloride	0.00100	0.170	0.500	mg/L	U	SW9056A
5L36203-CCB3	Chloride	0.000700	0.170	0.500	mg/L	U	SW9056A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E300.0

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L15010

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate as N	2.778	16.88	19.25	85.1		80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS	
						RPD	REC.
Nitrate as N	2.778	19.22	84.2	0.128		15	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9012B

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L21003

% Solids:

Source Sample Name: **1512147-03**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Cyanide	0.02000	0.005495	0.02425	93.8		80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Cyanide	0.02000	0.02319	88.5	4.47		20	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW9056A

OTC537-GW-5371-151214

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 5L24001

% Solids:

Source Sample Name: **1512147-03RE1**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Chloride	555.6	2007	2526	93.4		80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Chloride	555.6	2525	93.3	0.0238		15	80 - 120

DUPLICATES

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Batch: 5L15010
Preparation: WC_PREP_ANIONS_W
Source Sample Name: OTC537-GW-5371-151214

SDG: 1512147
Project: Holloman AFB
Laboratory ID: 5L15010-DUP1
Lab Source ID: 1512147-03
Initial/Final: 5 mL / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Nitrate as N	10	16.9	16.99	0.625		E300.0

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Batch: 5L17012
Preparation: pNone
Source Sample Name: OTC537-GW-5371-151214

SDG: 1512147
Project: Holloman AFB
Laboratory ID: 5L17012-DUP1
Lab Source ID: 1512147-03
Initial/Final: 100 mL / 100 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	8060	7971	1.17		SM2540C

DUPLICATES

SW9056A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Batch: 5L24001
Preparation: WC_PREP_ANIONS_W
Source Sample Name: OTC537-GW-5371-151214

SDG: 1512147
Project: Holloman AFB
Laboratory ID: 5L24001-DUP3
Lab Source ID: 1512147-03RE1
Initial/Final: 5 mL / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Chloride	10	2010 D	1947 D	3.02		SW9056A

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L15010	Laboratory ID:	5L15010-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.723	109	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L17012	Laboratory ID:	5L17012-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	964.0	870.0	90.2	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L17012	Laboratory ID:	5L17012-BS2
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	964.0	960.0	99.6	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L17012	Laboratory ID:	5L17012-BS3
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	964.0	980.0	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L17012	Laboratory ID:	5L17012-BS4
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	964.0	965.0	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L17012	Laboratory ID:	5L17012-BS5
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	964.0	990.0	103	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9012B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L21003	Laboratory ID:	5L21003-BS1
Preparation:	pCyanide	Initial/Final:	25 mL / 25 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Cyanide	0.7960	0.7544	94.8	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	5L24001	Laboratory ID:	5L24001-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Chloride	25.00	24.85	99.4	80 - 120

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L15010 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02RE1	12/15/15 12:02	5.00	5.00
OTC537-GW-5371-151214	1512147-03	12/15/15 12:02	5.00	5.00
OTC537-GW-5371-FD-151214	1512147-04	12/15/15 12:02	5.00	5.00
Blank	5L15010-BLK1	12/15/15 10:02	5.00	5.00
LCS	5L15010-BS1	12/15/15 10:02	5.00	5.00
OTC537-GW-5371-151214	5L15010-DUP1	12/15/15 10:02	5.00	5.00
OTC537-GW-5371-151214	5L15010-MS1	12/15/15 10:02	22.50	25.00
OTC537-GW-5371-151214	5L15010-MSD1	12/15/15 10:02	22.50	25.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L17012 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02	12/18/15 10:13	100.00	100.00
OTC537-GW-5371-151214	1512147-03	12/18/15 10:13	100.00	100.00
OTC537-GW-5371-FD-151214	1512147-04	12/18/15 10:13	100.00	100.00
Blank	5L17012-BLK1	12/18/15 10:13	100.00	100.00
LCS	5L17012-BS1	12/18/15 10:13	20.00	20.00
LCS	5L17012-BS2	12/18/15 10:13	20.00	20.00
LCS	5L17012-BS3	12/18/15 10:13	20.00	20.00
LCS	5L17012-BS4	12/18/15 10:13	20.00	20.00
LCS	5L17012-BS5	12/18/15 10:13	20.00	20.00
OTC537-GW-5371-151214	5L17012-DUP1	12/18/15 10:13	100.00	100.00

PREPARATION BATCH SUMMARY

SW9012B

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L21003 Batch Matrix: Water Preparation: pCyanide

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02	12/21/15 07:43	25.00	25.00
OTC537-GW-5371-151214	1512147-03	12/21/15 07:43	25.00	25.00
OTC537-GW-5371-FD-151214	1512147-04	12/21/15 07:43	25.00	25.00
Blank	5L21003-BLK1	12/21/15 07:43	25.00	25.00
LCS	5L21003-BS1	12/21/15 07:43	25.00	25.00
OTC537-GW-5371-151214	5L21003-MS1	12/21/15 07:43	25.00	25.00
OTC537-GW-5371-151214	5L21003-MSD1	12/21/15 07:43	25.00	25.00

PREPARATION BATCH SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Batch: 5L24001 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-5382-151214	1512147-02RE2	12/24/15 07:45	5.00	5.00
OTC537-GW-5371-151214	1512147-03RE1	12/24/15 07:45	5.00	5.00
OTC537-GW-5371-FD-151214	1512147-04RE1	12/24/15 07:45	5.00	5.00
Blank	5L24001-BLK1	12/24/15 07:45	5.00	5.00
LCS	5L24001-BS1	12/24/15 07:45	5.00	5.00
OTC537-GW-5371-151214	5L24001-DUP3	12/24/15 07:45	5.00	5.00
OTC537-GW-5371-151214	5L24001-MS3	12/24/15 07:45	22.50	25.00
OTC537-GW-5371-151214	5L24001-MSD3	12/24/15 07:45	22.50	25.00

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: 1512147

Client: CB&I

Project: Holloman AFB

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	5L17012-BS5	121815-024	12/18/15 15:45
LCS	5L17012-BS4	121815-023	12/18/15 15:45
LCS	5L17012-BS3	121815-022	12/18/15 15:45
LCS	5L17012-BS2	121815-021	12/18/15 15:45
LCS	5L17012-BS1	121815-002	12/18/15 15:45
OTC537-GW-5371-151214	5L17012-DUP1	121815-003	12/18/15 15:45
Blank	5L17012-BLK1	121815-001	12/18/15 15:45

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L35111	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L35111-CCV1	SEQ-CCV1_Integration	12/15/15 09:45
Calibration Blank	5L35111-CCB1	SEQ-CCB1_Integration	12/15/15 10:03
Instrument RL Check	5L35111-CRL2	SEQ-CRL2_Integration	12/15/15 10:38
Blank	5L15010-BLK1	5L15010-BLK1_Integration	12/15/15 11:14
LCS	5L15010-BS1	5L15010-BS1_Integration	12/15/15 11:32
OTC537-GW-5371-151214	1512147-03	1512147-03_Integration	12/15/15 13:18
OTC537-GW-5371-151214	5L15010-MS1	5L15010-MS1_Integration	12/15/15 13:36
OTC537-GW-5371-151214	5L15010-MSD1	5L15010-MSD1_Integration	12/15/15 14:07
OTC537-GW-5371-151214	5L15010-DUP1	5L15010-DUP1_Integration	12/15/15 14:25
OTC537-GW-5371-FD-151214	1512147-04	1512147-04_Integration	12/15/15 14:43
Calibration Check	5L35111-CCV2	SEQ-CCV2_Integration	12/15/15 16:12
Calibration Blank	5L35111-CCB2	SEQ-CCB2_Integration	12/15/15 16:30
OTC538-GW-5382-151214	1512147-02RE1	512147-02RE1@2_Integratior	12/15/15 16:48
Calibration Check	5L35111-CCV3	SEQ-CCV3_Integration	12/15/15 19:29
Calibration Blank	5L35111-CCB3	SEQ-CCB3_Integration	12/15/15 19:47

ANALYSIS SEQUENCE SUMMARY

SW9012B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L35513	Instrument:	WC-Lachat
Calibration:	5355003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5L35513-CAL1	M_12-21-2015_02-10-12PM-0	12/21/15 14:12
Cal Standard	5L35513-CAL2	M_12-21-2015_02-10-12PM-0	12/21/15 14:13
Cal Standard	5L35513-CAL3	M_12-21-2015_02-10-12PM-0	12/21/15 14:14
Cal Standard	5L35513-CAL4	M_12-21-2015_02-10-12PM-0	12/21/15 14:15
Cal Standard	5L35513-CAL5	M_12-21-2015_02-10-12PM-0	12/21/15 14:16
Cal Standard	5L35513-CAL6	M_12-21-2015_02-10-12PM-0	12/21/15 14:17
Cal Standard	5L35513-CAL7	M_12-21-2015_02-10-12PM-0	12/21/15 14:18
Initial Cal Check	5L35513-ICV1	M_12-21-2015_02-10-12PM-0	12/21/15 14:19
Initial Cal Blank	5L35513-ICB1	M_12-21-2015_02-10-12PM-0	12/21/15 14:21
High Cal Check	5L35513-HCV1		12/21/15 14:24
Low Cal Check	5L35513-LCV1		12/21/15 14:27
Blank	5L21003-BLK1	M_12-21-2015_02-10-12PM-0	12/21/15 14:33
LCS	5L21003-BS1	M_12-21-2015_02-10-12PM-0	12/21/15 14:34
OTC538-GW-5382-151214	1512147-02	M_12-21-2015_02-10-12PM-0	12/21/15 14:41
Calibration Check	5L35513-CCV1	M_12-21-2015_02-10-12PM-0	12/21/15 14:42
Calibration Blank	5L35513-CCB1	M_12-21-2015_02-10-12PM-0	12/21/15 14:43
OTC537-GW-5371-151214	1512147-03	M_12-21-2015_02-10-12PM-0	12/21/15 14:44
OTC537-GW-5371-151214	5L21003-MS1	M_12-21-2015_02-10-12PM-0	12/21/15 14:45
OTC537-GW-5371-151214	5L21003-MSD1	M_12-21-2015_02-10-12PM-0	12/21/15 14:46
OTC537-GW-5371-FD-151214	1512147-04	M_12-21-2015_02-10-12PM-0	12/21/15 14:47
Calibration Check	5L35513-CCV2	M_12-21-2015_02-10-12PM-0	12/21/15 14:51
Calibration Blank	5L35513-CCB2	M_12-21-2015_02-10-12PM-0	12/21/15 14:52

ANALYSIS SEQUENCE SUMMARY

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Sequence:	5L36203	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	5L36203-CCV1	SEQ-CCV1_Integration	12/24/15 08:11
Calibration Blank	5L36203-CCB1	SEQ-CCB1_Integration	12/24/15 08:29
Instrument RL Check	5L36203-CRL1	SEQ-CRL1_Integration	12/24/15 08:47
Blank	5L24001-BLK1	5L24001-BLK1_Integration	12/24/15 09:40
LCS	5L24001-BS1	5L24001-BS1_Integration	12/24/15 09:58
Calibration Check	5L36203-CCV2	SEQ-CCV2_Integration	12/24/15 14:09
Calibration Blank	5L36203-CCB2	SEQ-CCB2_Integration	12/24/15 14:26
OTC538-GW-5382-151214	1512147-02RE2	512147-02RE2@20_Integratio	12/24/15 14:44
OTC537-GW-5371-151214	1512147-03RE1	512147-03RE1@20_Integratio	12/24/15 15:02
OTC537-GW-5371-151214	5L24001-MS3	5L24001-MS3@20_Integration	12/24/15 15:20
OTC537-GW-5371-151214	5L24001-MSD3	L24001-MSD3@20_Integratio	12/24/15 15:38
OTC537-GW-5371-151214	5L24001-DUP3	L24001-DUP3@20_Integratio	12/24/15 15:56
OTC537-GW-5371-FD-151214	1512147-04RE1	512147-04RE1@20_Integratio	12/24/15 16:13
Calibration Check	5L36203-CCV3	SEQ-CCV3_Integration	12/24/15 19:30
Calibration Blank	5L36203-CCB3	SEQ-CCB3_Integration	12/24/15 19:47

INITIAL CALIBRATION DATA

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5323007	Instrument:	WC-IC2
Matrix:	Water	Calibration Dates:	11/17/15 7:54 11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5323007	Instrument:	WC-IC2
Matrix:	Water	Calibration Dates:	11/17/15 7:54 11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5323007	Instrument:	WC-IC2
Matrix:	Water	Calibration Dates:	11/17/15 7:54 11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5323007	Instrument:	WC-IC2
Matrix:	Water	Calibration Dates:	11/17/15 7:54 11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	0.126	0.1032627	0.252	0.1055079	0.63	0.1077229	1.26	0.114327	6.3	0.1233052	12.6	0.12778
Chloride	0.5	0.2720276	1	0.287169	2.5	0.294335	5	0.3032684	25	0.3014536	50	0.3060892
Fluoride	0.05	0.44033	0.1	0.461829	0.25	0.4932644	0.5	0.50716	2.5	0.5010368	5	0.4944214
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552
Sulfate as SO4	0.5	0.2256678	1	0.2202215	2.5	0.2180314	5	0.2202646	25	0.2174918	50	0.2208332

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Bromide	31.5	0.1254725	50.4	0.1305396	63	~~0.1261554~~						
Chloride	125	0.3061993	200	0.3057162	250	0.3029497						
Fluoride	12.5	~~0.4610045~~	20	~~0.4356024~~	25	~~0.4186656~~						
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						
Sulfate as SO4	125	0.2174702	200	0.2259882	250	0.22377						

INITIAL CALIBRATION DATA (Continued)

SW9056A

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Bromide	0.1172397	9.257594	8.14375	0.8992098	0.9994942		0.995	
Chloride	0.2976898	3.86824	4.845667	0.2683757	0.9999608		0.995	
Fluoride	0.4830069	5.409777	3.326	0.1833613	0.9999443		0.995	
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	
Sulfate as SO4	0.2210821	1.508986	8.729111	3.18872	0.9997657		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW9012B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5355003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	12/21/15 14:12	12/21/15 14:18

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Cyanide	1	37.46	0.5	39.46	0.2	40.75	0.1	40.61	0.008	45.4375	0.004	44.55

INITIAL CALIBRATION DATA (Continued)

SW9012B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147
Client:	CB&I	Project:	Holloman AFB
Calibration:	5355003	Instrument:	WC-Lachat
Matrix:	Water	Calibration Dates:	12/21/15 14:12 12/21/15 14:18

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Cyanide	0	0										

INITIAL CALIBRATION DATA (Continued)

SW9012B

Laboratory:	Empirical Laboratories, LLC	SDG:	1512147	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5355003	Instrument:	WC-Lachat	
Matrix:	Water	Calibration Dates:	12/21/15 14:12	12/21/15 14:18

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Cyanide	35.46679	44.78982	41.00143	16.7021	0.9992205		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/15/15 12:02	N/A	2.00	12/15/15 16:48	1.38	2.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/15/15 12:02	N/A	2.00	12/15/15 13:18	1.10	2.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/15/15 12:02	N/A	2.00	12/15/15 14:43	1.15	2.00	

HOLDING TIME SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/18/15 10:13	4.10	7.00	12/18/15 15:45	0.23	7.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/18/15 10:13	3.97	7.00	12/18/15 15:45	0.23	7.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/18/15 10:13	3.97	7.00	12/18/15 15:45	0.23	7.00	

HOLDING TIME SUMMARY

SW9012B

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/21/15 07:43	N/A	14.00	12/21/15 14:41	7.29	14.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/21/15 07:43	N/A	14.00	12/21/15 14:44	7.16	14.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/21/15 07:43	N/A	14.00	12/21/15 14:47	7.16	14.00	

HOLDING TIME SUMMARY

SW9056A

Laboratory: Empirical Laboratories, LLC SDG: 1512147

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-5382-151214	12/14/15 06:46	12/15/15 09:35	12/24/15 07:45	N/A	28.00	12/24/15 14:44	10.29	28.00	
OTC537-GW-5371-151214	12/14/15 10:01	12/15/15 09:35	12/24/15 07:45	N/A	28.00	12/24/15 15:02	10.17	28.00	
OTC537-GW-5371-FD-151214	12/14/15 10:01	12/15/15 09:35	12/24/15 07:45	N/A	28.00	12/24/15 16:13	10.22	28.00	

Subcontractor Data Package

Tritium

Case Narrative

Empirical Laboratories, LLC

Midwest Holloman AFB - Septic Site -- 144106

Work Order Number: 1512292

1. This report consists of the analytical results and supporting documentation for two water samples received by ALS on 12/16/2015.

2. These samples were prepared according to the current revision of SOP 700.

3. The samples were analyzed for the presence of tritium according to the current revision of SOP 704. The analyses were completed on 12/19/2015.

4. The analysis results for these samples are reported in units of pCi/L. The samples were not filtered prior to analysis.

5. No further anomalous situations were encountered during the preparation or analysis of these samples. All remaining quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Shiloh Summy — 12/29/15
Radiochemistry Primary Data Reviewer — Date

Julie Ellis — 12/31/15
Radiochemistry Final Data Reviewer — Date

1

Section 1

CHAIN OF CUSTODY

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1512292
Client Name: Empirical Laboratories, LLC
Client Project Name: Midwest Holloman AFB - Septic Site
Client Project Number: 144106
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
TC538-GW-5382-151214	1512292-1		WATER	14-Dec-15	6:46
TC537-GW-5371-151214	1512292-2		WATER	14-Dec-15	10:01

1512292

Ref. Document # 144106-H2015-151214

New Septic Sites

CHAIN OF CUSTODY

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: ALS
Lab Contact: Julie Ellingson
Lab Phone #: 1-800-443-1511

* NOT ENOUGH BOTTLES FOR SAMPLE, EXTRA VOLUME ADDED IN LITER AMBER.

	Lab Sample Number	Sample Identification	Collection Information: Date	Time	G/C	Matrix	# of Bottles	PRESERVATION: HCL	NaOH	HNO_3	H2SO4	Ice		Requesting Testing Program: Tritium by 906.0							Turn Around Time Required
1		OTC 538-GW-5382-151214	12/14/15	06:46	G	GW	1					X		X							ST
2	MS/MSD+DUP	OTC 537-GW-5371-151214	12/14/15	10:01	G	GW	2					X		X							ST

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s): P. Middleton

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/14/15	15:45	[signature]	12-16-15	1130

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific:

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO =Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid
SOL = Other Solid GS = Air Sample

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CB&I Federal Services Workorder No: 1512292

Project Manager: JE Initials: SDM Date: 12-16-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	NO
2. Are custody seals on shipping containers intact?	NONE	YES	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		YES	NO
5. Are the COC and bottle labels complete and legible?		YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		YES	NO
12. Are all samples within holding times for the requested analyses?		YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	YES	NO
15. Do any water samples contain sediment? Amount of sediment: ____ dusting ____ moderate X heavy	N/A	YES	~~NO~~ SDM
16. Were the samples shipped on ice?		YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD ONLY	YES	NO

Cooler #:	1
Temperature (°C):	2.4
No. of custody seals on cooler:	1
DOT Survey/ Acceptance Information — External µR/hr reading:	11
Background µR/hr reading:	10

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / NA (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

15.) Sample 1 has a heavy dusting of sediment noted not an issue

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: 12/16/15

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

1512292

MARY NORRIS
281.531.3151
GVT- HOUSTON 66V725
10777 WESTHEIMER ROAD
HOUSTON TX 77042

10 LBS

1 OF 1

DWT: 13,10,9

11

SHIP TO:
JULIE ELLINGSON
ALS
225 COMMERCE DR
FORT COLLINS CO 80524-2762

-1

CO 805 0-01

UPS NEXT DAY AIR

1

TRACKING #: 1Z 66V 725 01 9120 8297

BILLING: P/P

2.40

Charge to Coding: 00701.144106.4701..JR20001
Sender's Name: Patrick Middleton

CS 17.6.02. WNTR100 69.0A 10/2015

Section 2

SAMPLE RESULTS SUMMARY

Tritium by Liquid Scintillation Sample Results Summary

Client Name: Empirical Laboratories, LLC
Client Project Name: Midwest Holloman AFB - Septic Site
Client Project Number: 144106
Laboratory Name: **ALS Environmental -- FC**
PAI Work Order: 1512292

Page: 1 of 1
Reported on: Tuesday, December 29, 2015
1:26:34 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	DL	Units	Matrix	Prep Batch	Date Analyzed	Flags
1512292-1	TC538-GW-5382-151214	Sample	H-3	360 +/- 220	350	NA	pCi/l	WATER	3H151217-1	12/19/2015	LT
1512292-2	TC537-GW-5371-151214	Sample	H-3	130 +/- 210	350	NA	pCi/l	WATER	3H151217-1	12/19/2015	U

Comments:

Data Package ID: *H31512292-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty
MDC - Minimum Detectable Concentration
BDL - Below Detection Limit

Section 3

QC RESULTS SUMMARY ❸

Tritium by Liquid Scintillation

PAI 704 Rev 10

Method Blank Results

Lab Name: ALS Environmental -- FC
Work Order Number: 1512292
Client Name: Empirical Laboratories, LLC
ClientProject ID: Midwest Holloman AFB - Septic Site 144106

Lab ID: 3H151217-1MB

Sample Matrix: WATER
Prep SOP: PAI 700 Rev 13
Date Collected: 17-Dec-15
Date Prepared: 17-Dec-15
Date Analyzed: 19-Dec-15

Prep Batch: 3H151217-1
QCBatchID: 3H151217-1-2
Run ID: 3H151217-1A
Count Time: 90 minutes

Final Aliquot: 10.0 ml
Result Units: pCi/l
File Name: B65_10_121801

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
10028-17-8	H-3	30 +/- 210	350	400	NA	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Data Package ID: *H31512292-1*

Tritium by Liquid Scintillation

PAI 704 Rev 10

Laboratory Control Sample(s)

Lab Name: **ALS Environmental -- FC**
Work Order Number: 1512292
Client Name: Empirical Laboratories, LLC
ClientProject ID: Midwest Holloman AFB - Septic Site 144106

Lab ID: 3H151217-1LCS

Sample Matrix: WATER
Prep SOP: PAI 700 Rev 13
Date Collected: 17-Dec-15
Date Prepared: 17-Dec-15
Date Analyzed: 19-Dec-15

Prep Batch: 3H151217-1
QCBatchID: 3H151217-1-2
Run ID: 3H151217-1A
Count Time: 90 minutes

Final Aliquot: 9.84 ml
Result Units: pCi/l
File Name: B65_10_121801

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
10028-17-8	H-3	41200 +/- 6300	400	39400	105	85 - 115	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty
MDC - Minimum Detectable Concentration

Data Package ID: *H31512292-1*

Tritium by Liquid Scintillation

PAI 704 Rev 10

Matrix Spike Results

Lab Name: ALS Environmental -- FC
Work Order Number: 1512292
Client Name: Empirical Laboratories, LLC
ClientProject ID: Midwest Holloman AFB - Septic Site 144106

Field ID: TC537-GW-5371-151214
Lab ID: 1512292-2MS

Sample Matrix: WATER
Prep SOP: PAI 700 Rev 13
Date Collected: 14-Dec-15
Date Prepared: 17-Dec-15
Date Analyzed: 19-Dec-15

Prep Batch: 3H151217-1
QCBatchID: 3H151217-1-2
Run ID: 3H151217-1A
Count Time: 90 minutes
Report Basis: Unfiltered

Final Aliquot: 9.84 ml
Prep Basis: Unfiltered
Moisture(%): 100.000
Result Units: pCi/l
File Name: B65_10_121801

CASNO	Target Nuclide	Matrix Spike	Sample Results	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
10028-17-8	H-3	41200	130	400	39400	104	85 - 115	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
N - Matrix Spike Recovery outside control limits
P - Matrix Spike Recovery within control limits
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

MDC - Minimum Detectable Concentration

Data Package ID: *H31512292-1*

Tritium by Liquid Scintillation

PAI 704 Rev 10

Duplicate Sample Results (DER)

Lab Name: **ALS Environmental -- FC**
Work Order Number: 1512292
Client Name: Empirical Laboratories, LLC
ClientProject ID: Midwest Holloman AFB - Septic Site 144106

Field ID: TC537-GW-5371-151214
Lab ID: 1512292-2DUP

Sample Matrix: WATER
Prep SOP: PAI 700 Rev 13
Date Collected: 14-Dec-15
Date Prepared: 17-Dec-15
Date Analyzed: 19-Dec-15

Prep Batch: 3H151217-1
QCBatchID: 3H151217-1-2
Run ID: 3H151217-1A
Count Time: 90 minutes
Report Basis: Unfiltered

Final Aliquot: 10.0 ml
Prep Basis: Unfiltered
Moisture(%): 100.000
Result Units: pCi/l
File Name: B65_10_121801

CASNO	Analyte	Sample			Duplicate			DER	DER Lim
		Result +/- 2 s TPU	MDC	Flags	Result +/- 2 s TPU	MDC	Flags		
10028-17-8	H-3	130 +/- 210	350	U	110 +/- 210	350	U	0.0589	2.13

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *H31512292-1*

Section 4

INDIVIDUAL SAMPLE RESULTS

4

Tritium by Liquid Scintillation

PAI 704 Rev 10

Sample Results

Lab Name: **ALS Environmental -- FC**
Work Order Number: 1512292
Client Name: Empirical Laboratories, LLC
ClientProject ID: Midwest Holloman AFB - Septic Site 144106

Field ID: TC538-GW-5382-151214
Lab ID: 1512292-1

Sample Matrix: WATER
Prep SOP: PAI 700 Rev 13
Date Collected: 14-Dec-15
Date Prepared: 17-Dec-15
Date Analyzed: 19-Dec-15

Prep Batch: 3H151217-1
QCBatchID: 3H151217-1-2
Run ID: 3H151217-1A
Count Time: 90 minutes
Report Basis: Unfiltered

Final Aliquot: 10.0 ml
Prep Basis: Unfiltered
Moisture(%): 100.000
Result Units: pCi/l
File Name: B65_10_121801

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
10028-17-8	H-3	360 +/- 220	350	400	NA	LT

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

Data Package ID: *H31512292-1*

Tritium by Liquid Scintillation

PAI 704 Rev 10

Sample Results

Lab Name: **ALS Environmental -- FC**
Work Order Number: 1512292
Client Name: Empirical Laboratories, LLC
ClientProject ID: Midwest Holloman AFB - Septic Site 144106

Field ID: TC537-GW-5371-151214
Lab ID: 1512292-2

Sample Matrix: WATER
Prep SOP: PAI 700 Rev 13
Date Collected: 14-Dec-15
Date Prepared: 17-Dec-15
Date Analyzed: 19-Dec-15

Prep Batch: 3H151217-1
QCBatchID: 3H151217-1-2
Run ID: 3H151217-1A
Count Time: 90 minutes
Report Basis: Unfiltered

Final Aliquot: 10.0 ml
Prep Basis: Unfiltered
Moisture(%): 100.000
Result Units: pCi/l
File Name: B65_10_121801

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
10028-17-8	H-3	130 +/- 210	350	400	NA	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

Data Package ID: *H31512292-1*

Tritium by Liquid Scintillation

PAI 704 Rev 10

Sample Duplicate Results

Lab Name: **ALS Environmental -- FC**
Work Order Number: 1512292
Client Name: Empirical Laboratories, LLC
ClientProject ID: Midwest Holloman AFB - Septic Site 144106

Field ID: TC537-GW-5371-151214
Lab ID: 1512292-2DUP

Sample Matrix: WATER
Prep SOP: PAI 700 Rev 13
Date Collected: 14-Dec-15
Date Prepared: 17-Dec-15
Date Analyzed: 19-Dec-15

Prep Batch: 3H151217-1
QCBatchID: 3H151217-1-2
Run ID: 3H151217-1A
Count Time: 90 minutes
Report Basis: Unfiltered

Final Aliquot: 10.0 ml
Prep Basis: Unfiltered
Moisture(%): 100.000
Result Units: pCi/l
File Name: B65_10_121801

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
10028-17-8	H-3	110 +/- 210	350	400	NA	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

Data Package ID: *H31512292-1*

Section 5

RAW DATA

5

Tritium by Liquid Scintillation Raw Data Report

Laboratory Name: ALS Environmental -- FC
PAI Work Order: 1512292

Prep SOP: PAI 700
Analytical SOP: PAI 704

Reported on: Tuesday, December 22, 2015
1:53:01 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QCBatchID	Ingrowth Date /Time	Quench Factor %Lum	Matrix %Moist.	Samp Alq Analy Alq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
1512292-1	H-3	12/14/2015	3H151217-1	NA	143.1	WATER	30 ml	LS6500	3H151217-1A	12/19/2015	6.810	15.46%	90	360	350	pCi/l	NA	
SMP	Trg. Analyte	6:46:00 AM	3H151217-1-2	NA	0.07	100	10 ml	39-2	B65_10_121801	9:00 AM	5.590	NA	NA	220		Unfiltered	NA	LT
1512292-2	H-3	12/14/2015	3H151217-1	NA	142.7	WATER	30 ml	LS6500	3H151217-1A	12/19/2015	6.030	15.46%	90	130	350	pCi/l	NA	
SMP	Trg. Analyte	10:01:00 AM	3H151217-1-2	NA	0.07	100	10 ml	39-3	B65_10_121801	10:31 AM	5.590	NA	NA	210		Unfiltered	NA	U
1512292-2	H-3	12/14/2015	3H151217-1	NA	141.6	WATER	30 ml	LS6500	3H151217-1A	12/19/2015	5.970	15.46%	90	110	350	pCi/l	0.06	
DUP	Trg. Analyte	10:01:00 AM	3H151217-1-2	NA	0.07	100	10 ml	39-4	B65_10_121801	12:03 PM	5.590	NA	NA	210		Unfiltered	NA	U
1512292-2	H-3	12/14/2015	3H151217-1	NA	142.1	WATER	30 ml	LS6500	3H151217-1A	12/19/2015	144.710	15.46%	90	41200	400	pCi/l	NA	104
MS	Trg. Analyte	10:01:00 AM	3H151217-1-2	NA	0.02	100	9.84 ml	39-5	B65_10_121801	1:34 PM	5.590	NA	NA	6300		Unfiltered	NA	P
3H151217-1	H-3	12/17/2015	3H151217-1	NA	142.6	WATER	30 ml	LS6500	3H151217-1A	12/19/2015	5.710	15.46%	90	30	350	pCi/l	NA	
MB	Trg. Analyte	1:27:46 PM	3H151217-1-2	NA	0.07	NA	10 ml	39-7	B65_10_121801	4:37 PM	5.590	NA	NA	210		Unfiltered	NA	U
3H151217-1	H-3	12/17/2015	3H151217-1	NA	142.2	WATER	30 ml	LS6500	3H151217-1A	12/19/2015	144.710	15.46%	90	41200	400	pCi/l	NA	105
LCS	Trg. Analyte	1:27:46 PM	3H151217-1-2	NA	0.02	NA	9.84 ml	39-8	B65_10_121801	6:08 PM	5.590	NA	NA	6300		Unfiltered	NA	P

Comments:

Data Package ID: *H31512292-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR- Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

DER - Duplicate Error Ratio

BDL - Below Detection Limit

ID:3H:5ML 10ML 18 DEC 2015 15:06
USER:10 COMMENT:LS6500
PRESET TIME : 90.00
DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD
COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT
TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK :EDIT
SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
DATA BUFFER IS FULL. DATA WILL GO TO PRINTER ONLY.

LOW LEVEL : YES HALF LIFE CORRECTION DATE: none

CHAN: 60.0 - 250.0 %ERROR: 1.75 FACTOR: 1.000000 BKG. SUB: 0
CHAN: 400.0 - 950.0 %ERROR:20.00 FACTOR: 1.000000 BKG. SUB: 0

SAM NO	POS	TIME MIN	H#	WIND1 CPM	WIND1 %ERROR	WIND2 CPM	WIND2 %ERROR	LUMEX %	ELAPSED TIME
1	38-1	90.00	143.2	5.04	9.39	31.38	3.76	0.20	91.35
2	38-2	90.00	144.1	98.37	2.13	31.67	3.75	0.04	182.75
3	38-3	90.00	143.8	104.59	2.06	32.98	3.67	0.03	274.13
4	38-4	90.00	143.9	97.88	2.13	32.58	3.69	0.03	365.52
5	38-5	84.05	142.8	155.51	1.75	32.86	3.81	0.02	450.89
6	38-6	86.20	143.9	151.58	1.75	32.56	3.77	0.02	538.45
7	38-7	45.75	143.1	285.79	1.75	33.29	5.12	0.01	585.20
8	38-8	90.00	143.2	5.93	8.65	32.87	3.68	0.08	676.60
9	38-9	90.00	143.4	8.73	7.13	33.54	3.64	0.08	767.99
10	38-10	90.00	142.7	5.27	9.19	33.38	3.65	0.08	859.37
11	38-11	90.00	142.1	5.70	8.83	32.61	3.69	0.08	950.73
12	38-12	90.00	143.2	6.00	8.61	33.63	3.64	0.07	1042.12
13	39-1	90.00	143.3	5.43	9.04	34.12	3.61	0.07	1133.62
14	39-2	90.00	143.1	6.81	8.08	33.30	3.65	0.07	1225.01
15	39-3	90.00	142.7	6.03	8.58	33.57	3.64	0.07	1316.38
16	39-4	90.00	141.6	5.97	8.63	33.53	3.64	0.07	1407.74
17	39-5	90.00	142.1	144.71	1.75	33.92	3.62	0.02	1499.10
18	39-6	90.00	142.5	5.68	8.85	33.37	3.65	0.07	1590.47
19	39-7	90.00	142.6	5.71	8.82	33.67	3.63	0.07	1681.84
20	39-8	90.00	142.2	144.71	1.75	33.76	3.63	0.02	1773.22
21	39-9	90.00	141.3	6.03	8.58	33.76	3.63	0.07	1864.59

B65 10-121801
JP 12/21/15

WK 12-21-15

B65_10_121801.ASC

BSF Version	: 3
Instrument Type	: LS 6000
Data Capture Date	: 18 Dec 2015 14:05:16
User Filename	: C:\...\LS WINCONNECTION\DATA2\USER10\UN121801.BSF
User Number	: 10
User Id	: 3H:5ML,10ML
User Comments	: LS6500
Preset Count Time	: 90.00
Calculation Mode	: CPM
H# Selected	: YES
Sample Repeats	: 1
Printer Output Mode	: STD
Blank Count	: NO
IC# or SCR Selected	: NO
Replicates	: 1
RS232 Output Mode	: EDIT
Two-Phase Selected	: NO
AQC Choice	: NO
Cycle Repeats	: 1
Data Buffer Output Mode	: EDIT
Scintillator Choice	: LIQUID
Lumex Selected	: NO
Low Sample Reject Count	: 0
Low Level Selection	: YES
Half Life Correction Date	: none
Window Limits Window 1	: 60.00
Preset %Error Iso1	: 1.75
Norm Multiplier Iso1	: 1.00000
Background CPM 1	: 0.00
Window Limits Window 2	: 400.00
Preset %Error Iso2	: 20.00
Norm Multiplier Iso2	: 1.00000
Background CPM 2	: 0.00

Sam	Rack	Time	H#	CPM Iso1	%Err1	CPM Iso2	%Err2	LumEx	ElTime
1	38-1	90.00	143.2	5.04	9.39	31.38	3.76	0.20	91.35
2	38-2	90.00	144.1	98.37	2.13	31.67	3.75	0.04	182.75
3	38-3	90.00	143.8	104.59	2.06	32.98	3.67	0.03	274.13
4	38-4	90.00	143.9	97.88	2.13	32.58	3.69	0.03	365.52
5	38-5	84.05	142.8	155.51	1.75	32.86	3.81	0.02	450.89
6	38-6	86.20	143.9	151.58	1.75	32.56	3.77	0.02	538.45
7	38-7	45.75	143.1	285.79	1.75	33.29	5.12	0.01	585.20
8	38-8	90.00	143.2	5.93	8.65	32.87	3.68	0.08	676.60
9	38-9	90.00	143.4	8.73	7.13	33.54	3.64	0.08	767.99
10	38-10	90.00	142.7	5.27	9.19	33.38	3.65	0.08	859.37
11	38-11	90.00	142.1	5.70	8.83	32.61	3.69	0.08	950.73
12	38-12	90.00	143.2	6.00	8.61	33.63	3.64	0.07	1042.12
13	39-1	90.00	143.3	5.43	9.04	34.12	3.61	0.07	1133.62
14	39-2	90.00	143.1	6.81	8.08	33.30	3.65	0.07	1225.01
15	39-3	90.00	142.7	6.03	8.58	33.57	3.64	0.07	1316.38
16	39-4	90.00	141.6	5.97	8.63	33.53	3.64	0.07	1407.74
17	39-5	90.00	142.1	144.71	1.75	33.92	3.62	0.02	1499.10
18	39-6	90.00	142.5	5.68	8.85	33.37	3.65	0.07	1590.47
19	39-7	90.00	142.6	5.71	8.82	33.67	3.63	0.07	1681.84
20	39-8	90.00	142.2	144.71	1.75	33.76	3.63	0.02	1773.22
21	39-9	90.00	141.3	6.03	8.58	33.76	3.63	0.07	1864.59

JM 12/21/15

MC 12-21-15

Instrument ID: **LS6500** **ALS**

Date	Sample ID	CountTime (min.)	Rack & Position	Test	User #	Batch ID	Position Check	Initials	Comments
12/15/15	1323004-10	30.05	10 - 10	H_3 10mL	13	3H131120-1	JP	JP	H_3 10mL Quench Curve Calibration
	-11	33.35	- 11						
	-12	37.60	- 12						
	3H131120-1AMB	180	19 - 1						
	BMB		- 2						
	CMB		- 3						
	DMB		- 4						
	EMB		- 5						
	FMB		- 6						
	GMB		- 7						
	HMB		- 8						
	IMB		- 9						
	JMB		- 10						
	KMB		- 11						
	LMB		- 12						
12/17/15	Daily QC	10	1,3 - 1-3,1-2	—	1,3	—	JP	JP	NA
12/17/15	3H131120-3CB1	180	26 - 1	H_3 10mL	13	3H131120-3	JP	JP	H_3 10mL Quench Curve TCVs / ICBs
	1323006-1		- 2						
	-2		- 3						
	-3		- 4						
	3H131120-3CB2		- 5						
	-3AMB		- 6						
	BMB		- 7						
	CMB		- 8						
	CB3		- 9						
12/18/15	Daily QC	10	1,3 - 1-3,1-2	—	1,3	—	JP	JP	NA
12/18/15	3H151217-1CB1	90	38 - 1	H_3 10mL	10	3H151217-1	JP	JP	NA
	1512220-1		- 2						
	-2		- 3						
	-2D		- 4						

Analyst / Date JP 12/21/15

FORM 762r7.XLS (12/3/2015)

Note: Each page is copied as completed and included with the workorder/run documentation; reviewed subsequently

Instrument ID: **LS6500** **ALS**

Date	Sample ID	CountTime (min.)	Rack & Position	Test	User #	Batch ID	Position Check	Initials	Comments
12/18/15	1512220-3	84.05	38 - 5	H3/Ga-L	10	3H151217-1	JP	JP	NA
	-4	86.20	- 6						
	-4MS	45.75	- 7						
	1512264-1	90	- 8						
	-2		- 9						
	-3		- 10						
	3H151217-1CB2		- 11						
	1512264-4		- 12						
	-6		39 - 1						
	1512292-1		- 2						
	-2		- 3						
	-2D		- 4						
	-2MS		- 5						
	1512293-1		- 6						
	3H151217-1MB		- 7						
	LCS		- 8						
	CB3		- 9						
12/19/15	Daily QC	10	13 - 1-3, 1-2	—	13	—	JP	JP	NA
12/20/15	Daily QC	10	13 - 1-3, 1-2	—	13	—	JP	JP	
12/20/15	TC151214-2CB1	75	14 - 1	Tc99	2	TC151214-2	JP	JP	NA
	1512130-4		- 2						
	-5		- 3						
	-6		- 4						
	-7		- 5						
	-8		- 6						
	-9		- 7						
	-10		- 8						
	TC151214-2CB2		- 9						
	1512130-10D		- 10						
	11		- 11						

Analyst / Date JP 12-22-15

FORM 762r7.XLS (12/3/2015)

Note: Each page is copied as completed and included with the workorder/run documentation; reviewed subsequently

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Section 6

QUALITY ASSURANCE SUMMARY REPORTS

6

No *NON-CONFORMANCE REPORTS* or *QUALITY ASSURANCE SUMMARY SHEETS* are included in this data package.

Section 7

LABORATORY BENCH SHEETS

7

Radiochemistry Instrument Worksheet

ALS Environmental -- FC

Prep Batch: 3H151217-1

Prep Procedure: H3

Analytical QASS / NCR? Y / (N) AA

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Report Units	Cnt 1 File/Inst	Cnt 1 Rack-Pos	Cnt 1 Pos Chk By	Cnt 2 File/Inst	Cnt 2 Rack-Pos	Cnt 2 Pos Chk By	Cnt 3 File/Inst	Cnt 3 Rack-Pos	Cnt 3 Pos Chk By	Notes
1	1512220-1	SMP	30	10	ml	pCi/l	See 12-18-15 10:22 for count info									
1	1512220-2	SMP	30	10	ml	pCi/l										
1	1512220-2	DUP	30	10	ml	pCi/l										
1	1512220-3	SMP	30	10	ml	pCi/l										
1	1512220-4	SMP	30	10	ml	pCi/l										
1	1512220-4	MS	30	9.8361	ml	pCi/l										
1	1512264-1	SMP	30	10	ml	pCi/l										
1	1512264-2	SMP	30	10	ml	pCi/l										
1	1512264-3	SMP	30	10	ml	pCi/l										
1	1512264-4	SMP	30	10	ml	pCi/l										
1	1512264-6	SMP	30	10	ml	pCi/l										
1	1512292-1	SMP	30	10	ml	pCi/l										
1	1512292-2	SMP	30	10	ml	pCi/l										
1	1512292-2	DUP	30	10	ml	pCi/l										
1	1512292-2	MS	30	9.8361	ml	pCi/l										
1	1512293-1	SMP	30	10	ml	pCi/l										
1	3H151217-1CB1	MB	30	10	ml	pCi/l										
1	3H151217-1CB2	MB	30	10	ml	pCi/l										
1	3H151217-1CB3	MB	30	10	ml	pCi/l										
1	3H151217-1	MB	30	10	ml	pCi/l										
1	3H151217-1	LCS	30	9.8361	ml	pCi/l										

JP 12/23/15

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	648.4095.58	2,624.642	DPM/ml	12/17/15	1	ml	RS-019

Sample Barcodes

1512220-1
3H151217-1PS1

1512220-2
3H151217-1PS2

1512220-2DUP
3H151217-1PS3

Radiochemistry Instrument Worksheet

ALS Environmental -- FC

Prep Batch: 3H151217-1

Prep Procedure: H3

Analytical QASS / NCR? Y / N

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Report Units	Cnt 1 File/Inst	Cnt 1 Rack-Pos	Cnt 1 Pos Chk By	Cnt 2 File/Inst	Cnt 2 Rack-Pos	Cnt 2 Pos Chk By	Cnt 3 File/Inst	Cnt 3 Rack-Pos	Cnt 3 Pos Chk By	Notes
1512220-3 3H151217-1PS4								1512220-4 3H151217-1PS5						1512220-4MS 3H151217-1PS6		
1512264-1 3H151217-1PS7								1512264-2 3H151217-1PS8						1512264-3 3H151217-1PS9		
1512264-4 3H151217-1PS10								1512264-6 3H151217-1PS11						1512292-1 3H151217-1PS12		
1512292-2 3H151217-1PS13								1512292-2DUP 3H151217-1PS14						1512292-2MS 3H151217-1PS15		
1512293-1 3H151217-1PS16								3H151217-1CB1MB 3H151217-1PS17						3H151217-1CB2MB 3H151217-1PS18		
3H151217-1CB3MB 3H151217-1PS19								3H151217-1MB 3H151217-1PS20						3H151217-1LCS 3H151217-1PS21		

Reporting Units

LabID:	TstGrpName:	RptUnits:
1512293-1	H3	pCi/l
1512292-1	H3	pCi/l
1512264-1	H3	pCi/l
1512220-1	H3_ITLV	pCi/l
1512292-2	H3	pCi/l
1512264-2	H3	pCi/l
1512220-2	H3_ITLV	pCi/l
1512264-3	H3	pCi/l
1512220-3	H3_ITLV	pCi/l
1512264-4	H3	pCi/l
1512220-4	H3_ITLV	pCi/l
1512264-6	H3	pCi/l

Radiochemistry Instrument Worksheet

ALS Environmental -- FC

Prep Batch: 3H151217-1

Prep Procedure: H3 10mL Single Point 90Mn

Analytical QASS / NCR? Y / N AH

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Report Units	Cnt 1 File/Inst	Cnt 1 Rack-Pos	Cnt 1 Pos Chk By	Cnt 2 File/Inst	Cnt 2 Rack-Pos	Cnt 2 Pos Chk By	Cnt 3 File/Inst	Cnt 3 Rack-Pos	Cnt 3 Pos Chk By	Notes
1	1512220-1	SMP	30	10	ml	pCi/l	LS650038.2		JP							
1	1512220-2	SMP	30	10	ml	pCi/l		-3								
1	1512220-2	DUP	30	10	ml	pCi/l		-4								
1	1512220-3	SMP	30	10	ml	pCi/l		-5								
1	1512220-4	SMP	30	10	ml	pCi/l		-6								
1	1512220-4	MS	30	9.8361	ml	pCi/l		-7								
1	1512264-1	SMP	30	10	ml	pCi/l		-8								
1	1512264-2	SMP	30	10	ml	pCi/l		-9								
1	1512264-3	SMP	30	10	ml	pCi/l		-10								
1	1512264-4	SMP	30	10	ml	pCi/l		-12								
1	1512264-6	SMP	30	10	ml	pCi/l	39-1									
1	1512292-1	SMP	30	10	ml	pCi/l		-2								
1	1512292-2	SMP	30	10	ml	pCi/l		-3								
1	1512292-2	DUP	30	10	ml	pCi/l		-4								
1	1512292-2	MS	30	9.8361	ml	pCi/l		-5								
1	1512293-1	SMP	30	10	ml	pCi/l		-6								
1	3H151217-1CB1	MB	30	10	ml	pCi/l	38-1									
1	3H151217-1CB2	MB	30	10	ml	pCi/l		-11								
1	3H151217-1CB3	MB	30	10	ml	pCi/l	39-9									
1	3H151217-1	MB	30	10	ml	pCi/l		-7								
1	3H151217-1	LCS	30	9.8361	ml	pCi/l		-8								

1/11

1/8

12/31

AH 12-22-15

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	648.4095.58	2,624.642	DPM/ml	12/17/15	0.5	ml	RS-019

Sample Barcodes

1512220-1
3H151217-1PS1

1512220-2
3H151217-1PS2

1512220-2DUP
3H151217-1PS3

Radiochemistry Instrument Worksheet

ALS Environmental -- FC

Prep Batch: 3H151217-1

Prep Procedure: H3

Analytical QASS / NCR? Y N

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Report Units	Cnt 1 File/Inst	Cnt 1 Rack-Pos	Cnt 1 Pos Chk By	Cnt 2 File/Inst	Cnt 2 Rack-Pos	Cnt 2 Pos Chk By	Cnt 3 File/Inst	Cnt 3 Rack-Pos	Cnt 3 Pos Chk By	Notes
1512220-3 3H151217-1PS4								1512220-4 3H151217-1PS5						1512220-4MS 3H151217-1PS6		
1512264-1 3H151217-1PS7								1512264-2 3H151217-1PS8						1512264-3 3H151217-1PS9		
1512264-4 3H151217-1PS10								1512264-6 3H151217-1PS11						1512292-1 3H151217-1PS12		
1512292-2 3H151217-1PS13								1512292-2DUP 3H151217-1PS14						1512292-2MS 3H151217-1PS15		
1512293-1 3H151217-1PS16								3H151217-1CB1MB 3H151217-1PS17						3H151217-1CB2MB 3H151217-1PS18		
3H151217-1CB3MB 3H151217-1PS19								3H151217-1MB 3H151217-1PS20						3H151217-1LCS 3H151217-1PS21		

Reporting Units

LabID:	TstGrpName:	RptUnits:
1512293-1	H3	pCi/l
1512292-1	H3	pCi/l
1512264-1	H3	pCi/l
1512220-1	H3_ITLV	pCi/l
1512292-2	H3	pCi/l
1512264-2	H3	pCi/l
1512220-2	H3_ITLV	pCi/l
1512264-3	H3	pCi/l
1512220-3	H3_ITLV	pCi/l
1512264-4	H3	pCi/l
1512220-4	H3_ITLV	pCi/l
1512264-6	H3	pCi/l

Radiochemistry Prep Worksheet

ALS Environmental -- FC

Prep Batch: 3H151217-1

Prep Procedure: H3

Reviewed By: cdj CDJ **Review Date:** 12/22/2015

Non-Routine Pre-Treatment? Y / (N) **Batch:** N/A **Re-Prep?** Y / (N) **Batch:** N/A **Prep QASS / NCR?** Y / (N) N/A

Prep SOP: PAI 700 **Rev:** 13
Prep SOP: NONE
Matrix Class: liquid

Prep Analyst: Clayton D. Jacobs CDJ
Prep Date: 12/17/2015
Prep Dept: RS

Balance: N/A
Balance: N/A

Cocktail: UGLLT
Cocktail Pipet: T002
Aliquot Pipet: RS-401

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq ml	Fin Alq ml	Prep Basis	Water Added(ml)	Moisture(%)	Analysis Vol.(ml)	Standards	Prep Notes
1	1	1512220-1	SMP	N/A	30	10	Unfiltered	0	100	10	N/A	
2	1	1512220-2	SMP		30	10	Unfiltered	0	100	10		
3	1	1512220-2	DUP		30	10	Unfiltered	0	100	10		
4	1	1512220-3	SMP		30	10	Unfiltered	0	100	10		
5	1	1512220-4	SMP		30	10	Unfiltered	0	100	10		
6	1	1512220-4	MS		30	9.836066	Unfiltered	0	100	10	S1	
7	1	1512264-1	SMP		30	10	Unfiltered	0	100	10	N/A	
8	1	1512264-2	SMP		30	10	Unfiltered	0	100	10		CDJ 12/22/2015
9	1	1512264-3	SMP		30	10	Unfiltered	0	100	10		
10	1	1512264-4	SMP		30	10	Unfiltered	0	100	10		
11	1	1512264-6	SMP		30	10	Unfiltered	0	100	10		
12	1	1512292-1	SMP		30	10	Unfiltered	0	100	10		
13	1	1512292-2	SMP		30	10	Unfiltered	0	100	10		
14	1	1512292-2	DUP		30	10	Unfiltered	0	100	10		
15	1	1512292-2	MS		30	9.836066	Unfiltered	0	100	10	S1	
16	1	1512293-1	SMP		30	10	Unfiltered	0	100	10	N/A	
17	1	3H151217-1CB1	MB		30	10	Unfiltered	0	100	10		
18	1	3H151217-1CB2	MB		30	10	Unfiltered	0	100	10		
19	1	3H151217-1CB3	MB		30	10	Unfiltered	0	100	10		
20	1	3H151217-1	MB		30	10	Unfiltered	0	100	10		
21	1	3H151217-1	LCS		30	9.836066	Unfiltered	0	100	10	S1	

Radiochemistry Prep Worksheet

ALS Environmental -- FC

Prep Batch: 3H151217-1

Prep Procedure: H3

Reviewed By: cdj CDJ **Review Date:** 12/22/2015

Non-Routine Pre-Treatment? Y / N **Batch:** N/A **Re-Prep? Y / N** **Batch:** N/A **Prep QASS / NCR? Y / N** N/A

Prep SOP: PAI 700 **Rev:** 13
Prep SOP: NONE
Matrix Class: liquid

Prep Analyst: Clayton D. Jacobs CDJ
Prep Date: 12/17/2015
Prep Dept: RS

Balance: N/A
Balance: N/A

Cocktail: UGLLT
Cocktail Pipet: T002
Aliquot Pipet: RS-401

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq ml	Fin Alq ml	Prep Basis	Water Added(ml)	Moisture(%)	Analysis Vol.(ml)	Standards	Prep Notes

Comments

Spiked By: Clayton D. Jacobs **Date:** 12/17/2015
Witnessed By: Crystal Shaeffer **Date:** 12/17/2015

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	648.4095.58	2,624.642	DPM/ml	12/17/15	1	ml	RS-019

Reagent Solution IDs*

97-15251 E11646 g25k51

*Except where otherwise noted, all reagents were applied in accordance with the specifications of the preparation methods associated with this batch.

ALS Environmental -- FC

Radiochemistry Prep Worksheet

Prep Batch: 3H151217-1

Prep Procedure: H3

Prep Batch Not Validated!!!

Reviewed By:

Review Date:

Non-Routine Pre-Treatment? Y / N Batch: _____ Re-Prep? Y / N Batch: _____ Prep QASS / NCR? Y / N _____

Prep SOP: PAI 700 Rev: 13
Prep SOP: NONE
Matrix Class: liquid

Prep Analyst: Clayton D. Jacobs CDJ
Prep Date: 12/17/2015
Prep Dept: RS

Balance:
Balance:

Cocktail:
Cocktail Pipet:
Aliquot Pipet:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq ml	Fin Alq ml	Prep Basis	Water Added(ml)	Moisture(%)	Analysis Vol.(ml)	Standards	Prep Notes
1	1	1512220-1	SMP		30	10	Unfiltered	0	100	10		
2	1	1512220-2	SMP		30	10	Unfiltered	0	100	10		
3	1	1512220-2	DUP		30	10	Unfiltered	0	100	10		
4	1	1512220-3	SMP		30	10	Unfiltered	0	100	10		
5	1	1512220-4	SMP		30	10	Unfiltered	0	100	10		
6	1	1512220-4	MS		30	9.836066	Unfiltered	0	100	10	S1	
7	1	1512264-1	SMP		30	10	Unfiltered	0	100	10		
8	1	1512264-2	SMP		30	10	Unfiltered	0	100	10		
9	1	1512264-3	SMP		30	10	Unfiltered	0	100	10		
10	1	1512264-4	SMP		30	10	Unfiltered	0	100	10		
11	1	1512264-6	SMP		30	10	Unfiltered	0	100	10		
12	1	1512292-1	SMP		30	10	Unfiltered	0	100	10		
13	1	1512292-2	SMP		30	10	Unfiltered	0	100	10		
14	1	1512292-2	DUP		30	10	Unfiltered	0	100	10		
15	1	1512292-2	MS		30	9.836066	Unfiltered	0	100	10	S1	
16	1	1512293-1	SMP		30	10	Unfiltered	0	100	10		
17	1	3H151217-1CB1	MB		30	10	Unfiltered	0	100	10		
18	1	3H151217-1CB2	MB		30	10	Unfiltered	0	100	10		
19	1	3H151217-1CB3	MB		30	10	Unfiltered	0	100	10		
20	1	3H151217-1	MB		30	10	Unfiltered	0	100	10		
21	1	3H151217-1	LCS		30	9.836066	Unfiltered	0	100	10	S1	

ALS Environmental -- FC

Radiochemistry Prep Worksheet

Prep Batch: 3H151217-1

Prep Procedure: H3

Prep Batch Not Validated!!!

Reviewed By:

Review Date:

Non-Routine Pre-Treatment? Y / N **Batch:** _____ **Re-Prep? Y / N** **Batch:** _____ **Prep QASS / NCR? Y / N** _____

Prep SOP: PAI 700 **Rev:** 13
Prep SOP: NONE
Matrix Class: liquid

Prep Analyst: Clayton D. Jacobs CDJ
Prep Date: 12/17/2015
Prep Dept: RS

Balance:
Balance:

Cocktail:
Cocktail Pipet:
Aliquot Pipet:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq ml	Fin Alq ml	Prep Basis	Water Added(ml)	Moisture(%)	Analysis Vol.(ml)	Standards	Prep Notes

Comments

Spiked By: CDJ **Date:** 12/17/15
Witnessed By: CDS **Date:** 12/17/15

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	648.4095.58	2,624.642	DPM/ml	12/17/15	0.5	ml	RS-019

exp 7/3/16

Reagent Solution IDs*

97-15251 E11646 g25k51

*Except where otherwise noted, all reagents were applied in accordance with the specifications of the preparation methods associated with this batch.

Sample Condition Form (Liquid)

Analyst: CDJ

Analysis Date: 12/17/2015 Method: Prep

Work Order	Sample ID	Sample Condition (Visual Appearance of Analysis Aliquot at Time of Prep) pH	Color	Remarks
1512264	1	~7	Clear	none
	2			
	3			
	4			
	6			
1512292	1			Sediment
	2			
1512220	1			none
	2			
	3			
	4			
1512293	1			
				CDJ 12/17/2015

I:\Oprtns\RAD\FORMS\sample condition form (Liquid)

Section 8

STANDARDS TRACEABILITY DOCUMENTS

8

Project 648.4095.58 H-3 working standard

Continued from Page

TE 7/21/14

Prepare a working dilution of 648.2382.75

1. Density of DI H2O, lot # NA
   Mass of 100mL vol. flask: 56.4430g Balance # 12
   Mass of flask & 100mL acid: 156.0566g Balance# 12
   Net Mass: 99.6136g
   Density: 0.9961g/mL

2. Mass of 648.2382.75 transferred:
   Mass of open empty ~~nalgene~~ amber: 386.86g Balance# 26
   Mass of ~~nalgene~~ amber & standard: 404.40g Balance# 26
   Net mass of standard transferred: 17.54g Balance# ____

   TE 7/21/14 TE 7/21/14 TE 7/21/14

3. Dilute to final volume:
   Mass of ~~nalgene~~ amber, standard, & diluent: 1321.5g Balance# 26
   Mass of empty ~~nalgene~~ amber (from above): 386.86g Balance# 26
   Net mass of new dilution: 934.64g Balance# ____

   TE 7/21/14

4. Final activity calculation:

$$369{,}530.45\,dpm/mL\left(\frac{0.9961\,g/mL}{0.9958\,g/mL}\right)\left(\frac{17.54\,g}{934.64\,g}\right)=6936.91\,dpm/mL$$

TE 7/21/14

JP 7/31/14

Stnd ID: **648.4095.58**

Description: **H-3**
Expiration: **7/23/2015**
Activity: **6936.91** **dpm/mL**

2s Uncertainty: **49.95** **dpm/mL**
Ref. Date: **9/3/1998**
Ref Time: **N/A**
Prep Date: **7/21/2014** *Prep by:* **TE**
Matrix/Comp. **DI Water**
Half Life (y): **1.23E+01**

Reverification Log		
Analysis Date	Initials	Expiration Date
07/03/2015	JP	07/03/2016

JP 7/31/14

Continued on Page

Signed: T Elliott Date: 7/21/14

Read and Understood By Signed: [illegible] Date: 07/31/14

Prepare a 10 dilution ~~working solution (at approximately 2000 DPM/mL)~~ tritium standard using RSO #1643 and diluting with DI water.

1) Determine the density of DI water:

Mass of empty 100 mL Class A volumetric flask	67.1522 g	Bal #13
Mass of flask + water	166.7351 g	↓
Net mass of 100 mL H_2O	99.5829 g	

$\rho = .9958$ g/mL

2) Transfer contents of Ampule SRM 4927F to a ~~40 mL VOA vial~~ 3/27/03 500 mL glass amber bottle

mass of ~~40 mL VOA vial~~ 3/27/03 empty bottle w/o lid	255.04 g	Bal #26
mass of open ampule + 50 mL beaker	40.9075 g	Bal #19
mass of empty ampule + 50 mL beaker	36.0148 g	↓
Net mass of Std.	4.8927 g	

3) Dilute Std. with DI water

mass of bottle w/o lid	255.04 g	Bal #26
mass of bottle, Std. + DI water	757.1 g	↓
Net mass of Std + DI water	502.1 g	

4. Final Activity Calculation.

$$\frac{(634.7\ \text{kBq/g})(1000\ \text{Bq/kBq})(4.8927\ \text{g})(60\ \text{DPM/Bq})(.9958\ \text{g/mL})}{502.1\ \text{g}} = 369{,}530.45\ \frac{\text{DPM}}{\text{mL}}$$

U.S. Department of Commerce
National Institute of Standards and Technology
SRM 4927F
Hydrogen-3
≤4 MBq in distilled water

CAUTION
RADIOACTIVE

Continued on Page

Read and Understood By

Signed 3/27/03 Date — Signed 3/27/03 Date

National Institute of Standards & Technology

Certificate

PATP C.648
Rec'd 17-04-C

Standard Reference Material 4927F
Hydrogen-3 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive hydrogen-3, as water, in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of beta-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains hydrogen-3 with a total activity of approximately 3.2 MBq. Hydrogen-3 decays by beta-particle emission. None of the beta particles escape from the SRM ampoule. During the decay process no photons are emitted. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. There is no detectable external radiation. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains only distilled water. There is no chemical hazard. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least September 2008.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) because of the radioactivity.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, L.R. Karam, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas and M.P. Unterweger of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by J.W.L. Thomas.

Bert M. Coursey, Chief
Ionizing Radiation Division

Gaithersburg, Maryland 20899
June 1999
Half-life and text revised October 2000

Nancy M. Trahey, Chief
Standard Reference Materials Program

*Notes and references are on pages 5 and 6.

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 and 6.

PROPERTIES OF SRM 4927F

Certified values

Solution density	(0.998 ± 0.002) $g \cdot mL^{-1}$ at 20.0 °C [b]*
Radionuclide	Hydrogen-3
Reference time	1200 EST, 3 September 1998
Massic activity of the solution [c]	634.7 $kBq \cdot g^{-1}$
Relative expanded uncertainty (k=2)	0.72% [d] [e]

Uncertified values

Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution mass	Approximately 5.0 g		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration ($mol \cdot L^{-1}$)	Mass Fraction ($g \cdot g^{-1}$)
	H_2O ^3HHO	55 6×10^{-7}	1.00 1×10^{-8}
Radiological Properties:			
Radionuclidic impurities	None detected [f]		
Half lives used	Hydrogen-3: (4500 ± 8) d [g]		
Calibration method and measuring instrument(s)	4πβ gas counting of SRM 4927E using the NIST length-compensated internal gas proportional counters and intercomparison of SRMs 4927E/4927F using two 4πβ liquid-scintillation counting systems [h]		

*Notes and references are on pages 5 and 6.

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [d]*

Input Quantity x_i, the source of uncertainty (and individual uncertainty components where appropriate)	Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [i]	Relative Sensitivity Factor, $\lvert \partial y/\partial x_i \rvert \cdot (x_i/y)$ [j]	Relative Uncertainty Of Output Quantity, $u_r(y)/y$, (%) [k]
Massic count rate of SRM 4927E, corrected for background and decay [h]	Standard deviation of the mean for 23 sets of gas counting measurements (A)	0.18	1.0	0.18
Gram-mole measurements	Estimated (B)	0.20	1.0	0.20
Live-time [p]	Estimated (B)	0.10	1.0	0.10
Extrapolation of count-rate-versus-energy to zero energy	Estimated (B)	0.20	1.0	0.20
Half life of H-3	Standard uncertainty of the half life (A)	0.18 [m]	0.009 [n]	0.002
Liquid-scintillation intercomparison of SRM 4927F and SRM 4927E	Standard deviation of the mean for 7 sets of liquid-scintillation measurements (A)	0.06	1.0	0.06
Radionuclidic impurities	Limit of detection (B) [q]	100.	0.0005	0.05
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%)				0.36
Coverage Factor, k				x 2
Relative Expanded Uncertainty of the Output Quantity, U/y, (%)				0.72

*Notes and references are on pages 5 and 6.

NOTES

[a] The Sievert is the SI unit for dose equivalent. See reference [1]. One μSv is equal to 0.1 mrem.

Distance from Ampoule (cm):	1	30	100
Approximate Dose Rate (μSv/h):	<0.1 (Not detectable)		

[b] The stated uncertainty is two times the standard uncertainty.

[c] Massic activity is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].

[d] The reported value, y, of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as $y = f(x_1, x_2, x_3, \ldots x_n)$, where f is a mathematical function derived from the assumed model of the measurement process.

The value, x_i, used for each input quantity i has a standard uncertainty, $u(x_i)$, that generates a corresponding uncertainty in y, $u_i(y) = |\partial y/\partial x_i| \cdot u(x_i)$, called a component of combined standard uncertainty of y.

The combined standard uncertainty of y, $u_c(y)$, is the positive square root of the sum of the squares of the components of combined standard uncertainty.

The combined standard uncertainty is multiplied by a coverage factor of $k = 2$ to obtain U, the expanded uncertainty of y.

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation $u_c(y)$, the unknown value of the massic activity is believed to lie in the interval $y \pm U$ with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

[e] The value of each standard uncertainty component, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic response is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval $U/2$ to $2U$ (i.e., within a factor of 2 of the estimated value).

[f] The estimated limit of detection for radionuclidic impurities is 300 $Bq \cdot g^{-1}$.

[g] The stated uncertainty is the standard uncertainty. See reference [5].

[h] Extensive gas-counting measurements were made on the SRM 4927E solution during 1998 and 1999. The SRM 4927F solution was intercompared with the SRM 4927E solution using liquid-scintillation counting.

[i] Relative standard uncertainty of the input quantity x_i.

[j] The relative change in the output quantity y divided by the relative change in the input quantity x_i. If $|\partial y/\partial x_i| \cdot (x_i/y) = 1.0$, then a 1% change in x_i results in a 1% change in y. If $|\partial y/\partial x_i| \cdot (x_i/y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y.

[k] Relative component of combined standard uncertainty of output quantity y, rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_r(y)/y = |\partial y/\partial x_i| \cdot u(x_i)/y = |\partial y/\partial x_i| \cdot (x_i/y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y/\partial x_i| \cdot (x_i/y)$, and $u_r(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

[m] The relative standard uncertainty of $\lambda \cdot t$ is determined by the relative standard uncertainty of λ (i.e., of the half life). The relative standard uncertainty of t is negligible.

[n] $|\partial y/\partial x_i| \cdot (x_i/y) = |\lambda \cdot t|$

[p] The live time is determined by counting the pulses from a gated crystal-controlled oscillator.

[q] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i)/x_i$ = 100%. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of H-3)}·{(Bq of impurity)/(Bq of H-3)}. Thus $u_r(y)/y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.

REFERENCES

[1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900.

[2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900. (Listed under ISO miscellaneous publications as "ISO Guide to the Expression 1993".)

[3] B. N. Taylor and C. E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.

[4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.

[5] L.L. Lucas and M.P. Unterweger, *Comprehensive Review and Critical Evaluation of the Half-Life of Tritium*, J. Res. Natl. Inst. Stand. Technol. 105, 541-549 (2000).

Section 9

ADDITIONAL SUPPORTING DOCUMENTATION

9

Liquid Scintillation Counter

Instrumentation Calibration

Initial Efficiency Calibration Standards Traceability

LS6500 10mL geometry Tritium Background Determination

Interim control limits are established from the initial calibration for the geometry of interest. Limits are +/- 3 standard deviations from the initial unquenched calibration blank data. Once enough historical data is acquired, new historical limits are set as follows: Control limits for reagent blanks are established from 30 individual historical data points (10 batches). Limits are +/- 3 standard deviations from 30 individual historical data points. Individual reagent blanks and the average of reagent blanks from each batch are in control if the Count Rate (CPM) is within the established control limits.

CURRENTLY UNDER HISTORICAL LIMITS

Updated on 8/05/14 JP

							Individual Reagent Blanks			Average of Reagent Blanks		
COUNT DATE	#	Sample ID	Count Duration (m)	Count Rate (CPM)	Total Cts.	Mean	LCL	UCL	Pass ?	LCL	UCL	Pass ?
12/18/2015	280	3H151217-1CB1	90	5.04	453.6		4.67	6.69	PASS			
12/19/2015	281	3H151217-1CB2	90	5.7	513		4.67	6.69	PASS			
12/19/2015	282	3H151217-1CB3	90	6.03	542.7	5.59	4.67	6.69	PASS	4.67	6.69	PASS

I:\Oprtns\RAD\INST\LSC\LS6500\CB'S_BKGD_WIN2_CKS\RB__H3_10mL_LS6500

Tritium "Window 2" Control Limits (LS 6500)

The background count rate is determined from the average of the reagent blanks for the batch. Window 2 control limits are established using the average count rate from the three reagent blanks associated with each prep batch +/- 3X the estimated poisson uncertainty.

Updated 8/05/12 MBC

COUNT DATE	#	Sample ID	Count Duration (min.)	**Average count Duration (min.)**	Count Rate (CPM)	Batch Average Reagent Blank	**Lower Control Limit**	**Upper Control Limit**	**PASS/ FAIL**
12/18/2015	280	3H151217-1CB1	90		31.38				
12/19/2015	281	3H151217-1CB2	90		32.61				
12/19/2015	282	3H151217-1CB3	90	90	33.76	32.58	**30.78**	**34.39**	
		1512220-3	84.05		32.86		**30.72**	**34.45**	**PASS**
		1512220-4	86.2		32.56		**30.74**	**34.43**	**PASS**
		1512220-4MS	45.75		33.29		**30.05**	**35.12**	**PASS**

I:\Oprtns\RAD\INST\LSC\LS6500\CB'S_BKGD_WIN2_CKS\RB__H3_10mL_LS6500

10-mL Tritium Efficiency Calibration LS6500

10 mL sample + 10 mL Ultima Gold LLT
11/30/2015
LS6500

Standard used: 699.3020.95

160351.04	dpm/ml as of	9/3/1998
1/2 life =	12.3	yrs.
current activity =	60692.40	dpm/ml
volume =	0.1000	ml
Spike Activity =	6069.24	dpm

Sample ID	WIND1 cpm (60-250)	WIND2 cpm (400-950)	%LUMEX	H #	
1323005-1	935.57	37.50	0.00	147.4	
1323005-2	949.20	37.25	0.00	147.4	
1323005-3	947.10	33.26	0.00	148.1	
3H131120-2AMB	5.73	33.28	0.04	148.0	
3H131120-2BMB	5.38	34.63	0.04	146.5	
3H131120-2CMB	5.84	34.54	0.05	145.4	
average LCS=	943.96	34.15	0.02	147.1	averages
average bkg=	5.65				
net cpm=	938.31				
/known dpm=	6069.24				
efficiency=	**0.1546**				

WIND2 cpm	%LUMEX	H #	
35.46	5.00	162.1	UCL
32.84	0.00	132.1	LCL
See Tech. Mgr.	See Tech. Mgr.	Std. Addition	Corrective Action

Previous Eff. 0.1591

% Diff. $\left|\frac{0.1546}{0.1591} - 1\right| \times 100 = 2.83\%$

Instrument Technician: [signature] 12-2-15
Signature & Date

Supervisory Review: [signature] 12/8/15
Signature & Date

I:\Oprtns\RAD\INST\LSC\LS6500\CALIBRATIONS\SINGLE POINT\2015\11.30.15_EFF_H3-10mL

^{3}H Efficiency Calibration Verification / Method Blank Verification 12/01/15

Calibration Source Check

LS6500

Analysis Date: 12/1/2015
Nuclide: ^{3}H
Half Life: 1.23E+01 yrs

Calibration Check Source:

Spike Standard: 648.4095.35
Reference Date : 9/3/1998
Spiked DPM/mL : 6585.43
Spike Volume : 0.5000 mL
Spiked into : 30.0 mL
Current Spk. Act. : 20.98 dpm/mL

Control Limits: 85%-115%

Calibration Check Source Count

Sample ID	Position	Prep Date	Cnt. Dur.	Anal. Vol.	GrsCPM	BkgCPM	Efficiency	Activity	Units	Chem. Yield	LCS Recovery:	Pass/Fail
1323007-1	38-8	11/20/2013	180	9.9	68.66	5.39	0.1546	20.88	pCi/mL	100%	99.5%	PASS
1323007-2	38-9	11/20/2013	180	9.9	68.77	5.39	0.1546	20.91	pCi/mL	100%	99.7%	PASS
1323007-3	38-10	11/20/2013	180	9.9	69.21	5.39	0.1546	21.06	pCi/mL	100%	100.4%	PASS

Method Blank Check Count

1 σ IU 0.056 *1 σ PU 0.051*

Sample ID	Rack	Prep Date	Cnt. Dur.	Anal. Vol.	GrsCPM	BkgCPM	Efficiency	Chem. Yield	k (denom.)	activity	MDC	Pass/Fail	Units	2s CU	2σ IU	2σ PU	2σ TPU
3H131120-4AMB	38-12	11/20/2013	180	10	5.32	5.39	0.1546	100%	3.061	-0.0229	0.27	PASS	pCi/mL	0.159	-0.00256	-0.00233	0.159
3H131120-4BMB	31-1	11/20/2013	180	10	5.52	5.39	0.1546	100%	3.061	0.0425	0.27	PASS	pCi/mL	0.161	0.00476	0.00433	0.161
3H131120-4CMB	31-2	11/20/2013	180	10	5.13	5.39	0.1546	100%	3.061	-0.0849	0.26	PASS	pCi/mL	0.158	-0.00951	-0.00866	0.158

OK JP 12/4/15

I:\Oprtns\RAD\INST\LSC\LS6500\CALIBRATIONS\SINGLE POINT\2015\11.30.15_EFF_H3-10mL(ICV_ICB)

ID:3H:5ML,10ML 30 NOV 2015 18:58
USER:10 COMMENT:LS6500
PRESET TIME : 180.00
DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD
COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT
TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK :EDIT
SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
LOW LEVEL : YES HALF LIFE CORRECTION DATE: none

CHAN: 60.0 - 250.0 %ERROR: 1.75 FACTOR: 1.000000 BKG. SUB: 0
CHAN: 400.0 - 950.0 %ERROR:20.00 FACTOR: 1.000000 BKG. SUB: 0

SAM NO	POS	TIME MIN	H#	WIND1 CPM	WIND1 %ERROR	WIND2 CPM	WIND2 %ERROR	LUMEX %	ELAPSED TIME
1	38-1	14.00	147.4	935.57	1.75	37.50	8.73	0.00	14.66
2	38-2	13.80	147.4	949.20	1.75	37.25	8.82	0.00	29.20
3	38-3	13.80	148.1	947.10	1.75	33.26	9.34	0.00	43.78
4	38-4	180.00	148.0	5.73	6.23	33.28	2.58	0.04	225.85
5	38-5	180.00	146.5	5.38	6.42	34.63	2.53	0.04	407.91
6	38-6	180.00	145.4	5.84	6.17	34.54	2.54	0.05	589.97
7	38-7	180.00	146.4	5.69	6.25	34.48	2.54	0.04	772.00
8	38-8	180.00	146.8	68.66	1.80	34.36	2.54	0.02	954.06
9	38-9	180.00	147.0	68.77	1.80	33.61	2.57	0.02	1136.13
10	38-10	180.00	147.0	69.21	1.79	32.82	2.60	0.02	1318.18
11	38-11	180.00	148.2	5.32	6.46	32.73	2.61	0.03	1500.20
12	38-12	180.00	145.6	5.32	6.47	32.93	2.60	0.03	1682.24
13	31-1	180.00	148.2	5.52	6.35	32.87	2.60	0.04	1864.40
14	31-2	180.00	146.6	5.13	6.58	32.54	2.61	0.04	2046.43
15	31-3	180.00	146.2	5.16	6.57	33.53	2.57	0.04	2228.48

WK 12-2-15
JP 12/1/15

B65_10_113001.ASC

BSF Version	: 3
Instrument Type	: LS 6000
Data Capture Date	: 30 Nov 2015 17:57:51
User Filename	: C:\...\LS WINCONNECTION\DATA2\USER10\UN113001.BSF
User Number	: 10
User Id	: 3H:5ML,10ML
User Comments	: LS6500
Preset Count Time	: 180.00
Calculation Mode	: CPM
H# Selected	: YES
Sample Repeats	: 1
Printer Output Mode	: STD
Blank Count	: NO
IC# or SCR Selected	: NO
Replicates	: 1
RS232 Output Mode	: EDIT
Two-Phase Selected	: NO
AQC Choice	: NO
Cycle Repeats	: 1
Data Buffer Output Mode	: EDIT
Scintillator Choice	: LIQUID
Lumex Selected	: NO
Low Sample Reject Count	: 0
Low Level Selection	: YES
Half Life Correction Date	: none
Window Limits Window 1	: 60.00
Preset %Error Iso1	: 1.75
Norm Multiplier Iso1	: 1.00000
Background CPM 1	: 0.00
Window Limits Window 2	: 400.00
Preset %Error Iso2	: 20.00
Norm Multiplier Iso2	: 1.00000
Background CPM 2	: 0.00

Sam	Rack	Time	H#	CPM Iso1	%Err1	CPM Iso2	%Err2	LumEx	ElTime
1	38-1	14.00	147.4	935.57	1.75	37.50	8.73	0.00	14.66
2	38-2	13.80	147.4	949.20	1.75	37.25	8.82	0.00	29.20
3	38-3	13.80	148.1	947.10	1.75	33.26	9.34	0.00	43.78
4	38-4	180.00	148.0	5.73	6.23	33.28	2.58	0.04	225.85
5	38-5	180.00	146.5	5.38	6.42	34.63	2.53	0.04	407.91
6	38-6	180.00	145.4	5.84	6.17	34.54	2.54	0.05	589.97
7	38-7	180.00	146.4	5.69	6.25	34.48	2.54	0.04	772.00
8	38-8	180.00	146.8	68.66	1.80	34.36	2.54	0.02	954.06
9	38-9	180.00	147.0	68.77	1.80	33.61	2.57	0.02	1136.13
10	38-10	180.00	147.0	69.21	1.79	32.82	2.60	0.02	1318.18
11	38-11	180.00	148.2	5.32	6.46	32.73	2.61	0.03	1500.20
12	38-12	180.00	145.6	5.32	6.47	32.93	2.60	0.03	1682.24
13	31-1	180.00	148.2	5.52	6.35	32.87	2.60	0.04	1864.40
14	31-2	180.00	146.6	5.13	6.58	32.54	2.61	0.04	2046.43
15	31-3	180.00	146.2	5.16	6.57	33.53	2.57	0.04	2228.48

UL 12-2-15
JP 12/1/15

Page 1

Instrument ID: **LS6500** **ALS**

Date	Sample ID	CountTime (min.)	Rack & Position	Test	User #	Batch ID	Position Check	Initials	Comments
11/30/15	1511156 50	2	42 - 7	H3,C14	11	1511156	JP	JP	NA
	CB6		- 8	Tc99					
	1511156-51		- 9						
	-52		- 10						
	-53		- 11						
	-54		- 12						
	-55		44 - 1						
	-56		- 2						
	-57		- 3						
	-58		- 4						
	-59		- 5						
	-60		- 6						
	MB		- 7						
	LCS H3		- 8						
	LCS Tc99		- 9						
	LCS C14		- 10						
	CB7		- 11						
11/30/15	Daily QC	10	13 - 13, 12	—	13	—	JP	JP	NA
11/30/15	1323005-1	14	38 - 1	H3 10mL	10	3H131120-2	JP	JP	H3 10mL Single Pt Cal
	-2	13.80	- 2			13 JP 12/2/15			
	-3	13.80	- 3						
	3H131120-2AMB	180	- 4						
	BMB		- 5						
	CMB		- 6						
	3H131120-4CB1		- 7			3H131120-4			H3 10mL ICVs/ICBs
	1323007-1		- 8						
	-2		- 9						
	-3		- 10						
	3H131120-4CB2		- 11						
	AMB		- 12						

Analyst / Date UK 12-2-15

FORM 762r6.XLS (3/7/09)

Note: Each page is copied as completed and included with the workorder/run documentation; reviewed subsequently

455893

Instrument ID: **LS6500** **ALS**

Date	Sample ID	CountTime (min.)	Rack & Position	Test	User #	Batch ID	Position Check	Initials	Comments
11/30/15	3H131120-4 BMB	180	31 - 1	H_2O_2 10mL	10	3H131120-4	JP	JP	H_2O_2 10mL ICVs / ICBs
	CMB		- 2						
	CB3		- 3						
12/2/15	Daily QC	10	1,3 - 1-3, 1-2	—	1,3	—	JP	JP	NA
			-						
			-						
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			-						
			-						
			-						
			-						
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			-						
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			-	12-2-15					
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			-						
			-						

Analyst / Date 12-2-15

FORM 762r6.XLS (3/7/09)

Note: Each page is copied as completed and included with the workorder/run documentation; reviewed subsequently

455894

Radiochemistry Instrument Worksheet

ALS Environmental -- FC

Prep Batch: 3H131120-2

Prep Procedure: H3 10 mL Single Point Calibrations

Analytical QASS / NCR? Y / N NA

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Report Units	Cnt 1 File/Inst	Cnt 1 Rack-Pos	Cnt 1 Pos Chk By	Cnt 2 File/Inst	Cnt 2 Rack-Pos	Cnt 2 Pos Chk By	Cnt 3 File/Inst	Cnt 3 Rack-Pos	Cnt 3 Pos Chk By	Notes
1	1323005-1	SMP	9.9	9.9	ml	pCi/l	LS6500	38-1	JP							
1	1323005-2	SMP	9.9	9.9	ml	pCi/l		-2								
1	1323005-3	SMP	9.9	9.9	ml	pCi/l		-3								
~~1~~	~~1323005-4~~	~~SMP~~	~~4.9~~	~~4.9~~	~~ml~~	~~pCi/l~~										
1	1323005-5	SMP	4.9	4.9	ml	pCi/l										
~~1~~	~~1323005-6~~	~~SMP~~	~~4.9~~	~~4.9~~	~~ml~~	~~pCi/l~~										
1	3H131120-2A	MB	10	10	ml	pCi/l	LS6500	38-4	JP							
1	3H131120-2B	MB	10	10	ml	pCi/l		-5								
1	3H131120-2C	MB	10	10	ml	pCi/l		-6								
~~1~~	~~3H131120-2X~~	~~MB~~	~~5~~	~~5~~	~~ml~~	~~pCi/l~~										
1	3H131120-2Y	MB	5	5	ml	pCi/l										
~~1~~	~~3H131120-2Z~~	~~MB~~	~~5~~	~~5~~	~~ml~~	~~pCi/l~~										

NEJ 11/22/13

NEJ 11/22/13

12-2-15

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	699.3020.95	68,167.899	DPM/ml	11/20/13	0.1	ml	RS-008

Sample Barcodes

1323005-1 3H131120-2PS1	1323005-2 3H131120-2PS2	1323005-3 3H131120-2PS3
1323005-4 3H131120-2PS4	1323005-5 3H131120-2PS5	1323005-6 3H131120-2PS6
3H131120-2AMB 3H131120-2PS7	3H131120-2BMB 3H131120-2PS8	3H131120-2CMB 3H131120-2PS9
3H131120-2XMB 3H131120-2PS10	3H131120-2YMB 3H131120-2PS11	3H131120-2ZMB 3H131120-2PS12

ALS Environmental -- FC

Radiochemistry Instrument Worksheet

Prep Batch: 3H131120-2

Reporting Units

LabID:	TstGrpName:	RptUnits:
1323005-1	H3	pCi/l
1323005-2	H3	pCi/l
1323005-3	H3	pCi/l
1323005-4	H3	pCi/l
1323005-5	H3	pCi/l
1323005-6	H3	pCi/l

Radiochemistry Prep Worksheet

ALS Environmental -- FC

Prep Batch: 3H131120-2

Prep Procedure: H3

Reviewed By: jtl **Review Date:** 11/20/2013

Non-Routine Pre-Treatment? Y / N **Batch:** N/A **Re-Prep?** Y / N **Batch:** N/A **Prep QASS / NCR?** Y / N N/A

Prep SOP: PAI 700 **Rev:** 13
Prep SOP: NONE
Matrix Class: liquid

Prep Analyst: Jeffrey T. Lee
Prep Date: 11/20/2013
Prep Dept: RS

Balance:
Balance:

Cocktail: UG LLT
Cocktail Pipet:
Aliquot Pipet:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq ml	Fin Alq ml	Prep Basis	Water Added(ml)	Moisture(%)	Analysis Vol.(ml)	Standards	Prep Notes
1	1	1323005-1	SMP		9.9	9.9	Unfiltered	0	100	10	S1	
2	1	1323005-2	SMP		9.9	9.9	Unfiltered	0	100	10	S1	
3	1	1323005-3	SMP		9.9	9.9	Unfiltered	0	100	10	S1	
4	1	1323005-4	SMP		4.9	4.9	Unfiltered	0	100	5	S1	
5	1	1323005-5	SMP		4.9	4.9	Unfiltered	0	100	5	S1	
6	1	1323005-6	SMP		4.9	4.9	Unfiltered	0	100	5	S1	
7	1	3H131120-2A	MB		10	10	Unfiltered	0	100	10		
8	1	3H131120-2B	MB		10	10	Unfiltered	0	100	10		
9	1	3H131120-2C	MB		10	10	Unfiltered	0	100	10		
10	1	3H131120-2X	MB		5	5	Unfiltered	0	100	5		
11	1	3H131120-2Y	MB		5	5	Unfiltered	0	100	5		
12	1	3H131120-2Z	MB		5	5	Unfiltered	0	100	5		

Comments
5 mL and 10 mL single point calibration

Spiked By: Jeffrey T. Lee **Date:** 11/20/2013
Witnessed By: Peter Workman **Date:** 11/20/2013

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	699.3020.95	68,167.899	DPM/ml	11/20/13	0.1	ml	RS-008

Reagent Solution IDs*

97-13271

*Except where otherwise noted, all reagents were applied in accordance with the specifications of the preparation methods associated with this batch.

ALS Environmental -- FC

Radiochemistry Prep Worksheet

Prep Batch: 3H131120-2

Prep Procedure: H3

Prep Batch Not Validated!!!

Reviewed By: Review Date:

Non-Routine Pre-Treatment? Y / N Batch: Re-Prep? Y / N Batch: Prep QASS / NCR? Y / N

Prep SOP: PAI 700 Rev: 13
Prep SOP: NONE
Matrix Class: liquid

Prep Analyst: Jeffrey T. Lee
Prep Date: 11/20/2013
Prep Dept: RS

Balance:
Balance:

Cocktail: UG LLT
Cocktail Pipet:
Aliquot Pipet:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq ml	Fin Alq ml	Prep Basis	Water Added(ml)	Moisture(%)	Analysis Vol.(ml)	Standards	Prep Notes
1	1	1323005-1	SMP		9.9	9.9	Unfiltered	0	100	10	S1	
2	1	1323005-2	SMP		9.9	9.9	Unfiltered	0	100	10	S1	
3	1	1323005-3	SMP		9.9	9.9	Unfiltered	0	100	10	S1	
4	1	1323005-4	SMP		4.9	4.9	Unfiltered	0	100	5	S1	
5	1	1323005-5	SMP		4.9	4.9	Unfiltered	0	100	5	S1	
6	1	1323005-6	SMP		4.9	4.9	Unfiltered	0	100	5	S1	
7	1	3H131120-2A	MB		10	10	Unfiltered	0	100	10		
8	1	3H131120-2B	MB		10	10	Unfiltered	0	100	10		
9	1	3H131120-2C	MB		10	10	Unfiltered	0	100	10		
10	1	3H131120-2X	MB		5	5	Unfiltered	0	100	5		
11	1	3H131120-2Y	MB		5	5	Unfiltered	0	100	5		
12	1	3H131120-2Z	MB		5	5	Unfiltered	0	100	5		

Comments
5 mL and 10 mL single point calibration

Spiked By: JL Date: 11/20/13
Witnessed By: BJ Date: 11/20/13

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	699.3020.95	68,167.899	DPM/ml	11/20/13	0.1	ml	RS-008

9/18/14

Reagent Solution IDs*

97-13271

*Except where otherwise noted, all reagents were applied in accordance with the specifications of the preparation methods associated with this batch.

Radiochemistry Instrument Worksheet

ALS Environmental -- FC

Prep Batch: 3H131120-4

Prep Procedure: H3 10 mL Single Pt. ICV+ICB's

Analytical QASS / NCR? Y / N NA

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Report Units	Cnt 1 File/Inst	Cnt 1 Rack-Pos	Cnt 1 Pos Chk By	Cnt 2 File/Inst	Cnt 2 Rack-Pos	Cnt 2 Pos Chk By	Cnt 3 File/Inst	Cnt 3 Rack-Pos	Cnt 3 Pos Chk By	Notes
1	1323007-1	SMP	30	9.8361	ml	pCi/l	LS6500	38-8	JP							
1	1323007-2	SMP	30	9.8361	ml	pCi/l		-9								
1	1323007-3	SMP	30	9.8361	ml	pCi/l		-10								
~~1~~	~~1323007-4~~	~~SMP~~	~~30~~	~~4.9180~~	~~ml~~	~~pCi/l~~										
1	1323007-5	SMP	30	4.9180	ml	pCi/l										
~~1~~	~~1323007-6~~	~~SMP~~	~~30~~	~~4.9180~~	~~ml~~	~~pCi/l~~										
1	3H131120-4A	MB	30	10	ml	pCi/l	LS6500	38-12	JP							
1	3H131120-4B	MB	30	10	ml	pCi/l		31-1								
1	3H131120-4CB1	MB	30	10	ml	pCi/l		38-7								
1	3H131120-4CB2	MB	30	10	ml	pCi/l		1-11								
1	3H131120-4CB3	MB	30	10	ml	pCi/l		31-3								
~~1~~	~~3H131120-4CB4~~	~~MB~~	~~30~~	~~5~~	~~ml~~	~~pCi/l~~										
1	3H131120-4CB5	MB	30	5	ml	pCi/l										
~~1~~	~~3H131120-4CB6~~	~~MB~~	~~30~~	~~5~~	~~ml~~	~~pCi/l~~										
1	3H131120-4C	MB	30	10	ml	pCi/l	LS6500	31-2	JP							
~~1~~	~~3H131120-4X~~	~~MB~~	~~30~~	~~5~~	~~ml~~	~~pCi/l~~										
1	3H131120-4Y	MB	30	5	ml	pCi/l										
~~1~~	~~3H131120-4Z~~	~~MB~~	~~30~~	~~5~~	~~ml~~	~~pCi/l~~										

ND 11/22/13

ND 11/22/13

ND 11/22/13

12-2-15

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	648.4095.35	2,799.573	DPM/ml	11/20/13	0.5	ml	ST-002

Sample Barcodes

1323007-1 3H131120-4PS1	1323007-2 3H131120-4PS2	1323007-3 3H131120-4PS3
1323007-4 3H131120-4PS4	1323007-5 3H131120-4PS5	1323007-6 3H131120-4PS6
3H131120-4AMB 3H131120-4PS7	3H131120-4BMB 3H131120-4PS8	3H131120-4CB1MB 3H131120-4PS9

Radiochemistry Instrument Worksheet

ALS Environmental -- FC

Prep Batch: 3H131120-4

Prep Procedure: H3

Analytical QASS / NCR? Y / N N

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Report Units	Cnt 1 File/Inst	Cnt 1 Rack-Pos	Cnt 1 Pos Chk By	Cnt 2 File/Inst	Cnt 2 Rack-Pos	Cnt 2 Pos Chk By	Cnt 3 File/Inst	Cnt 3 Rack-Pos	Cnt 3 Pos Chk By	Notes
3H131120-4CB2MB 3H131120-4PS10								3H131120-4CB3MB 3H131120-4PS11						3H131120-4CB4MB 3H131120-4PS12		
3H131120-4CB5MB 3H131120-4PS13								3H131120-4CB6MB 3H131120-4PS14						3H131120-4CMB 3H131120-4PS15		
3H131120-4XMB 3H131120-4PS16								3H131120-4YMB 3H131120-4PS17						3H131120-4ZMB 3H131120-4PS18		

Reporting Units

LabID:	TstGrpName:	RptUnits:
1323007-1	H3	pCi/l
1323007-2	H3	pCi/l
1323007-3	H3	pCi/l
1323007-4	H3	pCi/l
1323007-5	H3	pCi/l
1323007-6	H3	pCi/l

Radiochemistry Prep Worksheet

ALS Environmental -- FC

Prep Batch: 3H131120-4

Prep Procedure: H3

Reviewed By: jtl **Review Date:** 11/21/2013

Non-Routine Pre-Treatment? Y (N) **Batch:** N/A **Re-Prep?** Y (N) **Batch:** N/A **Prep QASS / NCR?** Y (N) N/A

Prep SOP: PAI 700 **Rev:** 13
Prep SOP: NONE
Matrix Class: liquid

Prep Analyst: Jeffrey T. Lee
Prep Date: 11/20/2013
Prep Dept: RS

Balance:
Balance:

Cocktail: UG LLT
Cocktail Pipet:
Aliquot Pipet: RS-017

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq ml	Fin Alq ml	Prep Basis	Water Added(ml)	Moisture(%)	Analysis Vol.(ml)	Standards	Prep Notes
1	1	1323007-1	SMP		30	9.836066	Unfiltered	0	100	10	S1	
2	1	1323007-2	SMP		30	9.836066	Unfiltered	0	100	10	S1	
3	1	1323007-3	SMP		30	9.836066	Unfiltered	0	100	10	S1	
4	1	1323007-4	SMP		30	4.918033	Unfiltered	0	100	5	S1	
5	1	1323007-5	SMP		30	4.918033	Unfiltered	0	100	5	S1	
6	1	1323007-6	SMP		30	4.918033	Unfiltered	0	100	5	S1	
7	1	3H131120-4A	MB		30	10	Unfiltered	0	100	10		
8	1	3H131120-4B	MB		30	10	Unfiltered	0	100	10		
9	1	3H131120-4CB1	MB		30	10	Unfiltered	0	100	10		
10	1	3H131120-4CB2	MB		30	10	Unfiltered	0	100	10		
11	1	3H131120-4CB3	MB		30	10	Unfiltered	0	100	10		
12	1	3H131120-4CB4	MB		30	5	Unfiltered	0	100	5		
13	1	3H131120-4CB5	MB		30	5	Unfiltered	0	100	5		
14	1	3H131120-4CB6	MB		30	5	Unfiltered	0	100	5		
15	1	3H131120-4C	MB		30	10	Unfiltered	0	100	10		
16	1	3H131120-4X	MB		30	5	Unfiltered	0	100	5		
17	1	3H131120-4Y	MB		30	5	Unfiltered	0	100	5		
18	1	3H131120-4Z	MB		30	5	Unfiltered	0	100	5		

JTL 11/21/13

JTL 11/21/13

Comments
5 mL and 10 mL single point ICV/ICBs

Spiked By: Jeffrey T. Lee **Date:** 11/20/2013
Witnessed By: Kristen A. Middleton **Date:** 11/20/2013

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	648.4095.35	2,799.573	DPM/ml	11/20/13	0.5	ml	ST-002

Reagent Solution IDs*

97-13271 B0441604 E11646

*Except where otherwise noted, all reagents were applied in accordance with the specifications of the preparation methods associated with this batch.

ALS Environmental -- FC

Radiochemistry Prep Worksheet

Prep Batch: 3H131120-4

Prep Procedure: H3

Prep Batch Not Validated!!!

Reviewed By:

Review Date:

Non-Routine Pre-Treatment? Y / N **Batch:** _____ **Re-Prep? Y / N** **Batch:** _____ **Prep QASS / NCR? Y / N** _____

Prep SOP: PAI 700 **Rev:** 13
Prep SOP: NONE
Matrix Class: liquid

Prep Analyst: Jeffrey T. Lee
Prep Date: 11/20/2013 JL
Prep Dept: RS

Balance:
Balance:

Cocktail: UG LLT
Cocktail Pipet:
Aliquot Pipet:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq ml	Fin Alq ml	Prep Basis	Water Added(ml)	Moisture(%)	Analysis Vol.(ml)	Standards	Prep Notes
1	1	1323007-1	SMP		30	9.836066	Unfiltered	0	100	10	S1	
2	1	1323007-2	SMP		30	9.836066	Unfiltered	0	100	10	S1	
3	1	1323007-3	SMP		30	9.836066	Unfiltered	0	100	10	S1	
4	1	1323007-4	SMP		30	4.918033	Unfiltered	0	100	5	S1	
5	1	1323007-5	SMP		30	4.918033	Unfiltered	0	100	5	S1	
6	1	1323007-6	SMP		30	4.918033	Unfiltered	0	100	5	S1	
7	1	3H131120-4A	MB		30	10	Unfiltered	0	100	10		
8	1	3H131120-4B	MB		30	10	Unfiltered	0	100	10		
9	1	3H131120-4CB1	MB		30	10	Unfiltered	0	100	10		
10	1	3H131120-4CB2	MB		30	10	Unfiltered	0	100	10		
11	1	3H131120-4CB3	MB		30	10	Unfiltered	0	100	10		
12	1	3H131120-4CB4	MB		30	5	Unfiltered	0	100	5		
13	1	3H131120-4CB5	MB		30	5	Unfiltered	0	100	5		
14	1	3H131120-4CB6	MB		30	5	Unfiltered	0	100	5		
15	1	3H131120-4C	MB		30	10	Unfiltered	0	100	10		
16	1	3H131120-4X	MB		30	5	Unfiltered	0	100	5		
17	1	3H131120-4Y	MB		30	5	Unfiltered	0	100	5		
18	1	3H131120-4Z	MB		30	5	Unfiltered	0	100	5		

Comments
5 mL and 10 mL single point ICV/ICBs

Spiked By: JL **Date:** 11/20/13
Witnessed By: KAM **Date:** 11/20/13

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	H-3	648.4095.35	2,799.573	DPM/ml	11/20/13	0.5	ml	ST-002

9/18/14

Reagent Solution IDs*

97-13271 B0441604 E11646

*Except where otherwise noted, all reagents were applied in accordance with the specifications of the preparation methods associated with this batch.

LS6500 10mL geometry Tritium Background Determination

Interim control limits are established from the initial calibration for the geometry of interest. Limits are +/- 3 standard deviations from the initial unquenched calibration blank data. Once enough historical data is acquired, new historical limits are set as follows: Control limits for reagent blanks are established from 30 individual historical data points (10 batches). Limits are +/- 3 standard deviations from 30 individual historical data points. Individual reagent blanks and the average of reagent blanks from each batch are in control if the Count Rate (CPM) is within the established control limits.

CURRENTLY UNDER HISTORICAL LIMITS

Updated on 8/05/14 JP

							Individual Reagent Blanks			Average of Reagent Blanks		
COUNT DATE	#	Sample ID	Count Duration (m)	Count Rate (CPM)	Total Cts.	Mean	LCL	UCL	Pass ?	LCL	UCL	Pass ?
12/1/2015	265	3H131120-4CB1	180	5.69	1024.2		4.67	6.69	PASS			
12/1/2015	266	3H131120-4CB2	180	5.32	957.6		4.67	6.69	PASS			
12/2/2015	267	3H131120-4CB3	180	5.16	928.8	5.39	4.67	6.69	PASS	4.67	6.69	PASS

I:\Oprtns\RAD\INST\LSC\LS6500\CB'S_BKGD_WIN2_CKS\RB__H3_10mL_LS6500

Tritium "Window 2" Control Limits (LS 6500)

The background count rate is determined from the average of the reagent blanks for the batch. Window 2 control limits are established using the average count rate from the three reagent blanks associated with each prep batch +/- 3X the estimated poisson uncertainty.

Updated 8/05/12 MBC

COUNT DATE	#	Sample ID	Count Duration (min.)	**Average count Duration (min.)**	Count Rate (CPM)	Batch Average Reagent Blank	**Lower Control Limit**	**Upper Control Limit**
12/1/2015	265	3H131120-4CB1	180		34.48			
12/1/2015	266	3H131120-4CB2	180		32.73			
12/2/2015	267	3H131120-4CB3	180	180	33.53	33.58	**32.28**	**34.88**

I:\Oprtns\RAD\INST\LSC\LS6500\CB'S_BKGD_WIN2_CKS\RB__H3_10mL_LS6500

DAILY INSTRUMENT PERFORMANCE CHECKS - LS6500 (LL OFF, LUMEX OFF)

Daily IPCs consist of the following standards;

Efficiency Check -

Eckert&Ziegler Tritium Standard		**Eckert&Ziegler C-14 Standard**	
Lot H92218		Lot 92228	
101700.00	dpm	102420.00	dpm
3/4/2013	REF	3/4/2013	REF
3/4/2018	EXP	3/4/2018	EXP

Historical Control Limits	as of 03/25/13 JP	
	Decay Corrected Tritium	Carbon-14
UCL (3 sigma)	66070.55	81980.18
UWL (2 sigma)	64497.44	80028.27
Mean Value	62924.33	78076.36
LWL (2 sigma)	61351.22	76124.45
LCL (3 sigma)	59778.11	74172.54

Instrument re-calibrated for all tests starting 11/14/2012.

Obs	Date	H-3 CPM	Decay Corrected H-CPM	PASS?	C-14 CPM	PASS?
850	11/30/2015	52615.40	61417.94	OK	78483.3	OK
851	12/2/2015	52620.60	61443.00	OK	78578.3	OK

I:\Oprtns\RAD\INST\LSC\LS6500\DAILY QC\LSQA6500_New_02.26.09

DAILY CHECK LL ON ^{99}Tc SOURCE- LS6500

^{99}Tc standard		SPIKE	
836.3020.70		KNOWN ACTIVITY AS OF 2/26/07	
2/12/2015	REF	58000.38	dpm/g
2/12/2016	EXP	58000.38	dpm

Historical Control Limits 2/19/14 NES

	blank	Blank Quench #	spike
UCL (3 sigma)	18.8370	65.4848	11473.6506
UWL (2 sigma)	17.4915	63.7765	11206.8215
Mean Value	14.9500	56.9433	10673.1633
LWL (2 sigma)	12.3487	50.3949	10139.5052
LCL (3 sigma)	11.0481	48.2310	9872.6761

Obs #	Date	Blank C.R.	Pass ?	Quench #	Pass	Spiked C.R.	Pass ?
850	11/30/2015	14.9	OK	56.2	OK	11039.6	OK
851	12/2/2015	15.9	OK	54.7	OK	10897.4	OK

I:\Oprtns\RAD\INST\LSC\LS6500\DAILY QC\LSQA6500_New_02.26.09

Prepare a working dilution ~ 94000 dpm/mL of 3H from 699.2613.18.

1) Determine the density of DI water Bal. #
Mass of empty 100 mL volumetric flask: 66.4379g 12
Mass of flask and 100 mL DI water: 166.0659g ↓
Net mass of DI water: 99.6280
ρ = 0.9963 g/mL

2) Transfer standard:
Mass of empty bottle without lid: 97.1185g 12
Mass of bottle and standard: 100.5256g ↓
Net mass of standard: 3.4071g

3) Dilute with DI water:
Mass of empty bottle without lid: 97.1185g 12
Mass of bottle, standard and DI water: 197.7441g ↓
Net mass of standard and DI water: 100.6248g

4) Final activity calculation:

$$\frac{(4,733,412.50\ dpm/g)(3.4071g)(0.9963\ g/mL)}{(100.6248g)(0.9963\ g/mL)} = 159,351.52\ dpm/mL$$

DC 7/7/08

To more accurately calculate activity for 699.6112E: 160351.04 dpm/mL

MC 7/13/08

Std ID: 699.3020.95

Description: H-3
Expiration: 2/25/2009
Activity: 160351.04 dpm/mL
2σ Uncertainty: 1154.53 dpm/mL
Ref. Date: 9/3/1998
Ref Time: N/A
Prep Date: 2/7/2008 Prep by: DC
Matrix/Comp. DI WATER
Half Life (y): 1.23E+01

MC 7/13/08

Reverification Log

Analysis Date	Initials	Expiration Date
4/1/09	JLM	4/1/10
10/21/09	DC	10/21/10
11/26/10	RG	11/26/2011
9/23/11	RG	9/23/12
9/21/12	JP	9/20/13
9/18/13	JP	9/18/2014
7/23/14	JP	7/23/2015
07/03/15	JP	07/03/2016

MC 7/13/08

Continued on Page

Read and Understood By

Signed 7/7/08 Date Signed 7/13/08 Date

Prepare a 1° dilution of Ampoule 699 by diluting with DI water.

1) Determine the density of DI water

Mass of empty Class A 100mL volumetric flask	67.7956 g	Bal #12
Mass of flask + 100mL of DI water	167.3755 g	↓
Net mass of DI water	99.5799 g	

ρ = 0.9958 g/mL

2) Transfer contents of ampoule 699 into a 40 mL Amber glass VOA vile.

Mass of VOA vile w/o lid	24.3883g	Bal #12
Mass of opened ampoule before transfer	40.8432g	↓
Mass of opened ampoule after transfer	36.0281g	
Net mass of Std transferred	4.8151g	

3) Add DI water to final dilution

Mass of VOA vile w/o lid (w/o lid 7/28/03) from above	24.3883g	Bal #12
Mass of VOA vile, std, + DI water	62.9648g	↓
Net mass of Std + DI water	38.5765g	

4) Final Activity Calculation

$$\frac{(634.7\ \text{KBq/g})(4.8151\text{g})(60\ \text{DPM/Bq})(1000\ \text{Bq/KBq})(0.9958\ \text{g/mL})}{38.5765\text{g}}$$

(60 DPM/Bq ~~34.5~~ 7/28/03)

= 4,733,412.57 DPM/mL

U.S. Department of Commerce
National Institute of Standards and Technology
SRM 4927F
Hydrogen-3
<4 MBq in distilled water
CAUTION RADIOACTIVE

Continued on Page

Read and Understood By

Signed	7/28/03 Date	Signed	7/31/03 Date

National Institute of Standards & Technology

Certificate

PAF ID 0099
recd 5-09-03

Standard Reference Material 4927F
Hydrogen-3 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive hydrogen-3, as water, in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of beta-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains hydrogen-3 with a total activity of approximately 3.2 MBq. Hydrogen-3 decays by beta-particle emission. None of the beta particles escape from the SRM ampoule. During the decay process no photons are emitted. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. There is no detectable external radiation. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains only distilled water. There is no chemical hazard. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least September 2008.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) because of the radioactivity.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, L.R. Karam, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas and M.P. Unterweger of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by J.W.L. Thomas.

Bert M. Coursey, Chief
Ionizing Radiation Division

Nancy M. Trahey, Chief
Standard Reference Materials Program

Gaithersburg, Maryland 20899
June 1999
Half-life and text revised October 2000

*Notes and references are on pages 5 and 6.

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 and 6.

PROPERTIES OF SRM 4927F

Certified values

Solution density	(0.998 ± 0.002) $g \cdot mL^{-1}$ at 20.0 °C [b]*
Radionuclide	Hydrogen-3
Reference time	1200 EST, 3 September 1998
Massic activity of the solution [c]	634.7 $kBq \cdot g^{-1}$
Relative expanded uncertainty (k=2)	0.72% [d] [e]

Uncertified values

Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution mass	Approximately 5.0 g		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration ($mol \cdot L^{-1}$)	Mass Fraction ($g \cdot g^{-1}$)
	H_2O ^3HHO	55 6×10^{-7}	1.00 1×10^{-8}
Radiological Properties:			
Radionuclidic impurities	None detected [f]		
Half lives used	Hydrogen-3: (4500 ± 8) d [g]		
Calibration method and measuring instrument(s)	4πß gas counting of SRM 4927E using the NIST length-compensated internal gas proportional counters and intercomparison of SRMs 4927E/4927F using two 4πß liquid-scintillation counting systems [h]		

*Notes and references are on pages 5 and 6.

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [d]*

Input Quantity x_i, the source of uncertainty (and individual uncertainty components where appropriate)	Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [i]	Relative Sensitivity Factor, $\lvert \partial y/\partial x_i \rvert \cdot (x_i/y)$ [j]	Relative Uncertainty Of Output Quantity, $u_i(y)/y$, (%) [k]
Massic count rate of SRM 4927E, corrected for background and decay [h]	Standard deviation of the mean for 23 sets of gas counting measurements (A)	0.18	1.0	0.18
Gram-mole measurements	Estimated (B)	0.20	1.0	0.20
Live-time [p]	Estimated (B)	0.10	1.0	0.10
Extrapolation of count-rate-versus-energy to zero energy	Estimated (B)	0.20	1.0	0.20
Half life of H-3	Standard uncertainty of the half life (A)	0.18 [m]	0.009 [n]	0.002
Liquid-scintillation intercomparison of SRM 4927F and SRM 4927E	Standard deviation of the mean for 7 sets of liquid-scintillation measurements (A)	0.06	1.0	0.06
Radionuclidic impurities	Limit of detection (B) [q]	100.	0.0005	0.05
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%)				0.36
Coverage Factor, k				x 2
Relative Expanded Uncertainty of the Output Quantity, U/y, (%)				0.72

*Notes and references are on pages 5 and 6.

NOTES

[a] The Sievert is the SI unit for dose equivalent. See reference [1]. One μSv is equal to 0.1 mrem.

Distance from Ampoule (cm):	1	30	100
Approximate Dose Rate (μSv/h):	<0.1 (Not detectable)		

[b] The stated uncertainty is two times the standard uncertainty.

[c] **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].

[d] The reported value, y, of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as $y = f(x_1, x_2, x_3, \ldots x_n)$, where f is a mathematical function derived from the assumed model of the measurement process.

The value, x_i, used for each input quantity i has a **standard uncertainty**, $u(x_i)$, that generates a corresponding uncertainty in y, $u_i(y) \equiv |\partial y/\partial x_i| \cdot u(x_i)$, called a **component of combined standard uncertainty** of y.

The **combined standard uncertainty** of y, $u_c(y)$, is the positive square root of the sum of the squares of the components of combined standard uncertainty.

The combined standard uncertainty is multiplied by a **coverage factor** of $k = 2$ to obtain U, the **expanded uncertainty** of y.

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation $u_c(y)$, the unknown value of the massic activity is believed to lie in the interval $y \pm U$ with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

[e] The value of each standard uncertainty component, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic response is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval $U/2$ to $2U$ (i.e., within a factor of 2 of the estimated value).

[f] The estimated limit of detection for radionuclidic impurities is 300 $Bq \cdot g^{-1}$.

[g] The stated uncertainty is the standard uncertainty. See reference [5].

[h] Extensive gas-counting measurements were made on the SRM 4927E solution during 1998 and 1999. The SRM 4927F solution was intercompared with the SRM 4927E solution using liquid-scintillation counting.

[i] Relative standard uncertainty of the input quantity x_i.

[j] The relative change in the output quantity y divided by the relative change in the input quantity x_i. If $|\partial y/\partial x_i| \cdot (x_i/y) = 1.0$, then a 1% change in x_i results in a 1% change in y. If $|\partial y/\partial x_i| \cdot (x_i/y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y.

[k] Relative component of combined standard uncertainty of output quantity y, rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y \equiv |\partial y/\partial x_i| \cdot u(x_i)/y = |\partial y/\partial x_i| \cdot (x_i/y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y/\partial x_i| \cdot (x_i/y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

[m] The relative standard uncertainty of $\lambda \cdot t$ is determined by the relative standard uncertainty of λ (i.e., of the half life). The relative standard uncertainty of t is negligible.

[n] $|\partial y/\partial x_i| \cdot (x_i/y) = |\lambda \cdot t|$

[p] The live time is determined by counting the pulses from a gated crystal-controlled oscillator.

[q] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i)/x_i = 100\%$. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of H-3)}·{(Bq of impurity)/(Bq of H-3)}. Thus $u_i(y)/y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.

REFERENCES

[1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900.

[2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900. (Listed under ISO miscellaneous publications as "ISO Guide to the Expression 1993".)

[3] B. N. Taylor and C. E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.

[4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.

[5] L.L. Lucas and M.P. Unterweger, *Comprehensive Review and Critical Evaluation of the Half-Life of Tritium*, J. Res. Natl. Inst. Stand. Technol. **105**, 541-549 (2000).

Continued from Page

1C 9/8/12

Prepare a working dilution of 648.2382.75

1. Density of DI H_2O, lot # NA
   Mass of 100mL vol. flask: 56.4430g Balance # 12
   Mass of flask & 100mL water: 156.0818g Balance# 12
   Net Mass: 99.6388g
   Density: 0.9964g/mL

2. Mass of 648.2382.75 transferred:
   Mass of open empty bottle: 277.76g Balance# 26
   Mass of bottle & standard: 286.73g Balance# 26
   Net mass of standard transferred: 8.97g

1C 9/8/12

1C 9/8/12

3. Dilute to final volume:
   Mass of bottle, standard, & diluent: 781.4g Balance# 26
   Mass of empty bottle (from above): 277.76g Balance# 26
   Net mass of new dilution: 503.64g

4. Final activity calculation:

$$369{,}530.45\,dpm/mL \left(\frac{(0.9964\,g/mL)}{(0.9958\,g/mL)}\right)\left(\frac{8.97\,g}{503.64\,g}\right) = 6585.43\,dpm/mL$$

1C 9/8/12

JP 9/25/12

Stnd ID: **648.4095.35**

Description: **H-3**
Expiration: **9/20/2013**
Activity: **6585.43** **dpm/mL**
2s Uncertainty: **47.41** **dpm/mL**
Ref. Date: **9/3/1998**
Ref Time: **N/A**
Prep Date: **9/8/2012** ***Prep by:*** **TE**
Matrix/Comp. **DI Water**
Half Life (y): **1.23E+01**

JP 9/25/12

Reverification Log		
Analysis Date	Initials	Expiration Date
9/18/13	JP	9/18/2014

JP 9/25/12

JP 9/25/12

Continued on Page

T Elliot 9/8/12
Signed Date

Read and Understood By
Signed Date 9/8/12

Prepare a ~~working level dilution (at approximately 250 DPM/mL)~~ 10 dilution
from standard using RSO #648
and diluting with DI water.

1) Determine the density of DI water:

Mass of empty 100mL Class A volumetric flask	67.1522 g	Bal #3
Mass of flask + water	166.7351 g	↓
Net mass of 100mL H_2O	99.5829 g	

$\rho = .9958$ g/mL

2) Transfer contents of Ampoule SRM 4927F to a ~~40mL VOA vial~~ 500mL glass amber bottle
CW 3/17/03 3/17/03

mass of ~~40mL VOA vial~~ ~~gw bottle~~ w/o lid	255.04 g	Bal #26
mass of open ampoule + 50mL beaker	40.9075 g	Bal #12
mass of empty ampoule + 50mL beaker	36.0148 g	↓
Net mass of Std.	4.8927 g	

3) Dilute Std. with DI water.

mass of bottle w/o lid	255.04 g	Bal #26
mass of bottle, std, + DI water	757.1 g	↓
Net mass of Std + DI water	502.1 g	

4. Final Activity Calculation.

$$\frac{(634.7\ kBq/g)(1000\ Bq/kBq)(60\ DPM/Bq)(4.8927\ g)(.9958\ g/mL)}{502.1\ g}$$

$= 369{,}530.45\ \frac{DPM}{mL}$

U.S. Department of Commerce
National Institute of Standards and Technology
SRM 4927F
Hydrogen-3
≤4 MBq in distilled water
CAUTION
RADIOACTIVE

Continued on Page

Read and Understood By

Signed: [signature] Date: 3/27/03 Signed: Renee Mallegas Date: 3/27/03

National Institute of Standards & Technology

Certificate

PA ID C648
REC-E 17-04-C

Standard Reference Material 4927F
Hydrogen-3 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive hydrogen-3, as water, in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of beta-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains hydrogen-3 with a total activity of approximately 3.2 MBq. Hydrogen-3 decays by beta-particle emission. None of the beta particles escape from the SRM ampoule. During the decay process no photons are emitted. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. There is no detectable external radiation. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains only distilled water. There is no chemical hazard. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least September 2008.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) because of the radioactivity.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, L.R. Karam, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas and M.P. Unterweger of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by J.W.L. Thomas.

Bert M. Coursey, Chief
Ionizing Radiation Division

Nancy M. Trahey, Chief
Standard Reference Materials Program

Gaithersburg, Maryland 20899
June 1999
Half-life and text revised October 2000

*Notes and references are on pages 5 and 6.

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 and 6.

PROPERTIES OF SRM 4927F

Certified values

Solution density	(0.998 ± 0.002) $g \cdot mL^{-1}$ at 20.0 °C [b]*
Radionuclide	Hydrogen-3
Reference time	1200 EST, 3 September 1998
Massic activity of the solution [c]	634.7 $kBq \cdot g^{-1}$
Relative expanded uncertainty (k=2)	0.72% [d] [e]

Uncertified values

Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution mass	Approximately 5.0 g		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration ($mol \cdot L^{-1}$)	Mass Fraction ($g \cdot g^{-1}$)
	H_2O ^3HHO	55 6×10^{-7}	1.00 1×10^{-8}
Radiological Properties:			
Radionuclidic impurities	None detected [f]		
Half lives used	Hydrogen-3: (4500 ± 8) d [g]		
Calibration method and measuring instrument(s)	$4\pi\beta$ gas counting of SRM 4927E using the NIST length-compensated internal gas proportional counters and intercomparison of SRMs 4927E/4927F using two $4\pi\beta$ liquid-scintillation counting systems [h]		

*Notes and references are on pages 5 and 6.

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [d]*

Input Quantity x_i, the source of uncertainty (and individual uncertainty components where appropriate)	Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [i]	Relative Sensitivity Factor, $\lvert \partial y/\partial x_i \rvert \cdot (x_i/y)$ [j]	Relative Uncertainty Of Output Quantity, $u_i(y)/y$, (%) [k]
Massic count rate of SRM 4927E, corrected for background and decay [h]	Standard deviation of the mean for 23 sets of gas counting measurements (A)	0.18	1.0	0.18
Gram-mole measurements	Estimated (B)	0.20	1.0	0.20
Live-time [p]	Estimated (B)	0.10	1.0	0.10
Extrapolation of count-rate-versus-energy to zero energy	Estimated (B)	0.20	1.0	0.20
Half life of H-3	Standard uncertainty of the half life (A)	0.18 [m]	0.009 [n]	0.002
Liquid-scintillation intercomparison of SRM 4927F and SRM 4927E	Standard deviation of the mean for 7 sets of liquid-scintillation measurements (A)	0.06	1.0	0.06
Radionuclidic impurities	Limit of detection (B) [q]	100.	0.0005	0.05
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%)				0.36
Coverage Factor, k				x 2
Relative Expanded Uncertainty of the Output Quantity, U/y, (%)				0.72

*Notes and references are on pages 5 and 6.

NOTES

[a] The Sievert is the SI unit for dose equivalent. See reference [1]. One μSv is equal to 0.1 mrem.

Distance from Ampoule (cm):	1	30	100
Approximate Dose Rate (μSv/h):	<0.1 (Not detectable)		

[b] The stated uncertainty is two times the standard uncertainty.

[c] Massic activity is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].

[d] The reported value, y, of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as $y = f(x_1, x_2, x_3, \ldots x_n)$, where f is a mathematical function derived from the assumed model of the measurement process.

The value, x_i, used for each input quantity i has a standard uncertainty, $u(x_i)$, that generates a corresponding uncertainty in y, $u_i(y) = |\partial y/\partial x_i| \cdot u(x_i)$, called a **component of combined standard uncertainty** of y.

The **combined standard uncertainty** of y, $u_c(y)$, is the positive square root of the sum of the squares of the components of combined standard uncertainty.

The combined standard uncertainty is multiplied by a **coverage factor** of $k = 2$ to obtain U, the **expanded uncertainty** of y.

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation $u_c(y)$, the unknown value of the massic activity is believed to lie in the interval $y \pm U$ with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

[e] The value of each standard uncertainty component, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic response is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval $U/2$ to $2U$ (i.e., within a factor of 2 of the estimated value).

[f] The estimated limit of detection for radionuclidic impurities is 300 $Bq \cdot g^{-1}$.

[g] The stated uncertainty is the standard uncertainty. See reference [5].

[h] Extensive gas-counting measurements were made on the SRM 4927E solution during 1998 and 1999. The SRM 4927F solution was intercompared with the SRM 4927E solution using liquid-scintillation counting.

[i] Relative standard uncertainty of the input quantity x_i.

[j] The relative change in the output quantity y divided by the relative change in the input quantity x_i. If $|\partial y/\partial x_i| \cdot (x_i/y) = 1.0$, then a 1% change in x_i results in a 1% change in y. If $|\partial y/\partial x_i| \cdot (x_i/y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y.

[k] Relative component of combined standard uncertainty of output quantity y, rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y = |\partial y/\partial x_i| \cdot u(x_i)/y = |\partial y/\partial x_i| \cdot (x_i/y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y/\partial x_i| \cdot (x_i/y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

[m] The relative standard uncertainty of $\lambda \cdot t$ is determined by the relative standard uncertainty of λ (i.e., of the half life). The relative standard uncertainty of t is negligible.

[n] $|\partial y/\partial x_i| \cdot (x_i/y) = |\lambda \cdot t|$

[p] The live time is determined by counting the pulses from a gated crystal-controlled oscillator.

[q] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i)/x_i$ = 100%. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of H-3)}·{(Bq of impurity)/(Bq of H-3)}. Thus $u_i(y)/y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.

REFERENCES

[1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900.

[2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900. (Listed under ISO miscellaneous publications as "ISO Guide to the Expression 1993".)

[3] B. N. Taylor and C. E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.

[4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.

[5] L.L. Lucas and M.P. Unterweger, *Comprehensive Review and Critical Evaluation of the Half-Life of Tritium*, J. Res. Natl. Inst. Stand. Technol. 105, 541-549 (2000).

Liquid Scintillation Counter

Quality Control Data

Daily Instrument Performance Checks

DAILY INSTRUMENT PERFORMANCE CHECKS - LS6500 (LL OFF, LUMEX OFF)

Daily IPCs consist of the following standards;

Efficiency Check -

Eckert&Ziegler Tritium Standard		**Eckert&Ziegler C-14 Standard**	
Lot H92218		Lot 92228	
101700.00	dpm	102420.00	dpm
3/4/2013	REF	3/4/2013	REF
3/4/2018	EXP	3/4/2018	EXP

Historical Control Limits	as of 03/25/13 JP	
	Decay Corrected Tritium	Carbon-14
UCL (3 sigma)	66070.55	81980.18
UWL (2 sigma)	64497.44	80028.27
Mean Value	62924.33	78076.36
LWL (2 sigma)	61351.22	76124.45
LCL (3 sigma)	59778.11	74172.54

Instrument re-calibrated for all tests starting 11/14/2012.

			Decay Corrected			
Obs	Date	H-3 CPM	H-CPM	PASS?	C-14 CPM	PASS?
863	12/18/2015	52339.80	61266.42	LWL	78621.4	OK
864	12/19/2015	52336.80	61272.38	LWL	78667.2	OK

I:\Oprtns\RAD\INST\LSC\LS6500\DAILY QC\LSQA6500_New_02.26.09

DAILY CHECK LL ON ^{99}Tc SOURCE- LS6500

^{99}Tc standard		SPIKE	
836.3020.70		KNOWN ACTIVITY AS OF 2/26/07	
2/12/2015	REF	58000.38	dpm/g
2/12/2016	EXP	58000.38	dpm

Historical Control Limits 2/19/14 NES

	blank	Blank Quench #	spike
UCL (3 sigma)	18.8370	65.4848	11473.6506
UWL (2 sigma)	17.4915	63.7765	11206.8215
Mean Value	14.9500	56.9433	10673.1633
LWL (2 sigma)	12.3487	50.3949	10139.5052
LCL (3 sigma)	11.0481	48.2310	9872.6761

Obs #	Date	Blank C.R.	Pass ?	Quench #	Pass	Spiked C.R.	Pass ?
863	12/18/2015	13.8	OK	54.2	OK	10734.5	OK
864	12/19/2015	14.9	OK	53.6	OK	11271.9	UWL

I:\Oprtns\RAD\INST\LSC\LS6500\DAILY QC\LSQA6500_New_02.26.09

ANALYTICAL SUMMARY DATA PACKAGE
SDG # 1604034

PROJECT NAME: HOLLOMAN AFB
PROJECT LOCATION: HOLLOMAN AFB, NM
CONTRACT #: FA8903-D-09-D-8580

SUBMITTAL TO:
Maqsud Rahman
CB&I Federal Services
5050 Section Ave
Cincinnati, OH 45212

SUBMITTAL BY:
Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
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Original Report Date: April 25, 2016
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 307

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Data Review Manager, Ms. Amy Barnett, is responsible for the final data produced and reported. Her signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

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Sample Delivery Group Case Narrative

Receipt Information:

The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. No samples in this SDG were subcontracted.

Changes to the Revision:

This is an original submittal of the final report package.

Analytical Information:

All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW8260B:

Note – Samples 1604034-02, -04, and -06 were analyzed at a 2x due to the samples foaming during screening. No lower analyses were performed.

The following continuing calibration verifications exceeded criteria:
6D10302-CCV1 with a positive bias for Bromomethane; note – no positive results were detected in the associated samples for the compounds exceeding criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

SW6010C/SW7470A:

The following compounds are qualified with an M to indicate that the LOD and/or DL were raised due to sample interference:
Cadmium in 1604034-02, -04, and -06
Silver in 1604034-02

The following matrix spikes exceeded criteria:
6D09919-MS1/MSD1 (1604034-04) with a negative bias for Aluminum, with a positive bias for

Magnesium, exceeded relative percent difference criteria for Aluminum and Iron, and exceeded criteria for Calcium, Iron, Magnesium, Potassium, and Sodium; note – the parent sample concentrations for Calcium, Iron, Magnesium, Potassium, and Sodium are greater than 4 times the amount spiked and the associated batch spike is within criteria
6D09920-MS1/MSD1 (1604034-05) with a negative bias for Aluminum, with a positive bias for Antimony, Arsenic, Manganese, and Selenium, and exceeded criteria for Calcium, Magnesium, Potassium, and Sodium; note – the parent sample concentrations for Calcium, Magnesium, Potassium, and Sodium are greater than 4 times the amount spiked and the associated batch spike is within criteria

The following post spikes exceeded criteria:
6D09919-PS1 (1604034-04) for Calcium, Iron, Magnesium, and Sodium; note – the parent sample concentrations for Calcium, Iron, Magnesium, Potassium, and Sodium are greater than 4 times the amount spiked and the associated batch spike is within criteria
6D09920-PS1 (1604034-05) with a negative bias for Aluminum, with a positive bias for Antimony, Arsenic, and Selenium, and exceeded criteria for Calcium, Magnesium, Potassium, and Sodium; note – the parent sample concentrations for Calcium, Magnesium, Potassium, and Sodium are greater than 4 times the amount spiked and the associated batch spike is within criteria

The following serial dilutions exceeded criteria:
6D09919-DUP2 (1604034-04RE1) for Sodium
6D09919-DUP3 (1604034-05RE1) for Sodium

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Wet Chemistry:
Note – Sample 1604034-02 was re-analyzed as 1604034-02RE1 at a 10x due to over linear range Nitrate as N in the lower analysis. Sample 1604034-02RE1 was not analyzed until 5 days after sampling with a 48 hour holding time; therefore, the original and re-analysis are included in the report.

The following blanks have reported results greater than ½ the LOQ:
6D12003-BLK1 for Total Dissolved Solids; note – the concentrations in the samples are greater than 10x the concentration in the blank

The following matrix spikes exceeded criteria:
6D07029-MS1/MSD1 (1604034-04) with a negative bias for Nitrate as N; note – the associated batch spike is within criteria

The following duplicates exceeded relative percent difference criteria:
6D12004-DUP1 (1604034-04) for Total Suspended Solids

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H: The result was analyzed, extracted, or received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it

indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to

assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "RE" implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

1604034 Summary Package

1604034-01 A

27934

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 877-345-1113 ♦ (fax) 866-417-0548

Name CHRIS LONG	Name
Company CB&I F.S.	Company
Address 10777 WESTHEIMER	Address
City SUITE 170 HOUSTON	City
State, Zip TX 77042	State, Zip
Phone (713) 243-7090	Phone
Fax	Fax
E-mail	E-mail
Project No./Name: HOLLOMAN AFB 144106.5R2000	**Sampler's (Signature):** Pat J. [illegible]

Send Invoice to:

Analysis Requirements:

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	SW8260C: VOCs	SW6020A/7470A: METALS/MERCURY	E300: NITRATE	SM2540C/D: TDS/TSS	Comments	No. of Bottles	Lab Use Only Containers/Pres.
01	4/6/16 09:00	TB-01	LIQ	X				TRIP BLANK	2	
02/03	4/6/16 10:22	OTC538-GW-MW02	GW	X	X	X	X	FILTERED METALS	~~8~~ 7	
04/05	4/6/16 12:46	OTC537-GW-MW01	GW	X	X	X	X	" "	6	
	4/6/16 12:46	OTC537-GW-MW01-MS/MSD	GW	X	X	X	X	" "	12	
06/07	4/6/16 12:46	OTC537-GW-MW01-FD	GW	X	X	X	X	" "	6	

Sample Kit Prep'd by: (Signature)	Date/Time	Received By: (Signature)
Relinquished by: (Signature) Pat J. [illegible]	Date/Time 4/6/16 @ 15:00	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature) [illegible]	Date/Time 4/7/16 900	*Temperature*

REMARKS:

Details:

Page 1 of 1

Cooler No. 1 of 1

Date Shipped 4/6/16

Shipped By PM

Turnaround

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

V:\Standard Operating Procedures\Current SOP File Directory\Forms\QS10 R21 20140729 Chain of Custody.doc

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

1604034

Cooler Received/Opened On:4/7/16@0900 Workorder#_____

1. Tracking #_____ NA _____(last 4 digits, FedEx)

   Courier: ___~~FedEx~~ UPS

2. Temperature of rep. sample or temp blank when opened: 3.3 °C + *correction factor (+0.3)* = 3.6 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 2 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial/date) TH 4/7/16

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (initial/date) TH 4/7/16

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present for Cyanide "Effluent" samples? If so, treated/documented? YES...NO...NA

17. For 608 Pest/PCB samples, was pH <5 or >9? Was residual chlorine present? If either, adjusted/documented? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-17 (initial/date) TH 4/7/16

18. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

19. Did you sign the custody papers in the appropriate place? YES...NO...NA

20. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

21. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

22. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 18-22 (initial/date) TH 4/7/16

I certify that I attached a unique LIMS number label with matching sample name to each container (initial/date) TH 4/7/16

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) TH 4/7/16

Empirical Laboratories, LLC

WORK ORDER

1604034

Client: CB&I
Project: Holloman AFB
Project Manager: Sonya Gordon
Project Number: CBI_HAFB

Report To:
CB&I
Maqsud Rahman
5050 Section Ave
Cincinnati, OH 45212
Phone: (225) 932-2500
Fax: (225) 932-2661

Invoice To:
CB&I
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Date Due: 04/21/2016 16:00 (10 day TAT)
Date Received: 04/07/2016 09:00
Logged In By: Tiana L. Hutchings
Received By: Tiana L. Hutchings

Samples Received at:	3.6°C		
Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Analysis	TAT	Expires	Version	Comments
1604034-01 TB-01 [Water] Sampled 04/06/2016 09:00 (GMT-07:00) Mountain Time (US & Canada)				
VOC_8260B_REG	10	04/20/2016 10:00		
1604034-02 OTC538-GW-MW02 [Water] Sampled 04/06/2016 10:22 (GMT-07:00) Mountain Time (US & Canada)				
MET_7470A_MERCURY	10	05/04/2016 11:22		
MET_ICP_LOW6010C_FULL	10	10/03/2016 11:22		
VOC_8260B_REG	10	04/20/2016 11:22		
WC_ANIONS_300.0 (Short Hold)	10	04/08/2016 11:22		
WC_TDS_TOTAL_DISS_SOLIDS_2540C	10	04/13/2016 11:22		
WC_TSS_TOTAL_SUSPENDED_SOLIDS_	10	04/13/2016 11:22		
1604034-03 OTC538-GW-MW02 [Water] Sampled 04/06/2016 10:22 (GMT-07:00) Mountain Time (US & Canada)				**FIELD FILTERED**
MET_7470A_DIS_MERCURY	10	05/04/2016 11:22		
MET_ICP_LOW6010C_FULL_DIS	10	10/03/2016 11:22		

Empirical Laboratories, LLC

WORK ORDER

1604034

Client: CB&I
Project: Holloman AFB
Project Manager: Sonya Gordon
Project Number: CBI_HAFB

Analysis	TAT	Expires	Version	Comments
1604034-04 OTC537-GW-MW01 [Water] Sampled 04/06/2016 12:46 (GMT-07:00) Mountain Time (US & Canada)				**MS/MSD**
MET_7470A_MERCURY	10	05/04/2016 13:46		
MET_ICP_LOW6010C_FULL	10	10/03/2016 13:46		
VOC_8260B_REG	10	04/20/2016 13:46		
WC_ANIONS_300.0 (Short Hold)	10	04/08/2016 13:46		
WC_TDS_TOTAL_DISS_SOLIDS_2540C	10	04/13/2016 13:46		
WC_TSS_TOTAL_SUSPENDED_SOLIDS_	10	04/13/2016 13:46		
1604034-05 OTC537-GW-MW01 [Water] Sampled 04/06/2016 12:46 (GMT-07:00) Mountain Time (US & Canada)				**FIELD FILTERED MS/MSD**
MET_7470A_DIS_MERCURY	10	05/04/2016 13:46		
MET_ICP_LOW6010C_FULL_DIS	10	10/03/2016 13:46		
1604034-06 OTC537-GW-MW01-FD [Water] Sampled 04/06/2016 12:46 (GMT-07:00) Mountain Time (US & Canada)				
MET_7470A_MERCURY	10	05/04/2016 13:46		
MET_ICP_LOW6010C_FULL	10	10/03/2016 13:46		
VOC_8260B_REG	10	04/20/2016 13:46		
WC_ANIONS_300.0 (Short Hold)	10	04/08/2016 13:46		
WC_TDS_TOTAL_DISS_SOLIDS_2540C	10	04/13/2016 13:46		
WC_TSS_TOTAL_SUSPENDED_SOLIDS_	10	04/13/2016 13:46		
1604034-07 OTC537-GW-MW01-FD [Water] Sampled 04/06/2016 12:46 (GMT-07:00) Mountain Time (US & Canada)				**FIELD FILTERED**
MET_7470A_DIS_MERCURY	10	05/04/2016 13:46		
MET_ICP_LOW6010C_FULL_DIS	10	10/03/2016 13:46		

Empirical Laboratories, LLC

WORK ORDER

1604034

Client:	**CB&I**	**Project Manager:**	**Sonya Gordon**
Project:	**Holloman AFB**	**Project Number:**	**CBI_HAFB**

MET_ICP_LOW6010C_FULL **Extraction: MET_3005A_LOW**

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Vanadium
Zinc

MET_ICP_LOW6010C_FULL_DIS **Extraction: MET_3005A_LOW**

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Vanadium

Empirical Laboratories, LLC

WORK ORDER

1604034

Client:	**CB&I**	**Project Manager:**	**Sonya Gordon**
Project:	**Holloman AFB**	**Project Number:**	**CBI_HAFB**

Zinc

VOC_8260B_REG **Extraction: 5030B**

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloro-1,2,2-trifluoroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane (EDB)
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloroethene (total)
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,3-Dichloropropane
1,4-Dichlorobenzene
2,2-Dichloropropane
2-Butanone
2-Chlorotoluene
2-Hexanone
4-Chlorotoluene
4-Methyl-2-pentanone
Acetone
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Cyclohexane
Dibromochloromethane

Empirical Laboratories, LLC

WORK ORDER

1604034

Client:	**CB&I**	**Project Manager:**	**Sonya Gordon**
Project:	**Holloman AFB**	**Project Number:**	**CBI_HAFB**

Dibromomethane
Dichlorodifluoromethane
Ethylbenzene
Hexachlorobutadiene
Isopropylbenzene
m,p-Xylene
Methyl Acetate
Methyl t-Butyl Ether
Methylcyclohexane
Methylene chloride
Naphthalene
n-Butylbenzene
n-Propylbenzene
o-Xylene
p-Isopropyltoluene
sec-Butylbenzene
Styrene
tert-Butylbenzene
Tetrachloroethene
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Trichlorofluoromethane
Vinyl chloride
Xylenes (total)

WC_ANIONS_300.0 (Short Hold) **Extraction: WC_PREP_ANIONS_W**

Nitrate as N

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Holloman AFB
SDG #: 1604034

QC LEVEL: Level IV
Report Due: 4/21/2016 - 4/21/2016
Client Sample Count: 4

Sample Type	Sampled	Received	Lab ID	Client ID	Lab Matrix	E300.0	SM2540C	SM2540D	SW6010C	SW7470A	SW8260B
Trip Blank	4/6/2016	4/7/2016	1604034-01	TB-01	Water						X
Client Sample	4/6/2016	4/7/2016	1604034-02	OTC538-GW-MW02	Water	X	X	X	X	X	X
Client Sample	4/6/2016	4/7/2016	1604034-03	OTC538-GW-MW02	Water				X	X	
Client Sample	4/6/2016	4/7/2016	1604034-04	OTC537-GW-MW01	Water	X	X	X	X	X	X
Client Sample	4/6/2016	4/7/2016	1604034-05	OTC537-GW-MW01	Water				X	X	
Field Duplicate	4/6/2016	4/7/2016	1604034-06	OTC537-GW-MW01-FD	Water	X	X	X	X	X	X
Field Duplicate	4/6/2016	4/7/2016	1604034-07	OTC537-GW-MW01-FD	Water				X	X	

Data for SW8260B Forms

Sample Extraction Data

Prep Method: 5030B-SW8260B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604034-01 [TB-01]	6D12002	5.00/5.00	5.00	5.00	1.00			04/12/16
1604034-02 [OTC538-GW-MW02]	6D12002	5.00/5.00	5.00	5.00	2.00			04/13/16
1604034-06 [OTC537-GW-MW01-FD]	6D12002	5.00/5.00	5.00	5.00	2.00			04/13/16

Sample Extraction Data

Prep Method: 5030B-SW8260B

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604034-04 [OTC537-GW-MW01]	6D13002	5.00/5.00	5.00	5.00	2.00			04/14/16

ANALYSIS DATA SHEET

TB-01

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Water Laboratory ID: 1604034-01 File ID: 0403401A.D

Sampled: 04/06/16 09:00 Prepared: 04/12/16 21:49 Analyzed: 04/12/16 21:49

Solids: Preparation: 5030B Dilution: 1

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone		2.50	5.00	10.0	U
71-43-2	Benzene		0.250	0.500	1.00	U
108-86-1	Bromobenzene		0.250	0.500	1.00	U
74-97-5	Bromochloromethane		0.250	0.500	1.00	U
75-27-4	Bromodichloromethane		0.250	0.500	1.00	U
75-25-2	Bromoform		0.250	0.500	1.00	U
74-83-9	Bromomethane		0.500	1.00	2.00	UX
104-51-8	n-Butylbenzene		0.250	0.500	1.00	U
78-93-3	2-Butanone		2.50	5.00	10.0	U
135-98-8	sec-Butylbenzene		0.250	0.500	1.00	U
98-06-6	tert-Butylbenzene		0.250	0.500	1.00	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
75-00-3	Chloroethane		0.500	1.00	2.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
95-49-8	2-Chlorotoluene		0.250	0.500	1.00	U
106-43-4	4-Chlorotoluene		0.250	0.500	1.00	U
110-82-7	Cyclohexane		0.250	0.500	1.00	U
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	U
74-95-3	Dibromomethane		0.250	0.500	1.00	U
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	U
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
540-59-0	1,2-Dichloroethene (total)		0.500	1.00	2.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
142-28-9	1,3-Dichloropropane		0.250	0.500	1.00	U
594-20-7	2,2-Dichloropropane		0.250	0.500	1.00	U
563-58-6	1,1-Dichloropropene		0.250	0.500	1.00	U
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	U

ANALYSIS DATA SHEET

TB-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1604034
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-01	File ID:	0403401A.D
Sampled:	04/06/16 09:00	Prepared:	04/12/16 21:49	Analyzed:	04/12/16 21:49
Solids:		Preparation:	5030B	Dilution:	1

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
87-68-3	Hexachlorobutadiene		0.250	0.500	1.00	U
591-78-6	2-Hexanone		1.25	2.50	5.00	U
98-82-8	Isopropylbenzene		0.250	0.500	1.00	U
99-87-6	p-Isopropyltoluene		0.250	0.500	1.00	U
75-09-2	Methylene chloride		0.500	1.00	2.00	U
79-20-9	Methyl Acetate		0.500	1.00	2.00	U
108-87-2	Methylcyclohexane		0.250	0.500	1.00	U
91-20-3	Naphthalene		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	U
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
103-65-1	n-Propylbenzene		0.250	0.500	1.00	U
100-42-5	Styrene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
108-88-3	Toluene		0.250	0.500	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.250	0.500	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
96-18-4	1,2,3-Trichloropropane		0.500	1.00	2.00	U
108-67-8	1,3,5-Trimethylbenzene		0.250	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.250	0.500	1.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported 71 Project Analytes: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.87	99.6	75 - 120	
Dibromofluoromethane	30.00	28.99	96.6	85 - 115	
1,2-Dichloroethane-d4	30.00	29.27	97.6	70 - 120	
Toluene-d8	30.00	29.37	97.9	85 - 120	

ANALYSIS DATA SHEET

OTC538-GW-MW02

Laboratory:	Empirical Laboratories, LLC			SDG:	1604034
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-02	File ID:	0403402B.D
Sampled:	04/06/16 10:22	Prepared:	04/13/16 02:09	Analyzed:	04/13/16 02:09
Solids:		Preparation:	5030B	Dilution:	2

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**9.40**	5.00	10.0	20.0	JD
71-43-2	Benzene		0.500	1.00	2.00	U
108-86-1	Bromobenzene		0.500	1.00	2.00	U
74-97-5	Bromochloromethane		0.500	1.00	2.00	U
75-27-4	Bromodichloromethane		0.500	1.00	2.00	U
75-25-2	Bromoform		0.500	1.00	2.00	U
74-83-9	Bromomethane		1.00	2.00	4.00	UX
104-51-8	n-Butylbenzene		0.500	1.00	2.00	U
78-93-3	2-Butanone		5.00	10.0	20.0	U
135-98-8	sec-Butylbenzene		0.500	1.00	2.00	U
98-06-6	tert-Butylbenzene		0.500	1.00	2.00	U
75-15-0	Carbon disulfide		0.500	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.500	1.00	2.00	U
108-90-7	Chlorobenzene		0.500	1.00	2.00	U
75-00-3	Chloroethane		1.00	2.00	4.00	U
67-66-3	Chloroform	**2.98**	0.500	1.00	2.00	D
74-87-3	Chloromethane		0.500	1.00	2.00	U
95-49-8	2-Chlorotoluene		0.500	1.00	2.00	U
106-43-4	4-Chlorotoluene		0.500	1.00	2.00	U
110-82-7	Cyclohexane		0.500	1.00	2.00	U
124-48-1	Dibromochloromethane		0.500	1.00	2.00	U
96-12-8	1,2-Dibromo-3-chloropropane		1.00	2.00	4.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.500	1.00	2.00	U
74-95-3	Dibromomethane		0.500	1.00	2.00	U
95-50-1	1,2-Dichlorobenzene		0.500	1.00	2.00	U
541-73-1	1,3-Dichlorobenzene		0.500	1.00	2.00	U
106-46-7	1,4-Dichlorobenzene		0.500	1.00	2.00	U
75-71-8	Dichlorodifluoromethane		1.00	2.00	4.00	U
75-34-3	1,1-Dichloroethane		0.500	1.00	2.00	U
107-06-2	1,2-Dichloroethane		0.500	1.00	2.00	U
75-35-4	1,1-Dichloroethene		0.500	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.500	1.00	2.00	U
156-60-5	trans-1,2-Dichloroethene		0.500	1.00	2.00	U
540-59-0	1,2-Dichloroethene (total)		1.00	2.00	4.00	U
78-87-5	1,2-Dichloropropane		0.500	1.00	2.00	U
142-28-9	1,3-Dichloropropane		0.500	1.00	2.00	U
594-20-7	2,2-Dichloropropane		0.500	1.00	2.00	U
563-58-6	1,1-Dichloropropene		0.500	1.00	2.00	U
10061-01-5	cis-1,3-Dichloropropene		0.500	1.00	2.00	U
10061-02-6	trans-1,3-Dichloropropene		0.500	1.00	2.00	U

ANALYSIS DATA SHEET

OTC538-GW-MW02

Laboratory:	Empirical Laboratories, LLC			SDG:	1604034
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-02	File ID:	0403402B.D
Sampled:	04/06/16 10:22	Prepared:	04/13/16 02:09	Analyzed:	04/13/16 02:09
Solids:		Preparation:	5030B	Dilution:	2

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.500	1.00	2.00	U
87-68-3	Hexachlorobutadiene		0.500	1.00	2.00	U
591-78-6	2-Hexanone		2.50	5.00	10.0	U
98-82-8	Isopropylbenzene		0.500	1.00	2.00	U
99-87-6	p-Isopropyltoluene		0.500	1.00	2.00	U
75-09-2	Methylene chloride		1.00	2.00	4.00	U
79-20-9	Methyl Acetate		1.00	2.00	4.00	U
108-87-2	Methylcyclohexane		0.500	1.00	2.00	U
91-20-3	Naphthalene		0.500	1.00	2.00	U
108-10-1	4-Methyl-2-pentanone		2.50	5.00	10.0	U
1634-04-4	Methyl t-Butyl Ether		0.500	1.00	2.00	U
103-65-1	n-Propylbenzene		0.500	1.00	2.00	U
100-42-5	Styrene		0.500	1.00	2.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.500	1.00	2.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.500	1.00	2.00	U
127-18-4	Tetrachloroethene		0.500	1.00	2.00	U
108-88-3	Toluene		0.500	1.00	2.00	U
87-61-6	1,2,3-Trichlorobenzene		0.500	1.00	2.00	U
120-82-1	1,2,4-Trichlorobenzene		0.500	1.00	2.00	U
79-00-5	1,1,2-Trichloroethane		0.500	1.00	2.00	U
71-55-6	1,1,1-Trichloroethane		0.500	1.00	2.00	U
79-01-6	Trichloroethene	**0.508**	0.500	1.00	2.00	JD
75-69-4	Trichlorofluoromethane		1.00	2.00	4.00	U
96-18-4	1,2,3-Trichloropropane		1.00	2.00	4.00	U
108-67-8	1,3,5-Trimethylbenzene		0.500	1.00	2.00	U
95-63-6	1,2,4-Trimethylbenzene		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		1.00	2.00	4.00	U
75-01-4	Vinyl chloride		0.500	1.00	2.00	U
108-38-3/106-42-	m,p-Xylene		1.00	2.00	4.00	U
95-47-6	o-Xylene		0.500	1.00	2.00	U
1330-20-7	Xylenes (total)		1.50	3.00	6.00	U

Total Target Analytes Reported 71 Project Analytes: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.32	97.7	75 - 120	
Dibromofluoromethane	30.00	29.86	99.5	85 - 115	
1,2-Dichloroethane-d4	30.00	30.03	100	70 - 120	
Toluene-d8	30.00	28.68	95.6	85 - 120	

ANALYSIS DATA SHEET

OTC537-GW-MW01

Laboratory:	Empirical Laboratories, LLC			SDG:	1604034
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-04	File ID:	0403404B.D
Sampled:	04/06/16 12:46	Prepared:	04/14/16 02:01	Analyzed:	04/14/16 02:01
Solids:		Preparation:	5030B	Dilution:	2

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**36.8**	5.00	10.0	20.0	D
71-43-2	Benzene		0.500	1.00	2.00	U
108-86-1	Bromobenzene		0.500	1.00	2.00	U
74-97-5	Bromochloromethane		0.500	1.00	2.00	U
75-27-4	Bromodichloromethane		0.500	1.00	2.00	U
75-25-2	Bromoform		0.500	1.00	2.00	U
74-83-9	Bromomethane		1.00	2.00	4.00	U
104-51-8	n-Butylbenzene		0.500	1.00	2.00	U
78-93-3	2-Butanone		5.00	10.0	20.0	U
135-98-8	sec-Butylbenzene		0.500	1.00	2.00	U
98-06-6	tert-Butylbenzene		0.500	1.00	2.00	U
75-15-0	Carbon disulfide		0.500	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.500	1.00	2.00	U
108-90-7	Chlorobenzene		0.500	1.00	2.00	U
75-00-3	Chloroethane		1.00	2.00	4.00	U
67-66-3	Chloroform		0.500	1.00	2.00	U
74-87-3	Chloromethane		0.500	1.00	2.00	U
95-49-8	2-Chlorotoluene		0.500	1.00	2.00	U
106-43-4	4-Chlorotoluene		0.500	1.00	2.00	U
110-82-7	Cyclohexane		0.500	1.00	2.00	U
124-48-1	Dibromochloromethane		0.500	1.00	2.00	U
96-12-8	1,2-Dibromo-3-chloropropane		1.00	2.00	4.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.500	1.00	2.00	U
74-95-3	Dibromomethane		0.500	1.00	2.00	U
95-50-1	1,2-Dichlorobenzene		0.500	1.00	2.00	U
541-73-1	1,3-Dichlorobenzene		0.500	1.00	2.00	U
106-46-7	1,4-Dichlorobenzene		0.500	1.00	2.00	U
75-71-8	Dichlorodifluoromethane		1.00	2.00	4.00	U
75-34-3	1,1-Dichloroethane		0.500	1.00	2.00	U
107-06-2	1,2-Dichloroethane		0.500	1.00	2.00	U
75-35-4	1,1-Dichloroethene		0.500	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.500	1.00	2.00	U
156-60-5	trans-1,2-Dichloroethene		0.500	1.00	2.00	U
540-59-0	1,2-Dichloroethene (total)		1.00	2.00	4.00	U
78-87-5	1,2-Dichloropropane		0.500	1.00	2.00	U
142-28-9	1,3-Dichloropropane		0.500	1.00	2.00	U
594-20-7	2,2-Dichloropropane		0.500	1.00	2.00	U
563-58-6	1,1-Dichloropropene		0.500	1.00	2.00	U
10061-01-5	cis-1,3-Dichloropropene		0.500	1.00	2.00	U
10061-02-6	trans-1,3-Dichloropropene		0.500	1.00	2.00	U

ANALYSIS DATA SHEET

OTC537-GW-MW01

Laboratory:	Empirical Laboratories, LLC			SDG:	1604034
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-04	File ID:	0403404B.D
Sampled:	04/06/16 12:46	Prepared:	04/14/16 02:01	Analyzed:	04/14/16 02:01
Solids:		Preparation:	5030B	Dilution:	2

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.500	1.00	2.00	U
87-68-3	Hexachlorobutadiene		0.500	1.00	2.00	U
591-78-6	2-Hexanone		2.50	5.00	10.0	U
98-82-8	Isopropylbenzene		0.500	1.00	2.00	U
99-87-6	p-Isopropyltoluene		0.500	1.00	2.00	U
75-09-2	Methylene chloride		1.00	2.00	4.00	U
79-20-9	Methyl Acetate		1.00	2.00	4.00	U
108-87-2	Methylcyclohexane		0.500	1.00	2.00	U
91-20-3	Naphthalene		0.500	1.00	2.00	U
108-10-1	4-Methyl-2-pentanone		2.50	5.00	10.0	U
1634-04-4	Methyl t-Butyl Ether		0.500	1.00	2.00	U
103-65-1	n-Propylbenzene		0.500	1.00	2.00	U
100-42-5	Styrene		0.500	1.00	2.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.500	1.00	2.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.500	1.00	2.00	U
127-18-4	Tetrachloroethene		0.500	1.00	2.00	U
108-88-3	Toluene		0.500	1.00	2.00	U
87-61-6	1,2,3-Trichlorobenzene		0.500	1.00	2.00	U
120-82-1	1,2,4-Trichlorobenzene		0.500	1.00	2.00	U
79-00-5	1,1,2-Trichloroethane		0.500	1.00	2.00	U
71-55-6	1,1,1-Trichloroethane		0.500	1.00	2.00	U
79-01-6	Trichloroethene		0.500	1.00	2.00	U
75-69-4	Trichlorofluoromethane		1.00	2.00	4.00	U
96-18-4	1,2,3-Trichloropropane		1.00	2.00	4.00	U
108-67-8	1,3,5-Trimethylbenzene		0.500	1.00	2.00	U
95-63-6	1,2,4-Trimethylbenzene		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		1.00	2.00	4.00	U
75-01-4	Vinyl chloride		0.500	1.00	2.00	U
108-38-3/106-42-	m,p-Xylene		1.00	2.00	4.00	U
95-47-6	o-Xylene		0.500	1.00	2.00	U
1330-20-7	Xylenes (total)		1.50	3.00	6.00	U

Total Target Analytes Reported 71 Project Analytes: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.33	94.4	75 - 120	
Dibromofluoromethane	30.00	29.10	97.0	85 - 115	
1,2-Dichloroethane-d4	30.00	29.68	98.9	70 - 120	
Toluene-d8	30.00	28.62	95.4	85 - 120	

ANALYSIS DATA SHEET

OTC537-GW-MW01-FD

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Water Laboratory ID: 1604034-06 File ID: 0403406B.D

Sampled: 04/06/16 12:46 Prepared: 04/13/16 02:38 Analyzed: 04/13/16 02:38

Solids: Preparation: 5030B Dilution: 2

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**20.8**	5.00	10.0	20.0	D
71-43-2	Benzene		0.500	1.00	2.00	U
108-86-1	Bromobenzene		0.500	1.00	2.00	U
74-97-5	Bromochloromethane		0.500	1.00	2.00	U
75-27-4	Bromodichloromethane		0.500	1.00	2.00	U
75-25-2	Bromoform		0.500	1.00	2.00	U
74-83-9	Bromomethane		1.00	2.00	4.00	UX
104-51-8	n-Butylbenzene		0.500	1.00	2.00	U
78-93-3	2-Butanone		5.00	10.0	20.0	U
135-98-8	sec-Butylbenzene		0.500	1.00	2.00	U
98-06-6	tert-Butylbenzene		0.500	1.00	2.00	U
75-15-0	Carbon disulfide		0.500	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.500	1.00	2.00	U
108-90-7	Chlorobenzene		0.500	1.00	2.00	U
75-00-3	Chloroethane		1.00	2.00	4.00	U
67-66-3	Chloroform		0.500	1.00	2.00	U
74-87-3	Chloromethane		0.500	1.00	2.00	U
95-49-8	2-Chlorotoluene		0.500	1.00	2.00	U
106-43-4	4-Chlorotoluene		0.500	1.00	2.00	U
110-82-7	Cyclohexane		0.500	1.00	2.00	U
124-48-1	Dibromochloromethane		0.500	1.00	2.00	U
96-12-8	1,2-Dibromo-3-chloropropane		1.00	2.00	4.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.500	1.00	2.00	U
74-95-3	Dibromomethane		0.500	1.00	2.00	U
95-50-1	1,2-Dichlorobenzene		0.500	1.00	2.00	U
541-73-1	1,3-Dichlorobenzene		0.500	1.00	2.00	U
106-46-7	1,4-Dichlorobenzene		0.500	1.00	2.00	U
75-71-8	Dichlorodifluoromethane		1.00	2.00	4.00	U
75-34-3	1,1-Dichloroethane		0.500	1.00	2.00	U
107-06-2	1,2-Dichloroethane		0.500	1.00	2.00	U
75-35-4	1,1-Dichloroethene		0.500	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.500	1.00	2.00	U
156-60-5	trans-1,2-Dichloroethene		0.500	1.00	2.00	U
540-59-0	1,2-Dichloroethene (total)		1.00	2.00	4.00	U
78-87-5	1,2-Dichloropropane		0.500	1.00	2.00	U
142-28-9	1,3-Dichloropropane		0.500	1.00	2.00	U
594-20-7	2,2-Dichloropropane		0.500	1.00	2.00	U
563-58-6	1,1-Dichloropropene		0.500	1.00	2.00	U
10061-01-5	cis-1,3-Dichloropropene		0.500	1.00	2.00	U
10061-02-6	trans-1,3-Dichloropropene		0.500	1.00	2.00	U

ANALYSIS DATA SHEET

OTC537-GW-MW01-FD

Laboratory:	Empirical Laboratories, LLC			SDG:	1604034
Client:	CB&I			Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-06	File ID:	0403406B.D
Sampled:	04/06/16 12:46	Prepared:	04/13/16 02:38	Analyzed:	04/13/16 02:38
Solids:		Preparation:	5030B	Dilution:	2

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.500	1.00	2.00	U
87-68-3	Hexachlorobutadiene		0.500	1.00	2.00	U
591-78-6	2-Hexanone		2.50	5.00	10.0	U
98-82-8	Isopropylbenzene		0.500	1.00	2.00	U
99-87-6	p-Isopropyltoluene		0.500	1.00	2.00	U
75-09-2	Methylene chloride		1.00	2.00	4.00	U
79-20-9	Methyl Acetate		1.00	2.00	4.00	U
108-87-2	Methylcyclohexane		0.500	1.00	2.00	U
91-20-3	Naphthalene		0.500	1.00	2.00	U
108-10-1	4-Methyl-2-pentanone		2.50	5.00	10.0	U
1634-04-4	Methyl t-Butyl Ether		0.500	1.00	2.00	U
103-65-1	n-Propylbenzene		0.500	1.00	2.00	U
100-42-5	Styrene		0.500	1.00	2.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.500	1.00	2.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.500	1.00	2.00	U
127-18-4	Tetrachloroethene		0.500	1.00	2.00	U
108-88-3	Toluene		0.500	1.00	2.00	U
87-61-6	1,2,3-Trichlorobenzene		0.500	1.00	2.00	U
120-82-1	1,2,4-Trichlorobenzene		0.500	1.00	2.00	U
79-00-5	1,1,2-Trichloroethane		0.500	1.00	2.00	U
71-55-6	1,1,1-Trichloroethane		0.500	1.00	2.00	U
79-01-6	Trichloroethene		0.500	1.00	2.00	U
75-69-4	Trichlorofluoromethane		1.00	2.00	4.00	U
96-18-4	1,2,3-Trichloropropane		1.00	2.00	4.00	U
108-67-8	1,3,5-Trimethylbenzene		0.500	1.00	2.00	U
95-63-6	1,2,4-Trimethylbenzene		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		1.00	2.00	4.00	U
75-01-4	Vinyl chloride		0.500	1.00	2.00	U
108-38-3/106-42-	m,p-Xylene		1.00	2.00	4.00	U
95-47-6	o-Xylene		0.500	1.00	2.00	U
1330-20-7	Xylenes (total)		1.50	3.00	6.00	U

Total Target Analytes Reported 71 Project Analytes: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.41	98.0	75 - 120	
Dibromofluoromethane	30.00	29.71	99.0	85 - 115	
1,2-Dichloroethane-d4	30.00	29.41	98.0	70 - 120	
Toluene-d8	30.00	29.55	98.5	85 - 120	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8260B

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Sequence: 6D10302
Instrument: MS-VOA6
Calibration: 6049001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (6D10302-CCV1) ug/L				Lab File ID: 0412CCVE.D		Analyzed: 04/12/16 18:55		
Bromofluorobenzene	30.00	103	80 - 120	12.079	12.079	0.0000	+/-1.000	
Dibromofluoromethane	30.00	97.3	80 - 120	6.727	6.727	0.0000	+/-1.000	
1,2-Dichloroethane-d4	30.00	96.5	80 - 120	7.23	7.23	0.0000	+/-1.000	
Toluene-d8	30.00	99.2	80 - 120	9.467	9.467	0.0000	+/-1.000	
LCS (6D12002-BS1) ug/L				Lab File ID: 0412LC1E.D		Analyzed: 04/12/16 19:24		
Bromofluorobenzene	30.00	99.2	75 - 120	12.086	12.079	0.0070	+/-1.000	
Dibromofluoromethane	30.00	96.3	85 - 115	6.734	6.727	0.0070	+/-1.000	
1,2-Dichloroethane-d4	30.00	98.4	70 - 120	7.236	7.23	0.0060	+/-1.000	
Toluene-d8	30.00	98.5	85 - 120	9.464	9.467	-0.0030	+/-1.000	
LCS (6D12002-BS2) ug/L				Lab File ID: 0412LC2E.D		Analyzed: 04/12/16 19:53		
Bromofluorobenzene	30.00	98.1	75 - 120	12.079	12.079	0.0000	+/-1.000	
Dibromofluoromethane	30.00	94.6	85 - 115	6.728	6.727	0.0010	+/-1.000	
1,2-Dichloroethane-d4	30.00	98.8	70 - 120	7.23	7.23	0.0000	+/-1.000	
Toluene-d8	30.00	99.5	85 - 120	9.468	9.467	0.0010	+/-1.000	
Blank (6D12002-BLK1) ug/L				Lab File ID: 0412BLKE.D		Analyzed: 04/12/16 21:20		
Bromofluorobenzene	30.00	100	75 - 120	12.075	12.079	-0.0040	+/-1.000	
Dibromofluoromethane	30.00	97.7	85 - 115	6.723	6.727	-0.0040	+/-1.000	
1,2-Dichloroethane-d4	30.00	97.8	70 - 120	7.226	7.23	-0.0040	+/-1.000	
Toluene-d8	30.00	100	85 - 120	9.463	9.467	-0.0040	+/-1.000	
TB-01 (1604034-01) ug/L				Lab File ID: 0403401A.D		Analyzed: 04/12/16 21:49		
Bromofluorobenzene	30.00	99.6	75 - 120	12.08	12.079	0.0010	+/-1.000	
Dibromofluoromethane	30.00	96.6	85 - 115	6.728	6.727	0.0010	+/-1.000	
1,2-Dichloroethane-d4	30.00	97.6	70 - 120	7.23	7.23	0.0000	+/-1.000	
Toluene-d8	30.00	97.9	85 - 120	9.468	9.467	0.0010	+/-1.000	
OTC538-GW-MW02 (1604034-02) ug/L				Lab File ID: 0403402B.D		Analyzed: 04/13/16 02:09		
Bromofluorobenzene	30.00	97.7	75 - 120	12.079	12.079	0.0000	+/-1.000	
Dibromofluoromethane	30.00	99.5	85 - 115	6.727	6.727	0.0000	+/-1.000	
1,2-Dichloroethane-d4	30.00	100	70 - 120	7.23	7.23	0.0000	+/-1.000	
Toluene-d8	30.00	95.6	85 - 120	9.467	9.467	0.0000	+/-1.000	
OTC537-GW-MW01-FD (1604034-06) ug/L				Lab File ID: 0403406B.D		Analyzed: 04/13/16 02:38		
Bromofluorobenzene	30.00	98.0	75 - 120	12.079	12.079	0.0000	+/-1.000	
Dibromofluoromethane	30.00	99.0	85 - 115	6.727	6.727	0.0000	+/-1.000	
1,2-Dichloroethane-d4	30.00	98.0	70 - 120	7.229	7.23	-0.0010	+/-1.000	
Toluene-d8	30.00	98.5	85 - 120	9.457	9.467	-0.0100	+/-1.000	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10402	Instrument:	MS-VOA6
		Calibration:	6049001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (6D10402-CCV1) ug/L				Lab File ID: 0413CCVE.D		Analyzed: 04/13/16 21:12		
Bromofluorobenzene	30.00	98.6	80 - 120	12.08	12.08	0.0000	+/-1.000	
Dibromofluoromethane	30.00	97.8	80 - 120	6.731	6.731	0.0000	+/-1.000	
1,2-Dichloroethane-d4	30.00	98.9	80 - 120	7.233	7.233	0.0000	+/-1.000	
Toluene-d8	30.00	96.9	80 - 120	9.47	9.47	0.0000	+/-1.000	
LCS (6D13002-BS1) ug/L				Lab File ID: 0413LC1E.D		Analyzed: 04/13/16 21:41		
Bromofluorobenzene	30.00	99.2	75 - 120	12.082	12.08	0.0020	+/-1.000	
Dibromofluoromethane	30.00	98.3	85 - 115	6.732	6.731	0.0010	+/-1.000	
1,2-Dichloroethane-d4	30.00	97.8	70 - 120	7.235	7.233	0.0020	+/-1.000	
Toluene-d8	30.00	97.5	85 - 120	9.471	9.47	0.0010	+/-1.000	
LCS (6D13002-BS2) ug/L				Lab File ID: 0413LC2E.D		Analyzed: 04/13/16 22:10		
Bromofluorobenzene	30.00	96.9	75 - 120	12.085	12.08	0.0050	+/-1.000	
Dibromofluoromethane	30.00	97.6	85 - 115	6.735	6.731	0.0040	+/-1.000	
1,2-Dichloroethane-d4	30.00	99.7	70 - 120	7.238	7.233	0.0050	+/-1.000	
Toluene-d8	30.00	97.7	85 - 120	9.464	9.47	-0.0060	+/-1.000	
Blank (6D13002-BLK1) ug/L				Lab File ID: 0413BLKE.D		Analyzed: 04/13/16 23:37		
Bromofluorobenzene	30.00	96.7	75 - 120	12.085	12.08	0.0050	+/-1.000	
Dibromofluoromethane	30.00	97.3	85 - 115	6.735	6.731	0.0040	+/-1.000	
1,2-Dichloroethane-d4	30.00	96.2	70 - 120	7.237	7.233	0.0040	+/-1.000	
Toluene-d8	30.00	95.0	85 - 120	9.464	9.47	-0.0060	+/-1.000	
OTC537-GW-MW01 (1604034-04) ug/L				Lab File ID: 0403404B.D		Analyzed: 04/14/16 02:01		
Bromofluorobenzene	30.00	94.4	75 - 120	12.086	12.08	0.0060	+/-1.000	
Dibromofluoromethane	30.00	97.0	85 - 115	6.726	6.731	-0.0050	+/-1.000	
1,2-Dichloroethane-d4	30.00	98.9	70 - 120	7.228	7.233	-0.0050	+/-1.000	
Toluene-d8	30.00	95.4	85 - 120	9.465	9.47	-0.0050	+/-1.000	
Matrix Spike (6D13002-MS1) ug/L				Lab File ID: 0403404M.D		Analyzed: 04/14/16 07:19		
Bromofluorobenzene	30.00	101	75 - 120	12.081	12.08	0.0010	+/-1.000	
Dibromofluoromethane	30.00	99.8	85 - 115	6.731	6.731	0.0000	+/-1.000	
1,2-Dichloroethane-d4	30.00	98.8	70 - 120	7.234	7.233	0.0010	+/-1.000	
Toluene-d8	30.00	96.4	85 - 120	9.47	9.47	0.0000	+/-1.000	
Matrix Spike Dup (6D13002-MSD1) ug/L				Lab File ID: 0403404S.D		Analyzed: 04/14/16 07:48		
Bromofluorobenzene	30.00	98.4	75 - 120	12.086	12.08	0.0060	+/-1.000	
Dibromofluoromethane	30.00	97.4	85 - 115	6.726	6.731	-0.0050	+/-1.000	
1,2-Dichloroethane-d4	30.00	95.2	70 - 120	7.239	7.233	0.0060	+/-1.000	
Toluene-d8	30.00	97.0	85 - 120	9.465	9.47	-0.0050	+/-1.000	

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12002	Laboratory ID:	6D12002-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Benzene	50.00	51.5	103	80 - 120
Bromobenzene	50.00	49.2	98.4	75 - 125
Bromochloromethane	50.00	48.5	97.0	65 - 130
Bromodichloromethane	50.00	53.4	107	75 - 120
Bromoform	50.00	36.6	73.3	70 - 130
Bromomethane	50.00	57.4	115	30 - 145
n-Butylbenzene	50.00	54.3	109	70 - 135
sec-Butylbenzene	50.00	52.0	104	70 - 125
tert-Butylbenzene	50.00	51.0	102	70 - 130
Carbon disulfide	50.00	54.0	108	35 - 160
Carbon tetrachloride	50.00	49.6	99.3	65 - 140
Chlorobenzene	50.00	47.1	94.1	80 - 120
Chloroethane	50.00	47.3	94.6	60 - 135
Chloroform	50.00	48.6	97.2	65 - 135
Chloromethane	50.00	52.3	105	40 - 125
2-Chlorotoluene	50.00	51.4	103	75 - 125
4-Chlorotoluene	50.00	52.7	105	75 - 130
Cyclohexane	50.00	59.6	119	60 - 130
Dibromochloromethane	50.00	39.9	79.8	60 - 135
1,2-Dibromo-3-chloropropane	50.00	40.9	81.8	50 - 130
1,2-Dibromoethane (EDB)	50.00	47.5	95.0	80 - 120
Dibromomethane	50.00	50.2	100	75 - 125
1,2-Dichlorobenzene	50.00	49.4	98.9	70 - 120
1,3-Dichlorobenzene	50.00	48.5	97.1	75 - 125
1,4-Dichlorobenzene	50.00	48.3	96.6	75 - 125
Dichlorodifluoromethane	50.00	49.3	98.6	30 - 155
1,1-Dichloroethane	50.00	51.8	104	70 - 135
1,2-Dichloroethane	50.00	49.2	98.3	70 - 130
1,1-Dichloroethene	50.00	49.1	98.2	70 - 130
cis-1,2-Dichloroethene	50.00	49.7	99.4	70 - 125

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12002	Laboratory ID:	6D12002-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
trans-1,2-Dichloroethene	50.00	46.8	93.6	60 - 140
1,2-Dichloroethene (total)	100.0	96.5	96.5	75 - 125
1,2-Dichloropropane	50.00	51.3	103	75 - 125
1,3-Dichloropropane	50.00	51.7	103	75 - 125
2,2-Dichloropropane	50.00	46.3	92.5	70 - 135
1,1-Dichloropropene	50.00	49.8	99.5	75 - 130
cis-1,3-Dichloropropene	50.00	52.5	105	70 - 130
trans-1,3-Dichloropropene	50.00	46.9	93.8	55 - 140
Ethylbenzene	50.00	49.8	99.6	75 - 125
Hexachlorobutadiene	50.00	42.9	85.7	50 - 140
Isopropylbenzene	50.00	49.4	98.8	75 - 125
p-Isopropyltoluene	50.00	51.2	102	75 - 130
Methylene chloride	50.00	49.1	98.2	55 - 140
Methyl Acetate	50.00	63.2	126	55 - 150
Methylcyclohexane	50.00	54.1	108	60 - 125
Naphthalene	50.00	52.8	106	55 - 140
Methyl t-Butyl Ether	50.00	53.3	107	65 - 125
n-Propylbenzene	50.00	52.4	105	70 - 130
Styrene	50.00	49.9	99.8	65 - 135
1,1,2,2-Tetrachloroethane	50.00	53.4	107	65 - 130
1,1,1,2-Tetrachloroethane	50.00	46.4	92.9	80 - 130
Tetrachloroethene	50.00	45.3	90.5	45 - 150
Toluene	50.00	49.2	98.4	75 - 120
1,2,3-Trichlorobenzene	50.00	50.9	102	55 - 140
1,2,4-Trichlorobenzene	50.00	50.0	100	65 - 135
1,1,2-Trichloroethane	50.00	48.3	96.7	75 - 125
1,1,1-Trichloroethane	50.00	50.4	101	65 - 130
Trichloroethene	50.00	49.2	98.5	70 - 125
Trichlorofluoromethane	50.00	53.1	106	60 - 145
1,2,3-Trichloropropane	50.00	47.7	95.5	75 - 125

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12002	Laboratory ID:	6D12002-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
1,3,5-Trimethylbenzene	50.00	52.1	104	75 - 130
1,2,4-Trimethylbenzene	50.00	53.3	107	75 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	50.00	54.4	109	60 - 130
Vinyl chloride	50.00	55.8	112	50 - 145
m,p-Xylene	100.0	100	100	75 - 130
o-Xylene	50.00	49.4	98.7	80 - 120
Xylenes (total)	150.0	150	99.8	75 - 130

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12002	Laboratory ID:	6D12002-BS2
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Acetone	100.0	101	101	40 - 140
2-Butanone	100.0	94.2	94.2	30 - 150
2-Hexanone	100.0	109	109	55 - 130
4-Methyl-2-pentanone	100.0	102	102	60 - 135

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D13002	Laboratory ID:	6D13002-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Benzene	50.00	51.5	103	80 - 120
Bromobenzene	50.00	49.5	99.0	75 - 125
Bromochloromethane	50.00	51.7	103	65 - 130
Bromodichloromethane	50.00	52.9	106	75 - 120
Bromoform	50.00	39.3	78.7	70 - 130
Bromomethane	50.00	56.4	113	30 - 145
n-Butylbenzene	50.00	48.4	96.7	70 - 135
sec-Butylbenzene	50.00	48.0	95.9	70 - 125
tert-Butylbenzene	50.00	49.5	98.9	70 - 130
Carbon disulfide	50.00	53.4	107	35 - 160
Carbon tetrachloride	50.00	49.0	98.1	65 - 140
Chlorobenzene	50.00	47.2	94.5	80 - 120
Chloroethane	50.00	48.5	97.0	60 - 135
Chloroform	50.00	48.3	96.5	65 - 135
Chloromethane	50.00	51.9	104	40 - 125
2-Chlorotoluene	50.00	48.4	96.7	75 - 125
4-Chlorotoluene	50.00	48.6	97.3	75 - 130
Cyclohexane	50.00	57.8	116	60 - 130
Dibromochloromethane	50.00	42.2	84.4	60 - 135
1,2-Dibromo-3-chloropropane	50.00	44.2	88.5	50 - 130
1,2-Dibromoethane (EDB)	50.00	48.3	96.6	80 - 120
Dibromomethane	50.00	50.5	101	75 - 125
1,2-Dichlorobenzene	50.00	50.2	100	70 - 120
1,3-Dichlorobenzene	50.00	48.5	97.1	75 - 125
1,4-Dichlorobenzene	50.00	48.3	96.7	75 - 125
Dichlorodifluoromethane	50.00	44.7	89.3	30 - 155
1,1-Dichloroethane	50.00	51.2	102	70 - 135
1,2-Dichloroethane	50.00	49.4	98.7	70 - 130
1,1-Dichloroethene	50.00	47.7	95.3	70 - 130
cis-1,2-Dichloroethene	50.00	49.9	99.9	70 - 125

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D13002	Laboratory ID:	6D13002-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
trans-1,2-Dichloroethene	50.00	46.0	91.9	60 - 140
1,2-Dichloroethene (total)	100.0	95.9	95.9	75 - 125
1,2-Dichloropropane	50.00	51.7	103	75 - 125
1,3-Dichloropropane	50.00	52.7	105	75 - 125
2,2-Dichloropropane	50.00	42.9	85.8	70 - 135
1,1-Dichloropropene	50.00	49.0	98.0	75 - 130
cis-1,3-Dichloropropene	50.00	52.4	105	70 - 130
trans-1,3-Dichloropropene	50.00	47.3	94.7	55 - 140
Ethylbenzene	50.00	48.9	97.8	75 - 125
Hexachlorobutadiene	50.00	42.1	84.2	50 - 140
Isopropylbenzene	50.00	48.2	96.3	75 - 125
p-Isopropyltoluene	50.00	48.0	96.1	75 - 130
Methylene chloride	50.00	49.2	98.3	55 - 140
Methyl Acetate	50.00	66.0	132	55 - 150
Methylcyclohexane	50.00	52.1	104	60 - 125
Naphthalene	50.00	56.0	112	55 - 140
Methyl t-Butyl Ether	50.00	56.0	112	65 - 125
n-Propylbenzene	50.00	48.1	96.2	70 - 130
Styrene	50.00	49.4	98.7	65 - 135
1,1,2,2-Tetrachloroethane	50.00	52.9	106	65 - 130
1,1,1,2-Tetrachloroethane	50.00	47.8	95.6	80 - 130
Tetrachloroethene	50.00	45.7	91.4	45 - 150
Toluene	50.00	48.6	97.3	75 - 120
1,2,3-Trichlorobenzene	50.00	51.3	103	55 - 140
1,2,4-Trichlorobenzene	50.00	49.7	99.4	65 - 135
1,1,2-Trichloroethane	50.00	49.4	98.9	75 - 125
1,1,1-Trichloroethane	50.00	49.1	98.2	65 - 130
Trichloroethene	50.00	48.6	97.3	70 - 125
Trichlorofluoromethane	50.00	51.1	102	60 - 145
1,2,3-Trichloropropane	50.00	50.2	100	75 - 125

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D13002	Laboratory ID:	6D13002-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
1,3,5-Trimethylbenzene	50.00	49.2	98.4	75 - 130
1,2,4-Trimethylbenzene	50.00	49.6	99.2	75 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	50.00	51.6	103	60 - 130
Vinyl chloride	50.00	57.3	115	50 - 145
m,p-Xylene	100.0	98.9	98.9	75 - 130
o-Xylene	50.00	48.8	97.6	80 - 120
Xylenes (total)	150.0	148	98.5	75 - 130

LCS / LCS DUPLICATE RECOVERY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D13002	Laboratory ID:	6D13002-BS2
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Acetone	100.0	103	103	40 - 140
2-Butanone	100.0	92.5	92.5	30 - 150
2-Hexanone	100.0	107	107	55 - 130
4-Methyl-2-pentanone	100.0	101	101	60 - 135

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D13002

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Acetone	200.0	36.8	239	101		40 - 140
Benzene	100.0	ND	102	102		80 - 120
Bromobenzene	100.0	ND	93.6	93.6		75 - 125
Bromochloromethane	100.0	ND	101	101		65 - 130
Bromodichloromethane	100.0	ND	106	106		75 - 120
Bromoform	100.0	ND	74.2	74.2		70 - 130
Bromomethane	100.0	ND	85.2	85.2		30 - 145
n-Butylbenzene	100.0	ND	90.4	90.4		70 - 135
2-Butanone	200.0	ND	211	105		30 - 150
sec-Butylbenzene	100.0	ND	90.6	90.6		70 - 125
tert-Butylbenzene	100.0	ND	94.9	94.9		70 - 130
Carbon disulfide	100.0	ND	100	100		35 - 160
Carbon tetrachloride	100.0	ND	101	101		65 - 140
Chlorobenzene	100.0	ND	91.3	91.3		80 - 120
Chloroethane	100.0	ND	97.9	97.9		60 - 135
Chloroform	100.0	ND	96.9	96.9		65 - 135
Chloromethane	100.0	ND	103	103		40 - 125
2-Chlorotoluene	100.0	ND	93.7	93.7		75 - 125
4-Chlorotoluene	100.0	ND	95.0	95.0		75 - 130
Cyclohexane	100.0	ND	114	114		60 - 130
Dibromochloromethane	100.0	ND	81.3	81.3		60 - 135
1,2-Dibromo-3-chloropropane	100.0	ND	82.6	82.6		50 - 130
1,2-Dibromoethane (EDB)	100.0	ND	93.5	93.5		80 - 120
Dibromomethane	100.0	ND	99.7	99.7		75 - 125
1,2-Dichlorobenzene	100.0	ND	96.2	96.2		70 - 120
1,3-Dichlorobenzene	100.0	ND	91.9	91.9		75 - 125
1,4-Dichlorobenzene	100.0	ND	93.5	93.5		75 - 125
Dichlorodifluoromethane	100.0	ND	85.7	85.7		30 - 155
1,1-Dichloroethane	100.0	ND	103	103		70 - 135
1,2-Dichloroethane	100.0	ND	99.4	99.4		70 - 130
1,1-Dichloroethene	100.0	ND	95.9	95.9		70 - 130
cis-1,2-Dichloroethene	100.0	ND	100	100		70 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D13002

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
trans-1,2-Dichloroethene	100.0	ND	91.3	91.3		60 - 140
1,2-Dichloroethene (total)	200.0	ND	192	95.9		75 - 125
1,2-Dichloropropane	100.0	ND	101	101		75 - 125
1,3-Dichloropropane	100.0	ND	103	103		75 - 125
2,2-Dichloropropane	100.0	ND	76.1	76.1		70 - 135
1,1-Dichloropropene	100.0	ND	98.8	98.8		75 - 130
cis-1,3-Dichloropropene	100.0	ND	99.5	99.5		70 - 130
trans-1,3-Dichloropropene	100.0	ND	89.7	89.7		55 - 140
Ethylbenzene	100.0	ND	94.6	94.6		75 - 125
Hexachlorobutadiene	100.0	ND	74.0	74.0		50 - 140
2-Hexanone	200.0	ND	214	107		55 - 130
Isopropylbenzene	100.0	ND	94.6	94.6		75 - 125
p-Isopropyltoluene	100.0	ND	91.8	91.8		75 - 130
Methylene chloride	100.0	ND	96.3	96.3		55 - 140
Methyl Acetate	100.0	ND	120	120		55 - 150
Methylcyclohexane	100.0	ND	97.5	97.5		60 - 125
Naphthalene	100.0	ND	97.5	97.5		55 - 140
4-Methyl-2-pentanone	200.0	ND	221	111		60 - 135
Methyl t-Butyl Ether	100.0	ND	107	107		65 - 125
n-Propylbenzene	100.0	ND	92.9	92.9		70 - 130
Styrene	100.0	ND	94.7	94.7		65 - 135
1,1,2,2-Tetrachloroethane	100.0	ND	103	103		65 - 130
1,1,1,2-Tetrachloroethane	100.0	ND	94.1	94.1		80 - 130
Tetrachloroethene	100.0	ND	87.8	87.8		45 - 150
Toluene	100.0	ND	95.0	95.0		75 - 120
1,2,3-Trichlorobenzene	100.0	ND	87.2	87.2		55 - 140
1,2,4-Trichlorobenzene	100.0	ND	86.6	86.6		65 - 135
1,1,2-Trichloroethane	100.0	ND	96.0	96.0		75 - 125
1,1,1-Trichloroethane	100.0	ND	101	101		65 - 130
Trichloroethene	100.0	ND	96.1	96.1		70 - 125
Trichlorofluoromethane	100.0	ND	107	107		60 - 145
1,2,3-Trichloropropane	100.0	ND	100	100		75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D13002

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
1,3,5-Trimethylbenzene	100.0	ND	95.4	95.4		75 - 130
1,2,4-Trimethylbenzene	100.0	ND	95.9	95.9		75 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	100.0	ND	106	106		60 - 130
Vinyl chloride	100.0	ND	112	112		50 - 145
m,p-Xylene	200.0	ND	192	95.8		75 - 130
o-Xylene	100.0	ND	96.6	96.6		80 - 120
Xylenes (total)	300.0	ND	288	96.0		75 - 130

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D13002

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Acetone	200.0	256	109	6.54		30	40 - 140
Benzene	100.0	111	111	8.55		30	80 - 120
Bromobenzene	100.0	102	102	8.37		30	75 - 125
Bromochloromethane	100.0	108	108	6.83		30	65 - 130
Bromodichloromethane	100.0	113	113	6.19		30	75 - 120
Bromoform	100.0	80.1	80.1	7.60		30	70 - 130
Bromomethane	100.0	108	108	23.4		30	30 - 145
n-Butylbenzene	100.0	99.2	99.2	9.27		30	70 - 135
2-Butanone	200.0	222	111	5.15		30	30 - 150
sec-Butylbenzene	100.0	98.4	98.4	8.25		30	70 - 125
tert-Butylbenzene	100.0	103	103	8.03		30	70 - 130
Carbon disulfide	100.0	101	101	1.14		30	35 - 160
Carbon tetrachloride	100.0	109	109	7.67		30	65 - 140
Chlorobenzene	100.0	98.0	98.0	7.05		30	80 - 120
Chloroethane	100.0	108	108	9.70		30	60 - 135
Chloroform	100.0	104	104	7.30		30	65 - 135
Chloromethane	100.0	114	114	9.94		30	40 - 125
2-Chlorotoluene	100.0	101	101	6.96		30	75 - 125
4-Chlorotoluene	100.0	102	102	6.75		30	75 - 130
Cyclohexane	100.0	123	123	7.81		30	60 - 130
Dibromochloromethane	100.0	87.0	87.0	6.74		30	60 - 135
1,2-Dibromo-3-chloropropane	100.0	90.6	90.6	9.21		30	50 - 130
1,2-Dibromoethane (EDB)	100.0	100	100	6.74		30	80 - 120
Dibromomethane	100.0	106	106	5.93		30	75 - 125
1,2-Dichlorobenzene	100.0	101	101	4.76		30	70 - 120
1,3-Dichlorobenzene	100.0	99.8	99.8	8.23		30	75 - 125
1,4-Dichlorobenzene	100.0	99.2	99.2	5.95		30	75 - 125
Dichlorodifluoromethane	100.0	96.3	96.3	11.6		30	30 - 155
1,1-Dichloroethane	100.0	112	112	8.99		30	70 - 135
1,2-Dichloroethane	100.0	105	105	5.98		30	70 - 130
1,1-Dichloroethene	100.0	105	105	8.91		30	70 - 130
cis-1,2-Dichloroethene	100.0	108	108	7.62		30	70 - 125
trans-1,2-Dichloroethene	100.0	101	101	9.76		30	60 - 140

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D13002

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
1,2-Dichloroethene (total)	200.0	209	105	8.64		30	75 - 125
1,2-Dichloropropane	100.0	109	109	7.79		30	75 - 125
1,3-Dichloropropane	100.0	110	110	6.60		30	75 - 125
2,2-Dichloropropane	100.0	81.0	81.0	6.20		30	70 - 135
1,1-Dichloropropene	100.0	107	107	8.27		30	75 - 130
cis-1,3-Dichloropropene	100.0	107	107	7.62		30	70 - 130
trans-1,3-Dichloropropene	100.0	95.3	95.3	6.05		30	55 - 140
Ethylbenzene	100.0	104	104	9.02		30	75 - 125
Hexachlorobutadiene	100.0	81.8	81.8	9.93		30	50 - 140
2-Hexanone	200.0	232	116	7.79		30	55 - 130
Isopropylbenzene	100.0	102	102	7.61		30	75 - 125
p-Isopropyltoluene	100.0	98.8	98.8	7.34		30	75 - 130
Methylene chloride	100.0	105	105	8.60		30	55 - 140
Methyl Acetate	100.0	128	128	6.26		30	55 - 150
Methylcyclohexane	100.0	107	107	9.27		30	60 - 125
Naphthalene	100.0	106	106	8.28		30	55 - 140
4-Methyl-2-pentanone	200.0	237	119	6.96		30	60 - 135
Methyl t-Butyl Ether	100.0	114	114	6.67		30	65 - 125
n-Propylbenzene	100.0	101	101	8.51		30	70 - 130
Styrene	100.0	103	103	7.96		30	65 - 135
1,1,2,2-Tetrachloroethane	100.0	111	111	7.40		30	65 - 130
1,1,1,2-Tetrachloroethane	100.0	101	101	6.70		30	80 - 130
Tetrachloroethene	100.0	94.6	94.6	7.44		30	45 - 150
Toluene	100.0	104	104	8.95		30	75 - 120
1,2,3-Trichlorobenzene	100.0	95.0	95.0	8.52		30	55 - 140
1,2,4-Trichlorobenzene	100.0	92.9	92.9	7.03		30	65 - 135
1,1,2-Trichloroethane	100.0	102	102	5.86		30	75 - 125
1,1,1-Trichloroethane	100.0	109	109	7.55		30	65 - 130
Trichloroethene	100.0	105	105	8.65		30	70 - 125
Trichlorofluoromethane	100.0	116	116	7.87		30	60 - 145
1,2,3-Trichloropropane	100.0	104	104	3.68		30	75 - 125
1,3,5-Trimethylbenzene	100.0	103	103	7.22		30	75 - 130
1,2,4-Trimethylbenzene	100.0	103	103	6.99		30	75 - 130

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260B

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D13002

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
1,1,2-Trichloro-1,2,2-trifluoroethane	100.0	109	109	2.11		30	60 - 130
Vinyl chloride	100.0	124	124	9.81		30	50 - 145
m,p-Xylene	200.0	208	104	8.33		30	75 - 130
o-Xylene	100.0	103	103	6.50		30	80 - 120
Xylenes (total)	300.0	311	104	7.72		30	75 - 130

PREPARATION BATCH SUMMARY

SW8260B

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Batch: 6D12002 Batch Matrix: Water Preparation: 5030B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
TB-01	1604034-01	04/12/16 21:49	5.00	5.00
OTC538-GW-MW02	1604034-02	04/13/16 02:09	5.00	5.00
OTC537-GW-MW01-FD	1604034-06	04/13/16 02:38	5.00	5.00
Blank	6D12002-BLK1	04/12/16 21:20	5.00	5.00
LCS	6D12002-BS1	04/12/16 19:24	5.00	5.00
LCS	6D12002-BS2	04/12/16 19:53	5.00	5.00

PREPARATION BATCH SUMMARY

SW8260B

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Batch: 6D13002 Batch Matrix: Water Preparation: 5030B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC537-GW-MW01	1604034-04	04/14/16 02:01	5.00	5.00
Blank	6D13002-BLK1	04/13/16 23:37	5.00	5.00
LCS	6D13002-BS1	04/13/16 21:41	5.00	5.00
LCS	6D13002-BS2	04/13/16 22:10	5.00	5.00
OTC537-GW-MW01	6D13002-MS1	04/14/16 07:19	5.00	5.00
OTC537-GW-MW01	6D13002-MSD1	04/14/16 07:48	5.00	5.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D12002-BLK1 File ID: 0412BLKE.D

Sampled: Prepared: Analyzed: 04/12/16 21:20

Solids: Preparation: 5030B Dilution:

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone		2.50	5.00	10.0	U
71-43-2	Benzene		0.250	0.500	1.00	U
108-86-1	Bromobenzene		0.250	0.500	1.00	U
74-97-5	Bromochloromethane		0.250	0.500	1.00	U
75-27-4	Bromodichloromethane		0.250	0.500	1.00	U
75-25-2	Bromoform		0.250	0.500	1.00	U
74-83-9	Bromomethane		0.500	1.00	2.00	UX
104-51-8	n-Butylbenzene		0.250	0.500	1.00	U
78-93-3	2-Butanone		2.50	5.00	10.0	U
135-98-8	sec-Butylbenzene		0.250	0.500	1.00	U
98-06-6	tert-Butylbenzene		0.250	0.500	1.00	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
75-00-3	Chloroethane		0.500	1.00	2.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
95-49-8	2-Chlorotoluene		0.250	0.500	1.00	U
106-43-4	4-Chlorotoluene		0.250	0.500	1.00	U
110-82-7	Cyclohexane		0.250	0.500	1.00	U
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	U
74-95-3	Dibromomethane		0.250	0.500	1.00	U
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	U
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
540-59-0	1,2-Dichloroethene (total)		0.500	1.00	2.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
142-28-9	1,3-Dichloropropane		0.250	0.500	1.00	U
594-20-7	2,2-Dichloropropane		0.250	0.500	1.00	U
563-58-6	1,1-Dichloropropene		0.250	0.500	1.00	U
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	U

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D12002-BLK1 File ID: 0412BLKE.D

Sampled: Prepared: Analyzed: 04/12/16 21:20

Solids: Preparation: 5030B Dilution:

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
87-68-3	Hexachlorobutadiene		0.250	0.500	1.00	U
591-78-6	2-Hexanone		1.25	2.50	5.00	U
98-82-8	Isopropylbenzene		0.250	0.500	1.00	U
99-87-6	p-Isopropyltoluene		0.250	0.500	1.00	U
75-09-2	Methylene chloride		0.500	1.00	2.00	U
79-20-9	Methyl Acetate		0.500	1.00	2.00	U
108-87-2	Methylcyclohexane		0.250	0.500	1.00	U
91-20-3	Naphthalene		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	U
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
103-65-1	n-Propylbenzene		0.250	0.500	1.00	U
100-42-5	Styrene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
108-88-3	Toluene		0.250	0.500	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.250	0.500	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
96-18-4	1,2,3-Trichloropropane		0.500	1.00	2.00	U
108-67-8	1,3,5-Trimethylbenzene		0.250	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.250	0.500	1.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.01	100	75 - 120	
Dibromofluoromethane	30.00	29.31	97.7	85 - 115	
1,2-Dichloroethane-d4	30.00	29.33	97.8	70 - 120	
Toluene-d8	30.00	30.03	100	85 - 120	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D12002-BS1 File ID: 0412LC1E.D

Sampled: Prepared: Analyzed: 04/12/16 19:24

Solids: Preparation: 5030B Dilution:

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	**51.5**	0.250	0.500	1.00	
108-86-1	Bromobenzene	**49.2**	0.250	0.500	1.00	
74-97-5	Bromochloromethane	**48.5**	0.250	0.500	1.00	
75-27-4	Bromodichloromethane	**53.4**	0.250	0.500	1.00	
75-25-2	Bromoform	**36.6**	0.250	0.500	1.00	
74-83-9	Bromomethane	**57.4**	0.500	1.00	2.00	X
104-51-8	n-Butylbenzene	**54.3**	0.250	0.500	1.00	
135-98-8	sec-Butylbenzene	**52.0**	0.250	0.500	1.00	
98-06-6	tert-Butylbenzene	**51.0**	0.250	0.500	1.00	
75-15-0	Carbon disulfide	**54.0**	0.250	0.500	1.00	
56-23-5	Carbon tetrachloride	**49.6**	0.250	0.500	1.00	
108-90-7	Chlorobenzene	**47.1**	0.250	0.500	1.00	
75-00-3	Chloroethane	**47.3**	0.500	1.00	2.00	
67-66-3	Chloroform	**48.6**	0.250	0.500	1.00	
74-87-3	Chloromethane	**52.3**	0.250	0.500	1.00	
95-49-8	2-Chlorotoluene	**51.4**	0.250	0.500	1.00	
106-43-4	4-Chlorotoluene	**52.7**	0.250	0.500	1.00	
110-82-7	Cyclohexane	**59.6**	0.250	0.500	1.00	
124-48-1	Dibromochloromethane	**39.9**	0.250	0.500	1.00	
96-12-8	1,2-Dibromo-3-chloropropane	**40.9**	0.500	1.00	2.00	
106-93-4	1,2-Dibromoethane (EDB)	**47.5**	0.250	0.500	1.00	
74-95-3	Dibromomethane	**50.2**	0.250	0.500	1.00	
95-50-1	1,2-Dichlorobenzene	**49.4**	0.250	0.500	1.00	
541-73-1	1,3-Dichlorobenzene	**48.5**	0.250	0.500	1.00	
106-46-7	1,4-Dichlorobenzene	**48.3**	0.250	0.500	1.00	
75-71-8	Dichlorodifluoromethane	**49.3**	0.500	1.00	2.00	
75-34-3	1,1-Dichloroethane	**51.8**	0.250	0.500	1.00	
107-06-2	1,2-Dichloroethane	**49.2**	0.250	0.500	1.00	
75-35-4	1,1-Dichloroethene	**49.1**	0.250	0.500	1.00	
156-59-2	cis-1,2-Dichloroethene	**49.7**	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	**46.8**	0.250	0.500	1.00	
540-59-0	1,2-Dichloroethene (total)	**96.5**	0.500	1.00	2.00	
78-87-5	1,2-Dichloropropane	**51.3**	0.250	0.500	1.00	
142-28-9	1,3-Dichloropropane	**51.7**	0.250	0.500	1.00	
594-20-7	2,2-Dichloropropane	**46.3**	0.250	0.500	1.00	
563-58-6	1,1-Dichloropropene	**49.8**	0.250	0.500	1.00	
10061-01-5	cis-1,3-Dichloropropene	**52.5**	0.250	0.500	1.00	
10061-02-6	trans-1,3-Dichloropropene	**46.9**	0.250	0.500	1.00	
100-41-4	Ethylbenzene	**49.8**	0.250	0.500	1.00	
87-68-3	Hexachlorobutadiene	**42.9**	0.250	0.500	1.00	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D12002-BS1 File ID: 0412LC1E.D

Sampled: Prepared: Analyzed: 04/12/16 19:24

Solids: Preparation: 5030B Dilution:

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
98-82-8	Isopropylbenzene	**49.4**	0.250	0.500	1.00	
99-87-6	p-Isopropyltoluene	**51.2**	0.250	0.500	1.00	
75-09-2	Methylene chloride	**49.1**	0.500	1.00	2.00	
79-20-9	Methyl Acetate	**63.2**	0.500	1.00	2.00	
108-87-2	Methylcyclohexane	**54.1**	0.250	0.500	1.00	
91-20-3	Naphthalene	**52.8**	0.250	0.500	1.00	
1634-04-4	Methyl t-Butyl Ether	**53.3**	0.250	0.500	1.00	
103-65-1	n-Propylbenzene	**52.4**	0.250	0.500	1.00	
100-42-5	Styrene	**49.9**	0.250	0.500	1.00	
79-34-5	1,1,2,2-Tetrachloroethane	**53.4**	0.250	0.500	1.00	
630-20-6	1,1,1,2-Tetrachloroethane	**46.4**	0.250	0.500	1.00	
127-18-4	Tetrachloroethene	**45.3**	0.250	0.500	1.00	
108-88-3	Toluene	**49.2**	0.250	0.500	1.00	
87-61-6	1,2,3-Trichlorobenzene	**50.9**	0.250	0.500	1.00	
120-82-1	1,2,4-Trichlorobenzene	**50.0**	0.250	0.500	1.00	
79-00-5	1,1,2-Trichloroethane	**48.3**	0.250	0.500	1.00	
71-55-6	1,1,1-Trichloroethane	**50.4**	0.250	0.500	1.00	
79-01-6	Trichloroethene	**49.2**	0.250	0.500	1.00	
75-69-4	Trichlorofluoromethane	**53.1**	0.500	1.00	2.00	
96-18-4	1,2,3-Trichloropropane	**47.7**	0.500	1.00	2.00	
108-67-8	1,3,5-Trimethylbenzene	**52.1**	0.250	0.500	1.00	
95-63-6	1,2,4-Trimethylbenzene	**53.3**	0.250	0.500	1.00	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**54.4**	0.500	1.00	2.00	
75-01-4	Vinyl chloride	**55.8**	0.250	0.500	1.00	
108-38-3/106-42-	m,p-Xylene	**100**	0.500	1.00	2.00	
95-47-6	o-Xylene	**49.4**	0.250	0.500	1.00	
1330-20-7	Xylenes (total)	**150**	0.750	1.50	3.00	

Total Target Analytes Reported: 67

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.76	99.2	75 - 120	
Dibromofluoromethane	30.00	28.89	96.3	85 - 115	
1,2-Dichloroethane-d4	30.00	29.52	98.4	70 - 120	
Toluene-d8	30.00	29.54	98.5	85 - 120	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D12002-BS2 File ID: 0412LC2E.D

Sampled: Prepared: Analyzed: 04/12/16 19:53

Solids: Preparation: 5030B Dilution:

Batch: 6D12002 Sequence: 6D10302 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**101**	2.50	5.00	10.0	
78-93-3	2-Butanone	**94.2**	2.50	5.00	10.0	
591-78-6	2-Hexanone	**109**	1.25	2.50	5.00	
108-10-1	4-Methyl-2-pentanone	**102**	1.25	2.50	5.00	

Total Target Analytes Reported: 4

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.44	98.1	75 - 120	
Dibromofluoromethane	30.00	28.38	94.6	85 - 115	
1,2-Dichloroethane-d4	30.00	29.63	98.8	70 - 120	
Toluene-d8	30.00	29.85	99.5	85 - 120	

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D13002-BLK1 File ID: 0413BLKE.D

Sampled: Prepared: Analyzed: 04/13/16 23:37

Solids: Preparation: 5030B Dilution:

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone		2.50	5.00	10.0	U
71-43-2	Benzene		0.250	0.500	1.00	U
108-86-1	Bromobenzene		0.250	0.500	1.00	U
74-97-5	Bromochloromethane		0.250	0.500	1.00	U
75-27-4	Bromodichloromethane		0.250	0.500	1.00	U
75-25-2	Bromoform		0.250	0.500	1.00	U
74-83-9	Bromomethane		0.500	1.00	2.00	U
104-51-8	n-Butylbenzene		0.250	0.500	1.00	U
78-93-3	2-Butanone		2.50	5.00	10.0	U
135-98-8	sec-Butylbenzene		0.250	0.500	1.00	U
98-06-6	tert-Butylbenzene		0.250	0.500	1.00	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
75-00-3	Chloroethane		0.500	1.00	2.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
95-49-8	2-Chlorotoluene		0.250	0.500	1.00	U
106-43-4	4-Chlorotoluene		0.250	0.500	1.00	U
110-82-7	Cyclohexane		0.250	0.500	1.00	U
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	U
74-95-3	Dibromomethane		0.250	0.500	1.00	U
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	U
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
540-59-0	1,2-Dichloroethene (total)		0.500	1.00	2.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
142-28-9	1,3-Dichloropropane		0.250	0.500	1.00	U
594-20-7	2,2-Dichloropropane		0.250	0.500	1.00	U
563-58-6	1,1-Dichloropropene		0.250	0.500	1.00	U
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	U

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D13002-BLK1 File ID: 0413BLKE.D

Sampled: Prepared: Analyzed: 04/13/16 23:37

Solids: Preparation: 5030B Dilution:

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
87-68-3	Hexachlorobutadiene		0.250	0.500	1.00	U
591-78-6	2-Hexanone		1.25	2.50	5.00	U
98-82-8	Isopropylbenzene		0.250	0.500	1.00	U
99-87-6	p-Isopropyltoluene		0.250	0.500	1.00	U
75-09-2	Methylene chloride		0.500	1.00	2.00	U
79-20-9	Methyl Acetate		0.500	1.00	2.00	U
108-87-2	Methylcyclohexane		0.250	0.500	1.00	U
91-20-3	Naphthalene		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	U
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
103-65-1	n-Propylbenzene		0.250	0.500	1.00	U
100-42-5	Styrene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
630-20-6	1,1,1,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
108-88-3	Toluene		0.250	0.500	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.250	0.500	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
96-18-4	1,2,3-Trichloropropane		0.500	1.00	2.00	U
108-67-8	1,3,5-Trimethylbenzene		0.250	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.250	0.500	1.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.01	96.7	75 - 120	
Dibromofluoromethane	30.00	29.19	97.3	85 - 115	
1,2-Dichloroethane-d4	30.00	28.86	96.2	70 - 120	
Toluene-d8	30.00	28.50	95.0	85 - 120	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D13002-BS1 File ID: 0413LC1E.D

Sampled: Prepared: Analyzed: 04/13/16 21:41

Solids: Preparation: 5030B Dilution:

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	**51.5**	0.250	0.500	1.00	
108-86-1	Bromobenzene	**49.5**	0.250	0.500	1.00	
74-97-5	Bromochloromethane	**51.7**	0.250	0.500	1.00	
75-27-4	Bromodichloromethane	**52.9**	0.250	0.500	1.00	
75-25-2	Bromoform	**39.3**	0.250	0.500	1.00	
74-83-9	Bromomethane	**56.4**	0.500	1.00	2.00	
104-51-8	n-Butylbenzene	**48.4**	0.250	0.500	1.00	
135-98-8	sec-Butylbenzene	**48.0**	0.250	0.500	1.00	
98-06-6	tert-Butylbenzene	**49.5**	0.250	0.500	1.00	
75-15-0	Carbon disulfide	**53.4**	0.250	0.500	1.00	
56-23-5	Carbon tetrachloride	**49.0**	0.250	0.500	1.00	
108-90-7	Chlorobenzene	**47.2**	0.250	0.500	1.00	
75-00-3	Chloroethane	**48.5**	0.500	1.00	2.00	
67-66-3	Chloroform	**48.3**	0.250	0.500	1.00	
74-87-3	Chloromethane	**51.9**	0.250	0.500	1.00	
95-49-8	2-Chlorotoluene	**48.4**	0.250	0.500	1.00	
106-43-4	4-Chlorotoluene	**48.6**	0.250	0.500	1.00	
110-82-7	Cyclohexane	**57.8**	0.250	0.500	1.00	
124-48-1	Dibromochloromethane	**42.2**	0.250	0.500	1.00	
96-12-8	1,2-Dibromo-3-chloropropane	**44.2**	0.500	1.00	2.00	
106-93-4	1,2-Dibromoethane (EDB)	**48.3**	0.250	0.500	1.00	
74-95-3	Dibromomethane	**50.5**	0.250	0.500	1.00	
95-50-1	1,2-Dichlorobenzene	**50.2**	0.250	0.500	1.00	
541-73-1	1,3-Dichlorobenzene	**48.5**	0.250	0.500	1.00	
106-46-7	1,4-Dichlorobenzene	**48.3**	0.250	0.500	1.00	
75-71-8	Dichlorodifluoromethane	**44.7**	0.500	1.00	2.00	
75-34-3	1,1-Dichloroethane	**51.2**	0.250	0.500	1.00	
107-06-2	1,2-Dichloroethane	**49.4**	0.250	0.500	1.00	
75-35-4	1,1-Dichloroethene	**47.7**	0.250	0.500	1.00	
156-59-2	cis-1,2-Dichloroethene	**49.9**	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	**46.0**	0.250	0.500	1.00	
540-59-0	1,2-Dichloroethene (total)	**95.9**	0.500	1.00	2.00	
78-87-5	1,2-Dichloropropane	**51.7**	0.250	0.500	1.00	
142-28-9	1,3-Dichloropropane	**52.7**	0.250	0.500	1.00	
594-20-7	2,2-Dichloropropane	**42.9**	0.250	0.500	1.00	
563-58-6	1,1-Dichloropropene	**49.0**	0.250	0.500	1.00	
10061-01-5	cis-1,3-Dichloropropene	**52.4**	0.250	0.500	1.00	
10061-02-6	trans-1,3-Dichloropropene	**47.3**	0.250	0.500	1.00	
100-41-4	Ethylbenzene	**48.9**	0.250	0.500	1.00	
87-68-3	Hexachlorobutadiene	**42.1**	0.250	0.500	1.00	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D13002-BS1 File ID: 0413LC1E.D

Sampled: Prepared: Analyzed: 04/13/16 21:41

Solids: Preparation: 5030B Dilution:

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
98-82-8	Isopropylbenzene	**48.2**	0.250	0.500	1.00	
99-87-6	p-Isopropyltoluene	**48.0**	0.250	0.500	1.00	
75-09-2	Methylene chloride	**49.2**	0.500	1.00	2.00	
79-20-9	Methyl Acetate	**66.0**	0.500	1.00	2.00	
108-87-2	Methylcyclohexane	**52.1**	0.250	0.500	1.00	
91-20-3	Naphthalene	**56.0**	0.250	0.500	1.00	
1634-04-4	Methyl t-Butyl Ether	**56.0**	0.250	0.500	1.00	
103-65-1	n-Propylbenzene	**48.1**	0.250	0.500	1.00	
100-42-5	Styrene	**49.4**	0.250	0.500	1.00	
79-34-5	1,1,2,2-Tetrachloroethane	**52.9**	0.250	0.500	1.00	
630-20-6	1,1,1,2-Tetrachloroethane	**47.8**	0.250	0.500	1.00	
127-18-4	Tetrachloroethene	**45.7**	0.250	0.500	1.00	
108-88-3	Toluene	**48.6**	0.250	0.500	1.00	
87-61-6	1,2,3-Trichlorobenzene	**51.3**	0.250	0.500	1.00	
120-82-1	1,2,4-Trichlorobenzene	**49.7**	0.250	0.500	1.00	
79-00-5	1,1,2-Trichloroethane	**49.4**	0.250	0.500	1.00	
71-55-6	1,1,1-Trichloroethane	**49.1**	0.250	0.500	1.00	
79-01-6	Trichloroethene	**48.6**	0.250	0.500	1.00	
75-69-4	Trichlorofluoromethane	**51.1**	0.500	1.00	2.00	
96-18-4	1,2,3-Trichloropropane	**50.2**	0.500	1.00	2.00	
108-67-8	1,3,5-Trimethylbenzene	**49.2**	0.250	0.500	1.00	
95-63-6	1,2,4-Trimethylbenzene	**49.6**	0.250	0.500	1.00	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**51.6**	0.500	1.00	2.00	
75-01-4	Vinyl chloride	**57.3**	0.250	0.500	1.00	
108-38-3/106-42-	m,p-Xylene	**98.9**	0.500	1.00	2.00	
95-47-6	o-Xylene	**48.8**	0.250	0.500	1.00	
1330-20-7	Xylenes (total)	**148**	0.750	1.50	3.00	

Total Target Analytes Reported: 67

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.75	99.2	75 - 120	
Dibromofluoromethane	30.00	29.49	98.3	85 - 115	
1,2-Dichloroethane-d4	30.00	29.35	97.8	70 - 120	
Toluene-d8	30.00	29.26	97.5	85 - 120	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D13002-BS2 File ID: 0413LC2E.D

Sampled: Prepared: Analyzed: 04/13/16 22:10

Solids: Preparation: 5030B Dilution:

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**103**	2.50	5.00	10.0	
78-93-3	2-Butanone	**92.5**	2.50	5.00	10.0	
591-78-6	2-Hexanone	**107**	1.25	2.50	5.00	
108-10-1	4-Methyl-2-pentanone	**101**	1.25	2.50	5.00	

Total Target Analytes Reported: 4

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.08	96.9	75 - 120	
Dibromofluoromethane	30.00	29.29	97.6	85 - 115	
1,2-Dichloroethane-d4	30.00	29.91	99.7	70 - 120	
Toluene-d8	30.00	29.30	97.7	85 - 120	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D13002-MS1 File ID: 0403404M.D

Sampled: Prepared: Analyzed: 04/14/16 07:19

Solids: Preparation: 5030B Dilution:

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**239**	5.00	10.0	20.0	D
71-43-2	Benzene	**102**	0.500	1.00	2.00	D
108-86-1	Bromobenzene	**93.6**	0.500	1.00	2.00	D
74-97-5	Bromochloromethane	**101**	0.500	1.00	2.00	D
75-27-4	Bromodichloromethane	**106**	0.500	1.00	2.00	D
75-25-2	Bromoform	**74.2**	0.500	1.00	2.00	D
74-83-9	Bromomethane	**85.2**	1.00	2.00	4.00	D
104-51-8	n-Butylbenzene	**90.4**	0.500	1.00	2.00	D
78-93-3	2-Butanone	**211**	5.00	10.0	20.0	D
135-98-8	sec-Butylbenzene	**90.6**	0.500	1.00	2.00	D
98-06-6	tert-Butylbenzene	**94.9**	0.500	1.00	2.00	D
75-15-0	Carbon disulfide	**100**	0.500	1.00	2.00	D
56-23-5	Carbon tetrachloride	**101**	0.500	1.00	2.00	D
108-90-7	Chlorobenzene	**91.3**	0.500	1.00	2.00	D
75-00-3	Chloroethane	**97.9**	1.00	2.00	4.00	D
67-66-3	Chloroform	**96.9**	0.500	1.00	2.00	D
74-87-3	Chloromethane	**103**	0.500	1.00	2.00	D
95-49-8	2-Chlorotoluene	**93.7**	0.500	1.00	2.00	D
106-43-4	4-Chlorotoluene	**95.0**	0.500	1.00	2.00	D
110-82-7	Cyclohexane	**114**	0.500	1.00	2.00	D
124-48-1	Dibromochloromethane	**81.3**	0.500	1.00	2.00	D
96-12-8	1,2-Dibromo-3-chloropropane	**82.6**	1.00	2.00	4.00	D
106-93-4	1,2-Dibromoethane (EDB)	**93.5**	0.500	1.00	2.00	D
74-95-3	Dibromomethane	**99.7**	0.500	1.00	2.00	D
95-50-1	1,2-Dichlorobenzene	**96.2**	0.500	1.00	2.00	D
541-73-1	1,3-Dichlorobenzene	**91.9**	0.500	1.00	2.00	D
106-46-7	1,4-Dichlorobenzene	**93.5**	0.500	1.00	2.00	D
75-71-8	Dichlorodifluoromethane	**85.7**	1.00	2.00	4.00	D
75-34-3	1,1-Dichloroethane	**103**	0.500	1.00	2.00	D
107-06-2	1,2-Dichloroethane	**99.4**	0.500	1.00	2.00	D
75-35-4	1,1-Dichloroethene	**95.9**	0.500	1.00	2.00	D
156-59-2	cis-1,2-Dichloroethene	**100**	0.500	1.00	2.00	D
156-60-5	trans-1,2-Dichloroethene	**91.3**	0.500	1.00	2.00	D
540-59-0	1,2-Dichloroethene (total)	**192**	1.00	2.00	4.00	D
78-87-5	1,2-Dichloropropane	**101**	0.500	1.00	2.00	D
142-28-9	1,3-Dichloropropane	**103**	0.500	1.00	2.00	D
594-20-7	2,2-Dichloropropane	**76.1**	0.500	1.00	2.00	D
563-58-6	1,1-Dichloropropene	**98.8**	0.500	1.00	2.00	D
10061-01-5	cis-1,3-Dichloropropene	**99.5**	0.500	1.00	2.00	D
10061-02-6	trans-1,3-Dichloropropene	**89.7**	0.500	1.00	2.00	D

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D13002-MS1 File ID: 0403404M.D

Sampled: Prepared: Analyzed: 04/14/16 07:19

Solids: Preparation: 5030B Dilution:

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene	**94.6**	0.500	1.00	2.00	D
87-68-3	Hexachlorobutadiene	**74.0**	0.500	1.00	2.00	D
591-78-6	2-Hexanone	**214**	2.50	5.00	10.0	D
98-82-8	Isopropylbenzene	**94.6**	0.500	1.00	2.00	D
99-87-6	p-Isopropyltoluene	**91.8**	0.500	1.00	2.00	D
75-09-2	Methylene chloride	**96.3**	1.00	2.00	4.00	D
79-20-9	Methyl Acetate	**120**	1.00	2.00	4.00	D
108-87-2	Methylcyclohexane	**97.5**	0.500	1.00	2.00	D
91-20-3	Naphthalene	**97.5**	0.500	1.00	2.00	D
108-10-1	4-Methyl-2-pentanone	**221**	2.50	5.00	10.0	D
1634-04-4	Methyl t-Butyl Ether	**107**	0.500	1.00	2.00	D
103-65-1	n-Propylbenzene	**92.9**	0.500	1.00	2.00	D
100-42-5	Styrene	**94.7**	0.500	1.00	2.00	D
79-34-5	1,1,2,2-Tetrachloroethane	**103**	0.500	1.00	2.00	D
630-20-6	1,1,1,2-Tetrachloroethane	**94.1**	0.500	1.00	2.00	D
127-18-4	Tetrachloroethene	**87.8**	0.500	1.00	2.00	D
108-88-3	Toluene	**95.0**	0.500	1.00	2.00	D
87-61-6	1,2,3-Trichlorobenzene	**87.2**	0.500	1.00	2.00	D
120-82-1	1,2,4-Trichlorobenzene	**86.6**	0.500	1.00	2.00	D
79-00-5	1,1,2-Trichloroethane	**96.0**	0.500	1.00	2.00	D
71-55-6	1,1,1-Trichloroethane	**101**	0.500	1.00	2.00	D
79-01-6	Trichloroethene	**96.1**	0.500	1.00	2.00	D
75-69-4	Trichlorofluoromethane	**107**	1.00	2.00	4.00	D
96-18-4	1,2,3-Trichloropropane	**100**	1.00	2.00	4.00	D
108-67-8	1,3,5-Trimethylbenzene	**95.4**	0.500	1.00	2.00	D
95-63-6	1,2,4-Trimethylbenzene	**95.9**	0.500	1.00	2.00	D
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**106**	1.00	2.00	4.00	D
75-01-4	Vinyl chloride	**112**	0.500	1.00	2.00	D
108-38-3/106-42-	m,p-Xylene	**192**	1.00	2.00	4.00	D
95-47-6	o-Xylene	**96.6**	0.500	1.00	2.00	D
1330-20-7	Xylenes (total)	**288**	1.50	3.00	6.00	D

Total Target Analytes Reported: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.33	101	75 - 120	
Dibromofluoromethane	30.00	29.95	99.8	85 - 115	
1,2-Dichloroethane-d4	30.00	29.65	98.8	70 - 120	
Toluene-d8	30.00	28.93	96.4	85 - 120	

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D13002-MSD1 File ID: 0403404S.D

Sampled: Prepared: Analyzed: 04/14/16 07:48

Solids: Preparation: 5030B Dilution:

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	**256**	5.00	10.0	20.0	D
71-43-2	Benzene	**111**	0.500	1.00	2.00	D
108-86-1	Bromobenzene	**102**	0.500	1.00	2.00	D
74-97-5	Bromochloromethane	**108**	0.500	1.00	2.00	D
75-27-4	Bromodichloromethane	**113**	0.500	1.00	2.00	D
75-25-2	Bromoform	**80.1**	0.500	1.00	2.00	D
74-83-9	Bromomethane	**108**	1.00	2.00	4.00	D
104-51-8	n-Butylbenzene	**99.2**	0.500	1.00	2.00	D
78-93-3	2-Butanone	**222**	5.00	10.0	20.0	D
135-98-8	sec-Butylbenzene	**98.4**	0.500	1.00	2.00	D
98-06-6	tert-Butylbenzene	**103**	0.500	1.00	2.00	D
75-15-0	Carbon disulfide	**101**	0.500	1.00	2.00	D
56-23-5	Carbon tetrachloride	**109**	0.500	1.00	2.00	D
108-90-7	Chlorobenzene	**98.0**	0.500	1.00	2.00	D
75-00-3	Chloroethane	**108**	1.00	2.00	4.00	D
67-66-3	Chloroform	**104**	0.500	1.00	2.00	D
74-87-3	Chloromethane	**114**	0.500	1.00	2.00	D
95-49-8	2-Chlorotoluene	**101**	0.500	1.00	2.00	D
106-43-4	4-Chlorotoluene	**102**	0.500	1.00	2.00	D
110-82-7	Cyclohexane	**123**	0.500	1.00	2.00	D
124-48-1	Dibromochloromethane	**87.0**	0.500	1.00	2.00	D
96-12-8	1,2-Dibromo-3-chloropropane	**90.6**	1.00	2.00	4.00	D
106-93-4	1,2-Dibromoethane (EDB)	**100**	0.500	1.00	2.00	D
74-95-3	Dibromomethane	**106**	0.500	1.00	2.00	D
95-50-1	1,2-Dichlorobenzene	**101**	0.500	1.00	2.00	D
541-73-1	1,3-Dichlorobenzene	**99.8**	0.500	1.00	2.00	D
106-46-7	1,4-Dichlorobenzene	**99.2**	0.500	1.00	2.00	D
75-71-8	Dichlorodifluoromethane	**96.3**	1.00	2.00	4.00	D
75-34-3	1,1-Dichloroethane	**112**	0.500	1.00	2.00	D
107-06-2	1,2-Dichloroethane	**105**	0.500	1.00	2.00	D
75-35-4	1,1-Dichloroethene	**105**	0.500	1.00	2.00	D
156-59-2	cis-1,2-Dichloroethene	**108**	0.500	1.00	2.00	D
156-60-5	trans-1,2-Dichloroethene	**101**	0.500	1.00	2.00	D
540-59-0	1,2-Dichloroethene (total)	**209**	1.00	2.00	4.00	D
78-87-5	1,2-Dichloropropane	**109**	0.500	1.00	2.00	D
142-28-9	1,3-Dichloropropane	**110**	0.500	1.00	2.00	D
594-20-7	2,2-Dichloropropane	**81.0**	0.500	1.00	2.00	D
563-58-6	1,1-Dichloropropene	**107**	0.500	1.00	2.00	D
10061-01-5	cis-1,3-Dichloropropene	**107**	0.500	1.00	2.00	D
10061-02-6	trans-1,3-Dichloropropene	**95.3**	0.500	1.00	2.00	D

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Matrix: Laboratory ID: 6D13002-MSD1 File ID: 0403404S.D

Sampled: Prepared: Analyzed: 04/14/16 07:48

Solids: Preparation: 5030B Dilution:

Batch: 6D13002 Sequence: 6D10402 Calibration: 6049001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
100-41-4	Ethylbenzene	**104**	0.500	1.00	2.00	D
87-68-3	Hexachlorobutadiene	**81.8**	0.500	1.00	2.00	D
591-78-6	2-Hexanone	**232**	2.50	5.00	10.0	D
98-82-8	Isopropylbenzene	**102**	0.500	1.00	2.00	D
99-87-6	p-Isopropyltoluene	**98.8**	0.500	1.00	2.00	D
75-09-2	Methylene chloride	**105**	1.00	2.00	4.00	D
79-20-9	Methyl Acetate	**128**	1.00	2.00	4.00	D
108-87-2	Methylcyclohexane	**107**	0.500	1.00	2.00	D
91-20-3	Naphthalene	**106**	0.500	1.00	2.00	D
108-10-1	4-Methyl-2-pentanone	**237**	2.50	5.00	10.0	D
1634-04-4	Methyl t-Butyl Ether	**114**	0.500	1.00	2.00	D
103-65-1	n-Propylbenzene	**101**	0.500	1.00	2.00	D
100-42-5	Styrene	**103**	0.500	1.00	2.00	D
79-34-5	1,1,2,2-Tetrachloroethane	**111**	0.500	1.00	2.00	D
630-20-6	1,1,1,2-Tetrachloroethane	**101**	0.500	1.00	2.00	D
127-18-4	Tetrachloroethene	**94.6**	0.500	1.00	2.00	D
108-88-3	Toluene	**104**	0.500	1.00	2.00	D
87-61-6	1,2,3-Trichlorobenzene	**95.0**	0.500	1.00	2.00	D
120-82-1	1,2,4-Trichlorobenzene	**92.9**	0.500	1.00	2.00	D
79-00-5	1,1,2-Trichloroethane	**102**	0.500	1.00	2.00	D
71-55-6	1,1,1-Trichloroethane	**109**	0.500	1.00	2.00	D
79-01-6	Trichloroethene	**105**	0.500	1.00	2.00	D
75-69-4	Trichlorofluoromethane	**116**	1.00	2.00	4.00	D
96-18-4	1,2,3-Trichloropropane	**104**	1.00	2.00	4.00	D
108-67-8	1,3,5-Trimethylbenzene	**103**	0.500	1.00	2.00	D
95-63-6	1,2,4-Trimethylbenzene	**103**	0.500	1.00	2.00	D
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**109**	1.00	2.00	4.00	D
75-01-4	Vinyl chloride	**124**	0.500	1.00	2.00	D
108-38-3/106-42-	m,p-Xylene	**208**	1.00	2.00	4.00	D
95-47-6	o-Xylene	**103**	0.500	1.00	2.00	D
1330-20-7	Xylenes (total)	**311**	1.50	3.00	6.00	D

Total Target Analytes Reported: 71

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.53	98.4	75 - 120	
Dibromofluoromethane	30.00	29.22	97.4	85 - 115	
1,2-Dichloroethane-d4	30.00	28.57	95.2	70 - 120	
Toluene-d8	30.00	29.09	97.0	85 - 120	

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Lab File ID:	0216TUN1.D	Injection Date:	02/16/16
Instrument ID:	MS-VOA6	Injection Time:	07:24
Sequence:	6B04901	Lab Sample ID:	6B04901-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	23.7	PASS
75	30 - 60% of 95	47.9	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.03	PASS
173	Less than 2% of 174	0.17	PASS
174	50 - 200% of 95	80.5	PASS
175	5 - 9% of 174	6.94	PASS
176	95 - 101% of 174	96.9	PASS
177	5 - 9% of 176	6.01	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Lab File ID:	0412TUNE.D	Injection Date:	04/12/16
Instrument ID:	MS-VOA6	Injection Time:	17:58
Sequence:	6D10302	Lab Sample ID:	6D10302-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	25.4	PASS
75	30 - 60% of 95	47.5	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.55	PASS
173	Less than 2% of 174	0.337	PASS
174	50 - 200% of 95	71.8	PASS
175	5 - 9% of 174	7.05	PASS
176	95 - 101% of 174	96.3	PASS
177	5 - 9% of 176	6.23	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Lab File ID:	0413TUNE.D	Injection Date:	04/13/16
Instrument ID:	MS-VOA6	Injection Time:	20:43
Sequence:	6D10402	Lab Sample ID:	6D10402-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	26.5	PASS
75	30 - 60% of 95	48.9	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.55	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	69.8	PASS
175	5 - 9% of 174	7.29	PASS
176	95 - 101% of 174	95.6	PASS
177	5 - 9% of 176	6.52	PASS

INITIAL CALIBRATION STANDARDS

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6B04901	Instrument:	MS-VOA6
Calibration:	6049001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15I0402	VOA_4-BFB TUNE	6B04901-TUN1	0216TUN1.D	02/16/16 07:24
16B0438	VOA_W_ical_0.5ppb	6B04901-CAL1	0216CAL1.D	02/16/16 08:52
16B0439	VOA_W_ical_1.0ppb	6B04901-CAL2	0216CAL2.D	02/16/16 09:21
16B0440	VOA_W_ical_2.0ppb	6B04901-CAL3	0216CAL3.D	02/16/16 09:50
16B0441	VOA_W_ical_5.0ppb	6B04901-CAL4	0216CAL4.D	02/16/16 10:19
16B0442	VOA_W_ical_10ppb	6B04901-CAL5	0216CAL5.D	02/16/16 10:48
16B0443	VOA_W_ical_50ppb	6B04901-CAL6	0216CAL6.D	02/16/16 11:16
16B0444	VOA_W_ical_100ppb	6B04901-CAL7	0216CAL7.D	02/16/16 11:45
16B0445	VOA_W_ical_150ppb	6B04901-CAL8	0216CAL8.D	02/16/16 12:14
16B0446	VOA_W_ical_200ppb	6B04901-CAL9	0216CAL9.D	02/16/16 12:43

ANALYSIS SEQUENCE SUMMARY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6B04901	Instrument:	MS-VOA6
Calibration:	6049001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	6B04901-TUN1	0216TUN1.D	02/16/16 07:24
Cal Standard	6B04901-CAL1	0216CAL1.D	02/16/16 08:52
Cal Standard	6B04901-CAL2	0216CAL2.D	02/16/16 09:21
Cal Standard	6B04901-CAL3	0216CAL3.D	02/16/16 09:50
Cal Standard	6B04901-CAL4	0216CAL4.D	02/16/16 10:19
Cal Standard	6B04901-CAL5	0216CAL5.D	02/16/16 10:48
Cal Standard	6B04901-CAL6	0216CAL6.D	02/16/16 11:16
Cal Standard	6B04901-CAL7	0216CAL7.D	02/16/16 11:45
Cal Standard	6B04901-CAL8	0216CAL8.D	02/16/16 12:14
Cal Standard	6B04901-CAL9	0216CAL9.D	02/16/16 12:43
Initial Cal Check	6B04901-ICV1	0216ICV1.D	02/16/16 13:41

ANALYSIS SEQUENCE SUMMARY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10302	Instrument:	MS-VOA6
Calibration:	6049001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	6D10302-TUN1	0412TUNE.D	04/12/16 17:58
Calibration Check	6D10302-CCV1	0412CCVE.D	04/12/16 18:55
LCS	6D12002-BS1	0412LC1E.D	04/12/16 19:24
LCS	6D12002-BS2	0412LC2E.D	04/12/16 19:53
Blank	6D12002-BLK1	0412BLKE.D	04/12/16 21:20
TB-01	1604034-01	0403401A.D	04/12/16 21:49
OTC538-GW-MW02	1604034-02	0403402B.D	04/13/16 02:09
OTC537-GW-MW01-FD	1604034-06	0403406B.D	04/13/16 02:38

ANALYSIS SEQUENCE SUMMARY

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10402	Instrument:	MS-VOA6
Calibration:	6049001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	6D10402-TUN1	0413TUNE.D	04/13/16 20:43
Calibration Check	6D10402-CCV1	0413CCVE.D	04/13/16 21:12
LCS	6D13002-BS1	0413LC1E.D	04/13/16 21:41
LCS	6D13002-BS2	0413LC2E.D	04/13/16 22:10
Blank	6D13002-BLK1	0413BLKE.D	04/13/16 23:37
OTC537-GW-MW01	1604034-04	0403404B.D	04/14/16 02:01
OTC537-GW-MW01	6D13002-MS1	0403404M.D	04/14/16 07:19
OTC537-GW-MW01	6D13002-MSD1	0403404S.D	04/14/16 07:48

INTERNAL STANDARD AREA AND RT SUMMARY
SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10302	Instrument:	MS-VOA6
		Calibration:	6049001

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (6D10302-CCV1)			Lab File ID: 0412CCVE.D				Analyzed: 04/12/16 18:55		
Fluorobenzene	1149972	7.762	711390	7.8	162	50 - 200	-0.0380	+/-0.50	
Chlorobenzene-d5	494555	10.896	305044	10.91	162	50 - 200	-0.0140	+/-0.50	
1,4-Dichlorobenzene-d4	398275	13.281	256402	13.3	155	50 - 200	-0.0190	+/-0.50	
LCS (6D12002-BS1)			Lab File ID: 0412LC1E.D				Analyzed: 04/12/16 19:24		
Fluorobenzene	1175651	7.769	711390	7.762	165	50 - 200	0.0070	+/-0.50	
Chlorobenzene-d5	507281	10.893	305044	10.896	166	50 - 200	-0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	398928	13.278	256402	13.281	156	50 - 200	-0.0030	+/-0.50	
LCS (6D12002-BS2)			Lab File ID: 0412LC2E.D				Analyzed: 04/12/16 19:53		
Fluorobenzene	1182036	7.763	711390	7.762	166	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	495887	10.887	305044	10.896	163	50 - 200	-0.0090	+/-0.50	
1,4-Dichlorobenzene-d4	391207	13.282	256402	13.281	153	50 - 200	0.0010	+/-0.50	
Blank (6D12002-BLK1)			Lab File ID: 0412BLKE.D				Analyzed: 04/12/16 21:20		
Fluorobenzene	1064454	7.768	711390	7.762	150	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	440273	10.893	305044	10.896	144	50 - 200	-0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	347336	13.278	256402	13.281	135	50 - 200	-0.0030	+/-0.50	
TB-01 (1604034-01)			Lab File ID: 0403401A.D				Analyzed: 04/12/16 21:49		
Fluorobenzene	1082328	7.763	711390	7.762	152	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	454206	10.887	305044	10.896	149	50 - 200	-0.0090	+/-0.50	
1,4-Dichlorobenzene-d4	354403	13.272	256402	13.281	138	50 - 200	-0.0090	+/-0.50	
OTC538-GW-MW02 (1604034-02)			Lab File ID: 0403402B.D				Analyzed: 04/13/16 02:09		
Fluorobenzene	987999	7.762	711390	7.762	139	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	432756	10.886	305044	10.896	142	50 - 200	-0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	332086	13.271	256402	13.281	130	50 - 200	-0.0100	+/-0.50	
OTC537-GW-MW01-FD (1604034-06)			Lab File ID: 0403406B.D				Analyzed: 04/13/16 02:38		
Fluorobenzene	987985	7.762	711390	7.762	139	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	417939	10.886	305044	10.896	137	50 - 200	-0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	323659	13.271	256402	13.281	126	50 - 200	-0.0100	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10402	Instrument:	MS-VOA6
		Calibration:	6049001

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (6D10402-CCV1)			Lab File ID: 0413CCVE.D				Analyzed: 04/13/16 21:12		
Fluorobenzene	1095111	7.765	711390	7.8	154	50 - 200	-0.0350	+/-0.50	
Chlorobenzene-d5	485926	10.898	305044	10.91	159	50 - 200	-0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	406113	13.282	256402	13.3	158	50 - 200	-0.0180	+/-0.50	
LCS (6D13002-BS1)			Lab File ID: 0413LC1E.D				Analyzed: 04/13/16 21:41		
Fluorobenzene	1132507	7.767	711390	7.765	159	50 - 200	0.0020	+/-0.50	
Chlorobenzene-d5	493621	10.89	305044	10.898	162	50 - 200	-0.0080	+/-0.50	
1,4-Dichlorobenzene-d4	410705	13.284	256402	13.282	160	50 - 200	0.0020	+/-0.50	
LCS (6D13002-BS2)			Lab File ID: 0413LC2E.D				Analyzed: 04/13/16 22:10		
Fluorobenzene	1102630	7.77	711390	7.765	155	50 - 200	0.0050	+/-0.50	
Chlorobenzene-d5	472799	10.893	305044	10.898	155	50 - 200	-0.0050	+/-0.50	
1,4-Dichlorobenzene-d4	398073	13.277	256402	13.282	155	50 - 200	-0.0050	+/-0.50	
Blank (6D13002-BLK1)			Lab File ID: 0413BLKE.D				Analyzed: 04/13/16 23:37		
Fluorobenzene	1067541	7.769	711390	7.765	150	50 - 200	0.0040	+/-0.50	
Chlorobenzene-d5	459320	10.892	305044	10.898	151	50 - 200	-0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	384881	13.277	256402	13.282	150	50 - 200	-0.0050	+/-0.50	
OTC537-GW-MW01 (1604034-04)			Lab File ID: 0403404B.D				Analyzed: 04/14/16 02:01		
Fluorobenzene	984926	7.77	711390	7.765	138	50 - 200	0.0050	+/-0.50	
Chlorobenzene-d5	428775	10.893	305044	10.898	141	50 - 200	-0.0050	+/-0.50	
1,4-Dichlorobenzene-d4	350516	13.278	256402	13.282	137	50 - 200	-0.0040	+/-0.50	
Matrix Spike (6D13002-MS1)			Lab File ID: 0403404M.D				Analyzed: 04/14/16 07:19		
Fluorobenzene	1039642	7.766	711390	7.765	146	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	459720	10.889	305044	10.898	151	50 - 200	-0.0090	+/-0.50	
1,4-Dichlorobenzene-d4	385479	13.283	256402	13.282	150	50 - 200	0.0010	+/-0.50	
Matrix Spike Dup (6D13002-MSD1)			Lab File ID: 0403404S.D				Analyzed: 04/14/16 07:48		
Fluorobenzene	1017097	7.771	711390	7.765	143	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	447838	10.894	305044	10.898	147	50 - 200	-0.0040	+/-0.50	
1,4-Dichlorobenzene-d4	373664	13.278	256402	13.282	146	50 - 200	-0.0040	+/-0.50	

INITIAL CALIBRATION DATA

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Acetone	1	0.1129663	2	9.999222E-02	4	0.105347	10	0.1016513	20	0.1021136	100	0.1102347
Acetonitrile	5	5.455558E-02	10	4.623922E-02	20	4.903329E-02	50	5.148952E-02	100	0.0513449	500	5.721782E-02
Acrolein	2.5	~~4.200545E-02~~	5	~~3.987827E-02~~	10	5.117481E-02	25	4.845905E-02	50	5.304113E-02	250	6.232115E-02
Acrylonitrile	2.5	0.1057937	5	0.0916481	10	0.1095097	25	0.1197962	50	0.1229876	250	0.1326125
Benzene	0.5	1.112167	1	0.9829448	2	1.101496	5	1.14839	10	1.152339	50	1.185565
Allyl chloride	0.5	0.1456482	1	9.667459E-02	2	0.1383103	5	0.1391485	10	0.1368413	50	0.1413021
Bromobenzene	0.5	0.8235522	1	0.7854664	2	0.7788298	5	0.8145741	10	0.8417711	50	0.8595547
Bromochloromethane	0.5	0.1665524	1	0.1434921	2	0.165533	5	0.189171	10	0.1838062	50	0.1881572
Tert-Amyl Methyl Ether	0.5	0.694688	1	0.6537026	2	0.6971871	5	0.7803186	10	0.8002952	50	0.8726979
Bromodichloromethane	0.5	0.3274243	1	0.3283526	2	0.3711645	5	0.3792124	10	0.3955883	50	0.4189173
Bromoform	0.5	~~0.4157524~~	1	0.3400574	2	0.4202037	5	0.4390258	10	0.4767224	50	0.5384322
Bromomethane	0.5	0.2038923	1	0.1696624	2	0.1839489	5	0.2045687	10	0.2085698	50	0.2222974
Bromofluorobenzene	30	0.9105019	35	0.8955874	40	0.8856513	50	0.9097155	60	0.8871558	70	0.9026162
n-Butylbenzene	0.5	2.284161	1	1.909571	2	2.145169	5	2.413829	10	2.406971	50	2.518095
2-Butanone	1	0.1721951	2	0.1679017	4	0.1463625	10	0.1730059	20	0.1648384	100	0.191481
sec-Butylbenzene	0.5	2.977818	1	2.574028	2	2.93432	5	3.101295	10	3.121224	50	3.273592
tert-Butylbenzene	0.5	2.136553	1	1.988472	2	2.202742	5	2.357667	10	2.407912	50	2.466285
Carbon disulfide	0.5	0.9668221	1	0.7500065	2	0.9296783	5	0.9718079	10	0.9845391	50	1.03675
Carbon tetrachloride	0.5	0.3348469	1	0.2797187	2	0.3383444	5	0.3669639	10	0.376731	50	0.4095929
Chlorobenzene	0.5	1.758885	1	1.572088	2	1.707999	5	1.81572	10	1.815554	50	1.868508
Chloroethane	0.5	0.2151018	1	0.1656961	2	0.186375	5	0.1916318	10	0.2119351	50	0.2130572
Chloroform	0.5	0.6504558	1	0.5035011	2	0.5566225	5	0.5764937	10	0.5671233	50	0.5776416
2-Chloroethyl vinyl ether	1	0.180943	2	0.1504609	4	0.1821818	10	0.1972536	20	0.1948878	100	0.2121245
Chloromethane	0.5	0.4071029	1	0.3672374	2	0.4148545	5	0.4109493	10	0.4063937	50	0.4316969
1-Chlorohexane	0.5	1.041584	1	0.8442315	2	0.8826068	5	0.9020077	10	0.8781786	50	0.9154361
2-Chlorotoluene	0.5	2.27561	1	1.981593	2	2.20242	5	2.322889	10	2.334954	50	2.383326
Chloroprene	0.5	0.5100337	1	0.416798	2	0.5349781	5	0.5610327	10	0.5618204	50	0.573409
4-Chlorotoluene	0.5	2.649212	1	2.27656	2	2.582857	5	2.738339	10	2.767515	50	2.788361
Cyclohexane	0.5	0.492159	1	0.4289193	2	0.5008781	5	0.5252526	10	0.5167548	50	0.5382642
Dibromochloromethane	0.5	0.6390497	1	0.522755	2	0.6550329	5	0.7594036	10	0.7569743	50	0.8323383
1,2-Dibromo-3-chloropropane	0.5	0.1085175	1	8.932387E-02	2	0.1203079	5	0.1450394	10	0.1353878	50	0.1668667

INITIAL CALIBRATION DATA

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,2-Dibromoethane (EDB)	0.5	0.7467329	1	0.5990345	2	0.6773035	5	0.7547974	10	0.7469481	50	0.7728832
Dibromomethane	0.5	0.2090426	1	0.1962405	2	0.20886	5	0.2301971	10	0.227168	50	0.24511
1,2-Dichlorobenzene	0.5	1.243574	1	1.214054	2	1.362092	5	1.423084	10	1.453245	50	1.477833
1,3-Dichlorobenzene	0.5	1.38141	1	1.330894	2	1.474498	5	1.502735	10	1.538261	50	1.532091
trans-1,4-Dichloro-2-butene	0.5	~~0.2325084~~	1	0.2377453	2	0.2427661	5	0.2862146	10	0.3150657	50	0.3372245
cis-1,4-Dichloro-2-butene	0.5	0.251443	1	0.2718281	2	0.2729237	5	0.3347782	10	0.3277234	50	0.3828744
1,4-Dichlorobenzene	0.5	1.578085	1	1.343402	2	1.432406	5	1.558354	10	1.543873	50	1.555683
Dichlorodifluoromethane	0.5	~~0.3040964~~	1	0.245764	2	0.2987808	5	0.3151136	10	0.3614088	50	0.4030007
1,1-Dichloroethane	0.5	0.5499487	1	0.4867462	2	0.5907034	5	0.6280354	10	0.6250126	50	0.6386825
1,2-Dichloroethane	0.5	0.5225308	1	0.4472312	2	0.501031	5	0.5215812	10	0.5207532	50	0.5293013
1,1-Dichloroethene	0.5	0.2161622	1	0.2086214	2	0.2316697	5	0.2637617	10	0.2550079	50	0.2683615
cis-1,2-Dichloroethene	0.5	0.3443144	1	0.2929522	2	0.3516215	5	0.3463994	10	0.3461292	50	0.3568907
trans-1,2-Dichloroethene	0.5	0.2615305	1	0.2334573	2	0.2856184	5	0.3003489	10	0.3058905	50	0.3164713
1,2-Dichloroethene (total)	1	0.3029224	2	0.2632047	4	0.3186199	10	0.3233742	20	0.3260098	100	0.336681
1,2-Dichloropropane	0.5	0.327803	1	0.2862057	2	0.3222974	5	0.357105	10	0.3618422	50	0.3579216
1,3-Dichloropropane	0.5	0.912047	1	0.9565171	2	1.044655	5	1.095733	10	1.086176	50	1.125887
2,2-Dichloropropane	0.5	0.3836992	1	0.3504454	2	0.3869441	5	0.4079425	10	0.4056799	50	0.4281261
1,1-Dichloropropene	0.5	0.4518653	1	0.3707218	2	0.400393	5	0.4343227	10	0.4349007	50	0.4415862
cis-1,3-Dichloropropene	0.5	0.4571671	1	0.4133506	2	0.4606459	5	0.4960715	10	0.4954117	50	0.5255212
trans-1,3-Dichloropropene	0.5	0.9740838	1	0.8717028	2	0.9658578	5	1.07946	10	1.065514	50	1.175688
Diisopropyl Ether	0.5	1.342947	1	1.173403	2	1.370647	5	1.460568	10	1.460027	50	1.51208
1,4-Dioxane	10	~~2.412321E-03~~	20	1.547609E-03	40	2.199783E-03	100	2.694983E-03	200	2.655668E-03	1000	2.832923E-03
Ethylbenzene	0.5	2.771389	1	2.51358	2	2.784751	5	2.865485	10	2.909745	50	3.070322
Ethyl tert-Butyl Ether	0.5	0.9755322	1	0.8591361	2	1.00743	5	1.079663	10	1.10407	50	1.148987
Ethyl Methacrylate	0.5	0.6716543	1	0.6302398	2	0.6890128	5	0.7689558	10	0.7888838	50	0.8832335
Hexachlorobutadiene	0.5	0.4523938	1	0.4433883	2	0.4272598	5	0.4189232	10	0.4384899	50	0.452687
Hexane	0.5	0.3791548	1	0.3194932	2	0.3814995	5	0.3752166	10	0.385518	50	0.3835982
2-Hexanone	1	0.4546135	2	0.3517483	4	0.3922161	10	0.4474831	20	0.4698232	100	0.5236086
Iodomethane	0.5	~~0.1710968~~	1	0.2063231	2	0.2581665	5	0.3036168	10	0.3856965	50	0.4838004
Isobutyl alcohol	10	~~4.146769E-03~~	20	5.702985E-03	40	5.401552E-03	100	5.880538E-03	200	6.642995E-03	1000	7.767199E-03
Isopropylbenzene	0.5	2.361805	1	2.18188	2	2.466441	5	2.709459	10	2.702548	50	2.836241

INITIAL CALIBRATION DATA

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
p-Isopropyltoluene	0.5	2.586096	1	2.19818	2	2.422662	5	2.700543	10	2.65929	50	2.750064
Methacrylonitrile	5	0.2080428	10	0.1874405	20	0.2132959	50	0.2254884	100	0.2321679	500	0.2596881
Methylene chloride	0.5	0.3654459	1	0.2667077	2	0.3286589	5	0.3295143	10	0.3279984	50	0.3348683
Methyl Acetate	0.5	0.2784205	1	0.2020232	2	0.2245059	5	0.2566405	10	0.2425794	50	0.2553564
Methylcyclohexane	0.5	0.3580991	1	0.3187148	2	0.3668853	5	0.3855424	10	0.3594245	50	0.3833311
Naphthalene	0.5	1.853349	1	1.728943	2	1.818434	5	2.047312	10	2.133666	50	2.351122
Methyl Methacrylate	0.5	0.332196	1	0.2634086	2	0.2745001	5	0.3035377	10	0.3118859	50	0.3528732
4-Methyl-2-pentanone	1	0.2880774	2	0.251176	4	0.2727043	10	0.2924246	20	0.3074541	100	0.3536668
Methyl t-Butyl Ether	0.5	0.7158195	1	0.5766743	2	0.7219645	5	0.7513827	10	0.7905903	50	0.8510889
n-Propylbenzene	0.5	3.608156	1	3.194918	2	3.497262	5	3.720682	10	3.792117	50	3.928252
Propionitrile	5	3.353013E-02	10	3.727606E-02	20	3.458139E-02	50	4.060277E-02	100	4.238446E-02	500	4.707494E-02
Styrene	0.5	1.615601	1	1.505677	2	1.67884	5	1.86905	10	1.867666	50	2.00641
1,1,2,2-Tetrachloroethane	0.5	0.7584009	1	0.7404396	2	0.782324	5	0.8733628	10	0.8987307	50	0.9389976
1,1,1,2-Tetrachloroethane	0.5	0.5750742	1	0.5021292	2	0.5800014	5	0.6628428	10	0.634249	50	0.6847915
tert-Butyl alcohol	2.5	~~1.654163E-02~~	5	1.289242E-02	10	1.733846E-02	25	2.032868E-02	50	2.132438E-02	250	2.501209E-02
Tetrachloroethene	0.5	0.6741217	1	0.5613392	2	0.6462164	5	0.6675623	10	0.6692305	50	0.6803199
Toluene	0.5	1.520959	1	1.355962	2	1.545354	5	1.587259	10	1.541946	50	1.599821
1,2,3-Trichlorobenzene	0.5	0.7765211	1	0.6748799	2	0.7788836	5	0.837282	10	0.8624634	50	0.8836372
1,2,4-Trichlorobenzene	0.5	0.8978653	1	0.7886975	2	0.879839	5	0.9307837	10	0.9697008	50	1.002149
1,1,2-Trichloroethane	0.5	0.5308378	1	0.4830149	2	0.5339448	5	0.5403626	10	0.5425227	50	0.5672811
1,1,1-Trichloroethane	0.5	0.3986958	1	0.3684236	2	0.4013291	5	0.4430897	10	0.4398679	50	0.4667447
Tetrahydrofuran	0.5	~~2.885697E-02~~	1	~~1.786701E-02~~	2	2.649674E-02	5	3.082693E-02	10	2.909338E-02	50	0.0329757
Trichloroethene	0.5	0.3346954	1	0.2639646	2	0.3055435	5	0.3157149	10	0.3177964	50	0.3283492
Trichlorofluoromethane	0.5	0.3964993	1	0.3418826	2	0.4049779	5	0.4148343	10	0.4406072	50	0.4624781
1,2,3-Trichloropropane	0.5	0.1651378	1	0.1602937	2	0.2019053	5	0.2099418	10	0.2104591	50	0.2288695
1,3,5-Trimethylbenzene	0.5	2.362343	1	2.128139	2	2.426317	5	2.632788	10	2.664124	50	2.761674
1,2,4-Trimethylbenzene	0.5	2.420979	1	2.144607	2	2.425511	5	2.741096	10	2.778138	50	2.87241
1,1,2-Trichloro-1,2,2-trifluoroethan	0.5	0.2719826	1	0.2180368	2	0.2858285	5	0.2852757	10	0.2918006	50	0.3011824
Vinyl chloride	0.5	0.3059899	1	0.2578854	2	0.308963	5	0.3067659	10	0.3233329	50	0.3302767
m,p-Xylene	1	2.110397	2	1.852846	4	2.10173	10	2.27771	20	2.238858	100	2.368168
o-Xylene	0.5	2.0451	1	1.894364	2	2.154101	5	2.363917	10	2.310257	50	2.388892

INITIAL CALIBRATION DATA

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Vinyl acetate	1	0.683592	2	0.5725968	4	0.671101	10	0.7273882	20	0.7172939	100	0.8318417
Xylenes (total)	1.5	2.088632	3	1.866686	6	2.119187	15	2.306446	30	2.262658	150	2.375076
Dibromofluoromethane	30	0.3293343	35	0.3253352	40	0.3354512	50	0.344165	60	0.3464316	70	0.344198
1,2-Dichloroethane-d4	30	6.398774E-02	35	6.688742E-02	40	6.688755E-02	50	6.874184E-02	60	7.028031E-02	70	7.032622E-02
Toluene-d8	30	2.189151	35	2.191799	40	2.17552	50	2.231089	60	2.185402	70	2.207429
tert-Amyl alcohol	2.5	~~1.105805E-02~~	5	9.622977E-03	10	1.163793E-02	25	1.377084E-02	50	1.478846E-02	250	1.952683E-02
tert-Amyl ethyl ether	0.5	0.7764115	1	0.7419626	2	0.8005759	5	0.8899377	10	0.9056466	50	0.9627463
1,3,5-Trichlorobenzene	0.5	1.101463	1	0.9024108	2	0.9944487	5	1.033251	10	1.066786	50	1.110741
Diethyl ether	0.5	0.242141	1	0.225747	2	0.2488248	5	0.2735969	10	0.2710226	50	0.2888187
Cyclohexanone (outside certificatio	1.25	9.855394E-02	2.5	8.044025E-02	5	8.660301E-02	12.5	8.556245E-02	25	8.505617E-02	125	9.438959E-02
Ethyl Acetate (outside certification)	0.5	0.4630748	1	0.4660249	2	0.4529662	5	0.4799063	10	0.4806929	50	0.518832

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Acetone	200	0.1095783	300	0.1080364	400	0.1050454						
Acetonitrile	1000	5.683655E-02	1500	5.480407E-02	2000	5.519382E-02						
Acrolein	500	6.413385E-02	750	6.393125E-02	1000	6.490414E-02						
Acrylonitrile	500	0.1337462	750	0.132076	1000	0.1309924						
Benzene	100	1.22984	150	1.264691	200	1.266747						
Allyl chloride	100	0.1474875	150	0.1471449	200	0.1414048						
Bromobenzene	100	0.9190623	150	0.9147906	200	0.9276305						
Bromochloromethane	100	0.1887121	150	0.1879764	200	0.1866826						
Tert-Amyl Methyl Ether	100	0.8926673	150	0.8904054	200	0.898782						
Bromodichloromethane	100	0.4320773	150	0.4378746	200	0.4332053						
Bromoform	100	0.5713399	150	0.5863584	200	0.5771045						
Bromomethane	100	0.2434825	150	~~0.270053~~	200	~~0.2697678~~						
Bromofluorobenzene	30	0.9358388	30	0.9402331	30	0.9221062						
n-Butylbenzene	100	2.706494	150	2.715935	200	2.710594						
2-Butanone	200	0.1862643	300	0.1877731	400	0.1895035						
sec-Butylbenzene	100	3.548835	150	3.614164	200	3.716992						
tert-Butylbenzene	100	2.670597	150	2.674447	200	2.709671						
Carbon disulfide	100	1.074252	150	1.08248	200	1.086623						
Carbon tetrachloride	100	0.4242276	150	0.4328227	200	0.4231351						
Chlorobenzene	100	1.931056	150	2.007249	200	1.994635						
Chloroethane	100	0.2195188	150	0.2160133	200	0.2136525						
Chloroform	100	0.5952115	150	0.5948586	200	0.5886052						
2-Chloroethyl vinyl ether	200	0.2186897	300	0.2166588	400	0.2140225						
Chloromethane	100	0.4409577	150	0.4234873	200	0.4342337						
1-Chlorohexane	100	0.9578779	150	0.9725647	200	0.9466713						
2-Chlorotoluene	100	2.537954	150	2.576492	200	2.62803						
Chloroprene	100	0.5927563	150	0.5978106	200	0.588547						
4-Chlorotoluene	100	2.986727	150	3.042565	200	3.062658						
Cyclohexane	100	0.5544891	150	0.5633701	200	0.5567776						
Dibromochloromethane	100	0.8681603	150	0.9123267	200	0.8962327						
1,2-Dibromo-3-chloropropane	100	0.1719944	150	0.1690737	200	0.1700761						

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Calibration: 6049001
Instrument: MS-VOA6
Matrix: Water
Calibration Dates: 2/16/16 8:52 2/16/16 12:43

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,2-Dibromoethane (EDB)	100	0.7840731	150	0.8020025	200	0.794818						
Dibromomethane	100	0.2444322	150	0.2473305	200	0.2423885						
1,2-Dichlorobenzene	100	1.558989	150	1.55536	200	1.587517						
1,3-Dichlorobenzene	100	1.64223	150	1.648998	200	1.668418						
trans-1,4-Dichloro-2-butene	100	0.3502028	150	0.3463511	200	0.3411936						
cis-1,4-Dichloro-2-butene	100	0.4033155	150	0.3938808	200	0.3956557						
1,4-Dichlorobenzene	100	1.671611	150	1.672024	200	1.706969						
Dichlorodifluoromethane	100	0.4211572	150	0.4339821	200	0.4239685						
1,1-Dichloroethane	100	0.6570421	150	0.6574323	200	0.6605954						
1,2-Dichloroethane	100	0.536205	150	0.5305182	200	0.5222971						
1,1-Dichloroethene	100	0.2745848	150	0.2750109	200	0.2735446						
cis-1,2-Dichloroethene	100	0.354638	150	0.3571993	200	0.3569792						
trans-1,2-Dichloroethene	100	0.3284477	150	0.310348	200	0.3234984						
1,2-Dichloroethene (total)	200	0.3415428	300	0.3337736	400	0.3402388						
1,2-Dichloropropane	100	0.3651465	150	0.3698787	200	0.3648491						
1,3-Dichloropropane	100	1.13536	150	1.163282	200	1.143916						
2,2-Dichloropropane	100	0.4393923	150	0.4386157	200	0.4281737						
1,1-Dichloropropene	100	0.4545899	150	0.4551837	200	0.4502023						
cis-1,3-Dichloropropene	100	0.5476996	150	0.5621493	200	0.5568739						
trans-1,3-Dichloropropene	100	1.214768	150	1.25476	200	1.233759						
Diisopropyl Ether	100	1.56644	150	1.587668	200	1.612097						
1,4-Dioxane	2000	2.910134E-03	3000	2.873649E-03	4000	2.897257E-03						
Ethylbenzene	100	3.241552	150	3.406863	200	3.428859						
Ethyl tert-Butyl Ether	100	1.173787	150	1.185293	200	1.186789						
Ethyl Methacrylate	100	0.9008566	150	0.9150678	200	0.898546						
Hexachlorobutadiene	100	0.4748516	150	0.4784713	200	0.4791074						
Hexane	100	0.4016552	150	0.4011417	200	0.3942388						
2-Hexanone	200	0.5221376	300	0.5310221	400	0.5246883						
Iodomethane	100	0.5301767	150	0.5344997	200	0.5317519						
Isobutyl alcohol	2000	7.976553E-03	3000	8.000241E-03	4000	8.100265E-03						
Isopropylbenzene	100	3.035538	150	3.21623	200	3.112583						

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
p-Isopropyltoluene	100	2.966726	150	3.025011	200	3.075286						
Methacrylonitrile	1000	0.2645907	1500	0.2671361	2000	0.2670507						
Methylene chloride	100	0.3428731	150	0.3428765	200	0.3389106						
Methyl Acetate	100	0.2739835	150	0.2703618	200	0.2671958						
Methylcyclohexane	100	0.4006895	150	0.4046777	200	0.400346						
Naphthalene	100	2.442493	150	2.484728	200	2.495644						
Methyl Methacrylate	100	0.3517594	150	0.3534261	200	0.3481995						
4-Methyl-2-pentanone	200	0.3587005	300	0.3566072	400	0.3553357						
Methyl t-Butyl Ether	100	0.8681837	150	0.8689503	200	0.8642148						
n-Propylbenzene	100	4.314531	150	4.401512	200	4.528843						
Propionitrile	1000	4.695028E-02	1500	4.672739E-02	2000	4.635563E-02						
Styrene	100	2.094478	150	2.205381	200	2.173928						
1,1,2,2-Tetrachloroethane	100	0.9806179	150	0.9625667	200	0.9745798						
1,1,1,2-Tetrachloroethane	100	0.7102287	150	0.7361247	200	0.7186438						
tert-Butyl alcohol	500	2.602893E-02	750	2.580709E-02	1000	2.572578E-02						
Tetrachloroethene	100	0.6974702	150	0.7246298	200	0.7144566						
Toluene	100	1.655306	150	1.700638	200	1.67809						
1,2,3-Trichlorobenzene	100	0.910487	150	0.9201275	200	0.9093438						
1,2,4-Trichlorobenzene	100	1.056964	150	1.062047	200	1.06559						
1,1,2-Trichloroethane	100	0.567466	150	0.5724566	200	0.5646392						
1,1,1-Trichloroethane	100	0.4793447	150	0.4838635	200	0.4751161						
Tetrahydrofuran	100	3.248471E-02	150	3.205913E-02	200	3.142031E-02						
Trichloroethene	100	0.3365563	150	0.3379532	200	0.3323728						
Trichlorofluoromethane	100	0.4726188	150	0.4755732	200	0.498127						
1,2,3-Trichloropropane	100	0.2277478	150	0.2266399	200	0.2195239						
1,3,5-Trimethylbenzene	100	3.007941	150	3.027818	200	3.093446						
1,2,4-Trimethylbenzene	100	3.11779	150	3.142215	200	3.220261						
1,1,2-Trichloro-1,2,2-trifluoroethan	100	0.3058934	150	0.3084832	200	0.3019745						
Vinyl chloride	100	0.3520402	150	0.3371068	200	0.3313435						
m,p-Xylene	200	2.535948	300	2.70772	400	2.537083						
o-Xylene	100	2.502515	150	2.608416	200	2.595957						

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Vinyl acetate	200	0.8588882	300	0.8961972	400	~~0.9159768~~						
Xylenes (total)	300	2.524804	450	2.674618	600	2.556707						
Dibromofluoromethane	30	0.334621	30	0.33304	30	0.3340573						
1,2-Dichloroethane-d4	30	6.716569E-02	30	6.572007E-02	30	6.421826E-02						
Toluene-d8	30	2.189855	30	2.228225	30	2.203466						
tert-Amyl alcohol	500	2.039632E-02	750	2.026646E-02	1000	2.053162E-02						
tert-Amyl ethyl ether	100	0.994686	150	1.021582	200	1.022203						
1,3,5-Trichlorobenzene	100	1.159647	150	1.168727	200	1.169206						
Diethyl ether	100	0.2939906	150	0.2897632	200	0.2864916						
Cyclohexanone (outside certificatio	250	9.404951E-02	375	8.778698E-02	500	8.258071E-02						
Ethyl Acetate (outside certification)	100	0.5222701	150	0.5130921	200	0.5099346						

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acetone	0.1061072	4.145086	3.58	0.1979174			15	
Acetonitrile	5.296831E-02	6.98313	3.65	0.273438			15	
Acrolein	5.828077E-02	12.14882	3.462857	0.1416015			15	
Acrylonitrile	0.1199069	12.2969	4.417778	0.0982428			15	
Benzene	1.160464	7.77567	7.53	6.854029E-02			15	
Allyl chloride	0.1371069	11.41044	4.498889	0.1330034			15	
Bromobenzene	0.8516924	6.733559	12.26556	4.453732E-02			15	
Bromochloromethane	0.177787	8.955913	6.615556	7.836797E-02			15	
Tert-Amyl Methyl Ether	0.7978605	12.15279	7.721111	4.199107E-02			15	
Bromodichloromethane	0.3915352	11.04558	8.517778	5.273386E-02			15	
Bromoform	0.4936555	18.09515	11.675	4.756151E-02	0.9994619		SPCC (0.1)	
Bromomethane	0.2052031	11.74616	2.655714	0.201682			15	
Bromofluorobenzene	0.909934	2.16527	12.10222	2.948705E-02			15	
n-Butylbenzene	2.423424	11.47208	13.69111	2.690689E-02			15	
2-Butanone	0.1754806	8.441698	6.066667	8.185065E-02			15	
sec-Butylbenzene	3.206919	11.52714	13.15111	1.874836E-02			15	
tert-Butylbenzene	2.401594	10.70066	12.92111	0.0307287			15	
Carbon disulfide	0.9869954	10.69997	4.595556	0.1161073			15	
Carbon tetrachloride	0.3762648	13.73549	7.498889	4.472248E-02			15	
Chlorobenzene	1.830188	7.656551	10.95333	4.477956E-02			SPCC (0.3)	
Chloroethane	0.2036646	8.980735	2.785556	0.1886136			15	
Chloroform	0.5789459	6.707108	6.59	1.921429E-02			CCC (30)	
2-Chloroethyl vinyl ether	0.1963581	11.41549	8.882222	0.0475252			15	
Chloromethane	0.4152126	5.268493	2.076667	0.2411835			SPCC (0.1)	
1-Chlorohexane	0.9267954	6.441134	10.92222	3.727588E-02			15	
2-Chlorotoluene	2.360363	8.579427	12.48111	1.534042E-02			15	
Chloroprene	0.5485762	10.38349	5.881111	5.742477E-02			15	
4-Chlorotoluene	2.766088	9.049002	12.54556	4.208597E-02			15	
Cyclohexane	0.5196516	8.116096	7.426667	6.829442E-02			15	
Dibromochloromethane	0.7602526	17.43992	10.18778	4.248446E-02	0.9992793		0.99	
1,2-Dibromo-3-chloropropane	0.141843	21.52634	14.28889	2.638809E-02	0.9998218		0.99	
1,2-Dibromoethane (EDB)	0.7420659	8.778659	10.39778	3.968443E-02			15	

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dibromomethane	0.2278633	8.331416	8.453333	0.0593024			15	
1,2-Dichlorobenzene	1.430639	9.443986	13.64556	3.968718E-02			15	
1,3-Dichlorobenzene	1.524393	7.735899	13.23667	0.0352089			15	
trans-1,4-Dichloro-2-butene	0.3070955	15.03202	12.06875	2.576431E-02	0.9997668		0.99	
cis-1,4-Dichloro-2-butene	0.3371581	17.83964	11.75556	4.585148E-02	0.9997623		0.99	
1,4-Dichlorobenzene	1.56249	7.51678	13.32778	3.754546E-02			15	
Dichlorodifluoromethane	0.362897	19.17695	1.8725	0.2475369	0.9994821		0.99	
1,1-Dichloroethane	0.6104665	9.615351	5.614444	9.319078E-02			SPCC (0.1)	
1,2-Dichloroethane	0.5146054	5.26278	7.355556	0.0715449			15	
1,1-Dichloroethene	0.2518583	10.40883	4.051111	8.379048E-02			CCC (30)	
cis-1,2-Dichloroethene	0.345236	5.867458	6.336667	7.841942E-02			15	
trans-1,2-Dichloroethene	0.296179	10.51413	5.231111	6.188178E-02			15	
1,2-Dichloroethene (total)	0.3207075	7.720009	6.336667	7.841942E-02			15	
1,2-Dichloropropane	0.3458943	8.097986	8.341111	4.022106E-02			CCC (30)	
1,3-Dichloropropane	1.07373	8.121096	9.934444	5.053045E-02			15	
2,2-Dichloropropane	0.4076688	7.300246	6.44	2.055717E-02			15	
1,1-Dichloropropene	0.4326406	6.653909	7.375556	0.0711235			15	
cis-1,3-Dichloropropene	0.5016545	10.19542	9.095556	5.804896E-02			15	
trans-1,3-Dichloropropene	1.092844	12.44011	9.57	1.522066E-02			15	
Diisopropyl Ether	1.453986	9.634	5.992222	0.0722156			15	
1,4-Dioxane	2.576501E-03	18.49244	8.50375	6.138862E-02	0.9999131		0.99	
Ethylbenzene	2.999172	10.37231	11.09778	3.876461E-02			CCC (30)	
Ethyl tert-Butyl Ether	1.080076	10.4332	6.461111	5.429212E-02			15	
Ethyl Methacrylate	0.79405	13.96917	9.756667	5.279196E-02			15	
Hexachlorobutadiene	0.4517303	4.9006	15.64556	3.042043E-02			15	
Hexane	0.3801684	6.475771	5.828889	5.755611E-02			15	
2-Hexanone	0.4685934	13.71997	9.87	1.828082E-02			15	
Iodomethane	0.4042539	33.23995	4.24625	0.1220145	0.9991983		0.99	
Isobutyl alcohol	6.934041E-03	16.6554	6.6875	0.1051123	0.9997252		0.99	
Isopropylbenzene	2.735858	12.88258	11.99556	4.655165E-02			15	
p-Isopropyltoluene	2.709318	10.62324	13.29	6.890387E-03			15	
Methacrylonitrile	0.2361001	12.61113	6.238889	0.1685776			15	

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Methylene chloride	0.3308726	8.064631	4.545556	0.1146559			15	
Methyl Acetate	0.2523408	10.02884	4.406667	0.1140858			15	
Methylcyclohexane	0.3753012	7.372716	8.672222	4.941445E-02			15	
Naphthalene	2.150632	14.17568	15.51111	1.764847E-02			15	
Methyl Methacrylate	0.3213096	10.86219	8.477777	5.302813E-02			15	
4-Methyl-2-pentanone	0.3151274	13.23539	9.02	0.0213282			15	
Methyl t-Butyl Ether	0.7787632	12.64518	5.223333	0.0952854			15	
n-Propylbenzene	3.887364	11.5275	12.39889	3.220865E-02			15	
Propionitrile	4.172034E-02	13.18483	5.785556	0.1257766			15	
Styrene	1.890781	13.27433	11.57222	0.0442063			15	
1,1,2,2-Tetrachloroethane	0.8788911	10.91004	11.92111	1.743653E-02			SPCC (0.3)	
1,1,1,2-Tetrachloroethane	0.6448984	12.20053	10.99667	4.647852E-02			15	
tert-Butyl alcohol	2.180723E-02	22.01315	4.195	0.1267134	0.9998079		0.99	
Tetrachloroethene	0.6705941	7.115582	10.3	2.011263E-03			15	
Toluene	1.576148	6.596733	9.57	1.522066E-02			CCC (30)	
1,2,3-Trichlorobenzene	0.8392917	9.756201	15.79556	3.007857E-02			15	
1,2,4-Trichlorobenzene	0.9615151	9.955187	15.36	1.759729E-02			15	
1,1,2-Trichloroethane	0.5447251	5.16499	9.722222	4.853467E-02			15	
1,1,1-Trichloroethane	0.4396083	9.431744	7.154444	7.399202E-02			15	
Tetrahydrofuran	3.076527E-02	7.38412	6.798572	0.1006696			15	
Trichloroethene	0.3192163	7.348292	8.295556	0.0600773			15	
Trichlorofluoromethane	0.4341776	11.30916	3.275556	0.1609281			15	
1,2,3-Trichloropropane	0.2056132	12.65271	12.04333	0.0361538			15	
1,3,5-Trimethylbenzene	2.678288	12.37209	12.58	1.817693E-02			15	
1,2,4-Trimethylbenzene	2.762556	13.45155	12.95	4.068485E-02			15	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.2856064	9.774919	4.131111	0.0772477			15	
Vinyl chloride	0.3170783	8.52054	2.226667	0.2238255			CCC (30)	
m,p-Xylene	2.303384	11.50789	11.21222	3.885238E-02			15	
o-Xylene	2.318169	10.60655	11.60222	4.279746E-02			15	
Vinyl acetate	0.7448624	14.65452	5.6925	8.420818E-02			15	
Xylenes (total)	2.308313	11.13329	11.60222	4.279746E-02			15	
Dibromofluoromethane	0.3362926	2.141268	6.762222	6.309518E-02			15	

INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6049001	Instrument:	MS-VOA6
Matrix:	Water	Calibration Dates:	2/16/16 8:52 2/16/16 12:43

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,2-Dichloroethane-d4	6.713501E-02	3.461235	7.265556	7.402583E-02			15	
Toluene-d8	2.200215	0.8698646	9.491111	3.679603E-02			15	
tert-Amyl alcohol	1.631768E-02	26.99525	6.96875	0.120661	0.9995668		0.99	
tert-Amyl ethyl ether	0.9017502	11.94759	8.615555	6.155604E-02			15	
1,3,5-Trichlorobenzene	1.07852	8.343275	14.80667	3.078431E-02			15	
Diethyl ether	0.2689329	9.088063	3.692222	0.1192696			15	
Cyclohexanone (outside certification)	8.833585E-02	6.826568	11.72	2.468036E-02			15	
Ethyl Acetate (outside certification)	0.4896438	5.43322	6.444444	0.1140159			15	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	6049001
Lab File ID:	0216ICV1.D	Calibration Date:	02/16/16 08:52
Sequence:	6B04901	Injection Date:	02/16/16
Lab Sample ID:	6B04901-ICV1	Injection Time:	13:41

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Acetone	A	100.0	110.3	0.1061072	0.1170022		10.3	20
Benzene	A	50.00	52.34	1.160464	1.214827		4.7	20
Bromobenzene	A	50.00	52.25	0.8516924	0.8900297		4.5	20
Bromochloromethane	A	50.00	54.58	0.177787	0.1940868		9.2	20
Bromodichloromethane	A	50.00	56.63	0.3915352	0.4434233		13.3	20
Bromoform	A	50.00	47.91	0.4936555	0.5534923	0.1	-4.2	20
Bromomethane	A	50.00	56.00	0.2052031	0.2298477		12.0	20
n-Butylbenzene	A	50.00	52.00	2.423424	2.520492		4.0	20
2-Butanone	A	100.0	109.8	0.1754806	0.1926131		9.8	20
sec-Butylbenzene	A	50.00	51.55	3.206919	3.306071		3.1	20
tert-Butylbenzene	A	50.00	52.69	2.401594	2.530618		5.4	20
Carbon disulfide	A	50.00	55.03	0.9869954	1.086328		10.1	20
Carbon tetrachloride	A	50.00	53.16	0.3762648	0.4000421		6.3	20
Chlorobenzene	A	50.00	52.22	1.830188	1.911566	0.3	4.4	20
Chloroethane	A	50.00	48.67	0.2036646	0.1982671		-2.7	20
Chloroform	A	50.00	50.02	0.5789459	0.5791893		0.04	20
Chloromethane	A	50.00	54.31	0.4152126	0.4510017	0.1	8.6	20
2-Chlorotoluene	A	50.00	50.19	2.360363	2.369203		0.4	20
4-Chlorotoluene	A	50.00	51.29	2.766088	2.837582		2.6	20
Cyclohexane	A	50.00	58.10	0.5196516	0.6037844		16.2	20
Dibromochloromethane	A	50.00	48.70	0.7602526	0.8716415		-2.6	20
1,2-Dibromo-3-chloropropane	A	50.00	50.32	0.141843	0.1709407		0.6	20
1,2-Dibromoethane (EDB)	A	50.00	54.38	0.7420659	0.8071381		8.8	20
Dibromomethane	A	50.00	52.03	0.2278633	0.2371104		4.1	20
1,2-Dichlorobenzene	A	50.00	52.26	1.430639	1.495381		4.5	20
1,3-Dichlorobenzene	A	50.00	51.52	1.524393	1.570772		3.0	20
1,4-Dichlorobenzene	A	50.00	51.00	1.56249	1.593866		2.0	20
Dichlorodifluoromethane	A	50.00	46.69	0.362897	0.3975744		-6.6	20
1,1-Dichloroethane	A	50.00	52.28	0.6104665	0.6382818	0.1	4.6	20

INITIAL CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	6049001
Lab File ID:	0216ICV1.D	Calibration Date:	02/16/16 08:52
Sequence:	6B04901	Injection Date:	02/16/16
Lab Sample ID:	6B04901-ICV1	Injection Time:	13:41

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
1,2-Dichloroethane	A	50.00	49.57	0.5146054	0.5101648		-0.9	20
1,1-Dichloroethene	A	50.00	49.51	0.2518583	0.2493906		-1.0	20
cis-1,2-Dichloroethene	A	50.00	52.82	0.345236	0.3646824		5.6	20
trans-1,2-Dichloroethene	A	50.00	45.81	0.296179	0.271368		-8.4	20
1,2-Dichloroethene (total)	A	100.0	98.63	0.3207075	0.3180252		-0.8	20
1,2-Dichloropropane	A	50.00	51.92	0.3458943	0.3591845		3.8	20
1,3-Dichloropropane	A	50.00	56.59	1.07373	1.215352		13.2	20
2,2-Dichloropropane	A	50.00	50.86	0.4076688	0.4146871		1.7	20
1,1-Dichloropropene	A	50.00	50.61	0.4326406	0.4379612		1.2	20
cis-1,3-Dichloropropene	A	50.00	55.93	0.5016545	0.5611165		11.9	20
trans-1,3-Dichloropropene	A	50.00	53.02	1.092844	1.158822		6.0	20
Ethylbenzene	A	50.00	53.77	2.999172	3.225428		7.5	20
Hexachlorobutadiene	A	50.00	47.79	0.4517303	0.4317655		-4.4	20
2-Hexanone	A	100.0	116.6	0.4685934	0.5462579		16.6	20
Isopropylbenzene	A	50.00	53.71	2.735858	2.938888		7.4	20
p-Isopropyltoluene	A	50.00	52.41	2.709318	2.840003		4.8	20
Methylene chloride	A	50.00	50.66	0.3308726	0.3352163		1.3	20
Methyl Acetate	A	50.00	57.96	0.2523408	0.2924918		15.9	20
Methylcyclohexane	A	50.00	55.51	0.3753012	0.4166412		11.0	20
Naphthalene	A	50.00	58.84	2.150632	2.530712		17.7	20
4-Methyl-2-pentanone	A	100.0	112.7	0.3151274	0.3550714		12.7	20
Methyl t-Butyl Ether	A	50.00	58.19	0.7787632	0.906345		16.4	20
n-Propylbenzene	A	50.00	50.66	3.887364	3.938845		1.3	20
Styrene	A	50.00	55.23	1.890781	2.088706		10.5	20
1,1,2,2-Tetrachloroethane	A	50.00	55.59	0.8788911	0.9770941	0.3	11.2	20
1,1,1,2-Tetrachloroethane	A	50.00	54.14	0.6448984	0.6983266		8.3	20
Tetrachloroethene	A	50.00	52.63	0.6705941	0.7058083		5.3	20
Toluene	A	50.00	53.13	1.576148	1.674854		6.3	20
1,2,3-Trichlorobenzene	A	50.00	57.50	0.8392917	0.9652393		15.0	20

INITIAL CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	6049001
Lab File ID:	0216ICV1.D	Calibration Date:	02/16/16 08:52
Sequence:	6B04901	Injection Date:	02/16/16
Lab Sample ID:	6B04901-ICV1	Injection Time:	13:41

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
1,2,4-Trichlorobenzene	A	50.00	54.77	0.9615151	1.053281		9.5	20
1,1,2-Trichloroethane	A	50.00	53.39	0.5447251	0.5816557		6.8	20
1,1,1-Trichloroethane	A	50.00	52.51	0.4396083	0.4617114		5.0	20
Trichloroethene	A	50.00	51.31	0.3192163	0.3275647		2.6	20
Trichlorofluoromethane	A	50.00	55.48	0.4341776	0.4817905		11.0	20
1,2,3-Trichloropropane	A	50.00	56.96	0.2056132	0.2342267		13.9	20
1,3,5-Trimethylbenzene	A	50.00	52.58	2.678288	2.816718		5.2	20
1,2,4-Trimethylbenzene	A	50.00	52.77	2.762556	2.915474		5.5	20
1,1,2-Trichloro-1,2,2-trifluoroethane	A	50.00	55.53	0.2856064	0.3171863		11.1	20
Vinyl chloride	A	50.00	59.45	0.3170783	0.3769939		18.9	20
m,p-Xylene	A	100.0	107.4	2.303384	2.473501		7.4	20
o-Xylene	A	50.00	53.75	2.318169	2.492016		7.5	20
Xylenes (total)	A	150.0	161.1	2.308313	2.479673		7.4	20
Bromofluorobenzene	A	30.00	30.57	0.909934	0.9273289		1.9	20
Dibromofluoromethane	A	30.00	29.97	0.3362926	0.3359473		-0.1	20
1,2-Dichloroethane-d4	A	30.00	29.69	6.713501E-02	6.644073E-02		-1.0	20
Toluene-d8	A	30.00	30.13	2.200215	2.209693		0.4	20

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	6049001
Lab File ID:	0412CCVE.D	Calibration Date:	02/16/16 08:52
Sequence:	6D10302	Injection Date:	04/12/16
Lab Sample ID:	6D10302-CCV1	Injection Time:	18:55

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	A	200.0	213.3	0.1061072	0.1131761		6.7	20
Benzene	A	100.0	105.9	1.160464	1.228948		5.9	20
Bromobenzene	A	100.0	98.48	0.8516924	0.8387541		-1.5	20
Bromochloromethane	A	100.0	97.79	0.177787	0.1738652		-2.2	20
Bromodichloromethane	A	100.0	106.5	0.3915352	0.4170715		6.5	20
Bromoform	A	100.0	82.03	0.4936555	0.4738035	0.1	-18.0	20
Bromomethane	A	100.0	122.0	0.2052031	0.2503467		22.0	20 *
n-Butylbenzene	A	100.0	110.2	2.423424	2.671355		10.2	20
2-Butanone	A	200.0	219.7	0.1754806	0.1927921		9.9	20
sec-Butylbenzene	A	100.0	110.3	3.206919	3.536048		10.3	20
tert-Butylbenzene	A	100.0	106.6	2.401594	2.560152		6.6	20
Carbon disulfide	A	100.0	108.3	0.9869954	1.068799		8.3	20
Carbon tetrachloride	A	100.0	105.0	0.3762648	0.3952067		5.0	20
Chlorobenzene	A	100.0	98.75	1.830188	1.807288	0.3	-1.3	20
Chloroethane	A	100.0	105.6	0.2036646	0.2151363		5.6	20
Chloroform	A	100.0	100.7	0.5789459	0.5832557		0.7	20
Chloromethane	A	100.0	112.9	0.4152126	0.4687019	0.1	12.9	20
2-Chlorotoluene	A	100.0	109.8	2.360363	2.59267		9.8	20
4-Chlorotoluene	A	100.0	109.6	2.766088	3.030692		9.6	20
Cyclohexane	A	100.0	111.2	0.5196516	0.5781039		11.2	20
Dibromochloromethane	A	100.0	85.53	0.7602526	0.7654051		-14.5	20
1,2-Dibromo-3-chloropropane	A	100.0	89.85	0.141843	0.1526232		-10.2	20
1,2-Dibromoethane (EDB)	A	100.0	98.01	0.7420659	0.7272744		-2.0	20
Dibromomethane	A	100.0	103.8	0.2278633	0.2364866		3.8	20
1,2-Dichlorobenzene	A	100.0	101.7	1.430639	1.454432		1.7	20
1,3-Dichlorobenzene	A	100.0	99.82	1.524393	1.521617		-0.2	20
1,4-Dichlorobenzene	A	100.0	99.69	1.56249	1.557587		-0.3	20
Dichlorodifluoromethane	A	100.0	96.84	0.362897	0.4123173		-3.2	20
1,1-Dichloroethane	A	100.0	106.4	0.6104665	0.6494816	0.1	6.4	20

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	6049001
Lab File ID:	0412CCVE.D	Calibration Date:	02/16/16 08:52
Sequence:	6D10302	Injection Date:	04/12/16
Lab Sample ID:	6D10302-CCV1	Injection Time:	18:55

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,2-Dichloroethane	A	100.0	103.0	0.5146054	0.5299274		3.0	20
1,1-Dichloroethene	A	100.0	104.8	0.2518583	0.2638958		4.8	20
cis-1,2-Dichloroethene	A	100.0	99.64	0.345236	0.3439785		-0.4	20
trans-1,2-Dichloroethene	A	100.0	104.3	0.296179	0.3087944		4.3	20
1,2-Dichloroethene (total)	A	200.0	203.9	0.3207075	0.3263864		1.8	20
1,2-Dichloropropane	A	100.0	105.7	0.3458943	0.3655271		5.7	20
1,3-Dichloropropane	A	100.0	103.9	1.07373	1.115901		3.9	20
2,2-Dichloropropane	A	100.0	96.24	0.4076688	0.3923237		-3.8	20
1,1-Dichloropropene	A	100.0	104.3	0.4326406	0.4514544		4.3	20
cis-1,3-Dichloropropene	A	100.0	104.7	0.5016545	0.5252069		4.7	20
trans-1,3-Dichloropropene	A	100.0	105.3	1.092844	1.151187		5.3	20
Ethylbenzene	A	100.0	105.5	2.999172	3.163357		5.5	20
Hexachlorobutadiene	A	100.0	84.60	0.4517303	0.3821673		-15.4	20
2-Hexanone	A	200.0	230.5	0.4685934	0.5401586		15.3	20
Isopropylbenzene	A	100.0	106.0	2.735858	2.900629		6.0	20
p-Isopropyltoluene	A	100.0	105.6	2.709318	2.860468		5.6	20
Methylene chloride	A	100.0	99.48	0.3308726	0.3291409		-0.5	20
Methyl Acetate	A	100.0	115.0	0.2523408	0.2901118		15.0	20
Methylcyclohexane	A	100.0	105.2	0.3753012	0.3949565		5.2	20
Naphthalene	A	100.0	102.1	2.150632	2.195131		2.1	20
4-Methyl-2-pentanone	A	200.0	233.4	0.3151274	0.3677684		16.7	20
Methyl t-Butyl Ether	A	100.0	106.4	0.7787632	0.8288114		6.4	20
n-Propylbenzene	A	100.0	113.5	3.887364	4.411247		13.5	20
Styrene	A	100.0	105.6	1.890781	1.997272		5.6	20
1,1,2,2-Tetrachloroethane	A	100.0	111.3	0.8788911	0.9785141	0.3	11.3	20
1,1,1,2-Tetrachloroethane	A	100.0	97.05	0.6448984	0.6258675		-3.0	20
Tetrachloroethene	A	100.0	92.64	0.6705941	0.6212385		-7.4	20
Toluene	A	100.0	102.5	1.576148	1.615484		2.5	20
1,2,3-Trichlorobenzene	A	100.0	96.65	0.8392917	0.8111754		-3.4	20

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	6049001
Lab File ID:	0412CCVE.D	Calibration Date:	02/16/16 08:52
Sequence:	6D10302	Injection Date:	04/12/16
Lab Sample ID:	6D10302-CCV1	Injection Time:	18:55

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,2,4-Trichlorobenzene	A	100.0	97.98	0.9615151	0.9420614		-2.0	20
1,1,2-Trichloroethane	A	100.0	100.1	0.5447251	0.5454231		0.1	20
1,1,1-Trichloroethane	A	100.0	104.6	0.4396083	0.4596644		4.6	20
Trichloroethene	A	100.0	101.5	0.3192163	0.3240723		1.5	20
Trichlorofluoromethane	A	100.0	114.9	0.4341776	0.4990311		14.9	20
1,2,3-Trichloropropane	A	100.0	103.0	0.2056132	0.2118092		3.0	20
1,3,5-Trimethylbenzene	A	100.0	109.8	2.678288	2.941864		9.8	20
1,2,4-Trimethylbenzene	A	100.0	111.8	2.762556	3.087186		11.8	20
1,1,2-Trichloro-1,2,2-trifluoroethane	A	100.0	112.7	0.2856064	0.3218413		12.7	20
Vinyl chloride	A	100.0	118.6	0.3170783	0.3760999		18.6	20
m,p-Xylene	A	200.0	220.0	2.303384	2.533488		10.0	20
o-Xylene	A	100.0	105.8	2.318169	2.452604		5.8	20
Xylenes (total)	A	300.0	325.8	2.308313	2.506526		8.6	20
Bromofluorobenzene	A	30.00	30.84	0.909934	0.9354592		2.8	20
Dibromofluoromethane	A	30.00	29.18	0.3362926	0.3270714		-2.7	20
1,2-Dichloroethane-d4	A	30.00	28.95	6.713501E-02	6.479201E-02		-3.5	20
Toluene-d8	A	30.00	29.75	2.200215	2.181998		-0.8	20

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	6049001
Lab File ID:	0413CCVE.D	Calibration Date:	02/16/16 08:52
Sequence:	6D10402	Injection Date:	04/13/16
Lab Sample ID:	6D10402-CCV1	Injection Time:	21:12

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	A	200.0	215.4	0.1061072	0.1142568		7.7	20
Benzene	A	100.0	107.4	1.160464	1.246527		7.4	20
Bromobenzene	A	100.0	99.49	0.8516924	0.8473115		-0.5	20
Bromochloromethane	A	100.0	103.7	0.177787	0.1842873		3.7	20
Bromodichloromethane	A	100.0	106.3	0.3915352	0.4162044		6.3	20
Bromoform	A	100.0	83.60	0.4936555	0.4828711	0.1	-16.4	20
Bromomethane	A	100.0	119.7	0.2052031	0.2456581		19.7	20
n-Butylbenzene	A	100.0	100.4	2.423424	2.432626		0.4	20
2-Butanone	A	200.0	222.3	0.1754806	0.1950368		11.1	20
sec-Butylbenzene	A	100.0	100.1	3.206919	3.209532		0.08	20
tert-Butylbenzene	A	100.0	101.9	2.401594	2.447522		1.9	20
Carbon disulfide	A	100.0	106.9	0.9869954	1.055344		6.9	20
Carbon tetrachloride	A	100.0	102.2	0.3762648	0.3846202		2.2	20
Chlorobenzene	A	100.0	97.35	1.830188	1.781696	0.3	-2.6	20
Chloroethane	A	100.0	105.4	0.2036646	0.2145802		5.4	20
Chloroform	A	100.0	100.7	0.5789459	0.5827481		0.7	20
Chloromethane	A	100.0	109.7	0.4152126	0.4553163	0.1	9.7	20
2-Chlorotoluene	A	100.0	101.9	2.360363	2.404615		1.9	20
4-Chlorotoluene	A	100.0	102.8	2.766088	2.842511		2.8	20
Cyclohexane	A	100.0	108.8	0.5196516	0.5651975		8.8	20
Dibromochloromethane	A	100.0	88.13	0.7602526	0.7887256		-11.9	20
1,2-Dibromo-3-chloropropane	A	100.0	90.34	0.141843	0.1534501		-9.7	20
1,2-Dibromoethane (EDB)	A	100.0	97.84	0.7420659	0.7260371		-2.2	20
Dibromomethane	A	100.0	105.4	0.2278633	0.240091		5.4	20
1,2-Dichlorobenzene	A	100.0	103.1	1.430639	1.474749		3.1	20
1,3-Dichlorobenzene	A	100.0	100.7	1.524393	1.535396		0.7	20
1,4-Dichlorobenzene	A	100.0	99.30	1.56249	1.551628		-0.7	20
Dichlorodifluoromethane	A	100.0	96.22	0.362897	0.4096924		-3.8	20
1,1-Dichloroethane	A	100.0	106.1	0.6104665	0.6476034	0.1	6.1	20

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	6049001
Lab File ID:	0413CCVE.D	Calibration Date:	02/16/16 08:52
Sequence:	6D10402	Injection Date:	04/13/16
Lab Sample ID:	6D10402-CCV1	Injection Time:	21:12

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,2-Dichloroethane	A	100.0	104.9	0.5146054	0.5397335		4.9	20
1,1-Dichloroethene	A	100.0	102.2	0.2518583	0.2574813		2.2	20
cis-1,2-Dichloroethene	A	100.0	100.5	0.345236	0.3470122		0.5	20
trans-1,2-Dichloroethene	A	100.0	103.0	0.296179	0.3050107		3.0	20
1,2-Dichloroethene (total)	A	200.0	203.5	0.3207075	0.3260115		1.7	20
1,2-Dichloropropane	A	100.0	107.2	0.3458943	0.3707315		7.2	20
1,3-Dichloropropane	A	100.0	104.3	1.07373	1.120285		4.3	20
2,2-Dichloropropane	A	100.0	90.51	0.4076688	0.3689694		-9.5	20
1,1-Dichloropropene	A	100.0	102.9	0.4326406	0.4450434		2.9	20
cis-1,3-Dichloropropene	A	100.0	106.1	0.5016545	0.5320781		6.1	20
trans-1,3-Dichloropropene	A	100.0	102.6	1.092844	1.121008		2.6	20
Ethylbenzene	A	100.0	100.5	2.999172	3.015096		0.5	20
Hexachlorobutadiene	A	100.0	84.27	0.4517303	0.3806798		-15.7	20
2-Hexanone	A	200.0	221.5	0.4685934	0.5188895		10.7	20
Isopropylbenzene	A	100.0	101.6	2.735858	2.780264		1.6	20
p-Isopropyltoluene	A	100.0	99.03	2.709318	2.683156		-1.0	20
Methylene chloride	A	100.0	101.6	0.3308726	0.3360728		1.6	20
Methyl Acetate	A	100.0	114.8	0.2523408	0.2896961		14.8	20
Methylcyclohexane	A	100.0	102.5	0.3753012	0.384555		2.5	20
Naphthalene	A	100.0	105.8	2.150632	2.276137		5.8	20
4-Methyl-2-pentanone	A	200.0	231.7	0.3151274	0.3650937		15.9	20
Methyl t-Butyl Ether	A	100.0	111.0	0.7787632	0.8647321		11.0	20
n-Propylbenzene	A	100.0	104.8	3.887364	4.073214		4.8	20
Styrene	A	100.0	103.5	1.890781	1.957859		3.5	20
1,1,2,2-Tetrachloroethane	A	100.0	107.2	0.8788911	0.9418398	0.3	7.2	20
1,1,1,2-Tetrachloroethane	A	100.0	99.50	0.6448984	0.6416897		-0.5	20
Tetrachloroethene	A	100.0	92.65	0.6705941	0.6213273		-7.3	20
Toluene	A	100.0	98.29	1.576148	1.549272		-1.7	20
1,2,3-Trichlorobenzene	A	100.0	95.33	0.8392917	0.800068		-4.7	20

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Instrument ID:	MS-VOA6	Calibration:	6049001
Lab File ID:	0413CCVE.D	Calibration Date:	02/16/16 08:52
Sequence:	6D10402	Injection Date:	04/13/16
Lab Sample ID:	6D10402-CCV1	Injection Time:	21:12

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,2,4-Trichlorobenzene	A	100.0	95.71	0.9615151	0.9202444		-4.3	20
1,1,2-Trichloroethane	A	100.0	99.98	0.5447251	0.5446434		-0.01	20
1,1,1-Trichloroethane	A	100.0	101.4	0.4396083	0.4457293		1.4	20
Trichloroethene	A	100.0	99.27	0.3192163	0.3168906		-0.7	20
Trichlorofluoromethane	A	100.0	107.5	0.4341776	0.4668675		7.5	20
1,2,3-Trichloropropane	A	100.0	101.4	0.2056132	0.2085108		1.4	20
1,3,5-Trimethylbenzene	A	100.0	101.9	2.678288	2.728748		1.9	20
1,2,4-Trimethylbenzene	A	100.0	104.0	2.762556	2.872153		4.0	20
1,1,2-Trichloro-1,2,2-trifluoroethane	A	100.0	101.8	0.2856064	0.2908848		1.8	20
Vinyl chloride	A	100.0	116.8	0.3170783	0.3703534		16.8	20
m,p-Xylene	A	200.0	210.1	2.303384	2.419879		5.1	20
o-Xylene	A	100.0	103.2	2.318169	2.393344		3.2	20
Xylenes (total)	A	300.0	313.4	2.308313	2.411034		4.5	20
Bromofluorobenzene	A	30.00	29.59	0.909934	0.8976408		-1.4	20
Dibromofluoromethane	A	30.00	29.35	0.3362926	0.3290178		-2.2	20
1,2-Dichloroethane-d4	A	30.00	29.66	6.713501E-02	6.637227E-02		-1.1	20
Toluene-d8	A	30.00	29.08	2.200215	2.132586		-3.1	20

HOLDING TIME SUMMARY

SW8260B

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
TB-01	04/06/16 09:00	04/07/16 09:00	04/12/16 21:49	N/A	14.00	04/12/16 21:49	6.49	14.00	
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/13/16 02:09	N/A	14.00	04/13/16 02:09	6.62	14.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/14/16 02:01	N/A	14.00	04/14/16 02:01	7.51	14.00	
OTC537-GW-MW01-FD	04/06/16 12:46	04/07/16 09:00	04/13/16 02:38	N/A	14.00	04/13/16 02:38	6.54	14.00	

Data for SW6010C / SW7470A Forms

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604034-02 [OTC538-GW-MW02]	6D09919	100.00/25.00	100	25.0	5.00			04/13/16
1604034-02RE1 [OTC538-GW-MW02]	6D09919	100.00/25.00	100	25.0	25.00			04/13/16
1604034-04 [OTC537-GW-MW01]	6D09919	100.00/25.00	100	25.0	5.00			04/13/16
1604034-04RE1 [OTC537-GW-MW01]	6D09919	100.00/25.00	100	25.0	25.00			04/13/16
1604034-06 [OTC537-GW-MW01-FD]	6D09919	100.00/25.00	100	25.0	5.00			04/13/16
1604034-06RE1 [OTC537-GW-MW01-FD]	6D09919	100.00/25.00	100	25.0	25.00			04/13/16

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604034-03 [OTC538-GW-MW02]	6D09920	100.00/25.00	100	25.0	1.00			04/09/16
1604034-03RE1 [OTC538-GW-MW02]	6D09920	100.00/25.00	100	25.0	5.00			04/09/16
1604034-03RE2 [OTC538-GW-MW02]	6D09920	100.00/25.00	100	25.0	25.00			04/09/16
1604034-05 [OTC537-GW-MW01]	6D09920	100.00/25.00	100	25.0	1.00			04/09/16
1604034-05RE1 [OTC537-GW-MW01]	6D09920	100.00/25.00	100	25.0	5.00			04/09/16
1604034-05RE2 [OTC537-GW-MW01]	6D09920	100.00/25.00	100	25.0	25.00			04/09/16
1604034-07 [OTC537-GW-MW01-FD]	6D09920	100.00/25.00	100	25.0	25.00			04/09/16

Sample Extraction Data

Prep Method: pMercury-W SW 7470A-SW7470A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604034-02 [OTC538-GW-MW02]	6D12005	30.00/30.00	30.0	30.0	1.00			04/12/16
1604034-03 [OTC538-GW-MW02]	6D12005	30.00/30.00	30.0	30.0	1.00			04/12/16
1604034-04 [OTC537-GW-MW01]	6D12005	30.00/30.00	30.0	30.0	1.00			04/12/16
1604034-05 [OTC537-GW-MW01]	6D12005	30.00/30.00	30.0	30.0	1.00			04/12/16
1604034-06 [OTC537-GW-MW01-FD]	6D12005	30.00/30.00	30.0	30.0	1.00			04/12/16
1604034-07 [OTC537-GW-MW01-FD]	6D12005	30.00/30.00	30.0	30.0	1.00			04/12/16

ANALYSIS DATA SHEET

OTC538-GW-MW02

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-02
Sampled:	04/06/16 10:22	Received:	04/07/16 09:00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.160	0.200	1	U	SW7470A	6D12005	04/12/16 15:32
7429-90-5	Aluminum	**1080**	**62.5**	125	250	5	D	SW6010C	6D09919	04/15/16 16:53
7440-36-0	Antimony		6.25	10.0	12.5	5	U	SW6010C	6D09919	04/15/16 16:53
7440-38-2	Arsenic	**7.21**	**3.75**	7.50	12.5	5	J D	SW6010C	6D09919	04/15/16 16:53
7440-39-3	Barium	**17.1**	**6.25**	12.5	50.0	5	J D	SW6010C	6D09919	04/15/16 16:53
7440-41-7	Beryllium		1.25	2.50	6.25	5	U	SW6010C	6D09919	04/15/16 16:53
7440-43-9	Cadmium		2.50	2.50	6.25	5	M U	SW6010C	6D09919	04/15/16 16:53
7440-70-2	Calcium	**426000**	**1250**	2500	6250	5	D	SW6010C	6D09919	04/15/16 16:53
7440-47-3	Chromium		2.50	5.00	12.5	5	U	SW6010C	6D09919	04/15/16 16:53
7440-48-4	Cobalt		6.25	12.5	15.6	5	U	SW6010C	6D09919	04/15/16 16:53
7440-50-8	Copper		5.00	10.0	12.5	5	U	SW6010C	6D09919	04/15/16 16:53
7439-89-6	Iron	**649**	**37.5**	75.0	125	5	D	SW6010C	6D09919	04/15/16 16:53
7439-92-1	Lead		1.88	3.75	6.25	5	U	SW6010C	6D09919	04/15/16 16:53
7439-95-4	Magnesium	**383000**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 16:53
7439-96-5	Manganese	**342**	**3.75**	7.50	18.8	5	D	SW6010C	6D09919	04/15/16 16:53
7440-02-0	Nickel		3.75	7.50	12.5	5	U	SW6010C	6D09919	04/15/16 16:53
7440-09-7	Potassium	**8520**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 16:53
7782-49-2	Selenium	**9.69**	**3.75**	6.25	12.5	5	J D	SW6010C	6D09919	04/15/16 16:53
7440-22-4	Silver		1.25	2.50	12.5	5	U	SW6010C	6D09919	04/15/16 16:53
7440-23-5	Sodium	**1650000**	**6250**	18800	31200	25	D	SW6010C	6D09919	04/19/16 18:53
7440-28-0	Thallium		3.75	5.00	10.0	5	U	SW6010C	6D09919	04/15/16 16:53
7440-62-2	Vanadium	**34.6**	**6.25**	12.5	15.6	5	D	SW6010C	6D09919	04/15/16 16:53
7440-66-6	Zinc		6.25	12.5	25.0	5	U	SW6010C	6D09919	04/15/16 16:53

ANALYSIS DATA SHEET

OTC538-GW-MW02

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-03
Sampled:	04/06/16 10:22	Received:	04/07/16 09:00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)		0.0800	0.160	0.200	1	U	SW7470A	6D12005	04/12/16 15:33
7429-90-5	Aluminum (dissolved)	**543**	**62.5**	125	250	5	D	SW6010C	6D09920	04/15/16 12:51
7440-36-0	Antimony (dissolved)		1.25	2.00	2.50	1	U	SW6010C	6D09920	04/11/16 19:37
7440-38-2	Arsenic (dissolved)	**9.30**	**0.750**	1.50	2.50	1		SW6010C	6D09920	04/11/16 19:37
7440-39-3	Barium (dissolved)	**14.0**	**1.25**	2.50	10.0	1		SW6010C	6D09920	04/11/16 19:37
7440-41-7	Beryllium (dissolved)		0.250	0.500	1.25	1	U	SW6010C	6D09920	04/11/16 19:37
7440-43-9	Cadmium (dissolved)		1.25	2.50	6.25	5	U	SW6010C	6D09920	04/15/16 12:51
7440-70-2	Calcium (dissolved)	**602000**	**1250**	2500	6250	5	D	SW6010C	6D09920	04/15/16 12:51
7440-47-3	Chromium (dissolved)		2.50	5.00	12.5	5	U	SW6010C	6D09920	04/15/16 12:51
7440-48-4	Cobalt (dissolved)	**1.80**	**1.25**	2.50	3.12	1	J	SW6010C	6D09920	04/11/16 19:37
7440-50-8	Copper (dissolved)		5.00	10.0	12.5	5	U	SW6010C	6D09920	04/15/16 12:51
7439-89-6	Iron (dissolved)	**101**	**7.50**	15.0	25.0	1		SW6010C	6D09920	04/11/16 19:37
7439-92-1	Lead (dissolved)		0.375	0.750	1.25	1	U	SW6010C	6D09920	04/11/16 19:37
7439-95-4	Magnesium (dissolved)	**388000**	**1250**	3750	6250	5	D	SW6010C	6D09920	04/15/16 12:51
7439-96-5	Manganese (dissolved)	**306**	**0.750**	1.50	3.75	1		SW6010C	6D09920	04/11/16 19:37
7440-02-0	Nickel (dissolved)		3.75	7.50	12.5	5	U	SW6010C	6D09920	04/15/16 12:51
7440-09-7	Potassium (dissolved)	**10800**	**250**	750	1250	1		SW6010C	6D09920	04/11/16 19:37
7782-49-2	Selenium (dissolved)	**9.66**	**3.75**	6.25	12.5	5	J D	SW6010C	6D09920	04/15/16 12:51
7440-22-4	Silver (dissolved)		0.500	0.500	2.50	1	M U	SW6010C	6D09920	04/11/16 19:37
7440-23-5	Sodium (dissolved)	**1650000**	**6250**	18800	31200	25	D	SW6010C	6D09920	04/19/16 18:39
7440-28-0	Thallium (dissolved)		0.750	1.00	2.00	1	U	SW6010C	6D09920	04/11/16 19:37
7440-62-2	Vanadium (dissolved)	**32.8**	**1.25**	2.50	3.12	1		SW6010C	6D09920	04/11/16 19:37
7440-66-6	Zinc (dissolved)		6.25	12.5	25.0	5	U	SW6010C	6D09920	04/15/16 12:51

ANALYSIS DATA SHEET

OTC537-GW-MW01

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-04
Sampled:	04/06/16 12:46	Received:	04/07/16 09:00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.160	0.200	1	U	SW7470A	6D12005	04/12/16 15:34
7429-90-5	Aluminum	**1600**	**62.5**	125	250	5	* N D	SW6010C	6D09919	04/15/16 16:57
7440-36-0	Antimony		6.25	10.0	12.5	5	U	SW6010C	6D09919	04/15/16 16:57
7440-38-2	Arsenic		3.75	7.50	12.5	5	U	SW6010C	6D09919	04/15/16 16:57
7440-39-3	Barium	**34.7**	**6.25**	12.5	50.0	5	J D	SW6010C	6D09919	04/15/16 16:57
7440-41-7	Beryllium		1.25	2.50	6.25	5	U	SW6010C	6D09919	04/15/16 16:57
7440-43-9	Cadmium		2.50	2.50	6.25	5	M U	SW6010C	6D09919	04/15/16 16:57
7440-70-2	Calcium	**458000**	**1250**	2500	6250	5	N D	SW6010C	6D09919	04/15/16 16:57
7440-47-3	Chromium		2.50	5.00	12.5	5	U	SW6010C	6D09919	04/15/16 16:57
7440-48-4	Cobalt		6.25	12.5	15.6	5	U	SW6010C	6D09919	04/15/16 16:57
7440-50-8	Copper		5.00	10.0	12.5	5	U	SW6010C	6D09919	04/15/16 16:57
7439-89-6	Iron	**1310**	**37.5**	75.0	125	5	* N D	SW6010C	6D09919	04/15/16 16:57
7439-92-1	Lead		1.88	3.75	6.25	5	U	SW6010C	6D09919	04/15/16 16:57
7439-95-4	Magnesium	**393000**	**1250**	3750	6250	5	N D	SW6010C	6D09919	04/15/16 16:57
7439-96-5	Manganese	**321**	**3.75**	7.50	18.8	5	N D	SW6010C	6D09919	04/15/16 16:57
7440-02-0	Nickel		3.75	7.50	12.5	5	U	SW6010C	6D09919	04/15/16 16:57
7440-09-7	Potassium	**18900**	**1250**	3750	6250	5	N D	SW6010C	6D09919	04/15/16 16:57
7782-49-2	Selenium		3.75	6.25	12.5	5	U	SW6010C	6D09919	04/15/16 16:57
7440-22-4	Silver	**2.99**	**1.25**	2.50	12.5	5	J D	SW6010C	6D09919	04/15/16 16:57
7440-23-5	Sodium	**1720000**	**6250**	18800	31200	25	E N D	SW6010C	6D09919	04/19/16 18:57
7440-28-0	Thallium		3.75	5.00	10.0	5	U	SW6010C	6D09919	04/15/16 16:57
7440-62-2	Vanadium		6.25	12.5	15.6	5	U	SW6010C	6D09919	04/15/16 16:57
7440-66-6	Zinc	**7.59**	**6.25**	12.5	25.0	5	J D	SW6010C	6D09919	04/15/16 16:57

ANALYSIS DATA SHEET

OTC537-GW-MW01

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-05
Sampled:	04/06/16 12:46	Received:	04/07/16 09:00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)		0.0800	0.160	0.200	1	U	SW7470A	6D12005	04/12/16 15:38
7429-90-5	Aluminum (dissolved)	**1690**	**312**	625	1250	25	N D	SW6010C	6D09920	04/19/16 18:44
7440-36-0	Antimony (dissolved)		1.25	2.00	2.50	1	N U	SW6010C	6D09920	04/11/16 19:42
7440-38-2	Arsenic (dissolved)		0.750	1.50	2.50	1	N U	SW6010C	6D09920	04/11/16 19:42
7440-39-3	Barium (dissolved)	**31.9**	**1.25**	2.50	10.0	1		SW6010C	6D09920	04/11/16 19:42
7440-41-7	Beryllium (dissolved)		0.250	0.500	1.25	1	U	SW6010C	6D09920	04/11/16 19:42
7440-43-9	Cadmium (dissolved)		6.25	12.5	31.2	25	U	SW6010C	6D09920	04/19/16 18:44
7440-70-2	Calcium (dissolved)	**666000**	**6250**	12500	31200	25	N D	SW6010C	6D09920	04/19/16 18:44
7440-47-3	Chromium (dissolved)		2.50	5.00	12.5	5	U	SW6010C	6D09920	04/15/16 12:56
7440-48-4	Cobalt (dissolved)	**1.61**	**1.25**	2.50	3.12	1	J	SW6010C	6D09920	04/11/16 19:42
7440-50-8	Copper (dissolved)		5.00	10.0	12.5	5	U	SW6010C	6D09920	04/15/16 12:56
7439-89-6	Iron (dissolved)	**22.2**	**7.50**	15.0	25.0	1	J	SW6010C	6D09920	04/11/16 19:42
7439-92-1	Lead (dissolved)	**0.378**	**0.375**	0.750	1.25	1	J	SW6010C	6D09920	04/11/16 19:42
7439-95-4	Magnesium (dissolved)	**382000**	**1250**	3750	6250	5	N D	SW6010C	6D09920	04/15/16 12:56
7439-96-5	Manganese (dissolved)	**335**	**0.750**	1.50	3.75	1	N	SW6010C	6D09920	04/11/16 19:42
7440-02-0	Nickel (dissolved)		3.75	7.50	12.5	5	U	SW6010C	6D09920	04/15/16 12:56
7440-09-7	Potassium (dissolved)	**23300**	**250**	750	1250	1	N	SW6010C	6D09920	04/11/16 19:42
7782-49-2	Selenium (dissolved)		18.8	31.2	62.5	25	N U	SW6010C	6D09920	04/19/16 18:44
7440-22-4	Silver (dissolved)		0.250	0.500	2.50	1	U	SW6010C	6D09920	04/11/16 19:42
7440-23-5	Sodium (dissolved)	**1720000**	**6250**	18800	31200	25	E N D	SW6010C	6D09920	04/19/16 18:44
7440-28-0	Thallium (dissolved)		0.750	1.00	2.00	1	U	SW6010C	6D09920	04/11/16 19:42
7440-62-2	Vanadium (dissolved)	**1.51**	**1.25**	2.50	3.12	1	J	SW6010C	6D09920	04/11/16 19:42
7440-66-6	Zinc (dissolved)		31.2	62.5	125	25	U	SW6010C	6D09920	04/19/16 18:44

ANALYSIS DATA SHEET

OTC537-GW-MW01-FD

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-06
Sampled:	04/06/16 12:46	Received:	04/07/16 09:00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.160	0.200	1	U	SW7470A	6D12005	04/12/16 15:43
7429-90-5	Aluminum	**1500**	**62.5**	125	250	5	D	SW6010C	6D09919	04/15/16 17:25
7440-36-0	Antimony		6.25	10.0	12.5	5	U	SW6010C	6D09919	04/15/16 17:25
7440-38-2	Arsenic		3.75	7.50	12.5	5	U	SW6010C	6D09919	04/15/16 17:25
7440-39-3	Barium	**38.0**	**6.25**	12.5	50.0	5	J D	SW6010C	6D09919	04/15/16 17:25
7440-41-7	Beryllium		1.25	2.50	6.25	5	U	SW6010C	6D09919	04/15/16 17:25
7440-43-9	Cadmium		2.50	2.50	6.25	5	M U	SW6010C	6D09919	04/15/16 17:25
7440-70-2	Calcium	**400000**	**1250**	2500	6250	5	D	SW6010C	6D09919	04/15/16 17:25
7440-47-3	Chromium		2.50	5.00	12.5	5	U	SW6010C	6D09919	04/15/16 17:25
7440-48-4	Cobalt		6.25	12.5	15.6	5	U	SW6010C	6D09919	04/15/16 17:25
7440-50-8	Copper		5.00	10.0	12.5	5	U	SW6010C	6D09919	04/15/16 17:25
7439-89-6	Iron	**1260**	**37.5**	75.0	125	5	D	SW6010C	6D09919	04/15/16 17:25
7439-92-1	Lead		1.88	3.75	6.25	5	U	SW6010C	6D09919	04/15/16 17:25
7439-95-4	Magnesium	**399000**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 17:25
7439-96-5	Manganese	**326**	**3.75**	7.50	18.8	5	D	SW6010C	6D09919	04/15/16 17:25
7440-02-0	Nickel		3.75	7.50	12.5	5	U	SW6010C	6D09919	04/15/16 17:25
7440-09-7	Potassium	**19600**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 17:25
7782-49-2	Selenium		3.75	6.25	12.5	5	U	SW6010C	6D09919	04/15/16 17:25
7440-22-4	Silver	**3.56**	**1.25**	2.50	12.5	5	J D	SW6010C	6D09919	04/15/16 17:25
7440-23-5	Sodium	**1770000**	**6250**	18800	31200	25	D	SW6010C	6D09919	04/19/16 19:06
7440-28-0	Thallium		3.75	5.00	10.0	5	U	SW6010C	6D09919	04/15/16 17:25
7440-62-2	Vanadium		6.25	12.5	15.6	5	U	SW6010C	6D09919	04/15/16 17:25
7440-66-6	Zinc	**7.99**	**6.25**	12.5	25.0	5	J D	SW6010C	6D09919	04/15/16 17:25

ANALYSIS DATA SHEET

OTC537-GW-MW01-FD

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-07
Sampled:	04/06/16 12:46	Received:	04/07/16 09:00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)		0.0800	0.160	0.200	1	U	SW7470A	6D12005	04/12/16 15:44
7429-90-5	Aluminum (dissolved)	**1870**	**312**	625	1250	25	D	SW6010C	6D09920	04/21/16 13:01
7440-36-0	Antimony (dissolved)		31.2	50.0	62.5	25	U	SW6010C	6D09920	04/21/16 13:01
7440-38-2	Arsenic (dissolved)		18.8	37.5	62.5	25	U	SW6010C	6D09920	04/21/16 13:01
7440-39-3	Barium (dissolved)		31.2	62.5	250	25	U	SW6010C	6D09920	04/21/16 13:01
7440-41-7	Beryllium (dissolved)		6.25	12.5	31.2	25	U	SW6010C	6D09920	04/21/16 13:01
7440-43-9	Cadmium (dissolved)		6.25	12.5	31.2	25	U	SW6010C	6D09920	04/21/16 13:01
7440-70-2	Calcium (dissolved)	**672000**	**6250**	12500	31200	25	D	SW6010C	6D09920	04/21/16 13:01
7440-47-3	Chromium (dissolved)		12.5	25.0	62.5	25	U	SW6010C	6D09920	04/21/16 13:01
7440-48-4	Cobalt (dissolved)		31.2	62.5	78.1	25	U	SW6010C	6D09920	04/21/16 13:01
7440-50-8	Copper (dissolved)		25.0	50.0	62.5	25	U	SW6010C	6D09920	04/21/16 13:01
7439-89-6	Iron (dissolved)		188	375	625	25	U	SW6010C	6D09920	04/21/16 13:01
7439-92-1	Lead (dissolved)		9.38	18.8	31.2	25	U	SW6010C	6D09920	04/21/16 13:01
7439-95-4	Magnesium (dissolved)	**396000**	**6250**	18800	31200	25	D	SW6010C	6D09920	04/21/16 13:01
7439-96-5	Manganese (dissolved)	**368**	**18.8**	37.5	93.8	25	D	SW6010C	6D09920	04/21/16 13:01
7440-02-0	Nickel (dissolved)		18.8	37.5	62.5	25	U	SW6010C	6D09920	04/21/16 13:01
7440-09-7	Potassium (dissolved)	**17400**	**6250**	18800	31200	25	J D	SW6010C	6D09920	04/21/16 13:01
7782-49-2	Selenium (dissolved)		18.8	31.2	62.5	25	U	SW6010C	6D09920	04/21/16 13:01
7440-22-4	Silver (dissolved)		6.25	12.5	62.5	25	U	SW6010C	6D09920	04/21/16 13:01
7440-23-5	Sodium (dissolved)	**1790000**	**6250**	18800	31200	25	D	SW6010C	6D09920	04/21/16 13:01
7440-28-0	Thallium (dissolved)		18.8	25.0	50.0	25	U	SW6010C	6D09920	04/21/16 13:01
7440-62-2	Vanadium (dissolved)		31.2	62.5	78.1	25	U	SW6010C	6D09920	04/21/16 13:01
7440-66-6	Zinc (dissolved)		31.2	62.5	125	25	U	SW6010C	6D09920	04/21/16 13:01

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09919-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	ND	12.5	25.0	50.0	1	U	SW6010C	6D09919	04/14/16 11:28
7440-36-0	Antimony	ND	1.25	2.00	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-38-2	Arsenic	ND	0.750	1.50	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-39-3	Barium	ND	1.25	2.50	10.0	1	U	SW6010C	6D09919	04/14/16 11:28
7440-41-7	Beryllium	ND	0.250	0.500	1.25	1	U	SW6010C	6D09919	04/14/16 11:28
7440-43-9	Cadmium	ND	0.250	0.500	1.25	1	U	SW6010C	6D09919	04/14/16 11:28
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	6D09919	04/14/16 11:28
7440-47-3	Chromium	ND	0.500	1.00	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-48-4	Cobalt	ND	1.25	2.50	3.12	1	U	SW6010C	6D09919	04/14/16 11:28
7440-50-8	Copper	ND	1.00	2.00	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	6D09919	04/14/16 11:28
7439-92-1	Lead	ND	0.375	0.750	1.25	1	U	SW6010C	6D09919	04/14/16 11:28
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	6D09919	04/14/16 11:28
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	6D09919	04/14/16 11:28
7440-02-0	Nickel	ND	0.750	1.50	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	6D09919	04/14/16 11:28
7782-49-2	Selenium	ND	0.750	1.25	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-22-4	Silver	ND	0.250	0.500	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	6D09919	04/14/16 11:28
7440-28-0	Thallium	ND	0.750	1.00	2.00	1	U	SW6010C	6D09919	04/14/16 11:28
7440-62-2	Vanadium	ND	1.25	2.50	3.12	1	U	SW6010C	6D09919	04/14/16 11:28
7440-66-6	Zinc	ND	1.25	2.50	5.00	1	U	SW6010C	6D09919	04/14/16 11:28

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09919-BS1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	**103.1**	**12.5**	25.0	50.0	1		SW6010C	6D09919	04/14/16 11:32
7440-36-0	Antimony	**12.48**	**1.25**	2.00	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-38-2	Arsenic	**12.72**	**0.750**	1.50	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-39-3	Barium	**96.79**	**1.25**	2.50	10.0	1		SW6010C	6D09919	04/14/16 11:32
7440-41-7	Beryllium	**2.463**	**0.250**	0.500	1.25	1		SW6010C	6D09919	04/14/16 11:32
7440-43-9	Cadmium	**6.472**	**0.250**	0.500	1.25	1		SW6010C	6D09919	04/14/16 11:32
7440-70-2	Calcium	**801.6**	**250**	500	1250	1	J	SW6010C	6D09919	04/14/16 11:32
7440-47-3	Chromium	**9.483**	**0.500**	1.00	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-48-4	Cobalt	**25.23**	**1.25**	2.50	3.12	1		SW6010C	6D09919	04/14/16 11:32
7440-50-8	Copper	**12.42**	**1.00**	2.00	2.50	1		SW6010C	6D09919	04/14/16 11:32
7439-89-6	Iron	**55.16**	**7.50**	15.0	25.0	1		SW6010C	6D09919	04/14/16 11:32
7439-92-1	Lead	**12.28**	**0.375**	0.750	1.25	1		SW6010C	6D09919	04/14/16 11:32
7439-95-4	Magnesium	**775.8**	**250**	750	1250	1	J	SW6010C	6D09919	04/14/16 11:32
7439-96-5	Manganese	**25.84**	**0.750**	1.50	3.75	1		SW6010C	6D09919	04/14/16 11:32
7440-02-0	Nickel	**25.30**	**0.750**	1.50	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-09-7	Potassium	**764.9**	**250**	750	1250	1	J	SW6010C	6D09919	04/14/16 11:32
7782-49-2	Selenium	**12.44**	**0.750**	1.25	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-22-4	Silver	**11.40**	**0.250**	0.500	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-23-5	Sodium	**758.5**	**250**	750	1250	1	J	SW6010C	6D09919	04/14/16 11:32
7440-28-0	Thallium	**12.69**	**0.750**	1.00	2.00	1		SW6010C	6D09919	04/14/16 11:32
7440-62-2	Vanadium	**24.73**	**1.25**	2.50	3.12	1		SW6010C	6D09919	04/14/16 11:32
7440-66-6	Zinc	**25.48**	**1.25**	2.50	5.00	1		SW6010C	6D09919	04/14/16 11:32

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09919-DUP1
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	**1957**	**312**	625	1250	25	D	SW6010C	6D09919	04/15/16 17:20
7440-36-0	Antimony	ND	31.2	50.0	62.5	25	U	SW6010C	6D09919	04/15/16 17:20
7440-38-2	Arsenic	ND	18.8	37.5	62.5	25	U	SW6010C	6D09919	04/15/16 17:20
7440-39-3	Barium	**33.42**	**31.2**	62.5	250	25	J D	SW6010C	6D09919	04/15/16 17:20
7440-41-7	Beryllium	ND	6.25	12.5	31.2	25	U	SW6010C	6D09919	04/15/16 17:20
7440-43-9	Cadmium	ND	6.25	12.5	31.2	25	U	SW6010C	6D09919	04/15/16 17:20
7440-70-2	Calcium	**479700**	**6250**	12500	31200	25	D	SW6010C	6D09919	04/15/16 17:20
7440-47-3	Chromium	ND	12.5	25.0	62.5	25	U	SW6010C	6D09919	04/15/16 17:20
7440-48-4	Cobalt	ND	31.2	62.5	78.1	25	U	SW6010C	6D09919	04/15/16 17:20
7440-50-8	Copper	ND	25.0	50.0	62.5	25	U	SW6010C	6D09919	04/15/16 17:20
7439-89-6	Iron	**1371**	**188**	375	625	25	D	SW6010C	6D09919	04/15/16 17:20
7439-92-1	Lead	ND	9.38	18.8	31.2	25	U	SW6010C	6D09919	04/15/16 17:20
7439-95-4	Magnesium	**410100**	**6250**	18800	31200	25	D	SW6010C	6D09919	04/15/16 17:20
7439-96-5	Manganese	**323.6**	**18.8**	37.5	93.8	25	D	SW6010C	6D09919	04/15/16 17:20
7440-02-0	Nickel	ND	18.8	37.5	62.5	25	U	SW6010C	6D09919	04/15/16 17:20
7440-09-7	Potassium	**17070**	**6250**	18800	31200	25	J D	SW6010C	6D09919	04/15/16 17:20
7782-49-2	Selenium	ND	18.8	31.2	62.5	25	U	SW6010C	6D09919	04/15/16 17:20
7440-22-4	Silver	ND	6.25	12.5	62.5	25	U	SW6010C	6D09919	04/15/16 17:20
7440-28-0	Thallium	ND	18.8	25.0	50.0	25	U	SW6010C	6D09919	04/15/16 17:20
7440-62-2	Vanadium	ND	31.2	62.5	78.1	25	U	SW6010C	6D09919	04/15/16 17:20
7440-66-6	Zinc	ND	31.2	62.5	125	25	U	SW6010C	6D09919	04/15/16 17:20

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D09919-DUP2

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-23-5	Sodium	**2217000**	**31200**	93800	156000	125	D	SW6010C	6D09919	04/19/16 19:02

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09919-MS1
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	**2130**	**62.5**	125	250	5	D	SW6010C	6D09919	04/15/16 17:03
7440-36-0	Antimony	**131.0**	**6.25**	10.0	12.5	5	D	SW6010C	6D09919	04/15/16 17:03
7440-38-2	Arsenic	**137.9**	**3.75**	7.50	12.5	5	D	SW6010C	6D09919	04/15/16 17:03
7440-39-3	Barium	**480.7**	**6.25**	12.5	50.0	5	D	SW6010C	6D09919	04/15/16 17:03
7440-41-7	Beryllium	**11.90**	**1.25**	2.50	6.25	5	D	SW6010C	6D09919	04/15/16 17:03
7440-43-9	Cadmium	**60.38**	**1.25**	2.50	6.25	5	D	SW6010C	6D09919	04/15/16 17:03
7440-70-2	Calcium	**547100**	**1250**	2500	6250	5	D	SW6010C	6D09919	04/15/16 17:03
7440-47-3	Chromium	**45.57**	**2.50**	5.00	12.5	5	D	SW6010C	6D09919	04/15/16 17:03
7440-48-4	Cobalt	**124.5**	**6.25**	12.5	15.6	5	D	SW6010C	6D09919	04/15/16 17:03
7440-50-8	Copper	**67.02**	**5.00**	10.0	12.5	5	D	SW6010C	6D09919	04/15/16 17:03
7439-89-6	Iron	**1551**	**37.5**	75.0	125	5	D	SW6010C	6D09919	04/15/16 17:03
7439-92-1	Lead	**113.5**	**1.88**	3.75	6.25	5	D	SW6010C	6D09919	04/15/16 17:03
7439-95-4	Magnesium	**384200**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 17:03
7439-96-5	Manganese	**436.8**	**3.75**	7.50	18.8	5	D	SW6010C	6D09919	04/15/16 17:03
7440-02-0	Nickel	**120.9**	**3.75**	7.50	12.5	5	D	SW6010C	6D09919	04/15/16 17:03
7440-09-7	Potassium	**20530**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 17:03
7782-49-2	Selenium	**127.2**	**3.75**	6.25	12.5	5	D	SW6010C	6D09919	04/15/16 17:03
7440-22-4	Silver	**63.04**	**1.25**	2.50	12.5	5	D	SW6010C	6D09919	04/15/16 17:03
7440-23-5	Sodium	**1250000000**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 17:03
7440-28-0	Thallium	**115.5**	**3.75**	5.00	10.0	5	D	SW6010C	6D09919	04/15/16 17:03
7440-62-2	Vanadium	**125.9**	**6.25**	12.5	15.6	5	D	SW6010C	6D09919	04/15/16 17:03
7440-66-6	Zinc	**131.0**	**6.25**	12.5	25.0	5	D	SW6010C	6D09919	04/15/16 17:03

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09919-MSD1
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	**1064**	**62.5**	125	250	5	D	SW6010C	6D09919	04/15/16 17:09
7440-36-0	Antimony	**135.0**	**6.25**	10.0	12.5	5	D	SW6010C	6D09919	04/15/16 17:09
7440-38-2	Arsenic	**137.4**	**3.75**	7.50	12.5	5	D	SW6010C	6D09919	04/15/16 17:09
7440-39-3	Barium	**467.6**	**6.25**	12.5	50.0	5	D	SW6010C	6D09919	04/15/16 17:09
7440-41-7	Beryllium	**11.73**	**1.25**	2.50	6.25	5	D	SW6010C	6D09919	04/15/16 17:09
7440-43-9	Cadmium	**60.35**	**1.25**	2.50	6.25	5	D	SW6010C	6D09919	04/15/16 17:09
7440-70-2	Calcium	**526600**	**1250**	2500	6250	5	D	SW6010C	6D09919	04/15/16 17:09
7440-47-3	Chromium	**43.90**	**2.50**	5.00	12.5	5	D	SW6010C	6D09919	04/15/16 17:09
7440-48-4	Cobalt	**123.3**	**6.25**	12.5	15.6	5	D	SW6010C	6D09919	04/15/16 17:09
7440-50-8	Copper	**64.50**	**5.00**	10.0	12.5	5	D	SW6010C	6D09919	04/15/16 17:09
7439-89-6	Iron	**463.1**	**37.5**	75.0	125	5	D	SW6010C	6D09919	04/15/16 17:09
7439-92-1	Lead	**111.4**	**1.88**	3.75	6.25	5	D	SW6010C	6D09919	04/15/16 17:09
7439-95-4	Magnesium	**372800**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 17:09
7439-96-5	Manganese	**527.0**	**3.75**	7.50	18.8	5	D	SW6010C	6D09919	04/15/16 17:09
7440-02-0	Nickel	**120.1**	**3.75**	7.50	12.5	5	D	SW6010C	6D09919	04/15/16 17:09
7440-09-7	Potassium	**20660**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 17:09
7782-49-2	Selenium	**127.0**	**3.75**	6.25	12.5	5	D	SW6010C	6D09919	04/15/16 17:09
7440-22-4	Silver	**57.36**	**1.25**	2.50	12.5	5	D	SW6010C	6D09919	04/15/16 17:09
7440-23-5	Sodium	**1250000000**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/15/16 17:09
7440-28-0	Thallium	**116.5**	**3.75**	5.00	10.0	5	D	SW6010C	6D09919	04/15/16 17:09
7440-62-2	Vanadium	**120.7**	**6.25**	12.5	15.6	5	D	SW6010C	6D09919	04/15/16 17:09
7440-66-6	Zinc	**126.1**	**6.25**	12.5	25.0	5	D	SW6010C	6D09919	04/15/16 17:09

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09920-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum (dissolved)	ND	12.5	25.0	50.0	1	U	SW6010C	6D09920	04/11/16 18:51
7440-36-0	Antimony (dissolved)	ND	1.25	2.00	2.50	1	U	SW6010C	6D09920	04/11/16 18:51
7440-38-2	Arsenic (dissolved)	ND	0.750	1.50	2.50	1	U	SW6010C	6D09920	04/11/16 18:51
7440-39-3	Barium (dissolved)	ND	1.25	2.50	10.0	1	U	SW6010C	6D09920	04/11/16 18:51
7440-41-7	Beryllium (dissolved)	ND	0.250	0.500	1.25	1	U	SW6010C	6D09920	04/11/16 18:51
7440-43-9	Cadmium (dissolved)	ND	0.250	0.500	1.25	1	U	SW6010C	6D09920	04/11/16 18:51
7440-70-2	Calcium (dissolved)	ND	250	500	1250	1	U	SW6010C	6D09920	04/11/16 18:51
7440-47-3	Chromium (dissolved)	ND	0.500	1.00	2.50	1	U	SW6010C	6D09920	04/11/16 18:51
7440-48-4	Cobalt (dissolved)	ND	1.25	2.50	3.12	1	U	SW6010C	6D09920	04/11/16 18:51
7440-50-8	Copper (dissolved)	ND	1.00	2.00	2.50	1	U	SW6010C	6D09920	04/11/16 18:51
7439-89-6	Iron (dissolved)	ND	7.50	15.0	25.0	1	U	SW6010C	6D09920	04/11/16 18:51
7439-92-1	Lead (dissolved)	ND	0.375	0.750	1.25	1	U	SW6010C	6D09920	04/11/16 18:51
7439-95-4	Magnesium (dissolved)	ND	250	750	1250	1	U	SW6010C	6D09920	04/11/16 18:51
7439-96-5	Manganese (dissolved)	ND	0.750	1.50	3.75	1	U	SW6010C	6D09920	04/11/16 18:51
7440-02-0	Nickel (dissolved)	ND	0.750	1.50	2.50	1	U	SW6010C	6D09920	04/11/16 18:51
7440-09-7	Potassium (dissolved)	ND	250	750	1250	1	U	SW6010C	6D09920	04/11/16 18:51
7782-49-2	Selenium (dissolved)	ND	0.750	1.25	2.50	1	U	SW6010C	6D09920	04/11/16 18:51
7440-22-4	Silver (dissolved)	ND	0.250	0.500	2.50	1	U	SW6010C	6D09920	04/11/16 18:51
7440-23-5	Sodium (dissolved)	ND	250	750	1250	1	U	SW6010C	6D09920	04/11/16 18:51
7440-28-0	Thallium (dissolved)	ND	0.750	1.00	2.00	1	U	SW6010C	6D09920	04/11/16 18:51
7440-62-2	Vanadium (dissolved)	ND	1.25	2.50	3.12	1	U	SW6010C	6D09920	04/11/16 18:51
7440-66-6	Zinc (dissolved)	ND	1.25	2.50	5.00	1	U	SW6010C	6D09920	04/11/16 18:51

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09920-BS1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum (dissolved)	**103.7**	**12.5**	25.0	50.0	1		SW6010C	6D09920	04/11/16 18:56
7440-36-0	Antimony (dissolved)	**11.21**	**1.25**	2.00	2.50	1		SW6010C	6D09920	04/11/16 18:56
7440-38-2	Arsenic (dissolved)	**11.67**	**0.750**	1.50	2.50	1		SW6010C	6D09920	04/11/16 18:56
7440-39-3	Barium (dissolved)	**90.59**	**1.25**	2.50	10.0	1		SW6010C	6D09920	04/11/16 18:56
7440-41-7	Beryllium (dissolved)	**2.349**	**0.250**	0.500	1.25	1		SW6010C	6D09920	04/11/16 18:56
7440-43-9	Cadmium (dissolved)	**6.506**	**0.250**	0.500	1.25	1		SW6010C	6D09920	04/11/16 18:56
7440-70-2	Calcium (dissolved)	**763.8**	**250**	500	1250	1	J	SW6010C	6D09920	04/11/16 18:56
7440-47-3	Chromium (dissolved)	**9.761**	**0.500**	1.00	2.50	1		SW6010C	6D09920	04/11/16 18:56
7440-48-4	Cobalt (dissolved)	**24.25**	**1.25**	2.50	3.12	1		SW6010C	6D09920	04/11/16 18:56
7440-50-8	Copper (dissolved)	**11.95**	**1.00**	2.00	2.50	1		SW6010C	6D09920	04/11/16 18:56
7439-89-6	Iron (dissolved)	**47.54**	**7.50**	15.0	25.0	1		SW6010C	6D09920	04/11/16 18:56
7439-92-1	Lead (dissolved)	**11.91**	**0.375**	0.750	1.25	1		SW6010C	6D09920	04/11/16 18:56
7439-95-4	Magnesium (dissolved)	**743.6**	**250**	750	1250	1	J	SW6010C	6D09920	04/11/16 18:56
7439-96-5	Manganese (dissolved)	**23.55**	**0.750**	1.50	3.75	1		SW6010C	6D09920	04/11/16 18:56
7440-02-0	Nickel (dissolved)	**23.67**	**0.750**	1.50	2.50	1		SW6010C	6D09920	04/11/16 18:56
7440-09-7	Potassium (dissolved)	**708.3**	**250**	750	1250	1	J	SW6010C	6D09920	04/11/16 18:56
7782-49-2	Selenium (dissolved)	**12.29**	**0.750**	1.25	2.50	1		SW6010C	6D09920	04/11/16 18:56
7440-22-4	Silver (dissolved)	**11.72**	**0.250**	0.500	2.50	1		SW6010C	6D09920	04/11/16 18:56
7440-23-5	Sodium (dissolved)	**788.9**	**250**	750	1250	1	J	SW6010C	6D09920	04/11/16 18:56
7440-28-0	Thallium (dissolved)	**11.99**	**0.750**	1.00	2.00	1		SW6010C	6D09920	04/11/16 18:56
7440-62-2	Vanadium (dissolved)	**23.44**	**1.25**	2.50	3.12	1		SW6010C	6D09920	04/11/16 18:56
7440-66-6	Zinc (dissolved)	**25.75**	**1.25**	2.50	5.00	1		SW6010C	6D09920	04/11/16 18:56

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09920-DUP1
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-36-0	Antimony (dissolved)	ND	6.25	10.0	12.5	5	U	SW6010C	6D09920	04/11/16 20:01
7440-38-2	Arsenic (dissolved)	ND	3.75	7.50	12.5	5	U	SW6010C	6D09920	04/11/16 20:01
7440-39-3	Barium (dissolved)	**28.90**	**6.25**	12.5	50.0	5	J D	SW6010C	6D09920	04/11/16 20:01
7440-41-7	Beryllium (dissolved)	ND	1.25	2.50	6.25	5	U	SW6010C	6D09920	04/11/16 20:01
7440-48-4	Cobalt (dissolved)	ND	6.25	12.5	15.6	5	U	SW6010C	6D09920	04/11/16 20:01
7439-89-6	Iron (dissolved)	ND	37.5	75.0	125	5	U	SW6010C	6D09920	04/11/16 20:01
7439-92-1	Lead (dissolved)	ND	1.88	3.75	6.25	5	U	SW6010C	6D09920	04/11/16 20:01
7439-96-5	Manganese (dissolved)	**341.9**	**3.75**	7.50	18.8	5	D	SW6010C	6D09920	04/11/16 20:01
7440-09-7	Potassium (dissolved)	**19190**	**1250**	3750	6250	5	D	SW6010C	6D09920	04/11/16 20:01
7440-22-4	Silver (dissolved)	ND	1.25	2.50	12.5	5	U	SW6010C	6D09920	04/11/16 20:01
7440-28-0	Thallium (dissolved)	ND	3.75	5.00	10.0	5	U	SW6010C	6D09920	04/11/16 20:01
7440-62-2	Vanadium (dissolved)	ND	6.25	12.5	15.6	5	U	SW6010C	6D09920	04/11/16 20:01

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D09920-DUP2

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7440-47-3	Chromium (dissolved)	ND	12.5	25.0	62.5	25	U	SW6010C	6D09920	04/15/16 13:00
7440-50-8	Copper (dissolved)	ND	25.0	50.0	62.5	25	U	SW6010C	6D09920	04/15/16 13:00
7439-95-4	Magnesium (dissolved)	**409300**	**6250**	18800	31200	25	D	SW6010C	6D09920	04/15/16 13:00
7440-02-0	Nickel (dissolved)	ND	18.8	37.5	62.5	25	U	SW6010C	6D09920	04/15/16 13:00

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09920-DUP3
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum (dissolved)	**1705**	**1560**	3120	6250	125	J D	SW6010C	6D09920	04/19/16 18:49
7440-43-9	Cadmium (dissolved)	ND	31.2	62.5	156	125	U	SW6010C	6D09920	04/19/16 18:49
7440-70-2	Calcium (dissolved)	**686100**	**31200**	62500	156000	125	D	SW6010C	6D09920	04/19/16 18:49
7782-49-2	Selenium (dissolved)	ND	93.8	156	312	125	U	SW6010C	6D09920	04/19/16 18:49
7440-23-5	Sodium (dissolved)	**2227000**	**31200**	93800	156000	125	D	SW6010C	6D09920	04/19/16 18:49
7440-66-6	Zinc (dissolved)	ND	156	312	625	125	U	SW6010C	6D09920	04/19/16 18:49

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09920-MS1
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum (dissolved)	**73.16**	**12.5**	25.0	50.0	1		SW6010C	6D09920	04/11/16 19:47
7440-36-0	Antimony (dissolved)	**152.4**	**1.25**	2.00	2.50	1		SW6010C	6D09920	04/11/16 19:47
7440-38-2	Arsenic (dissolved)	**161.9**	**0.750**	1.50	2.50	1		SW6010C	6D09920	04/11/16 19:47
7440-39-3	Barium (dissolved)	**495.4**	**1.25**	2.50	10.0	1		SW6010C	6D09920	04/11/16 19:47
7440-41-7	Beryllium (dissolved)	**11.67**	**0.250**	0.500	1.25	1		SW6010C	6D09920	04/11/16 19:47
7440-43-9	Cadmium (dissolved)	**61.70**	**0.250**	0.500	1.25	1		SW6010C	6D09920	04/11/16 19:47
7440-70-2	Calcium (dissolved)	**250000000**	**250**	500	1250	1		SW6010C	6D09920	04/11/16 19:47
7440-47-3	Chromium (dissolved)	**40.97**	**0.500**	1.00	2.50	1		SW6010C	6D09920	04/11/16 19:47
7440-48-4	Cobalt (dissolved)	**128.7**	**1.25**	2.50	3.12	1		SW6010C	6D09920	04/11/16 19:47
7440-50-8	Copper (dissolved)	**72.19**	**1.00**	2.00	2.50	1		SW6010C	6D09920	04/11/16 19:47
7439-89-6	Iron (dissolved)	**247.0**	**7.50**	15.0	25.0	1		SW6010C	6D09920	04/11/16 19:47
7439-92-1	Lead (dissolved)	**112.9**	**0.375**	0.750	1.25	1		SW6010C	6D09920	04/11/16 19:47
7439-95-4	Magnesium (dissolved)	**250000000**	**250**	750	1250	1		SW6010C	6D09920	04/11/16 19:47
7439-96-5	Manganese (dissolved)	**456.5**	**0.750**	1.50	3.75	1		SW6010C	6D09920	04/11/16 19:47
7440-02-0	Nickel (dissolved)	**122.2**	**0.750**	1.50	2.50	1		SW6010C	6D09920	04/11/16 19:47
7440-09-7	Potassium (dissolved)	**250000000**	**250**	750	1250	1		SW6010C	6D09920	04/11/16 19:47
7782-49-2	Selenium (dissolved)	**160.1**	**0.750**	1.25	2.50	1		SW6010C	6D09920	04/11/16 19:47
7440-22-4	Silver (dissolved)	**66.66**	**0.250**	0.500	2.50	1		SW6010C	6D09920	04/11/16 19:47
7440-23-5	Sodium (dissolved)	**90280**	**250**	750	1250	1		SW6010C	6D09920	04/11/16 19:47
7440-28-0	Thallium (dissolved)	**114.9**	**0.750**	1.00	2.00	1		SW6010C	6D09920	04/11/16 19:47
7440-62-2	Vanadium (dissolved)	**116.2**	**1.25**	2.50	3.12	1		SW6010C	6D09920	04/11/16 19:47
7440-66-6	Zinc (dissolved)	**124.1**	**1.25**	2.50	5.00	1		SW6010C	6D09920	04/11/16 19:47

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09920-MSD1
% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum (dissolved)	**68.66**	**12.5**	25.0	50.0	1		SW6010C	6D09920	04/11/16 19:52
7440-36-0	Antimony (dissolved)	**157.1**	**1.25**	2.00	2.50	1		SW6010C	6D09920	04/11/16 19:52
7440-38-2	Arsenic (dissolved)	**167.2**	**0.750**	1.50	2.50	1		SW6010C	6D09920	04/11/16 19:52
7440-39-3	Barium (dissolved)	**540.0**	**1.25**	2.50	10.0	1		SW6010C	6D09920	04/11/16 19:52
7440-41-7	Beryllium (dissolved)	**12.12**	**0.250**	0.500	1.25	1		SW6010C	6D09920	04/11/16 19:52
7440-43-9	Cadmium (dissolved)	**65.25**	**0.250**	0.500	1.25	1		SW6010C	6D09920	04/11/16 19:52
7440-70-2	Calcium (dissolved)	**250000000**	**250**	500	1250	1		SW6010C	6D09920	04/11/16 19:52
7440-47-3	Chromium (dissolved)	**43.08**	**0.500**	1.00	2.50	1		SW6010C	6D09920	04/11/16 19:52
7440-48-4	Cobalt (dissolved)	**132.0**	**1.25**	2.50	3.12	1		SW6010C	6D09920	04/11/16 19:52
7440-50-8	Copper (dissolved)	**74.47**	**1.00**	2.00	2.50	1		SW6010C	6D09920	04/11/16 19:52
7439-89-6	Iron (dissolved)	**245.5**	**7.50**	15.0	25.0	1		SW6010C	6D09920	04/11/16 19:52
7439-92-1	Lead (dissolved)	**116.6**	**0.375**	0.750	1.25	1		SW6010C	6D09920	04/11/16 19:52
7439-95-4	Magnesium (dissolved)	**250000000**	**250**	750	1250	1		SW6010C	6D09920	04/11/16 19:52
7439-96-5	Manganese (dissolved)	**485.5**	**0.750**	1.50	3.75	1		SW6010C	6D09920	04/11/16 19:52
7440-02-0	Nickel (dissolved)	**125.5**	**0.750**	1.50	2.50	1		SW6010C	6D09920	04/11/16 19:52
7440-09-7	Potassium (dissolved)	**250000000**	**250**	750	1250	1		SW6010C	6D09920	04/11/16 19:52
7782-49-2	Selenium (dissolved)	**168.2**	**0.750**	1.25	2.50	1		SW6010C	6D09920	04/11/16 19:52
7440-22-4	Silver (dissolved)	**70.46**	**0.250**	0.500	2.50	1		SW6010C	6D09920	04/11/16 19:52
7440-23-5	Sodium (dissolved)	**75480**	**250**	750	1250	1		SW6010C	6D09920	04/11/16 19:52
7440-28-0	Thallium (dissolved)	**118.2**	**0.750**	1.00	2.00	1		SW6010C	6D09920	04/11/16 19:52
7440-62-2	Vanadium (dissolved)	**121.4**	**1.25**	2.50	3.12	1		SW6010C	6D09920	04/11/16 19:52
7440-66-6	Zinc (dissolved)	**130.0**	**1.25**	2.50	5.00	1		SW6010C	6D09920	04/11/16 19:52

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D12005-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	ND	0.0800	0.160	0.200	1	U	SW7470A	6D12005	04/12/16 15:26
7439-97-6	Mercury (dissolved)	ND	0.0800	0.160	0.200	1	U	SW7470A	6D12005	04/12/16 15:26

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D12005-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	**2.039**	**0.0800**	0.160	0.200	1		SW7470A	6D12005	04/12/16 15:27
7439-97-6	Mercury (dissolved)	**2.039**	**0.0800**	0.160	0.200	1		SW7470A	6D12005	04/12/16 15:27

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D12005-MS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)	**1.736**	**0.0800**	0.160	0.200	1		SW7470A	6D12005	04/12/16 15:35

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 6D12005-MS2

% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	**1.789**	**0.0800**	0.160	0.200	1		SW7470A	6D12005	04/12/16 15:39

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 6D12005-MSD1

% Solids: 0.00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)	**1.737**	**0.0800**	0.160	0.200	1		SW7470A	6D12005	04/12/16 15:37

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D12005-MSD2

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	**1.834**	**0.0800**	0.160	0.200	1		SW7470A	6D12005	04/12/16 15:40

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6102002
Sequence: 6D10204

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10204-ICV1	Aluminum (dissolved)	10000	10310	103	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	993.2	99.3	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1036	104	ug/L	+/- 10.00%
	Barium (dissolved)	1000	968.6	96.9	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1052	105	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1037	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	51900	104	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	995.0	99.5	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	955.4	95.5	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1038	104	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9844	98.4	ug/L	+/- 10.00%
	Lead (dissolved)	1000	958.0	95.8	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49150	98.3	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	973.4	97.3	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	971.4	97.1	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10240	102	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1047	105	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	491.0	98.2	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	50700	101	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	999.6	100	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1032	103	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1024	102	ug/L	+/- 10.00%
6D10204-CCV1	Aluminum (dissolved)	10000	10070	101	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1016	102	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1034	103	ug/L	+/- 10.00%
	Barium (dissolved)	1000	969.0	96.9	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1042	104	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1036	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	51420	103	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	998.7	99.9	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	963.8	96.4	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1000	100	ug/L	+/- 10.00%
	Iron (dissolved)	10000	10090	101	ug/L	+/- 10.00%
	Lead (dissolved)	1000	958.8	95.9	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49040	98.1	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	964.4	96.4	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	977.8	97.8	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10300	103	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6102002
Sequence: 6D10204

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10204-CCV1	Selenium (dissolved)	1000	1041	104	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	488.2	97.6	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	50910	102	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	991.4	99.1	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1016	102	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1009	101	ug/L	+/- 10.00%
6D10204-CCV7	Aluminum (dissolved)	10000	10110	101	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1004	100	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1022	102	ug/L	+/- 10.00%
	Barium (dissolved)	1000	965.1	96.5	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1028	103	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1028	103	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	50970	102	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	985.6	98.6	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	961.8	96.2	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1013	101	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9811	98.1	ug/L	+/- 10.00%
	Lead (dissolved)	1000	953.3	95.3	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	48260	96.5	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	977.4	97.7	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	965.4	96.5	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	9932	99.3	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1029	103	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	484.0	96.8	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	49550	99.1	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	989.1	98.9	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	999.5	100	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1003	100	ug/L	+/- 10.00%
6D10204-CCV8	Aluminum (dissolved)	10000	10170	102	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	993.6	99.4	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1011	101	ug/L	+/- 10.00%
	Barium (dissolved)	1000	955.0	95.5	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1013	101	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1022	102	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	50470	101	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	987.3	98.7	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	950.3	95.0	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1012	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6102002
Sequence: 6D10204

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10204-CCV8	Iron (dissolved)	10000	9657	96.6	ug/L	+/- 10.00%
	Lead (dissolved)	1000	942.5	94.3	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	47350	94.7	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	952.0	95.2	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	954.8	95.5	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10470	105	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1023	102	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	483.5	96.7	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	49740	99.5	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	976.3	97.6	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1000	100	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	996.3	99.6	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-FIMS

SDG: 1604034
Project: Holloman AFB
Calibration: 6103004
Sequence: 6D10311

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10311-ICV1	Mercury	4.000	4.133	103	ug/L	+/- 20.00%
	Mercury (dissolved)	4.000	4.133	103	ug/L	+/- 20.00%
6D10311-CCV1	Mercury	2.000	2.062	103	ug/L	+/- 20.00%
	Mercury (dissolved)	2.000	2.062	103	ug/L	+/- 20.00%
6D10311-CCV2	Mercury	4.000	4.130	103	ug/L	+/- 20.00%
	Mercury (dissolved)	4.000	4.130	103	ug/L	+/- 20.00%
6D10311-CCV3	Mercury	2.000	2.043	102	ug/L	+/- 20.00%
	Mercury (dissolved)	2.000	2.043	102	ug/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10503-ICV1	Aluminum	10000	9981	99.8	ug/L	+/- 10.00%
	Antimony	1000	1012	101	ug/L	+/- 10.00%
	Arsenic	1000	1050	105	ug/L	+/- 10.00%
	Barium	1000	984.6	98.5	ug/L	+/- 10.00%
	Beryllium	1000	1038	104	ug/L	+/- 10.00%
	Cadmium	1000	1030	103	ug/L	+/- 10.00%
	Calcium	50000	52110	104	ug/L	+/- 10.00%
	Chromium	1000	981.1	98.1	ug/L	+/- 10.00%
	Cobalt	1000	959.7	96.0	ug/L	+/- 10.00%
	Copper	1000	999.1	99.9	ug/L	+/- 10.00%
	Iron	10000	9909	99.1	ug/L	+/- 10.00%
	Lead	1000	969.5	96.9	ug/L	+/- 10.00%
	Magnesium	50000	49530	99.1	ug/L	+/- 10.00%
	Manganese	1000	985.7	98.6	ug/L	+/- 10.00%
	Nickel	1000	987.8	98.8	ug/L	+/- 10.00%
	Potassium	10000	9971	99.7	ug/L	+/- 10.00%
	Selenium	1000	1045	104	ug/L	+/- 10.00%
	Silver	500.0	486.8	97.4	ug/L	+/- 10.00%
	Sodium	50000	50640	101	ug/L	+/- 10.00%
	Thallium	1000	1006	101	ug/L	+/- 10.00%
	Vanadium	1000	1013	101	ug/L	+/- 10.00%
	Zinc	1000	1019	102	ug/L	+/- 10.00%
6D10503-CCV1	Aluminum	10000	9878	98.8	ug/L	+/- 10.00%
	Antimony	1000	1022	102	ug/L	+/- 10.00%
	Arsenic	1000	1038	104	ug/L	+/- 10.00%
	Barium	1000	976.6	97.7	ug/L	+/- 10.00%
	Beryllium	1000	1036	104	ug/L	+/- 10.00%
	Cadmium	1000	1027	103	ug/L	+/- 10.00%
	Calcium	50000	51960	104	ug/L	+/- 10.00%
	Chromium	1000	996.9	99.7	ug/L	+/- 10.00%
	Cobalt	1000	963.7	96.4	ug/L	+/- 10.00%
	Copper	1000	996.8	99.7	ug/L	+/- 10.00%
	Iron	10000	10040	100	ug/L	+/- 10.00%
	Lead	1000	961.6	96.2	ug/L	+/- 10.00%
	Magnesium	50000	49460	98.9	ug/L	+/- 10.00%
	Manganese	1000	996.0	99.6	ug/L	+/- 10.00%
	Nickel	1000	982.9	98.3	ug/L	+/- 10.00%
	Potassium	10000	10070	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10503-CCV1	Selenium	1000	1035	103	ug/L	+/- 10.00%
	Silver	500.0	490.3	98.1	ug/L	+/- 10.00%
	Sodium	50000	50460	101	ug/L	+/- 10.00%
	Thallium	1000	991.8	99.2	ug/L	+/- 10.00%
	Vanadium	1000	1010	101	ug/L	+/- 10.00%
	Zinc	1000	1004	100	ug/L	+/- 10.00%
6D10503-CCV2	Aluminum	10000	9885	98.8	ug/L	+/- 10.00%
	Antimony	1000	1026	103	ug/L	+/- 10.00%
	Arsenic	1000	1039	104	ug/L	+/- 10.00%
	Barium	1000	980.9	98.1	ug/L	+/- 10.00%
	Beryllium	1000	1037	104	ug/L	+/- 10.00%
	Cadmium	1000	1032	103	ug/L	+/- 10.00%
	Calcium	50000	52100	104	ug/L	+/- 10.00%
	Chromium	1000	1004	100	ug/L	+/- 10.00%
	Cobalt	1000	967.5	96.7	ug/L	+/- 10.00%
	Copper	1000	1004	100	ug/L	+/- 10.00%
	Iron	10000	9931	99.3	ug/L	+/- 10.00%
	Lead	1000	966.1	96.6	ug/L	+/- 10.00%
	Magnesium	50000	49450	98.9	ug/L	+/- 10.00%
	Manganese	1000	1004	100	ug/L	+/- 10.00%
	Nickel	1000	987.1	98.7	ug/L	+/- 10.00%
	Potassium	10000	10040	100	ug/L	+/- 10.00%
	Selenium	1000	1038	104	ug/L	+/- 10.00%
	Silver	500.0	494.9	99.0	ug/L	+/- 10.00%
	Sodium	50000	49760	99.5	ug/L	+/- 10.00%
	Thallium	1000	996.4	99.6	ug/L	+/- 10.00%
	Vanadium	1000	1018	102	ug/L	+/- 10.00%
	Zinc	1000	1008	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10605-ICV1	Aluminum	10000	10560	106	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	10560	106	ug/L	+/- 10.00%
	Antimony	1000	1008	101	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1008	101	ug/L	+/- 10.00%
	Arsenic	1000	1053	105	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1053	105	ug/L	+/- 10.00%
	Barium	1000	989.9	99.0	ug/L	+/- 10.00%
	Barium (dissolved)	1000	989.9	99.0	ug/L	+/- 10.00%
	Beryllium	1000	1043	104	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1043	104	ug/L	+/- 10.00%
	Cadmium	1000	1020	102	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1020	102	ug/L	+/- 10.00%
	Calcium	50000	52330	105	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52330	105	ug/L	+/- 10.00%
	Chromium	1000	971.0	97.1	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	971.0	97.1	ug/L	+/- 10.00%
	Cobalt	1000	947.1	94.7	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	947.1	94.7	ug/L	+/- 10.00%
	Copper	1000	1033	103	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1033	103	ug/L	+/- 10.00%
	Iron	10000	9821	98.2	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9821	98.2	ug/L	+/- 10.00%
	Lead	1000	959.0	95.9	ug/L	+/- 10.00%
	Lead (dissolved)	1000	959.0	95.9	ug/L	+/- 10.00%
	Magnesium	50000	49790	99.6	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49790	99.6	ug/L	+/- 10.00%
	Manganese	1000	980.4	98.0	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	980.4	98.0	ug/L	+/- 10.00%
	Nickel	1000	974.5	97.4	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	974.5	97.4	ug/L	+/- 10.00%
	Potassium	10000	10420	104	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10420	104	ug/L	+/- 10.00%
	Selenium	1000	1035	103	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1035	103	ug/L	+/- 10.00%
	Silver	500.0	476.5	95.3	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	476.5	95.3	ug/L	+/- 10.00%
	Sodium	50000	48970	97.9	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	48970	97.9	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10605-ICV1	Thallium	1000	1004	100	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	1004	100	ug/L	+/- 10.00%
	Vanadium	1000	1011	101	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1011	101	ug/L	+/- 10.00%
	Zinc	1000	1010	101	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1010	101	ug/L	+/- 10.00%
6D10605-CCV1	Aluminum	10000	10540	105	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	10540	105	ug/L	+/- 10.00%
	Antimony	1000	1004	100	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1004	100	ug/L	+/- 10.00%
	Arsenic	1000	1039	104	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1039	104	ug/L	+/- 10.00%
	Barium	1000	997.6	99.8	ug/L	+/- 10.00%
	Barium (dissolved)	1000	997.6	99.8	ug/L	+/- 10.00%
	Beryllium	1000	1048	105	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1048	105	ug/L	+/- 10.00%
	Cadmium	1000	1008	101	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1008	101	ug/L	+/- 10.00%
	Calcium	50000	52380	105	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52380	105	ug/L	+/- 10.00%
	Chromium	1000	1014	101	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	1014	101	ug/L	+/- 10.00%
	Cobalt	1000	962.9	96.3	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	962.9	96.3	ug/L	+/- 10.00%
	Copper	1000	1061	106	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1061	106	ug/L	+/- 10.00%
	Iron	10000	10150	102	ug/L	+/- 10.00%
	Iron (dissolved)	10000	10150	102	ug/L	+/- 10.00%
	Lead	1000	959.5	95.9	ug/L	+/- 10.00%
	Lead (dissolved)	1000	959.5	95.9	ug/L	+/- 10.00%
	Magnesium	50000	49290	98.6	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49290	98.6	ug/L	+/- 10.00%
	Manganese	1000	1006	101	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	1006	101	ug/L	+/- 10.00%
	Nickel	1000	982.9	98.3	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	982.9	98.3	ug/L	+/- 10.00%
	Potassium	10000	10790	108	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10790	108	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10605-CCV1	Selenium	1000	1021	102	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1021	102	ug/L	+/- 10.00%
	Silver	500.0	499.9	100	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	499.9	100	ug/L	+/- 10.00%
	Sodium	50000	48160	96.3	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	48160	96.3	ug/L	+/- 10.00%
	Thallium	1000	1005	100	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	1005	100	ug/L	+/- 10.00%
	Vanadium	1000	1038	104	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1038	104	ug/L	+/- 10.00%
	Zinc	1000	1001	100	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1001	100	ug/L	+/- 10.00%
6D10605-CCV2	Aluminum	10000	10310	103	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	10310	103	ug/L	+/- 10.00%
	Antimony	1000	1021	102	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1021	102	ug/L	+/- 10.00%
	Arsenic	1000	1055	105	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1055	105	ug/L	+/- 10.00%
	Barium	1000	997.2	99.7	ug/L	+/- 10.00%
	Barium (dissolved)	1000	997.2	99.7	ug/L	+/- 10.00%
	Beryllium	1000	1044	104	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1044	104	ug/L	+/- 10.00%
	Cadmium	1000	1009	101	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1009	101	ug/L	+/- 10.00%
	Calcium	50000	52200	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52200	104	ug/L	+/- 10.00%
	Chromium	1000	956.6	95.7	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	956.6	95.7	ug/L	+/- 10.00%
	Cobalt	1000	958.1	95.8	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	958.1	95.8	ug/L	+/- 10.00%
	Copper	1000	1028	103	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1028	103	ug/L	+/- 10.00%
	Iron	10000	9694	96.9	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9694	96.9	ug/L	+/- 10.00%
	Lead	1000	963.0	96.3	ug/L	+/- 10.00%
	Lead (dissolved)	1000	963.0	96.3	ug/L	+/- 10.00%
	Magnesium	50000	49580	99.2	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49580	99.2	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10605-CCV2	Manganese	1000	992.0	99.2	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	992.0	99.2	ug/L	+/- 10.00%
	Nickel	1000	985.4	98.5	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	985.4	98.5	ug/L	+/- 10.00%
	Potassium	10000	10330	103	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10330	103	ug/L	+/- 10.00%
	Selenium	1000	1022	102	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1022	102	ug/L	+/- 10.00%
	Silver	500.0	470.1	94.0	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	470.1	94.0	ug/L	+/- 10.00%
	Sodium	50000	48720	97.4	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	48720	97.4	ug/L	+/- 10.00%
	Thallium	1000	1001	100	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	1001	100	ug/L	+/- 10.00%
	Vanadium	1000	978.7	97.9	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	978.7	97.9	ug/L	+/- 10.00%
	Zinc	1000	990.1	99.0	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	990.1	99.0	ug/L	+/- 10.00%
6D10605-CCV3	Aluminum	10000	10150	101	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	10150	101	ug/L	+/- 10.00%
	Antimony	1000	1017	102	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1017	102	ug/L	+/- 10.00%
	Arsenic	1000	1050	105	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1050	105	ug/L	+/- 10.00%
	Barium	1000	985.2	98.5	ug/L	+/- 10.00%
	Barium (dissolved)	1000	985.2	98.5	ug/L	+/- 10.00%
	Beryllium	1000	1043	104	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1043	104	ug/L	+/- 10.00%
	Cadmium	1000	1025	102	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1025	102	ug/L	+/- 10.00%
	Calcium	50000	52200	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52200	104	ug/L	+/- 10.00%
	Chromium	1000	958.1	95.8	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	958.1	95.8	ug/L	+/- 10.00%
	Cobalt	1000	956.4	95.6	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	956.4	95.6	ug/L	+/- 10.00%
	Copper	1000	1001	100	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1001	100	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10605-CCV3	Iron	10000	9617	96.2	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9617	96.2	ug/L	+/- 10.00%
	Lead	1000	957.9	95.8	ug/L	+/- 10.00%
	Lead (dissolved)	1000	957.9	95.8	ug/L	+/- 10.00%
	Magnesium	50000	49540	99.1	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49540	99.1	ug/L	+/- 10.00%
	Manganese	1000	976.4	97.6	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	976.4	97.6	ug/L	+/- 10.00%
	Nickel	1000	977.8	97.8	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	977.8	97.8	ug/L	+/- 10.00%
	Potassium	10000	10280	103	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10280	103	ug/L	+/- 10.00%
	Selenium	1000	1036	104	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1036	104	ug/L	+/- 10.00%
	Silver	500.0	467.2	93.4	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	467.2	93.4	ug/L	+/- 10.00%
	Sodium	50000	48260	96.5	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	48260	96.5	ug/L	+/- 10.00%
	Thallium	1000	993.0	99.3	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	993.0	99.3	ug/L	+/- 10.00%
	Vanadium	1000	976.4	97.6	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	976.4	97.6	ug/L	+/- 10.00%
	Zinc	1000	1001	100	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1001	100	ug/L	+/- 10.00%
6D10605-CCV7	Aluminum	10000	10530	105	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	10530	105	ug/L	+/- 10.00%
	Antimony	1000	1008	101	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1008	101	ug/L	+/- 10.00%
	Arsenic	1000	1036	104	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1036	104	ug/L	+/- 10.00%
	Barium	1000	984.1	98.4	ug/L	+/- 10.00%
	Barium (dissolved)	1000	984.1	98.4	ug/L	+/- 10.00%
	Beryllium	1000	1046	105	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1046	105	ug/L	+/- 10.00%
	Cadmium	1000	1023	102	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1023	102	ug/L	+/- 10.00%
	Calcium	50000	52390	105	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52390	105	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10605-CCV7	Chromium	1000	1016	102	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	1016	102	ug/L	+/- 10.00%
	Cobalt	1000	958.7	95.9	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	958.7	95.9	ug/L	+/- 10.00%
	Copper	1000	1038	104	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1038	104	ug/L	+/- 10.00%
	Iron	10000	10220	102	ug/L	+/- 10.00%
	Iron (dissolved)	10000	10220	102	ug/L	+/- 10.00%
	Lead	1000	954.8	95.5	ug/L	+/- 10.00%
	Lead (dissolved)	1000	954.8	95.5	ug/L	+/- 10.00%
	Magnesium	50000	49070	98.1	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49070	98.1	ug/L	+/- 10.00%
	Manganese	1000	1004	100	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	1004	100	ug/L	+/- 10.00%
	Nickel	1000	972.2	97.2	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	972.2	97.2	ug/L	+/- 10.00%
	Potassium	10000	10830	108	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10830	108	ug/L	+/- 10.00%
	Selenium	1000	1028	103	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1028	103	ug/L	+/- 10.00%
	Silver	500.0	497.6	99.5	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	497.6	99.5	ug/L	+/- 10.00%
	Sodium	50000	48040	96.1	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	48040	96.1	ug/L	+/- 10.00%
	Thallium	1000	995.6	99.6	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	995.6	99.6	ug/L	+/- 10.00%
	Vanadium	1000	1035	104	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1035	104	ug/L	+/- 10.00%
	Zinc	1000	1009	101	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1009	101	ug/L	+/- 10.00%
6D10605-CCV8	Aluminum	10000	10860	109	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	10860	109	ug/L	+/- 10.00%
	Antimony	1000	1010	101	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1010	101	ug/L	+/- 10.00%
	Arsenic	1000	1029	103	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1029	103	ug/L	+/- 10.00%
	Barium	1000	985.8	98.6	ug/L	+/- 10.00%
	Barium (dissolved)	1000	985.8	98.6	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10605-CCV8	Beryllium	1000	1053	105	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1053	105	ug/L	+/- 10.00%
	Cadmium	1000	1036	104	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1036	104	ug/L	+/- 10.00%
	Calcium	50000	52860	106	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52860	106	ug/L	+/- 10.00%
	Chromium	1000	1058	106	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	1058	106	ug/L	+/- 10.00%
	Cobalt	1000	967.5	96.8	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	967.5	96.8	ug/L	+/- 10.00%
	Copper	1000	1044	104	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1044	104	ug/L	+/- 10.00%
	Iron	10000	10430	104	ug/L	+/- 10.00%
	Iron (dissolved)	10000	10430	104	ug/L	+/- 10.00%
	Lead	1000	958.8	95.9	ug/L	+/- 10.00%
	Lead (dissolved)	1000	958.8	95.9	ug/L	+/- 10.00%
	Magnesium	50000	49510	99.0	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49510	99.0	ug/L	+/- 10.00%
	Manganese	1000	996.6	99.7	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	996.6	99.7	ug/L	+/- 10.00%
	Nickel	1000	974.5	97.4	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	974.5	97.4	ug/L	+/- 10.00%
	Potassium	10000	10860	109	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10860	109	ug/L	+/- 10.00%
	Selenium	1000	1035	103	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1035	103	ug/L	+/- 10.00%
	Silver	500.0	514.8	103	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	514.8	103	ug/L	+/- 10.00%
	Sodium	50000	47890	95.8	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	47890	95.8	ug/L	+/- 10.00%
	Thallium	1000	998.1	99.8	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	998.1	99.8	ug/L	+/- 10.00%
	Vanadium	1000	1071	107	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1071	107	ug/L	+/- 10.00%
	Zinc	1000	1026	103	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1026	103	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D11022-ICV1	Aluminum	10000	9895	98.9	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	9895	98.9	ug/L	+/- 10.00%
	Antimony	1000	993.9	99.4	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	993.9	99.4	ug/L	+/- 10.00%
	Arsenic	1000	1044	104	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1044	104	ug/L	+/- 10.00%
	Barium	1000	976.6	97.7	ug/L	+/- 10.00%
	Barium (dissolved)	1000	976.6	97.7	ug/L	+/- 10.00%
	Beryllium	1000	1025	103	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1025	103	ug/L	+/- 10.00%
	Cadmium	1000	1019	102	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1019	102	ug/L	+/- 10.00%
	Calcium	50000	51840	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	51840	104	ug/L	+/- 10.00%
	Chromium	1000	992.7	99.3	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	992.7	99.3	ug/L	+/- 10.00%
	Cobalt	1000	943.7	94.4	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	943.7	94.4	ug/L	+/- 10.00%
	Copper	1000	1000	100	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1000	100	ug/L	+/- 10.00%
	Iron	10000	9545	95.4	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9545	95.4	ug/L	+/- 10.00%
	Lead	1000	952.8	95.3	ug/L	+/- 10.00%
	Lead (dissolved)	1000	952.8	95.3	ug/L	+/- 10.00%
	Magnesium	50000	49810	99.6	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49810	99.6	ug/L	+/- 10.00%
	Manganese	1000	995.9	99.6	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	995.9	99.6	ug/L	+/- 10.00%
	Nickel	1000	970.7	97.1	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	970.7	97.1	ug/L	+/- 10.00%
	Potassium	10000	10290	103	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10290	103	ug/L	+/- 10.00%
	Selenium	1000	1041	104	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1041	104	ug/L	+/- 10.00%
	Silver	500.0	493.1	98.6	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	493.1	98.6	ug/L	+/- 10.00%
	Sodium	50000	48490	97.0	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	48490	97.0	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D11022-ICV1	Thallium	1000	1001	100	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	1001	100	ug/L	+/- 10.00%
	Vanadium	1000	1025	102	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1025	102	ug/L	+/- 10.00%
	Zinc	1000	1011	101	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1011	101	ug/L	+/- 10.00%
6D11022-CCV1	Aluminum	10000	9946	99.5	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	9946	99.5	ug/L	+/- 10.00%
	Antimony	1000	1004	100	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1004	100	ug/L	+/- 10.00%
	Arsenic	1000	1028	103	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1028	103	ug/L	+/- 10.00%
	Barium	1000	975.4	97.5	ug/L	+/- 10.00%
	Barium (dissolved)	1000	975.4	97.5	ug/L	+/- 10.00%
	Beryllium	1000	1023	102	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1023	102	ug/L	+/- 10.00%
	Cadmium	1000	1018	102	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1018	102	ug/L	+/- 10.00%
	Calcium	50000	51800	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	51800	104	ug/L	+/- 10.00%
	Chromium	1000	1001	100	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	1001	100	ug/L	+/- 10.00%
	Cobalt	1000	953.5	95.4	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	953.5	95.4	ug/L	+/- 10.00%
	Copper	1000	996.1	99.6	ug/L	+/- 10.00%
	Copper (dissolved)	1000	996.1	99.6	ug/L	+/- 10.00%
	Iron	10000	9645	96.5	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9645	96.5	ug/L	+/- 10.00%
	Lead	1000	950.9	95.1	ug/L	+/- 10.00%
	Lead (dissolved)	1000	950.9	95.1	ug/L	+/- 10.00%
	Magnesium	50000	49720	99.4	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	49720	99.4	ug/L	+/- 10.00%
	Manganese	1000	1003	100	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	1003	100	ug/L	+/- 10.00%
	Nickel	1000	969.9	97.0	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	969.9	97.0	ug/L	+/- 10.00%
	Potassium	10000	10210	102	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10210	102	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D11022-CCV1	Selenium	1000	1031	103	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1031	103	ug/L	+/- 10.00%
	Silver	500.0	493.7	98.7	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	493.7	98.7	ug/L	+/- 10.00%
	Sodium	50000	48670	97.3	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	48670	97.3	ug/L	+/- 10.00%
	Thallium	1000	990.0	99.0	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	990.0	99.0	ug/L	+/- 10.00%
	Vanadium	1000	1018	102	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1018	102	ug/L	+/- 10.00%
	Zinc	1000	997.7	99.8	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	997.7	99.8	ug/L	+/- 10.00%
6D11022-CCV7	Aluminum	10000	10720	107	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	10720	107	ug/L	+/- 10.00%
	Antimony	1000	981.6	98.2	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	981.6	98.2	ug/L	+/- 10.00%
	Arsenic	1000	993.2	99.3	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	993.2	99.3	ug/L	+/- 10.00%
	Barium	1000	941.3	94.1	ug/L	+/- 10.00%
	Barium (dissolved)	1000	941.3	94.1	ug/L	+/- 10.00%
	Beryllium	1000	1033	103	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1033	103	ug/L	+/- 10.00%
	Cadmium	1000	1044	104	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1044	104	ug/L	+/- 10.00%
	Calcium	50000	52150	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52150	104	ug/L	+/- 10.00%
	Chromium	1000	1038	104	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	1038	104	ug/L	+/- 10.00%
	Cobalt	1000	949.0	94.9	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	949.0	94.9	ug/L	+/- 10.00%
	Copper	1000	1080	108	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1080	108	ug/L	+/- 10.00%
	Iron	10000	9982	99.8	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9982	99.8	ug/L	+/- 10.00%
	Lead	1000	935.4	93.5	ug/L	+/- 10.00%
	Lead (dissolved)	1000	935.4	93.5	ug/L	+/- 10.00%
	Magnesium	50000	50470	101	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	50470	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D11022-CCV7	Manganese	1000	983.5	98.4	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	983.5	98.4	ug/L	+/- 10.00%
	Nickel	1000	940.4	94.0	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	940.4	94.0	ug/L	+/- 10.00%
	Potassium	10000	9864	98.6	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	9864	98.6	ug/L	+/- 10.00%
	Selenium	1000	1038	104	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1038	104	ug/L	+/- 10.00%
	Silver	500.0	509.0	102	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	509.0	102	ug/L	+/- 10.00%
	Sodium	50000	49720	99.4	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	49720	99.4	ug/L	+/- 10.00%
	Thallium	1000	969.6	97.0	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	969.6	97.0	ug/L	+/- 10.00%
	Vanadium	1000	1088	109	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1088	109	ug/L	+/- 10.00%
	Zinc	1000	1023	102	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1023	102	ug/L	+/- 10.00%
6D11022-CCV8	Aluminum	10000	10670	107	ug/L	+/- 10.00%
	Aluminum (dissolved)	10000	10670	107	ug/L	+/- 10.00%
	Antimony	1000	971.3	97.1	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	971.3	97.1	ug/L	+/- 10.00%
	Arsenic	1000	985.8	98.6	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	985.8	98.6	ug/L	+/- 10.00%
	Barium	1000	943.9	94.4	ug/L	+/- 10.00%
	Barium (dissolved)	1000	943.9	94.4	ug/L	+/- 10.00%
	Beryllium	1000	1031	103	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1031	103	ug/L	+/- 10.00%
	Cadmium	1000	1028	103	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1028	103	ug/L	+/- 10.00%
	Calcium	50000	52170	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52170	104	ug/L	+/- 10.00%
	Chromium	1000	1002	100	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	1002	100	ug/L	+/- 10.00%
	Cobalt	1000	945.6	94.6	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	945.6	94.6	ug/L	+/- 10.00%
	Copper	1000	1056	106	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1056	106	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D11022-CCV8	Iron	10000	10240	102	ug/L	+/- 10.00%
	Iron (dissolved)	10000	10240	102	ug/L	+/- 10.00%
	Lead	1000	930.9	93.1	ug/L	+/- 10.00%
	Lead (dissolved)	1000	930.9	93.1	ug/L	+/- 10.00%
	Magnesium	50000	50120	100	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	50120	100	ug/L	+/- 10.00%
	Manganese	1000	982.9	98.3	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	982.9	98.3	ug/L	+/- 10.00%
	Nickel	1000	935.8	93.6	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	935.8	93.6	ug/L	+/- 10.00%
	Potassium	10000	10230	102	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10230	102	ug/L	+/- 10.00%
	Selenium	1000	1025	102	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1025	102	ug/L	+/- 10.00%
	Silver	500.0	492.9	98.6	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	492.9	98.6	ug/L	+/- 10.00%
	Sodium	50000	47860	95.7	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	47860	95.7	ug/L	+/- 10.00%
	Thallium	1000	970.1	97.0	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	970.1	97.0	ug/L	+/- 10.00%
	Vanadium	1000	1086	109	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1086	109	ug/L	+/- 10.00%
	Zinc	1000	1005	101	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1005	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6112005
Sequence: 6D11204

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D11204-ICV1	Aluminum (dissolved)	10000	10120	101	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	999.6	100	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1048	105	ug/L	+/- 10.00%
	Barium (dissolved)	1000	967.4	96.7	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1043	104	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1038	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52650	105	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	967.8	96.8	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	953.3	95.3	ug/L	+/- 10.00%
	Copper (dissolved)	1000	991.8	99.2	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9792	97.9	ug/L	+/- 10.00%
	Lead (dissolved)	1000	960.3	96.0	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	50020	100	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	993.3	99.3	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	980.4	98.0	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10570	106	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1037	104	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	484.3	96.9	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	50700	101	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	1009	101	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1020	102	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1016	102	ug/L	+/- 10.00%
6D11204-CCV1	Aluminum (dissolved)	10000	10020	100	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1028	103	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1050	105	ug/L	+/- 10.00%
	Barium (dissolved)	1000	979.4	97.9	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1048	105	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1040	104	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	52770	106	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	990.8	99.1	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	968.9	96.9	ug/L	+/- 10.00%
	Copper (dissolved)	1000	986.3	98.6	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9748	97.5	ug/L	+/- 10.00%
	Lead (dissolved)	1000	968.8	96.9	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	50230	100	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	1011	101	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	989.8	99.0	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10480	105	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604034
Project: Holloman AFB
Calibration: 6112005
Sequence: 6D11204

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D11204-CCV1	Selenium (dissolved)	1000	1032	103	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	494.7	98.9	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	51160	102	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	1009	101	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1009	101	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1008	101	ug/L	+/- 10.00%
6D11204-CCV2	Aluminum (dissolved)	10000	10210	102	ug/L	+/- 10.00%
	Antimony (dissolved)	1000	1037	104	ug/L	+/- 10.00%
	Arsenic (dissolved)	1000	1056	106	ug/L	+/- 10.00%
	Barium (dissolved)	1000	987.4	98.7	ug/L	+/- 10.00%
	Beryllium (dissolved)	1000	1053	105	ug/L	+/- 10.00%
	Cadmium (dissolved)	1000	1057	106	ug/L	+/- 10.00%
	Calcium (dissolved)	50000	53160	106	ug/L	+/- 10.00%
	Chromium (dissolved)	1000	1012	101	ug/L	+/- 10.00%
	Cobalt (dissolved)	1000	979.0	97.9	ug/L	+/- 10.00%
	Copper (dissolved)	1000	1005	100	ug/L	+/- 10.00%
	Iron (dissolved)	10000	9835	98.3	ug/L	+/- 10.00%
	Lead (dissolved)	1000	978.3	97.8	ug/L	+/- 10.00%
	Magnesium (dissolved)	50000	50550	101	ug/L	+/- 10.00%
	Manganese (dissolved)	1000	1010	101	ug/L	+/- 10.00%
	Nickel (dissolved)	1000	996.7	99.7	ug/L	+/- 10.00%
	Potassium (dissolved)	10000	10600	106	ug/L	+/- 10.00%
	Selenium (dissolved)	1000	1050	105	ug/L	+/- 10.00%
	Silver (dissolved)	500.0	503.1	101	ug/L	+/- 10.00%
	Sodium (dissolved)	50000	51660	103	ug/L	+/- 10.00%
	Thallium (dissolved)	1000	1014	101	ug/L	+/- 10.00%
	Vanadium (dissolved)	1000	1023	102	ug/L	+/- 10.00%
	Zinc (dissolved)	1000	1024	102	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6102002
Sequence: 6D10204

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D10204-CRL1	Aluminum (dissolved)	200.0	212.6	106	ug/L	80 - 120
	Antimony (dissolved)	10.00	9.399	94.0	ug/L	80 - 120
	Arsenic (dissolved)	5.000	5.804	116	ug/L	80 - 120
	Barium (dissolved)	10.00	10.16	102	ug/L	80 - 120
	Beryllium (dissolved)	2.000	2.065	103	ug/L	80 - 120
	Cadmium (dissolved)	2.000	2.092	105	ug/L	80 - 120
	Calcium (dissolved)	2000	2162	108	ug/L	80 - 120
	Chromium (dissolved)	4.000	4.362	109	ug/L	80 - 120
	Cobalt (dissolved)	10.00	10.40	104	ug/L	80 - 120
	Copper (dissolved)	10.00	9.783	97.8	ug/L	80 - 120
	Iron (dissolved)	100.0	107.4	107	ug/L	80 - 120
	Lead (dissolved)	3.000	2.729	91.0	ug/L	80 - 120
	Magnesium (dissolved)	3000	3144	105	ug/L	80 - 120
	Manganese (dissolved)	6.000	6.186	103	ug/L	80 - 120
	Nickel (dissolved)	6.000	5.952	99.2	ug/L	80 - 120
	Potassium (dissolved)	3000	3164	105	ug/L	80 - 120
	Selenium (dissolved)	5.000	5.834	117	ug/L	80 - 120
	Silver (dissolved)	3.000	3.198	107	ug/L	80 - 120
	Sodium (dissolved)	3000	3312	110	ug/L	80 - 120
	Thallium (dissolved)	8.000	8.551	107	ug/L	80 - 120
	Vanadium (dissolved)	10.00	9.350	93.5	ug/L	80 - 120
	Zinc (dissolved)	10.00	10.20	102	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D10503-CRL1	Aluminum	200.0	195.0	97.5	ug/L	80 - 120
	Arsenic	5.000	4.946	98.9	ug/L	80 - 120
	Barium	10.00	10.36	104	ug/L	80 - 120
	Beryllium	2.000	2.005	100	ug/L	80 - 120
	Cadmium	2.000	2.149	107	ug/L	80 - 120
	Calcium	2000	2174	109	ug/L	80 - 120
	Chromium	4.000	3.448	86.2	ug/L	80 - 120
	Cobalt	10.00	10.30	103	ug/L	80 - 120
	Copper	10.00	11.61	116	ug/L	80 - 120
	Iron	100.0	117.0	117	ug/L	80 - 120
	Lead	3.000	2.988	99.6	ug/L	80 - 120
	Magnesium	3000	3135	104	ug/L	80 - 120
	Manganese	6.000	6.434	107	ug/L	80 - 120
	Nickel	6.000	5.775	96.2	ug/L	80 - 120
	Potassium	3000	3002	100	ug/L	80 - 120
	Selenium	5.000	5.438	109	ug/L	80 - 120
	Sodium	3000	3172	106	ug/L	80 - 120
	Thallium	8.000	8.838	110	ug/L	80 - 120
	Vanadium	10.00	10.18	102	ug/L	80 - 120
	Zinc	10.00	10.02	100	ug/L	80 - 120
6D10503-CRL2	Antimony	10.00	11.11	111	ug/L	80 - 120
	Silver	3.000	2.733	91.1	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D10605-CRL1	Aluminum	200.0	213.2	107	ug/L	80 - 120
	Aluminum (dissolved)	200.0	213.2	107	ug/L	80 - 120
	Antimony	10.00	11.27	113	ug/L	80 - 120
	Antimony (dissolved)	10.00	11.27	113	ug/L	80 - 120
	Arsenic	5.000	5.259	105	ug/L	80 - 120
	Arsenic (dissolved)	5.000	5.259	105	ug/L	80 - 120
	Barium	10.00	10.41	104	ug/L	80 - 120
	Barium (dissolved)	10.00	10.41	104	ug/L	80 - 120
	Beryllium	2.000	2.107	105	ug/L	80 - 120
	Beryllium (dissolved)	2.000	2.107	105	ug/L	80 - 120
	Cadmium	2.000	2.141	107	ug/L	80 - 120
	Cadmium (dissolved)	2.000	2.141	107	ug/L	80 - 120
	Calcium	2000	2212	111	ug/L	80 - 120
	Calcium (dissolved)	2000	2212	111	ug/L	80 - 120
	Chromium	4.000	4.290	107	ug/L	80 - 120
	Chromium (dissolved)	4.000	4.290	107	ug/L	80 - 120
	Cobalt	10.00	10.38	104	ug/L	80 - 120
	Cobalt (dissolved)	10.00	10.38	104	ug/L	80 - 120
	Copper	10.00	11.15	112	ug/L	80 - 120
	Copper (dissolved)	10.00	11.15	112	ug/L	80 - 120
	Iron	100.0	119.2	119	ug/L	80 - 120
	Iron (dissolved)	100.0	119.2	119	ug/L	80 - 120
	Lead	3.000	3.361	112	ug/L	80 - 120
	Lead (dissolved)	3.000	3.361	112	ug/L	80 - 120
	Magnesium	3000	3198	107	ug/L	80 - 120
	Magnesium (dissolved)	3000	3198	107	ug/L	80 - 120
	Manganese	6.000	6.446	107	ug/L	80 - 120
	Manganese (dissolved)	6.000	6.446	107	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D10605-CRL1	Nickel	6.000	5.666	94.4	ug/L	80 - 120
	Nickel (dissolved)	6.000	5.666	94.4	ug/L	80 - 120
	Potassium	3000	3170	106	ug/L	80 - 120
	Potassium (dissolved)	3000	3170	106	ug/L	80 - 120
	Selenium	5.000	4.384	87.7	ug/L	80 - 120
	Selenium (dissolved)	5.000	4.384	87.7	ug/L	80 - 120
	Silver	3.000	2.591	86.4	ug/L	80 - 120
	Silver (dissolved)	3.000	2.591	86.4	ug/L	80 - 120
	Sodium	3000	3125	104	ug/L	80 - 120
	Sodium (dissolved)	3000	3125	104	ug/L	80 - 120
	Thallium	8.000	8.773	110	ug/L	80 - 120
	Thallium (dissolved)	8.000	8.773	110	ug/L	80 - 120
	Vanadium	10.00	9.899	99.0	ug/L	80 - 120
	Vanadium (dissolved)	10.00	9.899	99.0	ug/L	80 - 120
	Zinc	10.00	10.31	103	ug/L	80 - 120
	Zinc (dissolved)	10.00	10.31	103	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D11022-CRL1	Aluminum	200.0	218.9	109	ug/L	80 - 120
	Aluminum (dissolved)	200.0	218.9	109	ug/L	80 - 120
	Antimony	10.00	9.338	93.4	ug/L	80 - 120
	Antimony (dissolved)	10.00	9.338	93.4	ug/L	80 - 120
	Arsenic	5.000	4.643	92.9	ug/L	80 - 120
	Arsenic (dissolved)	5.000	4.643	92.9	ug/L	80 - 120
	Barium	10.00	10.16	102	ug/L	80 - 120
	Barium (dissolved)	10.00	10.16	102	ug/L	80 - 120
	Beryllium	2.000	2.096	105	ug/L	80 - 120
	Beryllium (dissolved)	2.000	2.096	105	ug/L	80 - 120
	Cadmium	2.000	2.104	105	ug/L	80 - 120
	Cadmium (dissolved)	2.000	2.104	105	ug/L	80 - 120
	Calcium	2000	2179	109	ug/L	80 - 120
	Calcium (dissolved)	2000	2179	109	ug/L	80 - 120
	Chromium	4.000	4.165	104	ug/L	80 - 120
	Chromium (dissolved)	4.000	4.165	104	ug/L	80 - 120
	Cobalt	10.00	10.35	104	ug/L	80 - 120
	Cobalt (dissolved)	10.00	10.35	104	ug/L	80 - 120
	Copper	10.00	9.787	97.9	ug/L	80 - 120
	Copper (dissolved)	10.00	9.787	97.9	ug/L	80 - 120
	Iron	100.0	106.7	107	ug/L	80 - 120
	Iron (dissolved)	100.0	106.7	107	ug/L	80 - 120
	Lead	3.000	3.276	109	ug/L	80 - 120
	Lead (dissolved)	3.000	3.276	109	ug/L	80 - 120
	Magnesium	3000	3209	107	ug/L	80 - 120
	Magnesium (dissolved)	3000	3209	107	ug/L	80 - 120
	Manganese	6.000	6.484	108	ug/L	80 - 120
	Manganese (dissolved)	6.000	6.484	108	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D11022-CRL1	Nickel	6.000	5.956	99.3	ug/L	80 - 120
	Nickel (dissolved)	6.000	5.956	99.3	ug/L	80 - 120
	Potassium	3000	3100	103	ug/L	80 - 120
	Potassium (dissolved)	3000	3100	103	ug/L	80 - 120
	Silver	3.000	3.238	108	ug/L	80 - 120
	Silver (dissolved)	3.000	3.238	108	ug/L	80 - 120
	Sodium	3000	3200	107	ug/L	80 - 120
	Sodium (dissolved)	3000	3200	107	ug/L	80 - 120
	Thallium	8.000	6.860	85.7	ug/L	80 - 120
	Thallium (dissolved)	8.000	6.860	85.7	ug/L	80 - 120
	Vanadium	10.00	10.08	101	ug/L	80 - 120
	Vanadium (dissolved)	10.00	10.08	101	ug/L	80 - 120
	Zinc	10.00	10.88	109	ug/L	80 - 120
	Zinc (dissolved)	10.00	10.88	109	ug/L	80 - 120
6D11022-CRL2	Selenium	5.000	4.924	98.5	ug/L	80 - 120
	Selenium (dissolved)	5.000	4.924	98.5	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6112005
Sequence: 6D11204

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D11204-CRL1	Aluminum (dissolved)	200.0	233.1	117	ug/L	80 - 120
	Antimony (dissolved)	10.00	10.15	101	ug/L	80 - 120
	Arsenic (dissolved)	5.000	4.406	88.1	ug/L	80 - 120
	Barium (dissolved)	10.00	10.65	107	ug/L	80 - 120
	Beryllium (dissolved)	2.000	2.091	105	ug/L	80 - 120
	Cadmium (dissolved)	2.000	2.348	117	ug/L	80 - 120
	Calcium (dissolved)	2000	2290	114	ug/L	80 - 120
	Chromium (dissolved)	4.000	3.760	94.0	ug/L	80 - 120
	Cobalt (dissolved)	10.00	10.89	109	ug/L	80 - 120
	Copper (dissolved)	10.00	10.96	110	ug/L	80 - 120
	Lead (dissolved)	3.000	3.273	109	ug/L	80 - 120
	Magnesium (dissolved)	3000	3305	110	ug/L	80 - 120
	Manganese (dissolved)	6.000	6.668	111	ug/L	80 - 120
	Nickel (dissolved)	6.000	5.745	95.7	ug/L	80 - 120
	Potassium (dissolved)	3000	3384	113	ug/L	80 - 120
	Selenium (dissolved)	5.000	5.102	102	ug/L	80 - 120
	Silver (dissolved)	3.000	2.816	93.9	ug/L	80 - 120
	Sodium (dissolved)	3000	3396	113	ug/L	80 - 120
	Thallium (dissolved)	8.000	7.283	91.0	ug/L	80 - 120
	Vanadium (dissolved)	10.00	11.03	110	ug/L	80 - 120
	Zinc (dissolved)	10.00	11.12	111	ug/L	80 - 120
6D11204-CRL2	Iron (dissolved)	100.0	110.2	110	ug/L	80 - 120

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10204
Calibration: 6102002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10204-ICB1	Aluminum (dissolved)	-2.867	50.0	200	ug/L	U	SW6010C
	Antimony (dissolved)	-0.2935	5.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	0.2458	3.00	10.0	ug/L	U	SW6010C
	Barium (dissolved)	-0.05754	5.00	40.0	ug/L	U	SW6010C
	Beryllium (dissolved)	0.1043	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	-0.01717	1.00	5.00	ug/L	U	SW6010C
	Calcium (dissolved)	0.3100	1000	5000	ug/L	U	SW6010C
	Chromium (dissolved)	0.1056	2.00	10.0	ug/L	U	SW6010C
	Cobalt (dissolved)	0.04048	5.00	12.5	ug/L	U	SW6010C
	Copper (dissolved)	-0.08442	4.00	10.0	ug/L	U	SW6010C
	Iron (dissolved)	9.184	30.0	100	ug/L	U	SW6010C
	Lead (dissolved)	0.2492	1.50	5.00	ug/L	U	SW6010C
	Magnesium (dissolved)	0.1600	1000	5000	ug/L	U	SW6010C
	Manganese (dissolved)	-0.04391	3.00	15.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.3653	3.00	10.0	ug/L	U	SW6010C
	Potassium (dissolved)	13.98	1000	5000	ug/L	U	SW6010C
	Selenium (dissolved)	-0.5070	3.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	0.2440	1.00	10.0	ug/L	U	SW6010C
	Sodium (dissolved)	30.09	1000	5000	ug/L	U	SW6010C
	Thallium (dissolved)	-0.08496	3.00	8.00	ug/L	U	SW6010C
	Vanadium (dissolved)	-0.5371	5.00	12.5	ug/L	U	SW6010C
	Zinc (dissolved)	0.3317	5.00	20.0	ug/L	U	SW6010C
6D10204-CCB1	Aluminum (dissolved)	-8.28	50.0	200	ug/L	U	SW6010C
	Antimony (dissolved)	-0.702	5.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	-0.0800	3.00	10.0	ug/L	U	SW6010C
	Barium (dissolved)	-0.102	5.00	40.0	ug/L	U	SW6010C
	Beryllium (dissolved)	0.0867	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	-0.0538	1.00	5.00	ug/L	U	SW6010C
	Calcium (dissolved)	4.30	1000	5000	ug/L	U	SW6010C
	Chromium (dissolved)	0.0787	2.00	10.0	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.0276	5.00	12.5	ug/L	U	SW6010C
	Copper (dissolved)	0.833	4.00	10.0	ug/L	U	SW6010C
	Iron (dissolved)	3.95	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10204
Calibration: 6102002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10204-CCB1	Lead (dissolved)	-0.0336	1.50	5.00	ug/L	U	SW6010C
	Magnesium (dissolved)	-3.42	1000	5000	ug/L	U	SW6010C
	Manganese (dissolved)	-0.0189	3.00	15.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.506	3.00	10.0	ug/L	U	SW6010C
	Potassium (dissolved)	-5.41	1000	5000	ug/L	U	SW6010C
	Selenium (dissolved)	-1.88	3.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	0.143	1.00	10.0	ug/L	U	SW6010C
	Sodium (dissolved)	18.9	1000	5000	ug/L	U	SW6010C
	Thallium (dissolved)	1.18	3.00	8.00	ug/L	U	SW6010C
	Vanadium (dissolved)	-0.422	5.00	12.5	ug/L	U	SW6010C
	Zinc (dissolved)	0.286	5.00	20.0	ug/L	U	SW6010C
6D10204-CCB7	Aluminum (dissolved)	-10.9	50.0	200	ug/L	U	SW6010C
	Antimony (dissolved)	2.39	5.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	1.77	3.00	10.0	ug/L	U	SW6010C
	Barium (dissolved)	0.0738	5.00	40.0	ug/L	U	SW6010C
	Beryllium (dissolved)	-0.0146	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.0978	1.00	5.00	ug/L	U	SW6010C
	Calcium (dissolved)	3.07	1000	5000	ug/L	U	SW6010C
	Chromium (dissolved)	-0.121	2.00	10.0	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.0757	5.00	12.5	ug/L	U	SW6010C
	Copper (dissolved)	1.07	4.00	10.0	ug/L	U	SW6010C
	Iron (dissolved)	-3.14	30.0	100	ug/L	U	SW6010C
	Lead (dissolved)	0.341	1.50	5.00	ug/L	U	SW6010C
	Magnesium (dissolved)	-6.92	1000	5000	ug/L	U	SW6010C
	Manganese (dissolved)	0.0311	3.00	15.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.621	3.00	10.0	ug/L	U	SW6010C
	Potassium (dissolved)	-57.0	1000	5000	ug/L	U	SW6010C
	Selenium (dissolved)	2.63	3.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.234	1.00	10.0	ug/L	U	SW6010C
	Sodium (dissolved)	16.4	1000	5000	ug/L	U	SW6010C
	Thallium (dissolved)	1.84	3.00	8.00	ug/L	U	SW6010C
	Vanadium (dissolved)	0.408	5.00	12.5	ug/L	U	SW6010C
	Zinc (dissolved)	0.288	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10204
Calibration: 6102002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D09920-BLK1	Aluminum (dissolved)	-4.86	12.5	50.0	ug/L	U	SW6010C
	Antimony (dissolved)	-0.184	1.25	2.50	ug/L	U	SW6010C
	Arsenic (dissolved)	0.137	0.750	2.50	ug/L	U	SW6010C
	Barium (dissolved)	-0.0124	1.25	10.0	ug/L	U	SW6010C
	Beryllium (dissolved)	-0.00275	0.250	1.25	ug/L	U	SW6010C
	Cadmium (dissolved)	-0.0150	0.250	1.25	ug/L	U	SW6010C
	Calcium (dissolved)	1.79	250	1250	ug/L	U	SW6010C
	Chromium (dissolved)	-0.0479	0.500	2.50	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.0468	1.25	3.12	ug/L	U	SW6010C
	Copper (dissolved)	-0.233	1.00	2.50	ug/L	U	SW6010C
	Iron (dissolved)	-0.742	7.50	25.0	ug/L	U	SW6010C
	Lead (dissolved)	0.0243	0.375	1.25	ug/L	U	SW6010C
	Magnesium (dissolved)	0.952	250	1250	ug/L	U	SW6010C
	Manganese (dissolved)	0.355	0.750	3.75	ug/L	U	SW6010C
	Nickel (dissolved)	-0.116	0.750	2.50	ug/L	U	SW6010C
	Potassium (dissolved)	-7.30	250	1250	ug/L	U	SW6010C
	Selenium (dissolved)	-0.160	0.750	2.50	ug/L	U	SW6010C
	Silver (dissolved)	-0.113	0.250	2.50	ug/L	U	SW6010C
	Sodium (dissolved)	4.00	250	1250	ug/L	U	SW6010C
	Thallium (dissolved)	0.240	0.750	2.00	ug/L	U	SW6010C
	Vanadium (dissolved)	-0.128	1.25	3.12	ug/L	U	SW6010C
	Zinc (dissolved)	0.0113	1.25	5.00	ug/L	U	SW6010C
6D10204-CCB8	Aluminum (dissolved)	-12.0	50.0	200	ug/L	U	SW6010C
	Antimony (dissolved)	0.235	5.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	-0.805	3.00	10.0	ug/L	U	SW6010C
	Barium (dissolved)	0.155	5.00	40.0	ug/L	U	SW6010C
	Beryllium (dissolved)	0.181	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	-0.00863	1.00	5.00	ug/L	U	SW6010C
	Calcium (dissolved)	77.0	1000	5000	ug/L	U	SW6010C
	Chromium (dissolved)	0.108	2.00	10.0	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.0192	5.00	12.5	ug/L	U	SW6010C
	Copper (dissolved)	-0.519	4.00	10.0	ug/L	U	SW6010C
	Iron (dissolved)	-6.38	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10204
Calibration: 6102002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10204-CCB8	Lead (dissolved)	0.522	1.50	5.00	ug/L	U	SW6010C
	Magnesium (dissolved)	19.1	1000	5000	ug/L	U	SW6010C
	Manganese (dissolved)	0.646	3.00	15.0	ug/L	U	SW6010C
	Nickel (dissolved)	-1.01	3.00	10.0	ug/L	U	SW6010C
	Potassium (dissolved)	12.5	1000	5000	ug/L	U	SW6010C
	Selenium (dissolved)	-0.424	3.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	0.202	1.00	10.0	ug/L	U	SW6010C
	Sodium (dissolved)	1090	1000	5000	ug/L	J	SW6010C
	Thallium (dissolved)	0.390	3.00	8.00	ug/L	U	SW6010C
	Vanadium (dissolved)	-0.786	5.00	12.5	ug/L	U	SW6010C
	Zinc (dissolved)	0.259	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW7470A

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-FIMS
Project: Holloman AFB
Sequence: 6D10311
Calibration: 6103004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10311-ICB1	Mercury	-0.006634	0.0800	0.200	ug/L	U	SW7470A
	Mercury (dissolved)	-0.006634	0.0800	0.200	ug/L	U	SW7470A
6D10311-CCB1	Mercury	-0.00650	0.0800	0.200	ug/L	U	SW7470A
	Mercury (dissolved)	-0.00650	0.0800	0.200	ug/L	U	SW7470A
6D12005-BLK1	Mercury	0.0203	0.0800	0.200	ug/L	U	SW7470A
	Mercury (dissolved)	0.0203	0.0800	0.200	ug/L	U	SW7470A
6D10311-CCB2	Mercury	-0.00517	0.0800	0.200	ug/L	U	SW7470A
	Mercury (dissolved)	-0.00517	0.0800	0.200	ug/L	U	SW7470A
6D10311-CCB3	Mercury	-0.0455	0.0800	0.200	ug/L	U	SW7470A
	Mercury (dissolved)	-0.0455	0.0800	0.200	ug/L	U	SW7470A

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10503
Calibration: 6105001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10503-ICB1	Aluminum	-1.015	50.0	200	ug/L	U	SW6010C
	Antimony	1.188	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.8147	3.00	10.0	ug/L	U	SW6010C
	Barium	0.1002	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.08936	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.04157	1.00	5.00	ug/L	U	SW6010C
	Calcium	0.7100	1000	5000	ug/L	U	SW6010C
	Chromium	-0.1057	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.07038	5.00	12.5	ug/L	U	SW6010C
	Copper	1.081	4.00	10.0	ug/L	U	SW6010C
	Iron	10.39	30.0	100	ug/L	U	SW6010C
	Lead	-0.1305	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-16.72	1000	5000	ug/L	U	SW6010C
	Manganese	0.04124	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.5782	3.00	10.0	ug/L	U	SW6010C
	Potassium	34.64	1000	5000	ug/L	U	SW6010C
	Selenium	-0.6292	3.00	10.0	ug/L	U	SW6010C
	Silver	0.3384	1.00	10.0	ug/L	U	SW6010C
	Sodium	-30.51	1000	5000	ug/L	U	SW6010C
	Thallium	-0.2195	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.1537	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.1785	5.00	20.0	ug/L	U	SW6010C
6D10503-CCB1	Aluminum	6.87	50.0	200	ug/L	U	SW6010C
	Antimony	-0.448	5.00	10.0	ug/L	U	SW6010C
	Arsenic	1.41	3.00	10.0	ug/L	U	SW6010C
	Barium	0.0736	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0514	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.0779	1.00	5.00	ug/L	U	SW6010C
	Calcium	-1.48	1000	5000	ug/L	U	SW6010C
	Chromium	0.0605	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.0424	5.00	12.5	ug/L	U	SW6010C
	Copper	1.19	4.00	10.0	ug/L	U	SW6010C
	Iron	7.42	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10503
Calibration: 6105001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10503-CCB1	Lead	0.164	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-12.6	1000	5000	ug/L	U	SW6010C
	Manganese	0.0587	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.391	3.00	10.0	ug/L	U	SW6010C
	Potassium	46.1	1000	5000	ug/L	U	SW6010C
	Selenium	-0.268	3.00	10.0	ug/L	U	SW6010C
	Silver	0.301	1.00	10.0	ug/L	U	SW6010C
	Sodium	-52.0	1000	5000	ug/L	U	SW6010C
	Thallium	0.233	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.275	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.304	5.00	20.0	ug/L	U	SW6010C
6D09919-BLK1	Aluminum	1.88	12.5	50.0	ug/L	U	SW6010C
	Antimony	0.170	1.25	2.50	ug/L	U	SW6010C
	Arsenic	0.0850	0.750	2.50	ug/L	U	SW6010C
	Barium	0.138	1.25	10.0	ug/L	U	SW6010C
	Beryllium	0.00408	0.250	1.25	ug/L	U	SW6010C
	Cadmium	-0.0110	0.250	1.25	ug/L	U	SW6010C
	Calcium	2.64	250	1250	ug/L	U	SW6010C
	Chromium	0.0782	0.500	2.50	ug/L	U	SW6010C
	Cobalt	-0.0113	1.25	3.12	ug/L	U	SW6010C
	Copper	0.247	1.00	2.50	ug/L	U	SW6010C
	Iron	1.97	7.50	25.0	ug/L	U	SW6010C
	Lead	0.0702	0.375	1.25	ug/L	U	SW6010C
	Magnesium	-0.120	250	1250	ug/L	U	SW6010C
	Manganese	0.0340	0.750	3.75	ug/L	U	SW6010C
	Nickel	-0.0580	0.750	2.50	ug/L	U	SW6010C
	Potassium	12.2	250	1250	ug/L	U	SW6010C
	Selenium	-0.214	0.750	2.50	ug/L	U	SW6010C
	Silver	-0.102	0.250	2.50	ug/L	U	SW6010C
	Sodium	-13.8	250	1250	ug/L	U	SW6010C
	Thallium	-0.0564	0.750	2.00	ug/L	U	SW6010C
	Vanadium	-0.0723	1.25	3.12	ug/L	U	SW6010C
	Zinc	0.137	1.25	5.00	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10503
Calibration: 6105001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10503-CCB2	Aluminum	1.44	50.0	200	ug/L	U	SW6010C
	Antimony	0.961	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.0385	3.00	10.0	ug/L	U	SW6010C
	Barium	0.109	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0222	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.00772	1.00	5.00	ug/L	U	SW6010C
	Calcium	-0.600	1000	5000	ug/L	U	SW6010C
	Chromium	0.0789	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.0343	5.00	12.5	ug/L	U	SW6010C
	Copper	1.58	4.00	10.0	ug/L	U	SW6010C
	Iron	-2.75	30.0	100	ug/L	U	SW6010C
	Lead	0.148	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-17.4	1000	5000	ug/L	U	SW6010C
	Manganese	0.0478	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.603	3.00	10.0	ug/L	U	SW6010C
	Potassium	102	1000	5000	ug/L	U	SW6010C
	Selenium	0.564	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.0771	1.00	10.0	ug/L	U	SW6010C
	Sodium	201	1000	5000	ug/L	U	SW6010C
	Thallium	-0.359	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.0837	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.240	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-ICB1	Aluminum	6.621	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	6.621	50.0	200	ug/L	U	SW6010C
	Antimony	3.234	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	3.234	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.8777	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	0.8777	3.00	10.0	ug/L	U	SW6010C
	Barium	0.05285	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	0.05285	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.03706	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	0.03706	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.05739	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.05739	1.00	5.00	ug/L	U	SW6010C
	Calcium	-0.9200	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	-0.9200	1000	5000	ug/L	U	SW6010C
	Chromium	0.1219	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	0.1219	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.2801	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	0.2801	5.00	12.5	ug/L	U	SW6010C
	Copper	1.946	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	1.946	4.00	10.0	ug/L	U	SW6010C
	Iron	17.29	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	17.29	30.0	100	ug/L	U	SW6010C
	Lead	-0.6328	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	-0.6328	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-7.600	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	-7.600	1000	5000	ug/L	U	SW6010C
	Manganese	0.01428	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	0.01428	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.6982	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.6982	3.00	10.0	ug/L	U	SW6010C
	Potassium	12.42	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	12.42	1000	5000	ug/L	U	SW6010C
	Selenium	-0.8027	3.00	10.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-ICB1	Selenium (dissolved)	-0.8027	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.02218	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.02218	1.00	10.0	ug/L	U	SW6010C
	Sodium	-25.58	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	-25.58	1000	5000	ug/L	U	SW6010C
	Thallium	0.4140	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	0.4140	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.04797	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	0.04797	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.1067	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	0.1067	5.00	20.0	ug/L	U	SW6010C
6D10605-CCB1	Aluminum	1.07	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	1.07	50.0	200	ug/L	U	SW6010C
	Antimony	1.85	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	1.85	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.0340	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	-0.0340	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.00912	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	-0.00912	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0177	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	0.0177	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.00142	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.00142	1.00	5.00	ug/L	U	SW6010C
	Calcium	-2.49	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	-2.49	1000	5000	ug/L	U	SW6010C
	Chromium	0.191	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	0.191	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.140	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	0.140	5.00	12.5	ug/L	U	SW6010C
	Copper	1.28	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	1.28	4.00	10.0	ug/L	U	SW6010C
	Iron	10.7	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	10.7	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-CCB1	Lead	0.134	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	0.134	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-5.10	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	-5.10	1000	5000	ug/L	U	SW6010C
	Manganese	0.00704	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	0.00704	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.685	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.685	3.00	10.0	ug/L	U	SW6010C
	Potassium	41.6	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	41.6	1000	5000	ug/L	U	SW6010C
	Selenium	-1.21	3.00	10.0	ug/L	U	SW6010C
	Selenium (dissolved)	-1.21	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.216	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.216	1.00	10.0	ug/L	U	SW6010C
	Sodium	-48.1	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	-48.1	1000	5000	ug/L	U	SW6010C
	Thallium	-0.235	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	-0.235	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.431	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	0.431	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.0830	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	0.0830	5.00	20.0	ug/L	U	SW6010C
6D10605-CCB2	Aluminum	2.34	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	2.34	50.0	200	ug/L	U	SW6010C
	Antimony	1.42	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	1.42	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.741	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	0.741	3.00	10.0	ug/L	U	SW6010C
	Barium	0.0802	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	0.0802	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0708	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	0.0708	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.0423	1.00	5.00	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-CCB2	Cadmium (dissolved)	0.0423	1.00	5.00	ug/L	U	SW6010C
	Calcium	2.61	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	2.61	1000	5000	ug/L	U	SW6010C
	Chromium	0.441	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	0.441	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.0972	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	0.0972	5.00	12.5	ug/L	U	SW6010C
	Copper	1.65	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	1.65	4.00	10.0	ug/L	U	SW6010C
	Iron	3.69	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	3.69	30.0	100	ug/L	U	SW6010C
	Lead	0.398	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	0.398	1.50	5.00	ug/L	U	SW6010C
	Magnesium	6.74	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	6.74	1000	5000	ug/L	U	SW6010C
	Manganese	-0.0250	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	-0.0250	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.762	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.762	3.00	10.0	ug/L	U	SW6010C
	Potassium	-54.0	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	-54.0	1000	5000	ug/L	U	SW6010C
	Selenium	1.07	3.00	10.0	ug/L	U	SW6010C
	Selenium (dissolved)	1.07	3.00	10.0	ug/L	U	SW6010C
	Silver	0.200	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	0.200	1.00	10.0	ug/L	U	SW6010C
	Sodium	-55.8	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	-55.8	1000	5000	ug/L	U	SW6010C
	Thallium	0.341	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	0.341	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.0227	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	0.0227	5.00	12.5	ug/L	U	SW6010C
	Zinc	-0.00365	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	-0.00365	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-CCB3	Aluminum	12.4	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	12.4	50.0	200	ug/L	U	SW6010C
	Antimony	0.0233	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	0.0233	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.707	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	-0.707	3.00	10.0	ug/L	U	SW6010C
	Barium	0.0377	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	0.0377	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0529	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	0.0529	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.0354	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.0354	1.00	5.00	ug/L	U	SW6010C
	Calcium	-0.110	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	-0.110	1000	5000	ug/L	U	SW6010C
	Chromium	0.406	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	0.406	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.194	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	0.194	5.00	12.5	ug/L	U	SW6010C
	Copper	1.74	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	1.74	4.00	10.0	ug/L	U	SW6010C
	Iron	5.25	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	5.25	30.0	100	ug/L	U	SW6010C
	Lead	0.0335	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	0.0335	1.50	5.00	ug/L	U	SW6010C
	Magnesium	1.55	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	1.55	1000	5000	ug/L	U	SW6010C
	Manganese	0.682	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	0.682	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.667	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.667	3.00	10.0	ug/L	U	SW6010C
	Potassium	42.1	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	42.1	1000	5000	ug/L	U	SW6010C
	Selenium	-1.60	3.00	10.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-CCB3	Selenium (dissolved)	-1.60	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.322	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.322	1.00	10.0	ug/L	U	SW6010C
	Sodium	238	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	238	1000	5000	ug/L	U	SW6010C
	Thallium	0.279	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	0.279	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.728	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	-0.728	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.108	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	0.108	5.00	20.0	ug/L	U	SW6010C
6D10605-CCB7	Aluminum	-6.59	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	-6.59	50.0	200	ug/L	U	SW6010C
	Antimony	0.188	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	0.188	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.774	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	-0.774	3.00	10.0	ug/L	U	SW6010C
	Barium	0.0239	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	0.0239	5.00	40.0	ug/L	U	SW6010C
	Beryllium	-0.00820	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	-0.00820	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.0516	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	-0.0516	1.00	5.00	ug/L	U	SW6010C
	Calcium	-1.61	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	-1.61	1000	5000	ug/L	U	SW6010C
	Chromium	0.00130	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	0.00130	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.0189	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.0189	5.00	12.5	ug/L	U	SW6010C
	Copper	2.24	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	2.24	4.00	10.0	ug/L	U	SW6010C
	Iron	6.79	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	6.79	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-CCB7	Lead	-0.269	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	-0.269	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-6.61	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	-6.61	1000	5000	ug/L	U	SW6010C
	Manganese	0.149	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	0.149	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.949	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.949	3.00	10.0	ug/L	U	SW6010C
	Potassium	-46.9	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	-46.9	1000	5000	ug/L	U	SW6010C
	Selenium	-1.44	3.00	10.0	ug/L	U	SW6010C
	Selenium (dissolved)	-1.44	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.383	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.383	1.00	10.0	ug/L	U	SW6010C
	Sodium	-84.4	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	-84.4	1000	5000	ug/L	U	SW6010C
	Thallium	0.0747	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	0.0747	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.128	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	0.128	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.127	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	0.127	5.00	20.0	ug/L	U	SW6010C
6D10605-CCB8	Aluminum	-15.9	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	-15.9	50.0	200	ug/L	U	SW6010C
	Antimony	0.102	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	0.102	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.276	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	0.276	3.00	10.0	ug/L	U	SW6010C
	Barium	0.143	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	0.143	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0545	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	0.0545	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.0423	1.00	5.00	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-CCB8	Cadmium (dissolved)	-0.0423	1.00	5.00	ug/L	U	SW6010C
	Calcium	0.0300	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	0.0300	1000	5000	ug/L	U	SW6010C
	Chromium	-0.105	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	-0.105	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.0310	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	0.0310	5.00	12.5	ug/L	U	SW6010C
	Copper	0.598	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	0.598	4.00	10.0	ug/L	U	SW6010C
	Iron	2.54	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	2.54	30.0	100	ug/L	U	SW6010C
	Lead	0.333	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	0.333	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-0.840	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	-0.840	1000	5000	ug/L	U	SW6010C
	Manganese	0.175	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	0.175	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.695	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.695	3.00	10.0	ug/L	U	SW6010C
	Potassium	14.1	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	14.1	1000	5000	ug/L	U	SW6010C
	Selenium	-0.610	3.00	10.0	ug/L	U	SW6010C
	Selenium (dissolved)	-0.610	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.540	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.540	1.00	10.0	ug/L	U	SW6010C
	Sodium	143	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	143	1000	5000	ug/L	U	SW6010C
	Thallium	0.869	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	0.869	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.397	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	0.397	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.412	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	0.412	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11022
Calibration: 6110003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11022-ICB1	Aluminum	-18.65	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	-18.65	50.0	200	ug/L	U	SW6010C
	Antimony	2.536	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	2.536	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.2545	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	-0.2545	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.02854	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	-0.02854	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.002690	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	0.002690	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.03192	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.03192	1.00	5.00	ug/L	U	SW6010C
	Calcium	-2.400	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	-2.400	1000	5000	ug/L	U	SW6010C
	Chromium	-0.04697	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	-0.04697	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.01477	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.01477	5.00	12.5	ug/L	U	SW6010C
	Copper	1.054	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	1.054	4.00	10.0	ug/L	U	SW6010C
	Iron	10.09	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	10.09	30.0	100	ug/L	U	SW6010C
	Lead	0.2304	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	0.2304	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-2.790	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	-2.790	1000	5000	ug/L	U	SW6010C
	Manganese	-0.02493	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	-0.02493	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.5990	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.5990	3.00	10.0	ug/L	U	SW6010C
	Potassium	-26.01	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	-26.01	1000	5000	ug/L	U	SW6010C
	Selenium	-0.6050	3.00	10.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11022
Calibration: 6110003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11022-ICB1	Selenium (dissolved)	-0.6050	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.5466	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.5466	1.00	10.0	ug/L	U	SW6010C
	Sodium	63.76	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	63.76	1000	5000	ug/L	U	SW6010C
	Thallium	-1.151	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	-1.151	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.3209	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	-0.3209	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.05968	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	0.05968	5.00	20.0	ug/L	U	SW6010C
6D11022-CCB1	Aluminum	-8.54	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	-8.54	50.0	200	ug/L	U	SW6010C
	Antimony	0.931	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	0.931	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.516	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	0.516	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.000540	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	-0.000540	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0812	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	0.0812	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.0486	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.0486	1.00	5.00	ug/L	U	SW6010C
	Calcium	-4.57	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	-4.57	1000	5000	ug/L	U	SW6010C
	Chromium	0.0536	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	0.0536	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.0851	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.0851	5.00	12.5	ug/L	U	SW6010C
	Copper	0.952	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	0.952	4.00	10.0	ug/L	U	SW6010C
	Iron	8.65	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	8.65	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11022
Calibration: 6110003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11022-CCB1	Lead	0.719	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	0.719	1.50	5.00	ug/L	U	SW6010C
	Magnesium	0.420	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	0.420	1000	5000	ug/L	U	SW6010C
	Manganese	0.0252	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	0.0252	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.649	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.649	3.00	10.0	ug/L	U	SW6010C
	Potassium	-3.84	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	-3.84	1000	5000	ug/L	U	SW6010C
	Selenium	0.201	3.00	10.0	ug/L	U	SW6010C
	Selenium (dissolved)	0.201	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.485	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.485	1.00	10.0	ug/L	U	SW6010C
	Sodium	19.3	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	19.3	1000	5000	ug/L	U	SW6010C
	Thallium	-1.18	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	-1.18	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.0595	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	-0.0595	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.163	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	0.163	5.00	20.0	ug/L	U	SW6010C
6D11022-CCB7	Aluminum	-22.7	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	-22.7	50.0	200	ug/L	U	SW6010C
	Antimony	0.0483	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	0.0483	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.291	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	-0.291	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.00853	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	-0.00853	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.104	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	0.104	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.00225	1.00	5.00	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11022
Calibration: 6110003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11022-CCB7	Cadmium (dissolved)	0.00225	1.00	5.00	ug/L	U	SW6010C
	Calcium	35.7	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	35.7	1000	5000	ug/L	U	SW6010C
	Chromium	-0.128	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	-0.128	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.111	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.111	5.00	12.5	ug/L	U	SW6010C
	Copper	0.574	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	0.574	4.00	10.0	ug/L	U	SW6010C
	Iron	-5.48	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	-5.48	30.0	100	ug/L	U	SW6010C
	Lead	-0.0454	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	-0.0454	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-5.84	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	-5.84	1000	5000	ug/L	U	SW6010C
	Manganese	-0.00709	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	-0.00709	3.00	15.0	ug/L	U	SW6010C
	Nickel	0.0694	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	0.0694	3.00	10.0	ug/L	U	SW6010C
	Potassium	117	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	117	1000	5000	ug/L	U	SW6010C
	Selenium	-0.109	3.00	10.0	ug/L	U	SW6010C
	Selenium (dissolved)	-0.109	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.0804	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.0804	1.00	10.0	ug/L	U	SW6010C
	Sodium	-17.4	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	-17.4	1000	5000	ug/L	U	SW6010C
	Thallium	-1.81	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	-1.81	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.673	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	0.673	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.464	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	0.464	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11022
Calibration: 6110003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11022-CCB8	Aluminum	-36.3	50.0	200	ug/L	U	SW6010C
	Aluminum (dissolved)	-36.3	50.0	200	ug/L	U	SW6010C
	Antimony	0.828	5.00	10.0	ug/L	U	SW6010C
	Antimony (dissolved)	0.828	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-1.15	3.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	-1.15	3.00	10.0	ug/L	U	SW6010C
	Barium	0.105	5.00	40.0	ug/L	U	SW6010C
	Barium (dissolved)	0.105	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0482	1.00	5.00	ug/L	U	SW6010C
	Beryllium (dissolved)	0.0482	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.106	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.106	1.00	5.00	ug/L	U	SW6010C
	Calcium	27.4	1000	5000	ug/L	U	SW6010C
	Calcium (dissolved)	27.4	1000	5000	ug/L	U	SW6010C
	Chromium	-0.193	2.00	10.0	ug/L	U	SW6010C
	Chromium (dissolved)	-0.193	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.0468	5.00	12.5	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.0468	5.00	12.5	ug/L	U	SW6010C
	Copper	-0.114	4.00	10.0	ug/L	U	SW6010C
	Copper (dissolved)	-0.114	4.00	10.0	ug/L	U	SW6010C
	Iron	-2.60	30.0	100	ug/L	U	SW6010C
	Iron (dissolved)	-2.60	30.0	100	ug/L	U	SW6010C
	Lead	0.621	1.50	5.00	ug/L	U	SW6010C
	Lead (dissolved)	0.621	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-1.93	1000	5000	ug/L	U	SW6010C
	Magnesium (dissolved)	-1.93	1000	5000	ug/L	U	SW6010C
	Manganese	0.0570	3.00	15.0	ug/L	U	SW6010C
	Manganese (dissolved)	0.0570	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.0866	3.00	10.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.0866	3.00	10.0	ug/L	U	SW6010C
	Potassium	182	1000	5000	ug/L	U	SW6010C
	Potassium (dissolved)	182	1000	5000	ug/L	U	SW6010C
	Selenium	-0.211	3.00	10.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11022
Calibration: 6110003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11022-CCB8	Selenium (dissolved)	-0.211	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.344	1.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.344	1.00	10.0	ug/L	U	SW6010C
	Sodium	263	1000	5000	ug/L	U	SW6010C
	Sodium (dissolved)	263	1000	5000	ug/L	U	SW6010C
	Thallium	-0.195	3.00	8.00	ug/L	U	SW6010C
	Thallium (dissolved)	-0.195	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.830	5.00	12.5	ug/L	U	SW6010C
	Vanadium (dissolved)	0.830	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.407	5.00	20.0	ug/L	U	SW6010C
	Zinc (dissolved)	0.407	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11204
Calibration: 6112005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11204-ICB1	Aluminum (dissolved)	-10.55	50.0	200	ug/L	U	SW6010C
	Antimony (dissolved)	-1.115	5.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	0.1345	3.00	10.0	ug/L	U	SW6010C
	Barium (dissolved)	-0.02596	5.00	40.0	ug/L	U	SW6010C
	Beryllium (dissolved)	0.004960	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.003400	1.00	5.00	ug/L	U	SW6010C
	Calcium (dissolved)	-4.890	1000	5000	ug/L	U	SW6010C
	Chromium (dissolved)	-0.1231	2.00	10.0	ug/L	U	SW6010C
	Cobalt (dissolved)	0.1494	5.00	12.5	ug/L	U	SW6010C
	Copper (dissolved)	0.9657	4.00	10.0	ug/L	U	SW6010C
	Iron (dissolved)	22.32	30.0	100	ug/L	U	SW6010C
	Lead (dissolved)	1.411	1.50	5.00	ug/L	U	SW6010C
	Magnesium (dissolved)	-4.720	1000	5000	ug/L	U	SW6010C
	Manganese (dissolved)	-0.007300	3.00	15.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.5122	3.00	10.0	ug/L	U	SW6010C
	Potassium (dissolved)	60.35	1000	5000	ug/L	U	SW6010C
	Selenium (dissolved)	-0.9458	3.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	0.1368	1.00	10.0	ug/L	U	SW6010C
	Sodium (dissolved)	42.16	1000	5000	ug/L	U	SW6010C
	Thallium (dissolved)	-0.01827	3.00	8.00	ug/L	U	SW6010C
	Vanadium (dissolved)	-0.09750	5.00	12.5	ug/L	U	SW6010C
	Zinc (dissolved)	0.3499	5.00	20.0	ug/L	U	SW6010C
6D11204-CCB1	Aluminum (dissolved)	1.17	50.0	200	ug/L	U	SW6010C
	Antimony (dissolved)	-1.57	5.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	0.128	3.00	10.0	ug/L	U	SW6010C
	Barium (dissolved)	-0.0274	5.00	40.0	ug/L	U	SW6010C
	Beryllium (dissolved)	0.0882	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.0406	1.00	5.00	ug/L	U	SW6010C
	Calcium (dissolved)	-4.70	1000	5000	ug/L	U	SW6010C
	Chromium (dissolved)	-0.367	2.00	10.0	ug/L	U	SW6010C
	Cobalt (dissolved)	-0.00934	5.00	12.5	ug/L	U	SW6010C
	Copper (dissolved)	1.21	4.00	10.0	ug/L	U	SW6010C
	Iron (dissolved)	18.4	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11204
Calibration: 6112005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11204-CCB1	Lead (dissolved)	0.502	1.50	5.00	ug/L	U	SW6010C
	Magnesium (dissolved)	1.90	1000	5000	ug/L	U	SW6010C
	Manganese (dissolved)	-0.0757	3.00	15.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.255	3.00	10.0	ug/L	U	SW6010C
	Potassium (dissolved)	64.0	1000	5000	ug/L	U	SW6010C
	Selenium (dissolved)	-0.370	3.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.181	1.00	10.0	ug/L	U	SW6010C
	Sodium (dissolved)	-8.94	1000	5000	ug/L	U	SW6010C
	Thallium (dissolved)	-0.400	3.00	8.00	ug/L	U	SW6010C
	Vanadium (dissolved)	0.309	5.00	12.5	ug/L	U	SW6010C
	Zinc (dissolved)	0.452	5.00	20.0	ug/L	U	SW6010C
6D11204-CCB2	Aluminum (dissolved)	-5.94	50.0	200	ug/L	U	SW6010C
	Antimony (dissolved)	-0.321	5.00	10.0	ug/L	U	SW6010C
	Arsenic (dissolved)	0.0341	3.00	10.0	ug/L	U	SW6010C
	Barium (dissolved)	0.0383	5.00	40.0	ug/L	U	SW6010C
	Beryllium (dissolved)	0.0947	1.00	5.00	ug/L	U	SW6010C
	Cadmium (dissolved)	0.120	1.00	5.00	ug/L	U	SW6010C
	Calcium (dissolved)	-1.76	1000	5000	ug/L	U	SW6010C
	Chromium (dissolved)	-0.393	2.00	10.0	ug/L	U	SW6010C
	Cobalt (dissolved)	0.189	5.00	12.5	ug/L	U	SW6010C
	Copper (dissolved)	1.01	4.00	10.0	ug/L	U	SW6010C
	Iron (dissolved)	15.6	30.0	100	ug/L	U	SW6010C
	Lead (dissolved)	0.637	1.50	5.00	ug/L	U	SW6010C
	Magnesium (dissolved)	-13.1	1000	5000	ug/L	U	SW6010C
	Manganese (dissolved)	-0.0103	3.00	15.0	ug/L	U	SW6010C
	Nickel (dissolved)	-0.542	3.00	10.0	ug/L	U	SW6010C
	Potassium (dissolved)	12.6	1000	5000	ug/L	U	SW6010C
	Selenium (dissolved)	-0.875	3.00	10.0	ug/L	U	SW6010C
	Silver (dissolved)	-0.591	1.00	10.0	ug/L	U	SW6010C
	Sodium (dissolved)	1.91	1000	5000	ug/L	U	SW6010C
	Thallium (dissolved)	0.0118	3.00	8.00	ug/L	U	SW6010C
	Vanadium (dissolved)	0.618	5.00	12.5	ug/L	U	SW6010C
	Zinc (dissolved)	0.300	5.00	20.0	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6102002
Sequence: 6D10204

Lab Sample ID	Analyte	True	Found	%R	Units
6D10204-IFA1	Aluminum (dissolved)	500000	493,590.00	98.7	ug/L
	Antimony (dissolved)		3.69		ug/L
	Arsenic (dissolved)		-0.18		ug/L
	Barium (dissolved)		0.18		ug/L
	Beryllium (dissolved)		-0.06		ug/L
	Cadmium (dissolved)		1.07		ug/L
	Calcium (dissolved)	500000	496,650.00	99.3	ug/L
	Chromium (dissolved)		-1.56		ug/L
	Cobalt (dissolved)		-2.52		ug/L
	Copper (dissolved)		-0.72		ug/L
	Iron (dissolved)	200000	192,580.00	96.3	ug/L
	Lead (dissolved)		-1.32		ug/L
	Magnesium (dissolved)	500000	458,010.00	91.6	ug/L
	Manganese (dissolved)		-1.90		ug/L
	Nickel (dissolved)		-1.26		ug/L
	Potassium (dissolved)		13.12		ug/L
	Selenium (dissolved)		3.76		ug/L
	Silver (dissolved)		-0.54		ug/L
	Sodium (dissolved)		95.53		ug/L
	Thallium (dissolved)		-1.97		ug/L
	Vanadium (dissolved)		1.62		ug/L
	Zinc (dissolved)		-0.19		ug/L
6D10204-IFB1	Aluminum (dissolved)	500000	492,150.00	98.4	ug/L
	Antimony (dissolved)	600.0	650.32	108	ug/L
	Arsenic (dissolved)	100.0	105.00	105	ug/L
	Barium (dissolved)	500.0	526.54	105	ug/L
	Beryllium (dissolved)	500.0	521.17	104	ug/L
	Cadmium (dissolved)	1000	1,038.00	104	ug/L
	Calcium (dissolved)	500000	492,250.00	98.4	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6102002
Sequence: 6D10204

Lab Sample ID	Analyte	True	Found	%R	Units
6D10204-IFB1	Chromium (dissolved)	500.0	472.02	94.4	ug/L
	Cobalt (dissolved)	500.0	485.27	97.1	ug/L
	Copper (dissolved)	500.0	541.10	108	ug/L
	Iron (dissolved)	200000	193,840.00	96.9	ug/L
	Lead (dissolved)	50.00	49.39	98.8	ug/L
	Magnesium (dissolved)	500000	456,590.00	91.3	ug/L
	Manganese (dissolved)	500.0	443.57	88.7	ug/L
	Nickel (dissolved)	1000	948.58	94.9	ug/L
	Potassium (dissolved)		26.33		ug/L
	Selenium (dissolved)	50.00	55.17	110	ug/L
	Silver (dissolved)	200.0	205.19	103	ug/L
	Sodium (dissolved)		57.38		ug/L
	Thallium (dissolved)	100.0	102.16	102	ug/L
	Vanadium (dissolved)	500.0	493.57	98.7	ug/L
	Zinc (dissolved)	1000	999.30	99.9	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units
6D10503-IFA1	Aluminum	500000	488,180.00	97.6	ug/L
	Antimony		1.10		ug/L
	Arsenic		0.45		ug/L
	Barium		0.66		ug/L
	Beryllium		-0.05		ug/L
	Cadmium		0.77		ug/L
	Calcium	500000	500,320.00	100	ug/L
	Chromium		-1.42		ug/L
	Cobalt		-2.61		ug/L
	Copper		-1.26		ug/L
	Iron	200000	200,070.00	100	ug/L
	Lead		0.44		ug/L
	Magnesium	500000	462,400.00	92.5	ug/L
	Manganese		-1.96		ug/L
	Nickel		-0.92		ug/L
	Potassium		-42.74		ug/L
	Selenium		0.82		ug/L
	Silver		-0.73		ug/L
	Sodium		119.71		ug/L
	Thallium		-2.28		ug/L
	Vanadium		1.06		ug/L
	Zinc		-1.00		ug/L
6D10503-IFB1	Aluminum	500000	481,230.00	96.2	ug/L
	Antimony	600.0	657.41	110	ug/L
	Arsenic	100.0	108.07	108	ug/L
	Barium	500.0	534.43	107	ug/L
	Beryllium	500.0	517.12	103	ug/L
	Cadmium	1000	1,038.10	104	ug/L
	Calcium	500000	500,090.00	100	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units
6D10503-IFB1	Chromium	500.0	479.21	95.8	ug/L
	Cobalt	500.0	487.59	97.5	ug/L
	Copper	500.0	533.70	107	ug/L
	Iron	200000	198,780.00	99.4	ug/L
	Lead	50.00	47.11	94.2	ug/L
	Magnesium	500000	463,620.00	92.7	ug/L
	Manganese	500.0	453.05	90.6	ug/L
	Nickel	1000	961.22	96.1	ug/L
	Potassium		-27.76		ug/L
	Selenium	50.00	54.86	110	ug/L
	Silver	200.0	208.99	104	ug/L
	Sodium		130.01		ug/L
	Thallium	100.0	100.58	101	ug/L
	Vanadium	500.0	493.81	98.8	ug/L
	Zinc	1000	1,002.20	100	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units
6D10605-IFA1	Aluminum	500000	521,550.00	104	ug/L
	Aluminum (dissolved)	500000	521,550.00	104	ug/L
	Antimony		2.19		ug/L
	Antimony (dissolved)		2.19		ug/L
	Arsenic		0.09		ug/L
	Arsenic (dissolved)		0.09		ug/L
	Barium		0.49		ug/L
	Barium (dissolved)		0.49		ug/L
	Beryllium		-0.04		ug/L
	Beryllium (dissolved)		-0.04		ug/L
	Cadmium		0.45		ug/L
	Cadmium (dissolved)		0.45		ug/L
	Calcium	500000	503,580.00	101	ug/L
	Calcium (dissolved)	500000	503,580.00	101	ug/L
	Chromium		-0.80		ug/L
	Chromium (dissolved)		-0.80		ug/L
	Cobalt		-2.39		ug/L
	Cobalt (dissolved)		-2.39		ug/L
	Copper		0.72		ug/L
	Copper (dissolved)		0.72		ug/L
	Iron	200000	197,140.00	98.6	ug/L
	Iron (dissolved)	200000	197,140.00	98.6	ug/L
	Lead		0.10		ug/L
	Lead (dissolved)		0.10		ug/L
	Magnesium	500000	462,620.00	92.5	ug/L
	Magnesium (dissolved)	500000	462,620.00	92.5	ug/L
	Manganese		-1.91		ug/L
	Manganese (dissolved)		-1.91		ug/L
	Nickel		-1.07		ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units
6D10605-IFA1	Nickel (dissolved)		-1.07		ug/L
	Potassium		-43.36		ug/L
	Potassium (dissolved)		-43.36		ug/L
	Selenium		3.15		ug/L
	Selenium (dissolved)		3.15		ug/L
	Silver		-0.87		ug/L
	Silver (dissolved)		-0.87		ug/L
	Sodium		112.28		ug/L
	Sodium (dissolved)		112.28		ug/L
	Thallium		-0.07		ug/L
	Thallium (dissolved)		-0.07		ug/L
	Vanadium		1.07		ug/L
	Vanadium (dissolved)		1.07		ug/L
	Zinc		-0.98		ug/L
	Zinc (dissolved)		-0.98		ug/L
6D10605-IFB1	Aluminum	500000	514,160.00	103	ug/L
	Aluminum (dissolved)	500000	514,160.00	103	ug/L
	Antimony	600.0	655.61	109	ug/L
	Antimony (dissolved)	600.0	655.61	109	ug/L
	Arsenic	100.0	108.45	108	ug/L
	Arsenic (dissolved)	100.0	108.45	108	ug/L
	Barium	500.0	541.81	108	ug/L
	Barium (dissolved)	500.0	541.81	108	ug/L
	Beryllium	500.0	520.95	104	ug/L
	Beryllium (dissolved)	500.0	520.95	104	ug/L
	Cadmium	1000	1,017.30	102	ug/L
	Cadmium (dissolved)	1000	1,017.30	102	ug/L
	Calcium	500000	495,490.00	99.1	ug/L
	Calcium (dissolved)	500000	495,490.00	99.1	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units
6D10605-IFB1	Chromium	500.0	463.79	92.8	ug/L
	Chromium (dissolved)	500.0	463.79	92.8	ug/L
	Cobalt	500.0	482.08	96.4	ug/L
	Cobalt (dissolved)	500.0	482.08	96.4	ug/L
	Copper	500.0	549.84	110	ug/L
	Copper (dissolved)	500.0	549.84	110	ug/L
	Iron	200000	196,290.00	98.1	ug/L
	Iron (dissolved)	200000	196,290.00	98.1	ug/L
	Lead	50.00	45.37	90.7	ug/L
	Lead (dissolved)	50.00	45.37	90.7	ug/L
	Magnesium	500000	462,140.00	92.4	ug/L
	Magnesium (dissolved)	500000	462,140.00	92.4	ug/L
	Manganese	500.0	457.29	91.5	ug/L
	Manganese (dissolved)	500.0	457.29	91.5	ug/L
	Nickel	1000	956.27	95.6	ug/L
	Nickel (dissolved)	1000	956.27	95.6	ug/L
	Potassium		-45.85		ug/L
	Potassium (dissolved)		-45.85		ug/L
	Selenium	50.00	54.31	109	ug/L
	Selenium (dissolved)	50.00	54.31	109	ug/L
	Silver	200.0	199.19	99.6	ug/L
	Silver (dissolved)	200.0	199.19	99.6	ug/L
	Sodium		125.92		ug/L
	Sodium (dissolved)		125.92		ug/L
	Thallium	100.0	102.02	102	ug/L
	Thallium (dissolved)	100.0	102.02	102	ug/L
	Vanadium	500.0	489.11	97.8	ug/L
	Vanadium (dissolved)	500.0	489.11	97.8	ug/L
	Zinc	1000	984.27	98.4	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Instrument ID: ME-ICP

Calibration: 6106003

Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units
6D10605-IFB1	Zinc (dissolved)	1000	984.27	98.4	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units
6D11022-IFA1	Aluminum	500000	498,340.00	99.7	ug/L
	Aluminum (dissolved)	500000	498,340.00	99.7	ug/L
	Antimony		0.70		ug/L
	Antimony (dissolved)		0.70		ug/L
	Arsenic		0.70		ug/L
	Arsenic (dissolved)		0.70		ug/L
	Barium		0.46		ug/L
	Barium (dissolved)		0.46		ug/L
	Beryllium		-0.06		ug/L
	Beryllium (dissolved)		-0.06		ug/L
	Cadmium		0.53		ug/L
	Cadmium (dissolved)		0.53		ug/L
	Calcium	500000	497,910.00	99.6	ug/L
	Calcium (dissolved)	500000	497,910.00	99.6	ug/L
	Chromium		-1.40		ug/L
	Chromium (dissolved)		-1.40		ug/L
	Cobalt		-2.49		ug/L
	Cobalt (dissolved)		-2.49		ug/L
	Copper		-1.54		ug/L
	Copper (dissolved)		-1.54		ug/L
	Iron	200000	200,210.00	100	ug/L
	Iron (dissolved)	200000	200,210.00	100	ug/L
	Lead		-0.43		ug/L
	Lead (dissolved)		-0.43		ug/L
	Magnesium	500000	463,330.00	92.7	ug/L
	Magnesium (dissolved)	500000	463,330.00	92.7	ug/L
	Manganese		-1.89		ug/L
	Manganese (dissolved)		-1.89		ug/L
	Nickel		-2.18		ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units
6D11022-IFA1	Nickel (dissolved)		-2.18		ug/L
	Potassium		168.36		ug/L
	Potassium (dissolved)		168.36		ug/L
	Selenium		-0.98		ug/L
	Selenium (dissolved)		-0.98		ug/L
	Silver		-0.48		ug/L
	Silver (dissolved)		-0.48		ug/L
	Sodium		142.18		ug/L
	Sodium (dissolved)		142.18		ug/L
	Thallium		-3.03		ug/L
	Thallium (dissolved)		-3.03		ug/L
	Vanadium		1.30		ug/L
	Vanadium (dissolved)		1.30		ug/L
	Zinc		-1.03		ug/L
	Zinc (dissolved)		-1.03		ug/L
6D11022-IFB1	Aluminum	500000	485,390.00	97.1	ug/L
	Aluminum (dissolved)	500000	485,390.00	97.1	ug/L
	Antimony	600.0	649.76	108	ug/L
	Antimony (dissolved)	600.0	649.76	108	ug/L
	Arsenic	100.0	104.98	105	ug/L
	Arsenic (dissolved)	100.0	104.98	105	ug/L
	Barium	500.0	527.81	106	ug/L
	Barium (dissolved)	500.0	527.81	106	ug/L
	Beryllium	500.0	513.63	103	ug/L
	Beryllium (dissolved)	500.0	513.63	103	ug/L
	Cadmium	1000	1,026.80	103	ug/L
	Cadmium (dissolved)	1000	1,026.80	103	ug/L
	Calcium	500000	497,210.00	99.4	ug/L
	Calcium (dissolved)	500000	497,210.00	99.4	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units
6D11022-IFB1	Chromium	500.0	486.40	97.3	ug/L
	Chromium (dissolved)	500.0	486.40	97.3	ug/L
	Cobalt	500.0	479.48	95.9	ug/L
	Cobalt (dissolved)	500.0	479.48	95.9	ug/L
	Copper	500.0	538.75	108	ug/L
	Copper (dissolved)	500.0	538.75	108	ug/L
	Iron	200000	196,200.00	98.1	ug/L
	Iron (dissolved)	200000	196,200.00	98.1	ug/L
	Lead	50.00	43.17	86.3	ug/L
	Lead (dissolved)	50.00	43.17	86.3	ug/L
	Magnesium	500000	464,310.00	92.9	ug/L
	Magnesium (dissolved)	500000	464,310.00	92.9	ug/L
	Manganese	500.0	458.60	91.7	ug/L
	Manganese (dissolved)	500.0	458.60	91.7	ug/L
	Nickel	1000	943.51	94.4	ug/L
	Nickel (dissolved)	1000	943.51	94.4	ug/L
	Potassium		177.96		ug/L
	Potassium (dissolved)		177.96		ug/L
	Selenium	50.00	53.71	107	ug/L
	Selenium (dissolved)	50.00	53.71	107	ug/L
	Silver	200.0	212.38	106	ug/L
	Silver (dissolved)	200.0	212.38	106	ug/L
	Sodium		149.14		ug/L
	Sodium (dissolved)		149.14		ug/L
	Thallium	100.0	100.23	100	ug/L
	Thallium (dissolved)	100.0	100.23	100	ug/L
	Vanadium	500.0	501.90	100	ug/L
	Vanadium (dissolved)	500.0	501.90	100	ug/L
	Zinc	1000	994.95	99.5	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Instrument ID: ME-ICP

Calibration: 6110003

Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units
6D11022-IFB1	Zinc (dissolved)	1000	994.95	99.5	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6112005
Sequence: 6D11204

Lab Sample ID	Analyte	True	Found	%R	Units
6D11204-IFA1	Aluminum (dissolved)	500000	495,520.00	99.1	ug/L
	Antimony (dissolved)		1.87		ug/L
	Arsenic (dissolved)		-2.50		ug/L
	Barium (dissolved)		0.29		ug/L
	Beryllium (dissolved)		-0.03		ug/L
	Cadmium (dissolved)		1.24		ug/L
	Calcium (dissolved)	500000	501,490.00	100	ug/L
	Chromium (dissolved)		-1.35		ug/L
	Cobalt (dissolved)		-2.23		ug/L
	Copper (dissolved)		-1.59		ug/L
	Iron (dissolved)	200000	194,600.00	97.3	ug/L
	Lead (dissolved)		0.81		ug/L
	Magnesium (dissolved)	500000	466,680.00	93.3	ug/L
	Manganese (dissolved)		-1.79		ug/L
	Nickel (dissolved)		-0.98		ug/L
	Potassium (dissolved)		-24.63		ug/L
	Selenium (dissolved)		-0.90		ug/L
	Silver (dissolved)		-0.16		ug/L
	Sodium (dissolved)		112.10		ug/L
	Thallium (dissolved)		-1.37		ug/L
	Vanadium (dissolved)		1.54		ug/L
	Zinc (dissolved)		-0.87		ug/L
6D11204-IFB1	Aluminum (dissolved)	500000	492,480.00	98.5	ug/L
	Antimony (dissolved)	600.0	652.30	109	ug/L
	Arsenic (dissolved)	100.0	106.86	107	ug/L
	Barium (dissolved)	500.0	524.50	105	ug/L
	Beryllium (dissolved)	500.0	517.56	104	ug/L
	Cadmium (dissolved)	1000	1,046.90	105	ug/L
	Calcium (dissolved)	500000	504,680.00	101	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6112005
Sequence: 6D11204

Lab Sample ID	Analyte	True	Found	%R	Units
6D11204-IFB1	Chromium (dissolved)	500.0	482.64	96.5	ug/L
	Cobalt (dissolved)	500.0	484.15	96.8	ug/L
	Copper (dissolved)	500.0	529.14	106	ug/L
	Iron (dissolved)	200000	194,490.00	97.2	ug/L
	Lead (dissolved)	50.00	50.70	101	ug/L
	Magnesium (dissolved)	500000	465,490.00	93.1	ug/L
	Manganese (dissolved)	500.0	456.30	91.3	ug/L
	Nickel (dissolved)	1000	958.35	95.8	ug/L
	Potassium (dissolved)		-43.88		ug/L
	Selenium (dissolved)	50.00	56.08	112	ug/L
	Silver (dissolved)	200.0	211.59	106	ug/L
	Sodium (dissolved)		95.37		ug/L
	Thallium (dissolved)	100.0	102.72	103	ug/L
	Vanadium (dissolved)	500.0	492.33	98.5	ug/L
	Zinc (dissolved)	1000	1,001.60	100	ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D09919

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Aluminum	500.0	1601	2130	106		80 - 120
Antimony	125.0	ND	131.0	105		80 - 120
Arsenic	125.0	ND	137.9	110		80 - 120
Barium	500.0	34.72	480.7	89.2		80 - 120
Beryllium	12.50	ND	11.90	95.2		80 - 120
Cadmium	62.50	ND	60.38	96.6		80 - 120
Calcium	1250	458300	547100	7100	4x	80 - 120
Chromium	50.00	ND	45.57	91.1		80 - 120
Cobalt	125.0	ND	124.5	99.6		80 - 120
Copper	62.50	ND	67.02	107		80 - 120
Iron	250.0	1314	1551	94.8		80 - 120
Lead	125.0	ND	113.5	90.8		80 - 120
Magnesium	1250	393200	384200	-721	4x	80 - 120
Manganese	125.0	321.1	436.8	92.6		80 - 120
Nickel	125.0	ND	120.9	96.7		80 - 120
Potassium	1250	18890	20530	131	4x	80 - 120
Selenium	125.0	ND	127.2	102		80 - 120
Silver	62.50	2.986	63.04	96.1		80 - 120
Sodium	1250	1250000000	1250000000	0.00	4x	80 - 120
Thallium	125.0	ND	115.5	92.4		80 - 120
Vanadium	125.0	ND	125.9	101		80 - 120
Zinc	125.0	7.592	131.0	98.8		80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D09919

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Aluminum	500.0	1064	-108	66.8	N *	20	80 - 120
Antimony	125.0	135.0	108	3.00		20	80 - 120
Arsenic	125.0	137.4	110	0.390		20	80 - 120
Barium	500.0	467.6	86.6	2.76		20	80 - 120
Beryllium	12.50	11.73	93.8	1.45		20	80 - 120
Cadmium	62.50	60.35	96.6	0.0476		20	80 - 120
Calcium	1250	526600	5470	3.81	4x	20	80 - 120
Chromium	50.00	43.90	87.8	3.75		20	80 - 120
Cobalt	125.0	123.3	98.6	0.965		20	80 - 120
Copper	62.50	64.50	103	3.84		20	80 - 120
Iron	250.0	463.1	-340	108	4x *	20	80 - 120
Lead	125.0	111.4	89.1	1.83		20	80 - 120
Magnesium	1250	372800	-1630	3.00	4x	20	80 - 120
Manganese	125.0	527.0	165	18.7	N	20	80 - 120
Nickel	125.0	120.1	96.1	0.620		20	80 - 120
Potassium	1250	20660	142	0.662	4x	20	80 - 120
Selenium	125.0	127.0	102	0.207		20	80 - 120
Silver	62.50	57.36	87.0	9.45		20	80 - 120
Sodium	1250	1250000000	0.00	0.00	4x	20	80 - 120
Thallium	125.0	116.5	93.2	0.881		20	80 - 120
Vanadium	125.0	120.7	96.6	4.18		20	80 - 120
Zinc	125.0	126.1	94.8	3.83		20	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D09920

% Solids:

Source Sample Name: **1604034-05**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Aluminum (dissolved)	500.0	ND	73.16	14.6	N	80 - 120
Antimony (dissolved)	125.0	ND	152.4	122	N	80 - 120
Arsenic (dissolved)	125.0	ND	161.9	130	N	80 - 120
Barium (dissolved)	500.0	31.90	495.4	92.7		80 - 120
Beryllium (dissolved)	12.50	ND	11.67	93.4		80 - 120
Cadmium (dissolved)	62.50	ND	61.70	98.7		80 - 120
Calcium (dissolved)	1250	250000000	250000000	0.00	4x	80 - 120
Chromium (dissolved)	50.00	ND	40.97	81.9		80 - 120
Cobalt (dissolved)	125.0	1.606	128.7	102		80 - 120
Copper (dissolved)	62.50	ND	72.19	116		80 - 120
Iron (dissolved)	250.0	22.20	247.0	89.9		80 - 120
Lead (dissolved)	125.0	0.3781	112.9	90.0		80 - 120
Magnesium (dissolved)	1250	250000000	250000000	0.00	4x	80 - 120
Manganese (dissolved)	125.0	334.7	456.5	97.4		80 - 120
Nickel (dissolved)	125.0	2.954	122.2	95.4		80 - 120
Potassium (dissolved)	1250	23330	250000000	20000000	4x	80 - 120
Selenium (dissolved)	125.0	ND	160.1	128	N	80 - 120
Silver (dissolved)	62.50	ND	66.66	107		80 - 120
Sodium (dissolved)	1250	81460	90280	706	4x	80 - 120
Thallium (dissolved)	125.0	ND	114.9	92.0		80 - 120
Vanadium (dissolved)	125.0	1.514	116.2	91.8		80 - 120
Zinc (dissolved)	125.0	3.784	124.1	96.3		80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D09920

% Solids:

Source Sample Name: **1604034-05**

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Aluminum (dissolved)	500.0	68.66	13.7	6.35	N	20	80 - 120
Antimony (dissolved)	125.0	157.1	126	3.05	N	20	80 - 120
Arsenic (dissolved)	125.0	167.2	134	3.23	N	20	80 - 120
Barium (dissolved)	500.0	540.0	102	8.60		20	80 - 120
Beryllium (dissolved)	12.50	12.12	97.0	3.80		20	80 - 120
Cadmium (dissolved)	62.50	65.25	104	5.58		20	80 - 120
Calcium (dissolved)	1250	250000000	0.00	0.00	4x	20	80 - 120
Chromium (dissolved)	50.00	43.08	86.2	5.03		20	80 - 120
Cobalt (dissolved)	125.0	132.0	104	2.54		20	80 - 120
Copper (dissolved)	62.50	74.47	119	3.11		20	80 - 120
Iron (dissolved)	250.0	245.5	89.3	0.571		20	80 - 120
Lead (dissolved)	125.0	116.6	93.0	3.25		20	80 - 120
Magnesium (dissolved)	1250	250000000	0.00	0.00	4x	20	80 - 120
Manganese (dissolved)	125.0	485.5	121	6.16	N	20	80 - 120
Nickel (dissolved)	125.0	125.5	98.1	2.72		20	80 - 120
Potassium (dissolved)	1250	250000000	20000000	0.00	4x	20	80 - 120
Selenium (dissolved)	125.0	168.2	135	4.93	N	20	80 - 120
Silver (dissolved)	62.50	70.46	113	5.54		20	80 - 120
Sodium (dissolved)	1250	75480	-478	17.9	4x	20	80 - 120
Thallium (dissolved)	125.0	118.2	94.5	2.78		20	80 - 120
Vanadium (dissolved)	125.0	121.4	95.9	4.33		20	80 - 120
Zinc (dissolved)	125.0	130.0	101	4.65		20	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW7470A

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D12005

% Solids:

Source Sample Name: **1604034-05**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Mercury (dissolved)	2.000	ND	1.736	86.8		80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Mercury (dissolved)	2.000	1.737	86.9	0.0579		20	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW7470A

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D12005

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Mercury	2.000	ND	1.789	89.4		80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Mercury	2.000	1.834	91.7	2.50		20	80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09919-PS1
Batch: 6D09919
Lab Source ID: 1604034-04
Preparation: MET_3005A_LOW
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Aluminum	8160	6404	2000	87.8	80 - 120
Antimony	277.0	9.076	250.0	107	80 - 120
Arsenic	280.3	ND	250.0	111	80 - 120
Barium	2146	138.9	2000	100	80 - 120
Beryllium	49.41	ND	50.00	98.5	80 - 120
Cadmium	123.6	ND	125.0	98.9	80 - 120
Calcium	**1910000**	**1833000**	**5000**	**1540**	**80 - 120**
Chromium	188.3	ND	200.0	93.1	80 - 120
Cobalt	513.0	7.640	500.0	101	80 - 120
Copper	272.0	15.73	250.0	103	80 - 120
Iron	**6056**	**5257**	**1000**	**79.9**	**80 - 120**
Lead	240.1	5.790	250.0	93.7	80 - 120
Magnesium	**1559000**	**1573000**	**5000**	**-271**	**80 - 120**
Manganese	1733	1285	500.0	89.8	80 - 120
Nickel	510.6	11.76	500.0	99.8	80 - 120
Potassium	81040	75570	5000	110	80 - 120
Selenium	258.9	ND	250.0	104	80 - 120
Silver	255.4	11.94	250.0	97.4	80 - 120
Sodium	**5000000000**	**5000000000**	**5000**	**0.00**	**80 - 120**
Thallium	245.0	10.98	250.0	93.6	80 - 120
Vanadium	511.8	20.35	500.0	98.3	80 - 120
Zinc	546.2	30.37	500.0	103	80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09920-PS1
Batch: 6D09920
Lab Source ID: 1604034-05
Preparation: MET_3005A_LOW
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Aluminum (dissolved)	**342.0**	**ND**	**2000**	**17.1**	**80 - 120**
Antimony (dissolved)	**311.8**	**ND**	**250.0**	**123**	**80 - 120**
Arsenic (dissolved)	**331.4**	**ND**	**250.0**	**133**	**80 - 120**
Barium (dissolved)	2326	127.6	2000	110	80 - 120
Beryllium (dissolved)	49.04	ND	50.00	98.1	80 - 120
Cadmium (dissolved)	125.0	ND	125.0	100	80 - 120
Calcium (dissolved)	**1000000000**	**1000000000**	**5000**	**0.00**	**80 - 120**
Chromium (dissolved)	181.3	ND	200.0	90.6	80 - 120
Cobalt (dissolved)	526.0	6.425	500.0	104	80 - 120
Copper (dissolved)	298.0	ND	250.0	119	80 - 120
Iron (dissolved)	1071	88.80	1000	98.2	80 - 120
Lead (dissolved)	232.0	1.512	250.0	92.2	80 - 120
Magnesium (dissolved)	**1000000000**	**1000000000**	**5000**	**0.00**	**80 - 120**
Manganese (dissolved)	1771	1339	500.0	86.4	80 - 120
Nickel (dissolved)	510.8	11.82	500.0	99.8	80 - 120
Potassium (dissolved)	**1000000000**	**93340**	**5000**	**20000000**	**80 - 120**
Selenium (dissolved)	**332.0**	**ND**	**250.0**	**133**	**80 - 120**
Silver (dissolved)	284.3	ND	250.0	114	80 - 120
Sodium (dissolved)	**250400**	**325800**	**5000**	**-1510**	**80 - 120**
Thallium (dissolved)	234.2	ND	250.0	93.0	80 - 120
Vanadium (dissolved)	506.9	6.057	500.0	100	80 - 120
Zinc (dissolved)	534.6	15.13	500.0	104	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D09919	Laboratory ID:	6D09919-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Aluminum	100.0	103.1	103	80 - 120
Antimony	12.50	12.48	99.8	80 - 120
Arsenic	12.50	12.72	102	80 - 120
Barium	100.0	96.79	96.8	80 - 120
Beryllium	2.500	2.463	98.5	80 - 120
Cadmium	6.250	6.472	104	80 - 120
Calcium	750.0	801.6	107	80 - 120
Chromium	10.00	9.483	94.8	80 - 120
Cobalt	25.00	25.23	101	80 - 120
Copper	12.50	12.42	99.3	80 - 120
Iron	50.00	55.16	110	80 - 120
Lead	12.50	12.28	98.3	80 - 120
Magnesium	750.0	775.8	103	80 - 120
Manganese	25.00	25.84	103	80 - 120
Nickel	25.00	25.30	101	80 - 120
Potassium	750.0	764.9	102	80 - 120
Selenium	12.50	12.44	99.5	80 - 120
Silver	12.50	11.40	91.2	80 - 120
Sodium	750.0	758.5	101	80 - 120
Thallium	12.50	12.69	101	80 - 120
Vanadium	25.00	24.73	98.9	80 - 120
Zinc	25.00	25.48	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D09920	Laboratory ID:	6D09920-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Aluminum (dissolved)	100.0	103.7	104	80 - 120
Antimony (dissolved)	12.50	11.21	89.7	80 - 120
Arsenic (dissolved)	12.50	11.67	93.3	80 - 120
Barium (dissolved)	100.0	90.59	90.6	80 - 120
Beryllium (dissolved)	2.500	2.349	94.0	80 - 120
Cadmium (dissolved)	6.250	6.506	104	80 - 120
Calcium (dissolved)	750.0	763.8	102	80 - 120
Chromium (dissolved)	10.00	9.761	97.6	80 - 120
Cobalt (dissolved)	25.00	24.25	97.0	80 - 120
Copper (dissolved)	12.50	11.95	95.6	80 - 120
Iron (dissolved)	50.00	47.54	95.1	80 - 120
Lead (dissolved)	12.50	11.91	95.3	80 - 120
Magnesium (dissolved)	750.0	743.6	99.1	80 - 120
Manganese (dissolved)	25.00	23.55	94.2	80 - 120
Nickel (dissolved)	25.00	23.67	94.7	80 - 120
Potassium (dissolved)	750.0	708.3	94.4	80 - 120
Selenium (dissolved)	12.50	12.29	98.4	80 - 120
Silver (dissolved)	12.50	11.72	93.8	80 - 120
Sodium (dissolved)	750.0	788.9	105	80 - 120
Thallium (dissolved)	12.50	11.99	95.9	80 - 120
Vanadium (dissolved)	25.00	23.44	93.7	80 - 120
Zinc (dissolved)	25.00	25.75	103	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12005	Laboratory ID:	6D12005-BS1
Preparation:	pMercury-W SW 7470A	Initial/Final:	30 mL / 30 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Mercury	2.000	2.039	102	80 - 120
Mercury (dissolved)	2.000	2.039	102	80 - 120

SERIAL DILUTION

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sequence: 6D10605
Preparation: MET_3005A_LOW

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 6D09919-DUP1
Lab Source ID: 1604034-04
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Aluminum	1280.9	1565.8	22.2		SW6010C	10.00
Antimony	ND	ND			SW6010C	10.00
Arsenic	ND	ND			SW6010C	10.00
Barium	27.776	26.734	-3.75		SW6010C	10.00
Beryllium	ND	ND			SW6010C	10.00
Cadmium	ND	ND			SW6010C	10.00
Calcium	366640	383740	4.66		SW6010C	10.00
Chromium	ND	ND			SW6010C	10.00
Cobalt	ND	ND			SW6010C	10.00
Copper	ND	ND			SW6010C	10.00
Iron	1051.4	1096.5	4.29		SW6010C	10.00
Lead	ND	ND			SW6010C	10.00
Magnesium	314580	328070	4.29		SW6010C	10.00
Manganese	256.91	258.85	0.755		SW6010C	10.00
Nickel	ND	ND			SW6010C	10.00
Potassium	15114	13657	-9.64		SW6010C	10.00
Selenium	ND	ND			SW6010C	10.00
Silver	2.3888	ND			SW6010C	10.00
Thallium	ND	ND			SW6010C	10.00
Vanadium	ND	ND			SW6010C	10.00
Zinc	6.0733	ND			SW6010C	10.00

SERIAL DILUTION

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sequence: 6D11022
Preparation: MET_3005A_LOW

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 6D09919-DUP2
Lab Source ID: 1604034-04RE1
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Sodium	275000	354740	29	E	SW6010C	10.00

SERIAL DILUTION

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sequence: 6D10204
Preparation: MET_3005A_LOW

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 6D09920-DUP1
Lab Source ID: 1604034-05
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Antimony (dissolved)	ND	ND			SW6010C	10.00
Arsenic (dissolved)	ND	ND			SW6010C	10.00
Barium (dissolved)	127.59	115.62	-9.38		SW6010C	10.00
Beryllium (dissolved)	ND	ND			SW6010C	10.00
Cobalt (dissolved)	6.4254	ND			SW6010C	10.00
Iron (dissolved)	88.805	ND			SW6010C	10.00
Lead (dissolved)	1.5125	ND			SW6010C	10.00
Manganese (dissolved)	1338.8	1367.7	2.16		SW6010C	10.00
Potassium (dissolved)	93336	76750	-17.8		SW6010C	10.00
Silver (dissolved)	ND	ND			SW6010C	10.00
Thallium (dissolved)	ND	ND			SW6010C	10.00
Vanadium (dissolved)	6.0573	ND			SW6010C	10.00

SERIAL DILUTION

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sequence: 6D10605
Preparation: MET_3005A_LOW

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 6D09920-DUP2
Lab Source ID: 1604034-05RE1
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Chromium (dissolved)	ND	ND			SW6010C	10.00
Copper (dissolved)	ND	ND			SW6010C	10.00
Magnesium (dissolved)	305830	327420	7.06		SW6010C	10.00
Nickel (dissolved)	ND	ND			SW6010C	10.00

SERIAL DILUTION

SW6010C

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sequence: 6D11022
Preparation: MET_3005A_LOW

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 6D09920-DUP3
Lab Source ID: 1604034-05RE2
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I) ug/L	Serial Dilution Result (S) ug/L	% Difference	Q	Method	QC Limits % Difference
Aluminum (dissolved)	270	272.85	1.06		SW6010C	10.00
Cadmium (dissolved)	ND	ND			SW6010C	10.00
Calcium (dissolved)	106580	109770	2.99		SW6010C	10.00
Selenium (dissolved)	ND	ND			SW6010C	10.00
Sodium (dissolved)	275350	356370	29.4	E	SW6010C	10.00
Zinc (dissolved)	ND	ND			SW6010C	10.00

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604034

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Aluminum	396.152	0.000000	0.997239	0.000043	0.000000	0.000000
Antimony	206.833	0.000000	0.000000	0.000015	0.000000	0.000000
Arsenic	189.042	-0.000016	0.000000	-0.00007	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	0.000000	0.003803	0.000019	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.005608	0.000000
Cobalt	228.616	0.000000	0.000000	0.000041	0.000000	0.000000
Copper	324.754	0.000000	0.000000	-0.000044	0.001001	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.353	-0.000194	0.000000	0.000035	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000025	0.000000	0.000000
Nickel	231.604	0.000000	0.000000	0.000024	0.002042	0.000000
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.00002	-0.003538	0.000000	0.000000	0.000000
Silver	328.068	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000000	0.000000	0.000019	0.000000	0.000000
Vanadium	292.402	0.000000	0.000000	0.000000	0.000000	0.000000
Zinc	206.200	0.000014	0.000827	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604034

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Aluminum	396.152	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	-0.000021	0.000000	0.000000	0.000000	0.000000
Arsenic	189.042	0.000000	0.000000	0.000000	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	-0.000125	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.000000	0.000043
Cobalt	228.616	0.000000	0.000000	0.000000	0.000000	0.000000
Copper	324.754	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.353	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	0.000000	0.000000	0.000000	-0.000039	0.000000
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000000	0.000000	0.000000	0.000000	0.000000
Silver	328.068	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000000	0.000000	0.000000	0.000000	0.000000
Vanadium	292.402	0.000000	0.000000	0.000000	0.000000	0.000000
Zinc	206.200	0.000000	0.000000	0.000000	0.001494	0.000729

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604034

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Aluminum	396.152	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	0.000000	0.023282	0.000000	0.000000	0.000000
Arsenic	189.042	0.000000	0.000195	0.000000	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	0.000000	-0.00009	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.000000	0.000412
Cobalt	228.616	0.000000	-0.000032	0.000000	0.000000	0.000000
Copper	324.754	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	-0.00372	0.000000	0.000000	-0.000794
Lead	220.353	0.000000	0.000000	0.000535	0.000000	0.000116
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	-0.000486	-0.000079	0.000000	0.000000	0.000000
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000000	0.000000	0.000000	0.000000	0.00061
Silver	328.068	0.000000	0.000000	0.000000	0.000000	0.000319
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.003819	0.000203	0.000000	0.000000	0.001269
Vanadium	292.402	0.000000	-0.009679	0.000000	0.000000	-0.000386
Zinc	206.200	0.000000	0.000078	0.0003	0.000000	0.000688

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604034

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Aluminum	396.152	0.047589	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	-0.001234	0.000000	0.000000	0.000000	0.000000
Arsenic	189.042	0.003155	0.000000	0.000000	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	-0.000025	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	-0.000105	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.000000	0.000000
Cobalt	228.616	-0.001642	0.000000	0.000049	0.000000	0.000000
Copper	324.754	0.000505	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	-0.000713	0.000000	0.000000
Lead	220.353	-0.001390	0.000000	0.000151	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	-0.000735	0.000000	0.000000	0.000017	-0.00003
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000166	0.000000	-0.000022	0.000000	0.000000
Silver	328.068	-0.000046	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000230	0.000000	0.000000	0.000000	0.000000
Vanadium	292.402	-0.000106	0.000000	0.000000	0.000000	0.000000
Zinc	206.200	0.000173	0.000000	0.000366	0.000000	0.000004

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604034

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Aluminum	396.152	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	0.000000	0.000000	0.000252	0.000000	0.000048
Arsenic	189.042	0.000000	0.000000	-0.00007	0.000000	0.000084
Barium	233.527	0.000000	0.000000	0.000000	0.000000	-0.0002594
Beryllium	313.042	0.000000	0.000000	-0.000956	0.000000	-0.000417
Cadmium	214.438	0.000000	0.000000	0.000000	0.000000	0.00003
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000123	0.000000	-0.000018
Cobalt	228.616	0.000000	0.000000	0.002252	0.000000	0.000000
Copper	324.754	0.000000	0.000000	-0.001215	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.353	0.000000	0.000000	0.000092	0.000000	-0.00007
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	0.000000	0.000000	0.000078	0.000281	0.000104
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000000	0.000000	0.0000022	0.000000	0.00018
Silver	328.068	0.000000	0.000000	0.000000	0.000000	-0.00427
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000000	0.000000	-0.001356	0.000000	0.000464
Vanadium	292.402	0.000000	0.000000	0.000000	0.000682	0.000000
Zinc	206.200	0.000000	0.000000	0.000000	0.000000	0.000226

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604034

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Aluminum	396.152	0.000000				
Antimony	206.833	0.000000				
Arsenic	189.042	-0.000011				
Barium	233.527	0.000000				
Beryllium	313.042	0.000000				
Cadmium	214.438	0.000000				
Calcium	317.933	0.000000				
Chromium	267.716	0.000000				
Cobalt	228.616	0.000000				
Copper	324.754	0.000000				
Iron	261.187	0.000000				
Lead	220.353	0.000000				
Magnesium	279.079	0.000000				
Manganese	257.610	0.000000				
Nickel	231.604	0.000063				
Potassium	766.490	0.000000				
Selenium	196.090	0.000000				
Silver	328.068	0.000000				
Sodium	589.592	0.000000				
Thallium	190.856	0.000000				
Vanadium	292.402	0.000000				
Zinc	206.200	0.000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: CB&I SDG: 1604034

Project: Holloman AFB

ICP Instrument ID: ME-ICP Date: 01/30/2016

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Aluminum	15	500000	P
Antimony	15	25000	P
Arsenic	15	10000	P
Barium	15	5000	P
Beryllium	15	10000	P
Cadmium	15	10000	P
Calcium	15	500000	P
Chromium	15	10000	P
Cobalt	15	10000	P
Copper	15	25000	P
Iron	15	500000	P
Lead	15	25000	P
Magnesium	15	500000	P
Manganese	15	12000	P
Nickel	15	50000	P
Potassium	15	100000	P
Selenium	15	10000	P
Silver	15	2000	P
Sodium	15	500000	P
Thallium	15	10000	P
Vanadium	15	10000	P
Zinc	15	20000	P

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Batch: 6D09919 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW02	1604034-02	04/13/16 07:57	100.00	25.00
OTC538-GW-MW02	1604034-02RE1	04/13/16 07:57	100.00	25.00
OTC537-GW-MW01	1604034-04	04/13/16 07:57	100.00	25.00
OTC537-GW-MW01	1604034-04RE1	04/13/16 07:57	100.00	25.00
OTC537-GW-MW01-FD	1604034-06	04/13/16 07:57	100.00	25.00
OTC537-GW-MW01-FD	1604034-06RE1	04/13/16 07:57	100.00	25.00
Blank	6D09919-BLK1	04/13/16 07:57	100.00	25.00
LCS	6D09919-BS1	04/13/16 07:57	100.00	25.00
OTC537-GW-MW01	6D09919-DUP1	04/13/16 07:57	100.00	25.00
OTC537-GW-MW01	6D09919-DUP2	04/13/16 07:57	100.00	25.00
OTC537-GW-MW01	6D09919-MS1	04/13/16 07:57	100.00	25.00
OTC537-GW-MW01	6D09919-MSD1	04/13/16 07:57	100.00	25.00
OTC537-GW-MW01	6D09919-PS1	04/13/16 07:57	100.00	25.00

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Batch: 6D09920 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW02	1604034-03	04/09/16 07:05	100.00	25.00
OTC538-GW-MW02	1604034-03RE1	04/09/16 07:05	100.00	25.00
OTC538-GW-MW02	1604034-03RE2	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01	1604034-05	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01	1604034-05RE1	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01	1604034-05RE2	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01-FD	1604034-07	04/09/16 07:05	100.00	25.00
Blank	6D09920-BLK1	04/09/16 07:05	100.00	25.00
LCS	6D09920-BS1	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01	6D09920-DUP1	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01	6D09920-DUP2	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01	6D09920-DUP3	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01	6D09920-MS1	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01	6D09920-MSD1	04/09/16 07:05	100.00	25.00
OTC537-GW-MW01	6D09920-PS1	04/09/16 07:05	100.00	25.00

PREPARATION BATCH SUMMARY

SW7470A

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Batch: 6D12005 Batch Matrix: Water Preparation: pMercury-W SW 7470A

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW02	1604034-02	04/12/16 07:01	30.00	30.00
OTC538-GW-MW02	1604034-03	04/12/16 07:01	30.00	30.00
OTC537-GW-MW01	1604034-04	04/12/16 07:01	30.00	30.00
OTC537-GW-MW01	1604034-05	04/12/16 07:01	30.00	30.00
OTC537-GW-MW01-FD	1604034-06	04/12/16 07:01	30.00	30.00
OTC537-GW-MW01-FD	1604034-07	04/12/16 07:01	30.00	30.00
Blank	6D12005-BLK1	04/12/16 07:01	30.00	30.00
Blank	6D12005-BLK1	04/12/16 07:01	30.00	30.00
LCS	6D12005-BS1	04/12/16 07:01	30.00	30.00
LCS	6D12005-BS1	04/12/16 07:01	30.00	30.00
OTC537-GW-MW01	6D12005-MS1	04/12/16 07:01	30.00	30.00
OTC537-GW-MW01	6D12005-MS2	04/12/16 07:01	30.00	30.00
OTC537-GW-MW01	6D12005-MSD1	04/12/16 07:01	30.00	30.00
OTC537-GW-MW01	6D12005-MSD2	04/12/16 07:01	30.00	30.00

INITIAL CALIBRATION STANDARDS

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10204	Instrument:	ME-ICP
Calibration:	6102002		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0092	SEQ-CAL1	6D10204-CAL1	04-11-16A-001	04/11/16 10:40
16B0394	SEQ-CAL2	6D10204-CAL2	04-11-16A-002	04/11/16 10:44
16D0093	SEQ-CAL3	6D10204-CAL3	04-11-16A-003	04/11/16 10:47
16C0452	SEQ-CAL4	6D10204-CAL4	04-11-16A-004	04/11/16 10:51
16D0153	SEQ-CAL5	6D10204-CAL5	04-11-16A-005	04/11/16 10:55
16D0036	SEQ-CAL6	6D10204-CAL6	04-11-16A-006	04/11/16 10:59
15L0584	SEQ-CAL7	6D10204-CAL7	04-11-16A-007	04/11/16 11:04
15L0751	SEQ-CAL8	6D10204-CAL8	04-11-16A-008	04/11/16 11:19

INITIAL CALIBRATION STANDARDS

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10311	Instrument:	ME-FIMS
Calibration:	6103004		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0142	Mercury 0.0 ppb H2O calibration std	6D10311-CAL1	20160412w-001	04/12/16 15:01
16D0142	Mercury 0.0 ppb H2O calibration std	6D10311-CAL1	20160412w-001	04/12/16 15:01
16D0143	Mercury 0.20 ppb H2O calibration std	6D10311-CAL2	20160412w-002	04/12/16 15:02
16D0143	Mercury 0.20 ppb H2O calibration std	6D10311-CAL2	20160412w-002	04/12/16 15:02
16D0144	Mercury 0.50 ppb H2O calibration std	6D10311-CAL3	20160412w-003	04/12/16 15:03
16D0144	Mercury 0.50 ppb H2O calibration std	6D10311-CAL3	20160412w-003	04/12/16 15:03
16D0145	Mercury 1.0 ppb H2O calbration standard	6D10311-CAL4	20160412w-004	04/12/16 15:04
16D0145	Mercury 1.0 ppb H2O calbration standard	6D10311-CAL4	20160412w-004	04/12/16 15:04
16D0146	Mercury 2.0 ppb H2O calibration std	6D10311-CAL5	20160412w-005	04/12/16 15:05
16D0146	Mercury 2.0 ppb H2O calibration std	6D10311-CAL5	20160412w-005	04/12/16 15:05
16D0147	Mercury 4.0 ppb H2O calibration std	6D10311-CAL6	20160412w-006	04/12/16 15:07
16D0147	Mercury 4.0 ppb H2O calibration std	6D10311-CAL6	20160412w-006	04/12/16 15:07
16D0148	Mercury 6.0 ppb H2O calibration std	6D10311-CAL7	20160412w-007	04/12/16 15:08
16D0148	Mercury 6.0 ppb H2O calibration std	6D10311-CAL7	20160412w-007	04/12/16 15:08
16D0149	Mercury 10.0 ppb H2O calibration std	6D10311-CAL8	20160412w-008	04/12/16 15:09
16D0149	Mercury 10.0 ppb H2O calibration std	6D10311-CAL8	20160412w-008	04/12/16 15:09

INITIAL CALIBRATION STANDARDS

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10503	Instrument:	ME-ICP
Calibration:	6105001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0092	SEQ-CAL1	6D10503-CAL1	04-14-16A-001	04/14/16 09:43
16D0093	SEQ-CAL3	6D10503-CAL3	04-14-16A-002	04/14/16 09:51
16C0452	SEQ-CAL4	6D10503-CAL4	04-14-16A-003	04/14/16 09:55
16D0153	SEQ-CAL5	6D10503-CAL5	04-14-16A-004	04/14/16 09:58
16D0036	SEQ-CAL6	6D10503-CAL6	04-14-16A-005	04/14/16 10:02
15L0584	SEQ-CAL7	6D10503-CAL7	04-14-16A-006	04/14/16 10:07
15L0751	SEQ-CAL8	6D10503-CAL8	04-14-16A-007	04/14/16 10:11
16B0394	SEQ-CAL2	6D10503-CAL2	04-14-16A-008	04/14/16 10:20

INITIAL CALIBRATION STANDARDS

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10605	Instrument:	ME-ICP
Calibration:	6106003		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0092	SEQ-CAL1	6D10605-CAL1	04-15-16A-001	04/15/16 09:24
16D0092	SEQ-CAL1	6D10605-CAL1	04-15-16A-001	04/15/16 09:24
16B0394	SEQ-CAL2	6D10605-CAL2	04-15-16A-002	04/15/16 09:35
16B0394	SEQ-CAL2	6D10605-CAL2	04-15-16A-002	04/15/16 09:35
16D0093	SEQ-CAL3	6D10605-CAL3	04-15-16A-003	04/15/16 09:39
16D0093	SEQ-CAL3	6D10605-CAL3	04-15-16A-003	04/15/16 09:39
16C0452	SEQ-CAL4	6D10605-CAL4	04-15-16A-004	04/15/16 09:43
16C0452	SEQ-CAL4	6D10605-CAL4	04-15-16A-004	04/15/16 09:43
16D0153	SEQ-CAL5	6D10605-CAL5	04-15-16A-005	04/15/16 09:47
16D0153	SEQ-CAL5	6D10605-CAL5	04-15-16A-005	04/15/16 09:47
16D0036	SEQ-CAL6	6D10605-CAL6	04-15-16A-006	04/15/16 09:52
16D0036	SEQ-CAL6	6D10605-CAL6	04-15-16A-006	04/15/16 09:52
16D0288	SEQ-CAL7	6D10605-CAL7	04-15-16A-007	04/15/16 09:56
16D0288	SEQ-CAL7	6D10605-CAL7	04-15-16A-007	04/15/16 09:56
16D0289	SEQ-CAL8	6D10605-CAL8	04-15-16A-008	04/15/16 10:00
16D0289	SEQ-CAL8	6D10605-CAL8	04-15-16A-008	04/15/16 10:00

INITIAL CALIBRATION STANDARDS

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D11022	Instrument:	ME-ICP
Calibration:	6110003		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0092	SEQ-CAL1	6D11022-CAL1	04-19-16A-001	04/19/16 09:52
16D0092	SEQ-CAL1	6D11022-CAL1	04-19-16A-001	04/19/16 09:52
16B0394	SEQ-CAL2	6D11022-CAL2	04-19-16A-002	04/19/16 09:56
16B0394	SEQ-CAL2	6D11022-CAL2	04-19-16A-002	04/19/16 09:56
16D0093	SEQ-CAL3	6D11022-CAL3	04-19-16A-003	04/19/16 09:59
16D0093	SEQ-CAL3	6D11022-CAL3	04-19-16A-003	04/19/16 09:59
16C0452	SEQ-CAL4	6D11022-CAL4	04-19-16A-004	04/19/16 10:03
16C0452	SEQ-CAL4	6D11022-CAL4	04-19-16A-004	04/19/16 10:03
16D0153	SEQ-CAL5	6D11022-CAL5	04-19-16A-005	04/19/16 10:07
16D0153	SEQ-CAL5	6D11022-CAL5	04-19-16A-005	04/19/16 10:07
16D0036	SEQ-CAL6	6D11022-CAL6	04-19-16A-006	04/19/16 10:12
16D0036	SEQ-CAL6	6D11022-CAL6	04-19-16A-006	04/19/16 10:12
16D0288	SEQ-CAL7	6D11022-CAL7	04-19-16A-007	04/19/16 10:17
16D0288	SEQ-CAL7	6D11022-CAL7	04-19-16A-007	04/19/16 10:17
16D0289	SEQ-CAL8	6D11022-CAL8	04-19-16A-008	04/19/16 10:23
16D0289	SEQ-CAL8	6D11022-CAL8	04-19-16A-008	04/19/16 10:23

INITIAL CALIBRATION STANDARDS

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D11204	Instrument:	ME-ICP
Calibration:	6112005		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0092	SEQ-CAL1	6D11204-CAL1	04-21-16A-001	04/21/16 09:54
16D0377	SEQ-CAL2	6D11204-CAL2	04-21-16A-002	04/21/16 09:57
16D0093	SEQ-CAL3	6D11204-CAL3	04-21-16A-003	04/21/16 10:01
16C0452	SEQ-CAL4	6D11204-CAL4	04-21-16A-004	04/21/16 10:05
16D0153	SEQ-CAL5	6D11204-CAL5	04-21-16A-005	04/21/16 10:09
16D0036	SEQ-CAL6	6D11204-CAL6	04-21-16A-006	04/21/16 10:13
16D0288	SEQ-CAL7	6D11204-CAL7	04-21-16A-007	04/21/16 10:18
16D0289	SEQ-CAL8	6D11204-CAL8	04-21-16A-008	04/21/16 10:22

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10204	Instrument:	ME-ICP
Calibration:	6102002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D10204-CAL1	04-11-16A-001	04/11/16 10:40
Cal Standard	6D10204-CAL2	04-11-16A-002	04/11/16 10:44
Cal Standard	6D10204-CAL3	04-11-16A-003	04/11/16 10:47
Cal Standard	6D10204-CAL4	04-11-16A-004	04/11/16 10:51
Cal Standard	6D10204-CAL5	04-11-16A-005	04/11/16 10:55
Cal Standard	6D10204-CAL6	04-11-16A-006	04/11/16 10:59
Cal Standard	6D10204-CAL7	04-11-16A-007	04/11/16 11:04
Cal Standard	6D10204-CAL8	04-11-16A-008	04/11/16 11:19
Initial Cal Check	6D10204-ICV1	04-11-16B-001	04/11/16 11:45
Initial Cal Blank	6D10204-ICB1	04-11-16B-002	04/11/16 11:50
Instrument RL Check	6D10204-CRL1	04-11-16B-003	04/11/16 12:03
Interference Check A	6D10204-IFA1	04-11-16B-004	04/11/16 12:13
Interference Check B	6D10204-IFB1	04-11-16B-005	04/11/16 12:18
Calibration Check	6D10204-CCV1	04-11-16B-007	04/11/16 12:27
Calibration Blank	6D10204-CCB1	04-11-16B-008	04/11/16 12:31
Calibration Check	6D10204-CCV7	04-11-16C-039	04/11/16 18:43
Calibration Blank	6D10204-CCB7	04-11-16C-040	04/11/16 18:47
Blank	6D09920-BLK1	04-11-16C-041	04/11/16 18:51
LCS	6D09920-BS1	04-11-16C-042	04/11/16 18:56
OTC538-GW-MW02	1604034-03	04-11-16C-051	04/11/16 19:37
OTC537-GW-MW01	1604034-05	04-11-16C-052	04/11/16 19:42
OTC537-GW-MW01	6D09920-MS1	04-11-16C-053	04/11/16 19:47
OTC537-GW-MW01	6D09920-MSD1	04-11-16C-054	04/11/16 19:52
OTC537-GW-MW01	6D09920-PS1	04-11-16C-055	04/11/16 19:57
OTC537-GW-MW01	6D09920-DUP1	04-11-16C-056	04/11/16 20:01
Calibration Check	6D10204-CCV8	04-11-16C-057	04/11/16 20:06
Calibration Blank	6D10204-CCB8	04-11-16C-058	04/11/16 20:11

ANALYSIS SEQUENCE SUMMARY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10311	Instrument:	ME-FIMS
Calibration:	6103004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D10311-CAL1	20160412w-001	04/12/16 15:01
Cal Standard	6D10311-CAL1	20160412w-001	04/12/16 15:01
Cal Standard	6D10311-CAL2	20160412w-002	04/12/16 15:02
Cal Standard	6D10311-CAL2	20160412w-002	04/12/16 15:02
Cal Standard	6D10311-CAL3	20160412w-003	04/12/16 15:03
Cal Standard	6D10311-CAL3	20160412w-003	04/12/16 15:03
Cal Standard	6D10311-CAL4	20160412w-004	04/12/16 15:04
Cal Standard	6D10311-CAL4	20160412w-004	04/12/16 15:04
Cal Standard	6D10311-CAL5	20160412w-005	04/12/16 15:05
Cal Standard	6D10311-CAL5	20160412w-005	04/12/16 15:05
Cal Standard	6D10311-CAL6	20160412w-006	04/12/16 15:07
Cal Standard	6D10311-CAL6	20160412w-006	04/12/16 15:07
Cal Standard	6D10311-CAL7	20160412w-007	04/12/16 15:08
Cal Standard	6D10311-CAL7	20160412w-007	04/12/16 15:08
Cal Standard	6D10311-CAL8	20160412w-008	04/12/16 15:09
Cal Standard	6D10311-CAL8	20160412w-008	04/12/16 15:09
Initial Cal Check	6D10311-ICV1	20160412w-009	04/12/16 15:11
Initial Cal Check	6D10311-ICV1	20160412w-009	04/12/16 15:11
Initial Cal Blank	6D10311-ICB1	20160412w-010	04/12/16 15:12
Initial Cal Blank	6D10311-ICB1	20160412w-010	04/12/16 15:12
Calibration Check	6D10311-CCV1	20160412w-022	04/12/16 15:24
Calibration Check	6D10311-CCV1	20160412w-022	04/12/16 15:24
Calibration Blank	6D10311-CCB1	20160412w-023	04/12/16 15:25
Calibration Blank	6D10311-CCB1	20160412w-023	04/12/16 15:25
Blank	6D12005-BLK1	20160412w-024	04/12/16 15:26
Blank	6D12005-BLK1	20160412w-024	04/12/16 15:26
LCS	6D12005-BS1	20160412w-025	04/12/16 15:27
LCS	6D12005-BS1	20160412w-025	04/12/16 15:27
OTC538-GW-MW02	1604034-02	20160412w-029	04/12/16 15:32
OTC538-GW-MW02	1604034-03	20160412w-030	04/12/16 15:33
OTC537-GW-MW01	1604034-04	20160412w-031	04/12/16 15:34
OTC537-GW-MW01	6D12005-MS1	20160412w-032	04/12/16 15:35

ANALYSIS SEQUENCE SUMMARY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10311	Instrument:	ME-FIMS
Calibration:	6103004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
OTC537-GW-MW01	6D12005-MSD1	20160412w-033	04/12/16 15:37
OTC537-GW-MW01	1604034-05	20160412w-034	04/12/16 15:38
OTC537-GW-MW01	6D12005-MS2	20160412w-035	04/12/16 15:39
OTC537-GW-MW01	6D12005-MSD2	20160412w-036	04/12/16 15:40
Calibration Check	6D10311-CCV2	20160412w-037	04/12/16 15:41
Calibration Check	6D10311-CCV2	20160412w-037	04/12/16 15:41
Calibration Blank	6D10311-CCB2	20160412w-038	04/12/16 15:42
Calibration Blank	6D10311-CCB2	20160412w-038	04/12/16 15:42
OTC537-GW-MW01-FD	1604034-06	20160412w-039	04/12/16 15:43
OTC537-GW-MW01-FD	1604034-07	20160412w-040	04/12/16 15:44
Calibration Check	6D10311-CCV3	20160412w-049	04/12/16 15:53
Calibration Check	6D10311-CCV3	20160412w-049	04/12/16 15:53
Calibration Blank	6D10311-CCB3	20160412w-050	04/12/16 15:54
Calibration Blank	6D10311-CCB3	20160412w-050	04/12/16 15:54

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10503	Instrument:	ME-ICP
Calibration:	6105001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D10503-CAL1	04-14-16A-001	04/14/16 09:43
Cal Standard	6D10503-CAL3	04-14-16A-002	04/14/16 09:51
Cal Standard	6D10503-CAL4	04-14-16A-003	04/14/16 09:55
Cal Standard	6D10503-CAL5	04-14-16A-004	04/14/16 09:58
Cal Standard	6D10503-CAL6	04-14-16A-005	04/14/16 10:02
Cal Standard	6D10503-CAL7	04-14-16A-006	04/14/16 10:07
Cal Standard	6D10503-CAL8	04-14-16A-007	04/14/16 10:11
Cal Standard	6D10503-CAL2	04-14-16A-008	04/14/16 10:20
Initial Cal Check	6D10503-ICV1	04-14-16B-001	04/14/16 10:46
Initial Cal Blank	6D10503-ICB1	04-14-16B-002	04/14/16 10:52
Instrument RL Check	6D10503-CRL1	04-14-16B-003	04/14/16 10:56
Instrument RL Check	6D10503-CRL2	04-14-16B-004	04/14/16 11:01
Interference Check A	6D10503-IFA1	04-14-16B-005	04/14/16 11:05
Interference Check B	6D10503-IFB1	04-14-16B-006	04/14/16 11:10
Calibration Check	6D10503-CCV1	04-14-16B-008	04/14/16 11:19
Calibration Blank	6D10503-CCB1	04-14-16B-009	04/14/16 11:23
Blank	6D09919-BLK1	04-14-16B-010	04/14/16 11:28
LCS	6D09919-BS1	04-14-16B-011	04/14/16 11:32
Calibration Check	6D10503-CCV2	04-14-16B-022	04/14/16 12:21
Calibration Blank	6D10503-CCB2	04-14-16B-023	04/14/16 12:26

ANALYSIS SEQUENCE SUMMARY
SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10605	Instrument:	ME-ICP
Calibration:	6106003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D10605-CAL1	04-15-16A-001	04/15/16 09:24
Cal Standard	6D10605-CAL1	04-15-16A-001	04/15/16 09:24
Cal Standard	6D10605-CAL2	04-15-16A-002	04/15/16 09:35
Cal Standard	6D10605-CAL2	04-15-16A-002	04/15/16 09:35
Cal Standard	6D10605-CAL3	04-15-16A-003	04/15/16 09:39
Cal Standard	6D10605-CAL3	04-15-16A-003	04/15/16 09:39
Cal Standard	6D10605-CAL4	04-15-16A-004	04/15/16 09:43
Cal Standard	6D10605-CAL4	04-15-16A-004	04/15/16 09:43
Cal Standard	6D10605-CAL5	04-15-16A-005	04/15/16 09:47
Cal Standard	6D10605-CAL5	04-15-16A-005	04/15/16 09:47
Cal Standard	6D10605-CAL6	04-15-16A-006	04/15/16 09:52
Cal Standard	6D10605-CAL6	04-15-16A-006	04/15/16 09:52
Cal Standard	6D10605-CAL7	04-15-16A-007	04/15/16 09:56
Cal Standard	6D10605-CAL7	04-15-16A-007	04/15/16 09:56
Cal Standard	6D10605-CAL8	04-15-16A-008	04/15/16 10:00
Cal Standard	6D10605-CAL8	04-15-16A-008	04/15/16 10:00
Initial Cal Check	6D10605-ICV1	04-15-16B-001	04/15/16 10:28
Initial Cal Check	6D10605-ICV1	04-15-16B-001	04/15/16 10:28
Initial Cal Blank	6D10605-ICB1	04-15-16B-002	04/15/16 10:33
Initial Cal Blank	6D10605-ICB1	04-15-16B-002	04/15/16 10:33
Instrument RL Check	6D10605-CRL1	04-15-16B-005	04/15/16 10:47
Instrument RL Check	6D10605-CRL1	04-15-16B-005	04/15/16 10:47
Interference Check A	6D10605-IFA1	04-15-16B-006	04/15/16 10:51
Interference Check A	6D10605-IFA1	04-15-16B-006	04/15/16 10:51
Interference Check B	6D10605-IFB1	04-15-16B-007	04/15/16 10:56
Interference Check B	6D10605-IFB1	04-15-16B-007	04/15/16 10:56
Calibration Check	6D10605-CCV1	04-15-16B-009	04/15/16 11:05
Calibration Check	6D10605-CCV1	04-15-16B-009	04/15/16 11:05
Calibration Blank	6D10605-CCB1	04-15-16B-010	04/15/16 11:10
Calibration Blank	6D10605-CCB1	04-15-16B-010	04/15/16 11:10
Calibration Check	6D10605-CCV2	04-15-16B-027	04/15/16 12:24
Calibration Check	6D10605-CCV2	04-15-16B-027	04/15/16 12:24

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10605	Instrument:	ME-ICP
Calibration:	6106003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	6D10605-CCB2	04-15-16B-028	04/15/16 12:28
Calibration Blank	6D10605-CCB2	04-15-16B-028	04/15/16 12:28
OTC538-GW-MW02	1604034-03RE1	04-15-16B-033	04/15/16 12:51
OTC537-GW-MW01	1604034-05RE1	04-15-16B-034	04/15/16 12:56
OTC537-GW-MW01	6D09920-DUP2	04-15-16B-035	04/15/16 13:00
Calibration Check	6D10605-CCV3	04-15-16B-036	04/15/16 13:05
Calibration Check	6D10605-CCV3	04-15-16B-036	04/15/16 13:05
Calibration Blank	6D10605-CCB3	04-15-16B-037	04/15/16 13:09
Calibration Blank	6D10605-CCB3	04-15-16B-037	04/15/16 13:09
Calibration Check	6D10605-CCV7	04-15-16C-034	04/15/16 16:36
Calibration Check	6D10605-CCV7	04-15-16C-034	04/15/16 16:36
Calibration Blank	6D10605-CCB7	04-15-16C-035	04/15/16 16:42
Calibration Blank	6D10605-CCB7	04-15-16C-035	04/15/16 16:42
OTC538-GW-MW02	1604034-02	04-15-16D-001	04/15/16 16:53
OTC537-GW-MW01	1604034-04	04-15-16D-002	04/15/16 16:57
OTC537-GW-MW01	6D09919-MS1	04-15-16D-003	04/15/16 17:03
OTC537-GW-MW01	6D09919-MSD1	04-15-16D-004	04/15/16 17:09
OTC537-GW-MW01	6D09919-PS1	04-15-16D-005	04/15/16 17:15
OTC537-GW-MW01	6D09919-DUP1	04-15-16D-006	04/15/16 17:20
OTC537-GW-MW01-FD	1604034-06	04-15-16D-007	04/15/16 17:25
Calibration Check	6D10605-CCV8	04-15-16D-011	04/15/16 17:44
Calibration Check	6D10605-CCV8	04-15-16D-011	04/15/16 17:44
Calibration Blank	6D10605-CCB8	04-15-16D-012	04/15/16 17:48
Calibration Blank	6D10605-CCB8	04-15-16D-012	04/15/16 17:48

ANALYSIS SEQUENCE SUMMARY
SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D11022	Instrument:	ME-ICP
Calibration:	6110003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D11022-CAL1	04-19-16A-001	04/19/16 09:52
Cal Standard	6D11022-CAL1	04-19-16A-001	04/19/16 09:52
Cal Standard	6D11022-CAL2	04-19-16A-002	04/19/16 09:56
Cal Standard	6D11022-CAL2	04-19-16A-002	04/19/16 09:56
Cal Standard	6D11022-CAL3	04-19-16A-003	04/19/16 09:59
Cal Standard	6D11022-CAL3	04-19-16A-003	04/19/16 09:59
Cal Standard	6D11022-CAL4	04-19-16A-004	04/19/16 10:03
Cal Standard	6D11022-CAL4	04-19-16A-004	04/19/16 10:03
Cal Standard	6D11022-CAL5	04-19-16A-005	04/19/16 10:07
Cal Standard	6D11022-CAL5	04-19-16A-005	04/19/16 10:07
Cal Standard	6D11022-CAL6	04-19-16A-006	04/19/16 10:12
Cal Standard	6D11022-CAL6	04-19-16A-006	04/19/16 10:12
Cal Standard	6D11022-CAL7	04-19-16A-007	04/19/16 10:17
Cal Standard	6D11022-CAL7	04-19-16A-007	04/19/16 10:17
Cal Standard	6D11022-CAL8	04-19-16A-008	04/19/16 10:23
Cal Standard	6D11022-CAL8	04-19-16A-008	04/19/16 10:23
Initial Cal Check	6D11022-ICV1	04-19-16B-001	04/19/16 10:51
Initial Cal Check	6D11022-ICV1	04-19-16B-001	04/19/16 10:51
Initial Cal Blank	6D11022-ICB1	04-19-16B-002	04/19/16 10:57
Initial Cal Blank	6D11022-ICB1	04-19-16B-002	04/19/16 10:57
Instrument RL Check	6D11022-CRL1	04-19-16B-003	04/19/16 11:06
Instrument RL Check	6D11022-CRL1	04-19-16B-003	04/19/16 11:06
Instrument RL Check	6D11022-CRL2	04-19-16B-004	04/19/16 11:22
Instrument RL Check	6D11022-CRL2	04-19-16B-004	04/19/16 11:22
Interference Check A	6D11022-IFA1	04-19-16B-005	04/19/16 11:30
Interference Check A	6D11022-IFA1	04-19-16B-005	04/19/16 11:30
Interference Check B	6D11022-IFB1	04-19-16B-006	04/19/16 11:35
Interference Check B	6D11022-IFB1	04-19-16B-006	04/19/16 11:35
Calibration Check	6D11022-CCV1	04-19-16B-008	04/19/16 11:44
Calibration Check	6D11022-CCV1	04-19-16B-008	04/19/16 11:44
Calibration Blank	6D11022-CCB1	04-19-16B-009	04/19/16 11:49
Calibration Blank	6D11022-CCB1	04-19-16B-009	04/19/16 11:49

ANALYSIS SEQUENCE SUMMARY
SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D11022	Instrument:	ME-ICP
Calibration:	6110003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	6D11022-CCV7	04-19-16C-056	04/19/16 18:31
Calibration Check	6D11022-CCV7	04-19-16C-056	04/19/16 18:31
Calibration Blank	6D11022-CCB7	04-19-16C-057	04/19/16 18:35
Calibration Blank	6D11022-CCB7	04-19-16C-057	04/19/16 18:35
OTC538-GW-MW02	1604034-03RE2	04-19-16C-058	04/19/16 18:39
OTC537-GW-MW01	1604034-05RE2	04-19-16C-059	04/19/16 18:44
OTC537-GW-MW01	6D09920-DUP3	04-19-16C-060	04/19/16 18:49
OTC538-GW-MW02	1604034-02RE1	04-19-16C-061	04/19/16 18:53
OTC537-GW-MW01	1604034-04RE1	04-19-16C-062	04/19/16 18:57
OTC537-GW-MW01	6D09919-DUP2	04-19-16C-063	04/19/16 19:02
OTC537-GW-MW01-FD	1604034-06RE1	04-19-16C-064	04/19/16 19:06
Calibration Check	6D11022-CCV8	04-19-16C-067	04/19/16 19:20
Calibration Check	6D11022-CCV8	04-19-16C-067	04/19/16 19:20
Calibration Blank	6D11022-CCB8	04-19-16C-068	04/19/16 19:25
Calibration Blank	6D11022-CCB8	04-19-16C-068	04/19/16 19:25

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D11204	Instrument:	ME-ICP
Calibration:	6112005		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D11204-CAL1	04-21-16A-001	04/21/16 09:54
Cal Standard	6D11204-CAL2	04-21-16A-002	04/21/16 09:57
Cal Standard	6D11204-CAL3	04-21-16A-003	04/21/16 10:01
Cal Standard	6D11204-CAL4	04-21-16A-004	04/21/16 10:05
Cal Standard	6D11204-CAL5	04-21-16A-005	04/21/16 10:09
Cal Standard	6D11204-CAL6	04-21-16A-006	04/21/16 10:13
Cal Standard	6D11204-CAL7	04-21-16A-007	04/21/16 10:18
Cal Standard	6D11204-CAL8	04-21-16A-008	04/21/16 10:22
Initial Cal Check	6D11204-ICV1	04-21-16B-001	04/21/16 10:49
Initial Cal Blank	6D11204-ICB1	04-21-16B-002	04/21/16 10:54
Instrument RL Check	6D11204-CRL1	04-21-16B-003	04/21/16 11:22
Instrument RL Check	6D11204-CRL2	04-21-16B-004	04/21/16 11:27
Interference Check A	6D11204-IFA1	04-21-16B-005	04/21/16 11:36
Interference Check B	6D11204-IFB1	04-21-16B-006	04/21/16 11:40
Calibration Check	6D11204-CCV1	04-21-16B-009	04/21/16 11:54
Calibration Blank	6D11204-CCB1	04-21-16B-010	04/21/16 11:58
OTC537-GW-MW01-FD	1604034-07	04-21-16B-024	04/21/16 13:01
Calibration Check	6D11204-CCV2	04-21-16B-029	04/21/16 13:27
Calibration Blank	6D11204-CCB2	04-21-16B-030	04/21/16 13:33

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6102002	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/11/16 10:40 4/11/16 11:19

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	3.0332E-05	10000	3.0387E-05			500000	2.9156E-05		
Antimony	0	0	100	0.0009908	1000	9.4238E-04					10000	9.1908E-04
Arsenic	0	0	100	0.0004253	1000	4.5004E-04					10000	4.3635E-04
Barium	0	0	50	0.0179084	1000	0.01637	5000	0.0170136				
Beryllium	0	0	100	0.0028183	1000	0.0028739					10000	0.0026981
Boron	0	0	50	0.000019	1000	1.832E-05					5000	1.6988E-05
Cadmium	0	0	100	0.034055	1000	0.033209					10000	0.031396
Calcium	0	0	1100	9.608182E-05	50000	9.1986E-05					10000	
Chromium	0	0	100	0.000058	1000	5.786E-05					10000	5.6645E-05
Cobalt	0	0	100	0.0088737	1000	0.0083612					10000	0.0086151
Copper	0	0	100	0.0000708	1000	6.301E-05					10000	5.9472E-05
Iron	0	0	5100	2.060784E-05	10000	1.9778E-05			500000	1.95448E-05	10000	
Lead	0	0	100	0.0019387	1000	0.0019237					10000	0.00201
Magnesium	0	0	5100		50000	2.873E-06			500000	2.8674E-06	10000	
Manganese	0	0	100	0.0003341	1000	3.1234E-04	10000	3.2383E-04			10000	
Molybdenum	0	0	100	0.0046019	1000	0.0047507					10000	0.0045861
Nickel	0	0	100	0.0049551	1000	0.0044908					10000	0.0045725
Potassium	0	0	1000	1.435E-05	10000	1.9759E-05						
Selenium	0	0	100	0.0005449	1000	5.1098E-04					10000	4.7955E-04
Silver	0	0	20	0.0000705	500	6.838E-05	2000	6.9075E-05				
Sodium	0	0	1000		50000	6.9772E-05						
Thallium	0	0	100	0.000757	1000	7.6871E-04					10000	7.7599E-04
Tin	0	0	50	0.0015168	1000	0.0016395					5000	1.60992E-03
Titanium	0	0	100	0.0002379	1000	0.00023					10000	2.2327E-04
Vanadium	0	0	100	0.0000587	1000	0.0000578					10000	5.557E-05
Zinc	0	0	100	0.014101	1000	0.01295					10000	0.012541
Strontium	0	0	100	0.002804	1000	0.00272					10000	0.00272
Lithium (outside certification)	0	0	100	0.0000125	1000	1.188E-05					10000	1.096E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6102002	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/11/16 10:40 4/11/16 11:19

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	8.704E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.8837E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.9339E-05										
Selenium												
Silver												
Sodium	100000	6.429999E-05	500000	6.6674E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6102002	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/11/16 10:40 4/11/16 11:19

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.246875E-05	66.71454	3.814635	170.6441	0.9999996		0.998	
Antimony	7.13065E-04	66.79816	2.274775	168.2629	0.9999964		0.998	
Arsenic	3.279225E-04	66.73805	7.395667	189.6818	0.9999877		0.998	
Barium	0.012823	66.84794	0.786345	154.5598	0.9999323		0.998	
Beryllium	2.097575E-03	66.75836	7.275143	192.767	0.9999598		0.998	
Boron	1.3577E-05	66.95018	5.71724	175.3885	0.9997541		0.998	
Cadmium	0.024665	66.81817	3.095555	169.2989	0.9999705		0.998	
Calcium	6.877695E-05	66.883	2.511405	155.7439	0.999969		0.998	
Chromium	4.312625E-05	66.68159	6.849565	166.9843	0.9999955		0.998	
Cobalt	0.0064625	66.74524	2.522802	185.5175	0.9999898		0.998	
Copper	4.83205E-05	67.38209	0.7514075	97.31364	0.9999821		0.998	
Iron	1.498266E-05	66.73617	24.41598	198.8784	0.9999998		0.998	
Lead	0.0014681	66.71597	14.09321	195.9987	0.9999835		0.998	
Magnesium	2.156025E-06	66.66741	44.29266	199.1411	0.9999987		0.998	
Manganese	2.425675E-04	66.76729	2.31804	102.0675	0.9999862		0.998	
Molybdenum	3.484675E-03	66.70062	25.71301	198.3096	0.9999872		0.998	
Nickel	0.0035046	66.91631	1.381445	172.8308	0.9999938		0.998	
Potassium	1.3362E-05	69.15572	2.0544	103.3048	0.9999765		0.998	
Selenium	3.838575E-04	67.02816	6.856197	184.3082	0.9999686		0.998	
Silver	5.198875E-05	66.68827	8.541903	177.3679	0.9999911		0.998	
Sodium	5.01865E-05	66.81597	2.681717	172.8472	0.9998873		0.998	
Thallium	5.75425E-04	66.68053	3.831662	176.3833	0.9999996		0.998	
Tin	1.191555E-03	66.8109	4.564438	187.1625	0.9999821		0.998	
Titanium	1.727925E-04	66.75641	3.851015	173.2958	0.999994		0.998	
Vanadium	4.30175E-05	66.73679	1.774843	102.5582	0.9999881		0.998	
Zinc	0.009898	66.99975	2.490788	161.8684	0.9999919		0.998	
Strontium	0.002061	66.69434	6.006325	187.8016	0.9999999		0.998	
Lithium (outside certification)	8.835E-06	67.05015	6.377075	174.7199	0.9999325		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6103004	Instrument:	ME-FIMS
Matrix:	Water	Calibration Dates:	4/12/16 15:01 4/12/16 15:09

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Mercury	0	0	0.2	1.366504E-02	0.5	0.010764	1	0.0101917	2	9.556737E-03	4	9.385494E-03
Mercury	0	0	0.2	1.366504E-02	0.5	0.010764	1	0.0101917	2	9.556737E-03	4	9.385494E-03

INITIAL CALIBRATION DATA (Continued)

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6103004	Instrument:	ME-FIMS	
Matrix:	Water	Calibration Dates:	4/12/16 15:01	4/12/16 15:09

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Mercury	6	9.415341E-03	10	9.189974E-03								
Mercury	6	9.415341E-03	10	9.189974E-03								

INITIAL CALIBRATION DATA (Continued)

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6103004	Instrument:	ME-FIMS	
Matrix:	Water	Calibration Dates:	4/12/16 15:01	4/12/16 15:09

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Mercury	9.021034E-03	43.53335	0	0	0.9998962		0.995	
Mercury	9.021034E-03	43.53335	0	0	0.9998962		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6105001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/14/16 9:43 4/14/16 10:20

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	3.0754E-05	10000	3.2341E-05			500000	3.0982E-05		
Antimony	0	0	100	0.0011351	1000	0.0010677					10000	0.0010381
Arsenic	0	0	100	0.0004859	1000	5.1368E-04					10000	4.9916E-04
Barium	0	0	50	0.021074	1000	0.018709	5000	0.0195144				
Beryllium	0	0	100	0.003055	1000	0.0031183					10000	0.0029635
Boron	0	0	50	0.000021	1000	2.008E-05					5000	1.8816E-05
Cadmium	0	0	100	0.036561	1000	0.036054					10000	0.03409
Calcium	0	0	1100	1.031455E-04	50000	9.9346E-05					10000	
Chromium	0	0	100	0.0000595	1000	6.137E-05					10000	5.9275E-05
Cobalt	0	0	100	0.0099684	1000	0.0093287					10000	0.0096373
Copper	0	0	100	0.0000726	1000	6.558E-05					10000	6.1638E-05
Iron	0	0	5100	1.679412E-05	10000	1.6146E-05			500000	1.60378E-05	10000	
Lead	0	0	100	0.0022494	1000	0.0021617					10000	0.0022677
Magnesium	0	0	5100		50000	3.0562E-06			500000	3.0334E-06	10000	
Manganese	0	0	100	0.0003743	1000	0.0003553	10000	3.5514E-04			10000	
Molybdenum	0	0	100	0.0047736	1000	0.0049711					10000	0.0047828
Nickel	0	0	100	0.0058064	1000	0.0051601					10000	0.0052599
Potassium	0	0	1000	9.82E-06	10000	1.4263E-05						
Selenium	0	0	100	0.000585	1000	5.5874E-04					10000	5.2477E-04
Silver	0	0	20	0.0000735	500	7.298E-05	2000	7.262499E-05				
Sodium	0	0	1000		50000	7.9612E-05						
Thallium	0	0	100	0.0008607	1000	8.6691E-04					10000	0.000877
Tin	0	0	50	0.0016858	1000	0.0018174					5000	0.0017863
Titanium	0	0	100	0.0002632	1000	2.5268E-04					10000	2.4819E-04
Vanadium	0	0	100	0.0000454	1000	5.096E-05					10000	4.8578E-05
Zinc	0	0	100	0.014997	1000	0.013943					10000	0.01346
Strontium	0	0	100	0.003259	1000	0.003146					10000	0.003189
Lithium (outside certification)	0	0	100	0.0000135	1000	1.289E-05					10000	1.1838E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6105001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/14/16 9:43 4/14/16 10:20

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.3464E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.0829E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.3508E-05										
Selenium												
Silver												
Sodium	100000	7.2321E-05	500000	7.639801E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6105001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/14/16 9:43 4/14/16 10:20

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.351925E-05	66.73319	12.7251	191.2198	0.9999993		0.998	
Antimony	8.10225E-04	66.85463	6.65896	188.3947	0.9999952		0.998	
Arsenic	3.74685E-04	66.73539	6.90856	181.9441	0.999989		0.998	
Barium	1.482435E-02	66.99478	1.061307	173.2053	0.9999179		0.998	
Beryllium	0.0022842	66.72469	9.498332	192.3921	0.999974		0.998	
Boron	1.4974E-05	66.93424	5.342533	146.6331	0.9998215		0.998	
Cadmium	2.667625E-02	66.78624	2.636627	151.7058	0.9999702		0.998	
Calcium	7.398886E-05	66.88364	2.072545	174.7494	0.9999618		0.998	
Chromium	4.503625E-05	66.69927	4.24755	133.226	0.9999872		0.998	
Cobalt	0.0072336	66.76439	2.91665	192.1971	0.999988		0.998	
Copper	4.99545E-05	67.28157	0.9836325	25.97101	0.9999781		0.998	
Iron	1.224448E-05	66.72243	83.50411	198.8533	0.9999998		0.998	
Lead	0.0016697	66.72422	10.33778	193.5574	0.9999792		0.998	
Magnesium	2.293125E-06	66.67251	7.516512	195.7335	0.9999895		0.998	
Manganese	2.71185E-04	66.74912	2.280602	107.784	0.9999998		0.998	
Molybdenum	3.631875E-03	66.71375	17.4798	198.2225	0.9999843		0.998	
Nickel	0.0040566	67.03347	0.313615	96.12466	0.9999926		0.998	
Potassium	9.39775E-06	69.79313	5.818255	169.672	0.999931		0.998	
Selenium	4.171275E-04	66.92819	3.01532	166.4576	0.9999684		0.998	
Silver	5.477625E-05	66.66989	5.389473	147.8322	0.9999988		0.998	
Sodium	5.708275E-05	66.87123	2.189045	109.6394	0.999806		0.998	
Thallium	6.511525E-04	66.67465	2.978035	186.3992	0.9999992		0.998	
Tin	1.322375E-03	66.8018	3.989205	185.1807	0.999984		0.998	
Titanium	1.910175E-04	66.74795	4.31648	173.9079	0.9999984		0.998	
Vanadium	3.62345E-05	66.96234	4.20573	158.9017	0.9999715		0.998	
Zinc	0.0106	66.94101	1.48098	147.9939	0.9999898		0.998	
Strontium	0.0023985	66.69493	1.693275	179.3483	0.9999979		0.998	
Lithium (outside certification)	9.557E-06	67.05249	4.178918	153.6107	0.9999238		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6106003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/15/16 9:24 4/15/16 10:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	4.4018E-05	10000	4.2844E-05			500000	0.000041		
Antimony	0	0	100	0.0010919	1000	0.0010301					10000	0.0010115
Arsenic	0	0	100	0.0004741	1000	4.9391E-04					10000	4.8239E-04
Barium	0	0	50	0.020032	1000	0.018123	5000	0.0188396				
Beryllium	0	0	100	0.0029784	1000	0.0030245					10000	0.0028622
Boron	0	0	50	0.0000214	1000	1.986E-05					5000	1.8756E-05
Cadmium	0	0	100	0.036882	1000	0.035962					10000	0.034099
Calcium	0	0	1100	1.015727E-04	50000	9.7324E-05					10000	
Chromium	0	0	100	0.0000513	1000	4.736E-05					10000	4.5433E-05
Cobalt	0	0	100	0.0098029	1000	0.0091662					10000	0.0095849
Copper	0	0	100	0.0000932	1000	8.868E-05					10000	8.7928E-05
Iron	0	0	5100	1.703922E-05	10000	1.5657E-05			500000	1.54388E-05	10000	
Lead	0	0	100	0.0021477	1000	0.0021033					10000	0.0022345
Magnesium	0	0	5100		50000	2.8914E-06			500000	2.8774E-06	10000	
Manganese	0	0	100	0.0003783	1000	3.4821E-04	10000	3.5363E-04			10000	
Molybdenum	0	0	100	0.0048454	1000	0.0049595					10000	0.0047685
Nickel	0	0	100	0.0056061	1000	0.005017					10000	0.0051747
Potassium	0	0	1000	1.677E-05	10000	2.0633E-05						
Selenium	0	0	100	0.0006002	1000	5.5364E-04					10000	5.1956E-04
Silver	0	0	20	0.000067	500	5.444E-05	2000	5.426E-05				
Sodium	0	0	1000		50000	7.817E-05						
Thallium	0	0	100	0.0008353	1000	8.4171E-04					10000	8.5936E-04
Tin	0	0	50	0.0016842	1000	0.0017967					5000	1.76444E-03
Titanium	0	0	100	0.0002641	1000	2.5136E-04					10000	2.4376E-04
Vanadium	0	0	100	0.0000526	1000	5.292E-05					10000	5.0352E-05
Zinc	0	0	100	0.014371	1000	0.013153					10000	0.012647
Strontium	0	0	100	0.003059	1000	0.00301					10000	0.003031
Lithium (outside certification)	0	0	100	8.999999E-06	1000	8.75E-06					10000	8.119E-06
Aluminum	0	0	5000	4.4018E-05	10000	4.2844E-05			500000	0.000041		
Antimony	0	0	100	0.0010919	1000	0.0010301					10000	0.0010115
Arsenic	0	0	100	0.0004741	1000	4.9391E-04					10000	4.8239E-04

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6106003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/15/16 9:24 4/15/16 10:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Barium	0	0	50	0.020032	1000	0.018123	5000	0.0188396				
Beryllium	0	0	100	0.0029784	1000	0.0030245					10000	0.0028622
Boron	0	0	50	0.0000214	1000	1.986E-05					5000	1.8756E-05
Cadmium	0	0	100	0.036882	1000	0.035962					10000	0.034099
Calcium	0	0	1100	1.015727E-04	50000	9.7324E-05					10000	
Chromium	0	0	100	0.0000513	1000	4.736E-05					10000	4.5433E-05
Cobalt	0	0	100	0.0098029	1000	0.0091662					10000	0.0095849
Copper	0	0	100	0.0000932	1000	8.868E-05					10000	8.7928E-05
Iron	0	0	5100	1.703922E-05	10000	1.5657E-05			500000	1.54388E-05	10000	
Lead	0	0	100	0.0021477	1000	0.0021033					10000	0.0022345
Magnesium	0	0	5100		50000	2.8914E-06			500000	2.8774E-06	10000	
Manganese	0	0	100	0.0003783	1000	3.4821E-04	10000	3.5363E-04			10000	
Molybdenum	0	0	100	0.0048454	1000	0.0049595					10000	0.0047685
Nickel	0	0	100	0.0056061	1000	0.005017					10000	0.0051747
Potassium	0	0	1000	1.677E-05	10000	2.0633E-05						
Selenium	0	0	100	0.0006002	1000	5.5364E-04					10000	5.1956E-04
Silver	0	0	20	0.000067	500	5.444E-05	2000	5.426E-05				
Sodium	0	0	1000		50000	7.817E-05						
Thallium	0	0	100	0.0008353	1000	8.4171E-04					10000	8.5936E-04
Tin	0	0	50	0.0016842	1000	0.0017967					5000	1.76444E-03
Titanium	0	0	100	0.0002641	1000	2.5136E-04					10000	2.4376E-04
Vanadium	0	0	100	0.0000526	1000	5.292E-05					10000	5.0352E-05
Zinc	0	0	100	0.014371	1000	0.013153					10000	0.012647
Strontium	0	0	100	0.003059	1000	0.00301					10000	0.003031
Lithium (outside certification)	0	0	100	8.999999E-06	1000	8.75E-06					10000	8.119E-06

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6106003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/15/16 9:24 4/15/16 10:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.146E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.9099E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.9788E-05										
Selenium												
Silver												
Sodium	100000	7.2199E-05	500000	7.9008E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												
Aluminum												
Antimony												
Arsenic												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6106003	Instrument:	ME-ICP	
Matrix:	Water	Calibration Dates:	4/15/16 9:24	4/15/16 10:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.146E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.9099E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.9788E-05										
Selenium												
Silver												
Sodium	100000	7.2199E-05	500000	7.9008E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034		
Client:	CB&I	Project:	Holloman AFB		
Calibration:	6106003	Instrument:	ME-ICP		
Matrix:	Water	Calibration Dates:	4/15/16 9:24	4/15/16 10:00	

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	3.19655E-05	66.77983	4.316557	161.9175	0.9999995		0.998	
Antimony	7.83375E-04	66.81085	3.025613	188.7787	0.9999987		0.998	
Arsenic	0.0003626	66.7043	3.36711	182.0644	0.9999926		0.998	
Barium	1.424865E-02	66.8953	1.761215	183.186	0.9999308		0.998	
Beryllium	2.216275E-03	66.73783	3.497312	149.0214	0.9999696		0.998	
Boron	1.5004E-05	67.05721	7.949522	185.1962	0.9998671		0.998	
Cadmium	2.673575E-02	66.80715	2.532935	166.0795	0.9999737		0.998	
Calcium	7.258918E-05	66.91089	2.020428	140.1666	0.9999604		0.998	
Chromium	3.602325E-05	67.01036	1.202615	89.55812	0.9999865		0.998	
Cobalt	0.0071385	66.76932	1.264205	170.9612	0.9999791		0.998	
Copper	6.7452E-05	66.75597	1.395795	107.6013	0.9999997		0.998	
Iron	1.203375E-05	66.92626	16.72274	197.0855	0.9999992		0.998	
Lead	1.621375E-03	66.75131	14.56205	197.4102	0.9999685		0.998	
Magnesium	2.169675E-06	66.66948	127.0702	199.6481	0.9999949		0.998	
Manganese	2.70035E-04	66.84282	4.458695	167.583	0.9999962		0.998	
Molybdenum	3.64335E-03	66.70145	23.86769	198.4983	0.9999843		0.998	
Nickel	3.94945E-03	66.96413	0.50965	114.6475	0.9999857		0.998	
Potassium	1.429775E-05	67.66788	3.890098	103.4497	0.9999606		0.998	
Selenium	4.1835E-04	67.13318	0.5608025	93.84438	0.9999702		0.998	
Silver	4.3925E-05	68.03514	2.062977	83.1977	0.9999991		0.998	
Sodium	5.734425E-05	66.87596	1.154955	99.18991	0.9996705		0.998	
Thallium	6.340925E-04	66.68597	6.352	188.1896	0.9999969		0.998	
Tin	1.311335E-03	66.76417	2.73892	165.829	0.9999826		0.998	
Titanium	1.89805E-04	66.81311	2.525995	171.0895	0.9999937		0.998	
Vanadium	3.8968E-05	66.73112	2.703168	148.7303	0.9999745		0.998	
Zinc	1.004275E-02	67.05484	3.966272	182.7987	0.9999874		0.998	
Strontium	0.002275	66.6725	9.1654	186.7688	0.9999995		0.998	
Lithium (outside certification)	6.46725E-06	66.91264	4.175458	150.0442	0.9999288		0.998	
Aluminum	3.19655E-05	66.77983	4.316557	161.9175	0.9999995		0.998	
Antimony	7.83375E-04	66.81085	3.025613	188.7787	0.9999987		0.998	
Arsenic	0.0003626	66.7043	3.36711	182.0644	0.9999926		0.998	
Barium	1.424865E-02	66.8953	1.761215	183.186	0.9999308		0.998	

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6106003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/15/16 9:24 4/15/16 10:00

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Beryllium	2.216275E-03	66.73783	3.497312	149.0214	0.9999696		0.998	
Boron	1.5004E-05	67.05721	7.949522	185.1962	0.9998671		0.998	
Cadmium	2.673575E-02	66.80715	2.532935	166.0795	0.9999737		0.998	
Calcium	7.258918E-05	66.91089	2.020428	140.1666	0.9999604		0.998	
Chromium	3.602325E-05	67.01036	1.202615	89.55812	0.9999865		0.998	
Cobalt	0.0071385	66.76932	1.264205	170.9612	0.9999791		0.998	
Copper	6.7452E-05	66.75597	1.395795	107.6013	0.9999997		0.998	
Iron	1.203375E-05	66.92626	16.72274	197.0855	0.9999992		0.998	
Lead	1.621375E-03	66.75131	14.56205	197.4102	0.9999685		0.998	
Magnesium	2.169675E-06	66.66948	127.0702	199.6481	0.9999949		0.998	
Manganese	2.70035E-04	66.84282	4.458695	167.583	0.9999962		0.998	
Molybdenum	3.64335E-03	66.70145	23.86769	198.4983	0.9999843		0.998	
Nickel	3.94945E-03	66.96413	0.50965	114.6475	0.9999857		0.998	
Potassium	1.429775E-05	67.66788	3.890098	103.4497	0.9999606		0.998	
Selenium	4.1835E-04	67.13318	0.5608025	93.84438	0.9999702		0.998	
Silver	4.3925E-05	68.03514	2.062977	83.1977	0.9999991		0.998	
Sodium	5.734425E-05	66.87596	1.154955	99.18991	0.9996705		0.998	
Thallium	6.340925E-04	66.68597	6.352	188.1896	0.9999969		0.998	
Tin	1.311335E-03	66.76417	2.73892	165.829	0.9999826		0.998	
Titanium	1.89805E-04	66.81311	2.525995	171.0895	0.9999937		0.998	
Vanadium	3.8968E-05	66.73112	2.703168	148.7303	0.9999745		0.998	
Zinc	1.004275E-02	67.05484	3.966272	182.7987	0.9999874		0.998	
Strontium	0.002275	66.6725	9.1654	186.7688	0.9999995		0.998	
Lithium (outside certification)	6.46725E-06	66.91264	4.175458	150.0442	0.9999288		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6110003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/19/16 9:52 4/19/16 10:23

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	3.4304E-05	10000	3.3657E-05			500000	3.1842E-05		
Antimony	0	0	100	0.001117	1000	0.0010532					10000	0.0010321
Arsenic	0	0	100	0.0004825	1000	5.1044E-04					10000	4.9794E-04
Barium	0	0	50	0.019636	1000	0.017761	5000	0.0186666				
Beryllium	0	0	100	0.0031103	1000	0.0031497					10000	0.0030247
Boron	0	0	50	0.0000208	1000	0.0000204					5000	1.9116E-05
Cadmium	0	0	100	0.038134	1000	0.036978					10000	0.035023
Calcium	0	0	1100	1.065182E-04	50000	9.9662E-05					10000	
Chromium	0	0	100	0.0000639	1000	6.276E-05					10000	6.0761E-05
Cobalt	0	0	100	0.0098928	1000	9.250901E-03					10000	9.657701E-03
Copper	0	0	100	0.0000793	1000	6.889E-05					10000	6.4894E-05
Iron	0	0	5100	1.848039E-05	10000	1.7306E-05			500000	1.72264E-05	10000	
Lead	0	0	100	0.0021808	1000	0.0021263					10000	0.00225
Magnesium	0	0	5100		50000	3.1444E-06			500000	3.1364E-06	10000	
Manganese	0	0	100	0.0003722	1000	3.4745E-04	10000	3.4677E-04			10000	
Molybdenum	0	0	100	0.0050442	1000	0.0051944					10000	0.004997
Nickel	0	0	100	0.0055518	1000	0.004997					10000	0.0051497
Potassium	0	0	1000	1.164E-05	10000	1.767E-05						
Selenium	0	0	100	0.0006242	1000	5.7889E-04					10000	5.4255E-04
Silver	0	0	20	0.0000785	500	7.436E-05	2000	7.3765E-05				
Sodium	0	0	1000		50000	7.2256E-05						
Thallium	0	0	100	0.0008352	1000	8.3758E-04					10000	8.5324E-04
Tin	0	0	50	0.001763	1000	0.0017993					5000	0.0017733
Titanium	0	0	100	0.0002619	1000	2.5111E-04					10000	2.4736E-04
Vanadium	0	0	100	0.0000501	1000	5.264E-05					10000	4.9832E-05
Zinc	0	0	100	0.014934	1000	0.014469					10000	0.013944
Strontium	0	0	100	0.003009	1000	0.002904					10000	0.002969
Lithium (outside certification)	0	0	100	0.000012	1000	1.131E-05					10000	1.0727E-05
Aluminum	0	0	5000	3.4304E-05	10000	3.3657E-05			500000	3.1842E-05		
Antimony	0	0	100	0.001117	1000	0.0010532					10000	0.0010321
Arsenic	0	0	100	0.0004825	1000	5.1044E-04					10000	4.9794E-04

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6110003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/19/16 9:52 4/19/16 10:23

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Barium	0	0	50	0.019636	1000	0.017761	5000	0.0186666				
Beryllium	0	0	100	0.0031103	1000	0.0031497					10000	0.0030247
Boron	0	0	50	0.0000208	1000	0.0000204					5000	1.9116E-05
Cadmium	0	0	100	0.038134	1000	0.036978					10000	0.035023
Calcium	0	0	1100	1.065182E-04	50000	9.9662E-05					10000	
Chromium	0	0	100	0.0000639	1000	6.276E-05					10000	6.0761E-05
Cobalt	0	0	100	0.0098928	1000	9.250901E-03					10000	9.657701E-03
Copper	0	0	100	0.0000793	1000	6.889E-05					10000	6.4894E-05
Iron	0	0	5100	1.848039E-05	10000	1.7306E-05			500000	1.72264E-05	10000	
Lead	0	0	100	0.0021808	1000	0.0021263					10000	0.00225
Magnesium	0	0	5100		50000	3.1444E-06			500000	3.1364E-06	10000	
Manganese	0	0	100	0.0003722	1000	3.4745E-04	10000	3.4677E-04			10000	
Molybdenum	0	0	100	0.0050442	1000	0.0051944					10000	0.004997
Nickel	0	0	100	0.0055518	1000	0.004997					10000	0.0051497
Potassium	0	0	1000	1.164E-05	10000	1.767E-05						
Selenium	0	0	100	0.0006242	1000	5.7889E-04					10000	5.4255E-04
Silver	0	0	20	0.0000785	500	7.436E-05	2000	7.3765E-05				
Sodium	0	0	1000		50000	7.2256E-05						
Thallium	0	0	100	0.0008352	1000	8.3758E-04					10000	8.5324E-04
Tin	0	0	50	0.001763	1000	0.0017993					5000	0.0017733
Titanium	0	0	100	0.0002619	1000	2.5111E-04					10000	2.4736E-04
Vanadium	0	0	100	0.0000501	1000	5.264E-05					10000	4.9832E-05
Zinc	0	0	100	0.014934	1000	0.014469					10000	0.013944
Strontium	0	0	100	0.003009	1000	0.002904					10000	0.002969
Lithium (outside certification)	0	0	100	0.000012	1000	1.131E-05					10000	1.0727E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6110003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/19/16 9:52 4/19/16 10:23

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.4324E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.1556E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.744E-05										
Selenium												
Silver												
Sodium	100000	6.7283E-05	500000	7.4678E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												
Aluminum												
Antimony												
Arsenic												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6110003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/19/16 9:52 4/19/16 10:23

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.4324E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.1556E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.744E-05										
Selenium												
Silver												
Sodium	100000	6.7283E-05	500000	7.4678E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034		
Client:	CB&I	Project:	Holloman AFB		
Calibration:	6110003	Instrument:	ME-ICP		
Matrix:	Water	Calibration Dates:	4/19/16 9:52	4/19/16 10:23	

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.495075E-05	66.79737	2.387923	146.249	0.9999993		0.998	
Antimony	8.00575E-04	66.81892	6.448552	191.2967	0.9999983		0.998	
Arsenic	3.7272E-04	66.73713	4.296353	172.7831	0.9999917		0.998	
Barium	0.0140159	66.89008	0.863985	153.5447	0.9998907		0.998	
Beryllium	2.321175E-03	66.70455	6.642378	188.8876	0.9999839		0.998	
Boron	1.5079E-05	66.83667	8.833525	171.8002	0.9998185		0.998	
Cadmium	2.753375E-02	66.82956	2.373125	169.3301	0.9999727		0.998	
Calcium	7.512604E-05	66.99689	1.995662	157.6729	0.9999695		0.998	
Chromium	4.685525E-05	66.72415	1.226402	67.60934	0.9999899		0.998	
Cobalt	7.20035E-03	66.7683	1.241345	162.0006	0.9999804		0.998	
Copper	5.3271E-05	67.6342	0.9282925	44.99925	0.999982		0.998	
Iron	1.32532E-05	66.80685	12.48406	192.3109	0.9999995		0.998	
Lead	1.639275E-03	66.73814	11.64144	194.5539	0.9999722		0.998	
Magnesium	2.3591E-06	66.6675	22.46426	196.6935	0.9999985		0.998	
Manganese	2.66605E-04	66.81419	2.494885	148.2165	0.9999996		0.998	
Molybdenum	0.0038089	66.70328	10.18234	196.058	0.9999846		0.998	
Nickel	3.924625E-03	66.93276	0.3797925	123.1062	0.9999867		0.998	
Potassium	1.16875E-05	70.81155	6.454458	148.4441	0.9999764		0.998	
Selenium	4.3641E-04	67.10455	2.488188	182.847	0.9999686		0.998	
Silver	5.665625E-05	66.77021	2.28031	88.05948	0.9999975		0.998	
Sodium	5.355425E-05	66.914	9.6638	169.694	0.9995997		0.998	
Thallium	6.31505E-04	66.67871	7.723095	189.2552	0.9999974		0.998	
Tin	0.0013339	66.6765	6.81109	186.3406	0.9999893		0.998	
Titanium	1.900925E-04	66.74547	0.9003875	156.1361	0.9999991		0.998	
Vanadium	3.8143E-05	66.74914	5.267027	159.5265	0.9999669		0.998	
Zinc	1.083675E-02	66.77103	5.000103	187.5909	0.9999878		0.998	
Strontium	0.0022205	66.69514	2.82645	184.0685	0.999995		0.998	
Lithium (outside certification)	8.50925E-06	66.9465	37.00545	192.6473	0.9999736		0.998	
Aluminum	2.495075E-05	66.79737	2.387923	146.249	0.9999993		0.998	
Antimony	8.00575E-04	66.81892	6.448552	191.2967	0.9999983		0.998	
Arsenic	3.7272E-04	66.73713	4.296353	172.7831	0.9999917		0.998	
Barium	0.0140159	66.89008	0.863985	153.5447	0.9998907		0.998	

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6110003	Instrument:	ME-ICP	
Matrix:	Water	Calibration Dates:	4/19/16 9:52	4/19/16 10:23

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Beryllium	2.321175E-03	66.70455	6.642378	188.8876	0.9999839		0.998	
Boron	1.5079E-05	66.83667	8.833525	171.8002	0.9998185		0.998	
Cadmium	2.753375E-02	66.82956	2.373125	169.3301	0.9999727		0.998	
Calcium	7.512604E-05	66.99689	1.995662	157.6729	0.9999695		0.998	
Chromium	4.685525E-05	66.72415	1.226402	67.60934	0.9999899		0.998	
Cobalt	7.20035E-03	66.7683	1.241345	162.0006	0.9999804		0.998	
Copper	5.3271E-05	67.6342	0.9282925	44.99925	0.999982		0.998	
Iron	1.32532E-05	66.80685	12.48406	192.3109	0.9999995		0.998	
Lead	1.639275E-03	66.73814	11.64144	194.5539	0.9999722		0.998	
Magnesium	2.3591E-06	66.6675	22.46426	196.6935	0.9999985		0.998	
Manganese	2.66605E-04	66.81419	2.494885	148.2165	0.9999996		0.998	
Molybdenum	0.0038089	66.70328	10.18234	196.058	0.9999846		0.998	
Nickel	3.924625E-03	66.93276	0.3797925	123.1062	0.9999867		0.998	
Potassium	1.16875E-05	70.81155	6.454458	148.4441	0.9999764		0.998	
Selenium	4.3641E-04	67.10455	2.488188	182.847	0.9999686		0.998	
Silver	5.665625E-05	66.77021	2.28031	88.05948	0.9999975		0.998	
Sodium	5.355425E-05	66.914	9.6638	169.694	0.9995997		0.998	
Thallium	6.31505E-04	66.67871	7.723095	189.2552	0.9999974		0.998	
Tin	0.0013339	66.6765	6.81109	186.3406	0.9999893		0.998	
Titanium	1.900925E-04	66.74547	0.9003875	156.1361	0.9999991		0.998	
Vanadium	3.8143E-05	66.74914	5.267027	159.5265	0.9999669		0.998	
Zinc	1.083675E-02	66.77103	5.000103	187.5909	0.9999878		0.998	
Strontium	0.0022205	66.69514	2.82645	184.0685	0.999995		0.998	
Lithium (outside certification)	8.50925E-06	66.9465	37.00545	192.6473	0.9999736		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6112005	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/21/16 9:54 4/21/16 10:22

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	3.2328E-05	10000	3.1686E-05			500000	3.0306E-05		
Antimony	0	0	100	0.0010749	1000	0.0010208					10000	9.8821E-04
Arsenic	0	0	100	0.0004677	1000	0.0004939					10000	4.7438E-04
Barium	0	0	50	0.0192754	1000	0.017647	5000	0.0184782				
Beryllium	0	0	100	0.0029846	1000	0.0030393					10000	0.0028881
Boron	0	0	50	0.0000194	1000	1.954E-05					5000	1.8484E-05
Cadmium	0	0	100	0.036149	1000	0.034977					10000	0.033046
Calcium	0	0	1100	1.022455E-04	50000	9.6206E-05					10000	
Chromium	0	0	100	0.0000599	1000	5.913E-05					10000	5.7994E-05
Cobalt	0	0	100	9.548199E-03	1000	0.0089651					10000	0.0093038
Copper	0	0	100	7.430001E-05	1000	6.407E-05					10000	6.3343E-05
Iron	0	0	5100	1.778431E-05	10000	1.6956E-05			500000	1.71244E-05	10000	
Lead	0	0	100	0.0021051	1000	0.0020628					10000	0.0021596
Magnesium	0	0	5100		50000	3.0358E-06			500000	2.9964E-06	10000	
Manganese	0	0	100	0.0003594	1000	3.3995E-04	10000	3.3989E-04			10000	
Molybdenum	0	0	100	0.004843	1000	0.0049771					10000	0.004838
Nickel	0	0	100	0.0054366	1000	0.0049135					10000	0.0049978
Potassium	0	0	1000	1.365E-05	10000	1.7209E-05						
Selenium	0	0	100	0.0005918	1000	5.4815E-04					10000	0.0005179
Silver	0	0	20	0.000075	500	7.032001E-05	2000	7.032001E-05				
Sodium	0	0	1000		50000	7.1036E-05						
Thallium	0	0	100	0.0008151	1000	8.2587E-04					10000	8.2998E-04
Tin	0	0	50	0.0017066	1000	0.00175					5000	1.71762E-03
Titanium	0	0	100	0.000252	1000	2.4479E-04					10000	2.4158E-04
Vanadium	0	0	100	0.0000475	1000	4.992E-05					10000	4.9619E-05
Zinc	0	0	100	0.014071	1000	0.013607					10000	0.013203
Strontium	0	0	100	0.002978	1000	0.002893					10000	0.002891
Lithium (outside certification)	0	0	100	0.0000109	1000	1.069E-05					10000	9.992E-06

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6112005	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/21/16 9:54 4/21/16 10:22

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.0304E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.0541E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.6864E-05										
Selenium												
Silver												
Sodium	100000	6.6339E-05	500000	6.899E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Calibration:	6112005	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/21/16 9:54 4/21/16 10:22

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.358E-05	66.76259	7.944828	190.0499	0.9999995		0.998	
Antimony	7.709775E-04	66.82775	3.160992	168.3664	0.9999936		0.998	
Arsenic	3.58995E-04	66.73854	6.349755	183.9328	0.9999803		0.998	
Barium	1.385015E-02	66.83926	0.4291175	147.5158	0.9999065		0.998	
Beryllium	0.002228	66.72568	10.71266	184.2101	0.9999739		0.998	
Boron	1.4356E-05	66.74643	10.31214	185.9685	0.9998663		0.998	
Cadmium	0.026043	66.84742	0.8892675	122.656	0.9999701		0.998	
Calcium	7.218886E-05	67.00786	1.492218	114.7062	0.9999591		0.998	
Chromium	4.4256E-05	66.69013	3.970907	154.6341	0.9999963		0.998	
Cobalt	6.954275E-03	66.75525	2.202815	189.1082	0.9999851		0.998	
Copper	5.042825E-05	67.40072	0.93601	79.19486	0.9999996		0.998	
Iron	1.296618E-05	66.72363	3.435453	184.4326	0.9999997		0.998	
Lead	1.581875E-03	66.7137	2.509913	173.2868	0.9999817		0.998	
Magnesium	2.271575E-06	66.67509	1318.493	199.9711	0.9999857		0.998	
Manganese	2.5981E-04	66.76029	4.68796	173.3766	0.9999997		0.998	
Molybdenum	3.664525E-03	66.68984	35.34723	199.0781	0.9999917		0.998	
Nickel	3.836975E-03	66.93402	0.5325875	162.7118	0.9999942		0.998	
Potassium	1.193075E-05	68.00647	6.01566	187.2837	0.9999831		0.998	
Selenium	4.144625E-04	67.06722	3.795953	173.3785	0.999977		0.998	
Silver	5.391E-05	66.79215	5.173962	159.178	0.9999997		0.998	
Sodium	5.159125E-05	66.77077	4.924742	166.5547	0.9999007		0.998	
Thallium	6.177375E-04	66.67441	9.214078	190.9759	0.9999999		0.998	
Tin	1.293555E-03	66.68187	0.929805	136.182	0.999983		0.998	
Titanium	1.845925E-04	66.70844	2.289753	160.4381	0.9999992		0.998	
Vanadium	3.675975E-05	66.731	3.602452	135.1069	0.9999991		0.998	
Zinc	1.022025E-02	66.75691	2.757855	173.2912	0.9999922		0.998	
Strontium	0.0021905	66.69236	5.0456	166.883	0.9999999		0.998	
Lithium (outside certification)	7.8955E-06	66.84766	5.030103	156.7058	0.9999527		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/13/16 07:57	N/A	180.00	04/15/16 16:53	9.23	180.00	
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/13/16 07:57	N/A	180.00	04/19/16 18:53	13.31	180.00	
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/09/16 07:05	N/A	180.00	04/11/16 19:37	5.34	180.00	
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/09/16 07:05	N/A	180.00	04/15/16 12:51	9.06	180.00	
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/09/16 07:05	N/A	180.00	04/19/16 18:39	13.30	180.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/13/16 07:57	N/A	180.00	04/15/16 16:57	9.13	180.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/13/16 07:57	N/A	180.00	04/19/16 18:57	13.22	180.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/09/16 07:05	N/A	180.00	04/11/16 19:42	5.25	180.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/09/16 07:05	N/A	180.00	04/15/16 12:56	8.97	180.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/09/16 07:05	N/A	180.00	04/19/16 18:44	13.21	180.00	
OTC537-GW-MW01-FD	04/06/16 12:46	04/07/16 09:00	04/13/16 07:57	N/A	180.00	04/15/16 17:25	9.15	180.00	
OTC537-GW-MW01-FD	04/06/16 12:46	04/07/16 09:00	04/13/16 07:57	N/A	180.00	04/19/16 19:06	13.22	180.00	
OTC537-GW-MW01-FD	04/06/16 12:46	04/07/16 09:00	04/09/16 07:05	N/A	180.00	04/21/16 13:01	14.97	180.00	

HOLDING TIME SUMMARY

SW7470A

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/12/16 07:01	5.82	28.00	04/12/16 15:32	0.36	28.00	
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/12/16 07:01	5.82	28.00	04/12/16 15:33	0.36	28.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/12/16 07:01	5.72	28.00	04/12/16 15:34	0.36	28.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/12/16 07:01	5.72	28.00	04/12/16 15:38	0.36	28.00	
OTC537-GW-MW01-FD	04/06/16 12:46	04/07/16 09:00	04/12/16 07:01	5.72	28.00	04/12/16 15:43	0.36	28.00	
OTC537-GW-MW01-FD	04/06/16 12:46	04/07/16 09:00	04/12/16 07:01	5.72	28.00	04/12/16 15:44	0.36	28.00	

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604034-02 [OTC538-GW-MW02]	6D07029	5.00/5.00	5.00	5.00	1.00			04/07/16
1604034-04 [OTC537-GW-MW01]	6D07029	5.00/5.00	5.00	5.00	1.00			04/07/16
1604034-06 [OTC537-GW-MW01-FD]	6D07029	5.00/5.00	5.00	5.00	1.00			04/07/16

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604034-02RE1 [OTC538-GW-MW02]	6D11016	5.00/5.00	5.00	5.00	10.00		H	04/11/16

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604034-02 [OTC538-GW-MW02]	6D12003	100.00/100.00	100	100	1.00			04/12/16
1604034-04 [OTC537-GW-MW01]	6D12003	100.00/100.00	100	100	1.00			04/12/16
1604034-06 [OTC537-GW-MW01-FD]	6D12003	100.00/100.00	100	100	1.00			04/12/16

Sample Extraction Data

Prep Method: pNone-SM2540D

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604034-02 [OTC538-GW-MW02]	6D12004	250.00/250.00	250	250	1.00			04/12/16
1604034-04 [OTC537-GW-MW01]	6D12004	250.00/250.00	250	250	1.00			04/12/16
1604034-06 [OTC537-GW-MW01-FD]	6D12004	250.00/250.00	250	250	1.00			04/12/16

ANALYSIS DATA SHEET

OTC538-GW-MW02

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-02
Sampled:	04/06/16 10:22	Received:	04/07/16 09:00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**10500**	**20.0**	20.0	20.0	1		SM2540C	6D12003	04/12/16 16:55
TSS	Total Suspended Solids	**36.0**	**4.00**	4.00	4.00	1		SM2540D	6D12004	04/13/16 00:00
14797-55-8	Nitrate as N	**30.1**	**0.0330**	0.100	0.250	1	E	E300.0	6D07029	04/07/16 19:58
14797-55-8	Nitrate as N	**34.5**	**0.330**	1.00	2.50	10	H D	E300.0	6D11016	04/11/16 19:34

ANALYSIS DATA SHEET

OTC537-GW-MW01

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-04
Sampled:	04/06/16 12:46	Received:	04/07/16 09:00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**11100**	**20.0**	20.0	20.0	1		SM2540C	6D12003	04/12/16 16:55
TSS	Total Suspended Solids	**36.4**	**4.00**	4.00	4.00	1	*	SM2540D	6D12004	04/13/16 00:00
14797-55-8	Nitrate as N		0.0330	0.100	0.250	1	N U	E300.0	6D07029	04/07/16 20:15

ANALYSIS DATA SHEET

OTC537-GW-MW01-FD

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604034-06
Sampled:	04/06/16 12:46	Received:	04/07/16 09:00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**11100**	**20.0**	20.0	20.0	1		SM2540C	6D12003	04/12/16 16:55
TSS	Total Suspended Solids	**41.6**	**4.00**	4.00	4.00	1		SM2540D	6D12004	04/13/16 00:00
14797-55-8	Nitrate as N		0.0330	0.100	0.250	1	U	E300.0	6D07029	04/07/16 21:27

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D07029-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	U	E300.0	6D07029	04/07/16 19:22

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D07029-BS1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**2.567**	**0.0330**	0.100	0.250	1		E300.0	6D07029	04/07/16 19:40

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Laboratory ID: 6D07029-DUP1

% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	U	E300.0	6D07029	04/07/16 21:09

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D07029-MS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**1.898**	**0.0367**	0.111	0.278	1		E300.0	6D07029	04/07/16 20:33

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D07029-MSD1
% Solids: 0.00

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**1.950**	**0.0367**	0.111	0.278	1		E300.0	6D07029	04/07/16 20:51

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D11016-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	U	E300.0	6D11016	04/11/16 18:41

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D11016-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**2.692**	**0.0330**	0.100	0.250	1		E300.0	6D11016	04/11/16 18:59

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D11016-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**2.698**	**0.0330**	0.100	0.250	1		E300.0	6D11016	04/11/16 19:17

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D12003-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**33.0**	**20.0**	20.0	20.0	1		SM2540C	6D12003	04/12/16 16:55

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D12003-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1105**	**20.0**	20.0	20.0	1		SM2540C	6D12003	04/12/16 16:55

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D12003-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**11080**	**20.0**	20.0	20.0	1		SM2540C	6D12003	04/12/16 16:55

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D12004-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TSS	Total Suspended Solids	ND	4.00	4.00	4.00	1	U	SM2540D	6D12004	04/13/16 00:00

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D12004-BS1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TSS	Total Suspended Solids	**239.4**	**4.00**	4.00	4.00	1		SM2540D	6D12004	04/13/16 00:00

ANALYSIS DATA SHEET

Duplicate

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids: 0.00

SDG: 1604034

Project: Holloman AFB

Laboratory ID: 6D12004-DUP1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TSS	Total Suspended Solids	**33.60**	**4.00**	4.00	4.00	1		SM2540D	6D12004	04/13/16 00:00

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1604034
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Nitrate as N	3.164	2.881	91.1	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1604034
Project: Holloman AFB
Calibration: 5323007
Sequence: 6D09814

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D09814-CCV1	Nitrate as N	2.500	2.612	104	mg/L	+/- 10.00%
6D09814-CCV2	Nitrate as N	2.500	2.708	108	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1604034
Project: Holloman AFB
Calibration: 5323007
Sequence: 6D10208

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10208-CCV1	Nitrate as N	2.500	2.542	102	mg/L	+/- 10.00%
6D10208-CCV2	Nitrate as N	2.500	2.698	108	mg/L	+/- 10.00%

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 6D09814

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D09814-CRL3	Nitrate as N	0.2500	0.2348	93.9	mg/L	50 - 150

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 6D10208

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D10208-CRL3	Nitrate as N	0.2500	0.2277	91.1	mg/L	50 - 150

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Batch: 6D07029

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D07029-BLK1	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Batch: 6D11016

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11016-BLK1	Nitrate as N	0.00260	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Batch: 6D12003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D12003-BLK1	Total Dissolved Solids	33.0	20.0	20.0	mg/L		SM2540C

METHOD BLANKS
SM2540D

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Batch: 6D12004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D12004-BLK1	Total Suspended Solids	0.00	4.00	4.00	mg/L	U	SM2540D

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Nitrate as N	0.001700	0.0330	0.250	mg/L	U	E300.0

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Sequence: 6D09814
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D09814-CCB1	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0
6D09814-CCB2	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604034
Client: CB&I
Project: Holloman AFB
Sequence: 6D10208
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10208-CCB1	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0
6D10208-CCB2	Nitrate as N	0.00120	0.0330	0.250	mg/L	U	E300.0

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

E300.0

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Matrix: Water

Batch: 6D07029

% Solids:

Source Sample Name: **1604034-04**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Nitrate as N	2.778	ND	1.898	68.3	N	80 - 120

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Nitrate as N	2.778	1.950	70.2	2.70	N	15	80 - 120

OTC537-GW-MW01

DUPLICATES

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Batch: 6D07029
Preparation: WC_PREP_ANIONS_W
Source Sample Name: OTC537-GW-MW01

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 6D07029-DUP1
Lab Source ID: 1604034-04
Initial/Final: 5 mL / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Nitrate as N	10	0.250 UN	0.250 U			E300.0

OTC537-GW-MW01

DUPLICATES

SM2540C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Batch: 6D12003
Preparation: pNone
Source Sample Name: OTC537-GW-MW01

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 6D12003-DUP1
Lab Source ID: 1604034-04
Initial/Final: 100 mL / 100 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Dissolved Solids	5	11100 B	11080 B	0.217		SM2540C

OTC537-GW-MW01

DUPLICATES

SM2540D

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Batch: 6D12004
Preparation: pNone
Source Sample Name: OTC537-GW-MW01

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 6D12004-DUP1
Lab Source ID: 1604034-04
Initial/Final: 250 mL / 250 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	METHOD
Total Suspended Solids	5	36.4	33.60	8.00	*	SM2540D

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D07029	Laboratory ID:	6D07029-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.567	103	90 - 110

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D11016	Laboratory ID:	6D11016-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.692	108	90 - 110

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Nitrate as N	2.500	2.698	108	0.256	200	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12003	Laboratory ID:	6D12003-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	964.0	1105	115	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540D

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12004	Laboratory ID:	6D12004-BS1
Preparation:	pNone	Initial/Final:	1000 mL / 1000 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Suspended Solids	233.5	239.4	103	80 - 120

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Batch: 6D07029 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW02	1604034-02	04/07/16 16:56	5.00	5.00
OTC537-GW-MW01	1604034-04	04/07/16 16:56	5.00	5.00
OTC537-GW-MW01-FD	1604034-06	04/07/16 16:56	5.00	5.00
Blank	6D07029-BLK1	04/07/16 16:56	5.00	5.00
LCS	6D07029-BS1	04/07/16 16:56	5.00	5.00
OTC537-GW-MW01	6D07029-DUP1	04/07/16 16:56	5.00	5.00
OTC537-GW-MW01	6D07029-MS1	04/07/16 16:56	22.50	25.00
OTC537-GW-MW01	6D07029-MSD1	04/07/16 16:56	22.50	25.00

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Batch: 6D11016 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW02	1604034-02RE1	04/11/16 16:37	5.00	5.00
Blank	6D11016-BLK1	04/11/16 16:37	5.00	5.00
LCS	6D11016-BS1	04/11/16 16:37	5.00	5.00
LCS Dup	6D11016-BSD1	04/11/16 16:37	5.00	5.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Batch: 6D12003 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW02	1604034-02	04/12/16 06:35	100.00	100.00
OTC537-GW-MW01	1604034-04	04/12/16 06:35	100.00	100.00
OTC537-GW-MW01-FD	1604034-06	04/12/16 06:35	100.00	100.00
Blank	6D12003-BLK1	04/12/16 06:35	100.00	100.00
LCS	6D12003-BS1	04/12/16 06:35	20.00	20.00
OTC537-GW-MW01	6D12003-DUP1	04/12/16 06:35	100.00	100.00

PREPARATION BATCH SUMMARY

SM2540D

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Batch: 6D12004 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW02	1604034-02	04/12/16 06:37	250.00	250.00
OTC537-GW-MW01	1604034-04	04/12/16 06:37	250.00	250.00
OTC537-GW-MW01-FD	1604034-06	04/12/16 06:37	250.00	250.00
Blank	6D12004-BLK1	04/12/16 06:37	250.00	250.00
LCS	6D12004-BS1	04/12/16 06:37	1,000.00	1,000.00
OTC537-GW-MW01	6D12004-DUP1	04/12/16 06:37	250.00	250.00

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	6D12003-BS1	20160412-002	04/12/16 16:55
OTC537-GW-MW01	6D12003-DUP1	20160412-003	04/12/16 16:55
Blank	6D12003-BLK1	20160412-001	04/12/16 16:55

ANALYSIS SEQUENCE SUMMARY

SM2540D

Laboratory: Empirical Laboratories, LLC

SDG: 1604034

Client: CB&I

Project: Holloman AFB

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	6D12004-BS1	20160412-002	04/13/16 00:00
OTC537-GW-MW01	6D12004-DUP1	20160412-003	04/13/16 00:00
Blank	6D12004-BLK1	20160412-001	04/13/16 00:00

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D09814	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	6D09814-CCV1	6D09814-CCV1_Integration	04/07/16 17:53
Calibration Blank	6D09814-CCB1	6D09814-CCB1_Integration	04/07/16 18:11
Instrument RL Check	6D09814-CRL3	6D09814-CRL3_Integration	04/07/16 19:04
Blank	6D07029-BLK1	6D07029-BLK1_Integration	04/07/16 19:22
LCS	6D07029-BS1	6D07029-BS1_Integration	04/07/16 19:40
OTC538-GW-MW02	1604034-02	1604034-02_Integration	04/07/16 19:58
OTC537-GW-MW01	1604034-04	1604034-04_Integration	04/07/16 20:15
OTC537-GW-MW01	6D07029-MS1	6D07029-MS1_Integration	04/07/16 20:33
OTC537-GW-MW01	6D07029-MSD1	6D07029-MSD1_Integration	04/07/16 20:51
OTC537-GW-MW01	6D07029-DUP1	6D07029-DUP1_Integration	04/07/16 21:09
OTC537-GW-MW01-FD	1604034-06	1604034-06_Integration	04/07/16 21:27
Calibration Check	6D09814-CCV2	6D09814-CCV2_Integration	04/08/16 00:07
Calibration Blank	6D09814-CCB2	6D09814-CCB2_Integration	04/08/16 00:25

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10208	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	6D10208-CCV1	6D10208-CCV1_Integration	04/11/16 17:12
Calibration Blank	6D10208-CCB1	6D10208-CCB1_Integration	04/11/16 17:30
Instrument RL Check	6D10208-CRL3	6D10208-CRL3_Integration	04/11/16 18:23
Blank	6D11016-BLK1	6D11016-BLK1_Integration	04/11/16 18:41
LCS	6D11016-BS1	6D11016-BS1_Integration	04/11/16 18:59
LCS Dup	6D11016-BSD1	6D11016-BSD1_Integration	04/11/16 19:17
OTC538-GW-MW02	1604034-02RE1	604034-02RE1@10_Integratio	04/11/16 19:34
Calibration Check	6D10208-CCV2	6D10208-CCV2_Integration	04/11/16 20:10
Calibration Blank	6D10208-CCB2	6D10208-CCB2_Integration	04/11/16 20:28

INITIAL CALIBRATION DATA

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604034	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/07/16 16:56	N/A	2.00	04/07/16 19:58	1.36	2.00	
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/11/16 16:37	N/A	2.00	04/11/16 19:34	5.34	2.00	*
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/07/16 16:56	N/A	2.00	04/07/16 20:15	1.27	2.00	
OTC537-GW-MW01-FD	04/06/16 12:46	04/07/16 09:00	04/07/16 16:56	N/A	2.00	04/07/16 21:27	1.32	2.00	

HOLDING TIME SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/12/16 06:35	5.80	7.00	04/12/16 16:55	0.43	7.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/12/16 06:35	5.70	7.00	04/12/16 16:55	0.43	7.00	
OTC537-GW-MW01-FD	04/06/16 12:46	04/07/16 09:00	04/12/16 06:35	5.70	7.00	04/12/16 16:55	0.43	7.00	

HOLDING TIME SUMMARY

SM2540D

Laboratory: Empirical Laboratories, LLC SDG: 1604034

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW02	04/06/16 10:22	04/07/16 09:00	04/12/16 06:37	5.80	7.00	04/13/16 00:00	0.72	7.00	
OTC537-GW-MW01	04/06/16 12:46	04/07/16 09:00	04/12/16 06:37	5.70	7.00	04/13/16 00:00	0.72	7.00	
OTC537-GW-MW01-FD	04/06/16 12:46	04/07/16 09:00	04/12/16 06:37	5.70	7.00	04/13/16 00:00	0.72	7.00	

ANALYTICAL DATA PACKAGE
SDG # 1604060

PROJECT NAME: HOLLOMAN AFB
PROJECT LOCATION: HOLLOMAN AFB, NM
CONTRACT #: FA8903-D-09-D-8580

SUBMITTAL TO:
Maqsud Rahman
CB&I Federal Services
5050 Section Ave
Cincinnati, OH 45212

SUBMITTAL BY:
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Original Report Date: April 22, 2016
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 357

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Data Review Manager, Ms. Amy Barnett, is responsible for the final data produced and reported. Her signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

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Sample Delivery Group Case Narrative

Receipt Information:

The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. No samples in this SDG were subcontracted.

Changes to the Revision:

This is an original submittal of the final report package.

Analytical Information:

All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6010C/SW7470A:

The following compounds are qualified with an M to indicate that the LOD and/or DL were raised due to sample interference:

Silver in 1604060-01

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Wet Chemistry:

Note – Sample 1604060-01 was re-analyzed as 1604060-01RE1 at a 10x due to over linear range Nitrate as N in the lower analysis. Sample 1604060-01RE1 was not analyzed until 4 days after sampling with a 48 hour holding time; therefore, the original and re-analysis are included in the report.

The following blanks have reported results greater than ½ the LOQ:

6D12003-BLK1 for Total Dissolved Solids; note – the concentrations in the samples are greater than 10x the concentration in the blank

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H: The result was analyzed, extracted, or received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it

indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to

assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

Amy Barnett

Ms. Amy M. Barnett
Data Review Manager

Sample Receipt Information

1604060 Data Package

1604060-01 A

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

29480

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 877-345-1113 ♦ (fax) 866-417-0548

Send Results to:

Name CHRIS LONG
Company CBEI E.S.
Address 10777 WESTHEIMER
City SUITE 170 HOUSTON
State, Zip TX 77042
Phone (713) 243-7090
Fax
E-mail

Send Invoice to:

Name
Company
Address
City
State, Zip
Phone
Fax
E-mail

Project No./Name: HOLLOMAN AFB 144106.JR2001

Sampler's (Signature): [signature]

Analysis Requirements:

SW6020A/7470A METALS MERCURY
E300: NITRATE
SM2540C/D: TDS/TSS

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	SW6020A/7470A METALS MERCURY	E300: NITRATE	SM2540C/D: TDS/TSS	Comments	No. of Bottles	Lab Use Only Containers/Pres.
a	4/7/16 10:05	OTC538-GW-MW01	GW	X	X	X		2	

Sample Kit Prep'd by: (Signature)	Date/Time	Received By: (Signature)
Relinquished by: (Signature) [signature]	Date/Time 4/7/16	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature) [signature]	Date/Time 4/8/16 ~~400~~ 950	Temperature 4/8/16 0.9

REMARKS:

Details:

Page 1 of 1
Cooler No. 1 of 1
Date Shipped 4/7/16
Shipped By [signature]
Turnaround

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

V:\Standard Operating Procedures\Current SOP File Directory\Forms\QS10 R21 20140729 Chain of Custody.doc

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On:4/8/16@~~0900~~ 950 TH 4/8/16 Workorder# 1604060

1. Tracking # NA (last 4 digits, FedEx)

   Courier: ~~FedEx~~ UPS 4/8/16

2. Temperature of rep. sample or temp blank when opened: 0.6 °C + *correction factor (+0.3)* = 0.9 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial/date) TH 4/8/16

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (initial/date) TH 4/8/16

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present for Cyanide "Effluent" samples? If so, treated/documented? YES...NO...NA

17. For 608 Pest/PCB samples, was pH <5 or >9? Was residual chlorine present? If either, adjusted/documented? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-17 (initial/date) TH 4/8/16

18. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

19. Did you sign the custody papers in the appropriate place? YES...NO...NA

20. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

21. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

22. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 18-22 (initial/date) TH 4/8/16

I certify that I attached a unique LIMS number label with matching sample name to each container (initial/date) TH 4/8/16

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) TH 4/8/16

Empirical Laboratories, LLC

WORK ORDER

1604060

Client: CB&I
Project: Holloman AFB
Project Manager: Sonya Gordon
Project Number: CBI_HAFB

Report To:
CB&I
Maqsud Rahman
5050 Section Ave
Cincinnati, OH 45212
Phone: (225) 932-2500
Fax: (225) 932-2661

Invoice To:
CB&I
Accounts Payable
PO Box 98519
Baton Rouge, LA 70884
Phone :(225) 932-2500
Fax: (225) 932-2661

Date Due: 04/22/2016 16:00 (10 day TAT)
Date Received: 04/08/2016 09:50
Logged In By: Tiana L. Hutchings
Received By: Tiana L. Hutchings

Samples Received at:	**0.9°C**		
Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	Yes		

Analysis	TAT	Expires	Version	Comments
1604060-01 OTC538-GW-MW01 [Water] Sampled 04/07/2016 10:05 (GMT-07:00) Mountain Time (US & Canada)				
MET_7470A_MERCURY	10	05/05/2016 11:05		
MET_ICP_LOW6010C_FULL	10	10/04/2016 11:05		
WC_ANIONS_300.0 (Short Hold)	10	04/09/2016 11:05		
WC_TDS_TOTAL_DISS_SOLIDS_2540C	10	04/14/2016 11:05		
WC_TSS_TOTAL_SUSPENDED_SOLIDS_	10	04/14/2016 11:05		

Empirical Laboratories, LLC

WORK ORDER

1604060

Client:	**CB&I**	**Project Manager:**	**Sonya Gordon**
Project:	**Holloman AFB**	**Project Number:**	**CBI_HAFB**

MET_ICP_LOW6010C_FULL **Extraction: MET_3005A_LOW**

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Vanadium
Zinc

WC_ANIONS_300.0 (Short Hold) **Extraction: WC_PREP_ANIONS_W**

Nitrate as N

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Holloman AFB
SDG #: 1604060

QC LEVEL: Level IV
Report Due: 4/22/2016 - 4/22/2016
Client Sample Count: 1

Sample Type	Sampled	Received	Lab ID	Client ID	Lab Matrix	E300.0	SM2540C	SM2540D	SW6010C	SW7470A
Client Sample	4/7/2016	4/8/2016	1604060-01	OTC538-GW-MW01	Water	X	X	X	X	X

Data for SW6010C/ SW7470A Forms

Sample Extraction Data

Prep Method: MET_3005A_LOW-SW6010C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604060-01 [OTC538-GW-MW01]	6D09919	100.00/25.00	100	25.0	2.00			04/13/16
1604060-01RE1 [OTC538-GW-MW01]	6D09919	100.00/25.00	100	25.0	5.00			04/13/16
1604060-01RE2 [OTC538-GW-MW01]	6D09919	100.00/25.00	100	25.0	10.00			04/13/16

Sample Extraction Data

Prep Method: pMercury-W SW 7470A-SW7470A

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604060-01 [OTC538-GW-MW01]	6D12009	30.00/30.00	30.0	30.0	1.00			04/12/16

ANALYSIS DATA SHEET

OTC538-GW-MW01

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604060-01
Sampled:	04/07/16 10:05	Received:	04/08/16 09:50

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.160	0.200	1	U	SW7470A	6D12009	04/12/16 16:15
7429-90-5	Aluminum	**1500**	**125**	250	500	10	D	SW6010C	6D09919	04/20/16 16:57
7440-36-0	Antimony		2.50	4.00	5.00	2	U	SW6010C	6D09919	04/15/16 18:02
7440-38-2	Arsenic	**2.16**	**1.50**	3.00	5.00	2	J D	SW6010C	6D09919	04/15/16 18:02
7440-39-3	Barium	**17.0**	**2.50**	5.00	20.0	2	J D	SW6010C	6D09919	04/15/16 18:02
7440-41-7	Beryllium		0.500	1.00	2.50	2	U	SW6010C	6D09919	04/15/16 18:02
7440-43-9	Cadmium		2.50	5.00	12.5	10	U	SW6010C	6D09919	04/20/16 16:57
7440-70-2	Calcium	**698000**	**2500**	5000	12500	10	D	SW6010C	6D09919	04/20/16 16:57
7440-47-3	Chromium	**2.65**	**2.50**	5.00	12.5	5	J D	SW6010C	6D09919	04/19/16 19:15
7440-48-4	Cobalt	**4.26**	**2.50**	5.00	6.25	2	J D	SW6010C	6D09919	04/15/16 18:02
7440-50-8	Copper		5.00	10.0	12.5	5	U	SW6010C	6D09919	04/19/16 19:15
7439-89-6	Iron	**300**	**15.0**	30.0	50.0	2	D	SW6010C	6D09919	04/15/16 18:02
7439-92-1	Lead		0.750	1.50	2.50	2	U	SW6010C	6D09919	04/15/16 18:02
7439-95-4	Magnesium	**384000**	**1250**	3750	6250	5	D	SW6010C	6D09919	04/19/16 19:15
7439-96-5	Manganese	**126**	**1.50**	3.00	7.50	2	D	SW6010C	6D09919	04/15/16 18:02
7440-02-0	Nickel	**232**	**3.75**	7.50	12.5	5	D	SW6010C	6D09919	04/19/16 19:15
7440-09-7	Potassium	**10400**	**500**	1500	2500	2	D	SW6010C	6D09919	04/15/16 18:02
7782-49-2	Selenium	**8.37**	**7.50**	12.5	25.0	10	J D	SW6010C	6D09919	04/20/16 16:57
7440-22-4	Silver		1.00	1.00	5.00	2	M U	SW6010C	6D09919	04/15/16 18:02
7440-23-5	Sodium	**1220000**	**2500**	7500	12500	10	D	SW6010C	6D09919	04/20/16 16:57
7440-28-0	Thallium		1.50	2.00	4.00	2	U	SW6010C	6D09919	04/15/16 18:02
7440-62-2	Vanadium	**13.2**	**2.50**	5.00	6.25	2	D	SW6010C	6D09919	04/15/16 18:02
7440-66-6	Zinc		12.5	25.0	50.0	10	U	SW6010C	6D09919	04/20/16 16:57

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09919-BLK1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	ND	12.5	25.0	50.0	1	U	SW6010C	6D09919	04/14/16 11:28
7440-36-0	Antimony	ND	1.25	2.00	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-38-2	Arsenic	ND	0.750	1.50	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-39-3	Barium	ND	1.25	2.50	10.0	1	U	SW6010C	6D09919	04/14/16 11:28
7440-41-7	Beryllium	ND	0.250	0.500	1.25	1	U	SW6010C	6D09919	04/14/16 11:28
7440-43-9	Cadmium	ND	0.250	0.500	1.25	1	U	SW6010C	6D09919	04/14/16 11:28
7440-70-2	Calcium	ND	250	500	1250	1	U	SW6010C	6D09919	04/14/16 11:28
7440-47-3	Chromium	ND	0.500	1.00	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-48-4	Cobalt	ND	1.25	2.50	3.12	1	U	SW6010C	6D09919	04/14/16 11:28
7440-50-8	Copper	ND	1.00	2.00	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7439-89-6	Iron	ND	7.50	15.0	25.0	1	U	SW6010C	6D09919	04/14/16 11:28
7439-92-1	Lead	ND	0.375	0.750	1.25	1	U	SW6010C	6D09919	04/14/16 11:28
7439-95-4	Magnesium	ND	250	750	1250	1	U	SW6010C	6D09919	04/14/16 11:28
7439-96-5	Manganese	ND	0.750	1.50	3.75	1	U	SW6010C	6D09919	04/14/16 11:28
7440-02-0	Nickel	ND	0.750	1.50	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-09-7	Potassium	ND	250	750	1250	1	U	SW6010C	6D09919	04/14/16 11:28
7782-49-2	Selenium	ND	0.750	1.25	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-22-4	Silver	ND	0.250	0.500	2.50	1	U	SW6010C	6D09919	04/14/16 11:28
7440-23-5	Sodium	ND	250	750	1250	1	U	SW6010C	6D09919	04/14/16 11:28
7440-28-0	Thallium	ND	0.750	1.00	2.00	1	U	SW6010C	6D09919	04/14/16 11:28
7440-62-2	Vanadium	ND	1.25	2.50	3.12	1	U	SW6010C	6D09919	04/14/16 11:28
7440-66-6	Zinc	ND	1.25	2.50	5.00	1	U	SW6010C	6D09919	04/14/16 11:28

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D09919-BS1
% Solids:

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum	**103.1**	**12.5**	25.0	50.0	1		SW6010C	6D09919	04/14/16 11:32
7440-36-0	Antimony	**12.48**	**1.25**	2.00	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-38-2	Arsenic	**12.72**	**0.750**	1.50	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-39-3	Barium	**96.79**	**1.25**	2.50	10.0	1		SW6010C	6D09919	04/14/16 11:32
7440-41-7	Beryllium	**2.463**	**0.250**	0.500	1.25	1		SW6010C	6D09919	04/14/16 11:32
7440-43-9	Cadmium	**6.472**	**0.250**	0.500	1.25	1		SW6010C	6D09919	04/14/16 11:32
7440-70-2	Calcium	**801.6**	**250**	500	1250	1	J	SW6010C	6D09919	04/14/16 11:32
7440-47-3	Chromium	**9.483**	**0.500**	1.00	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-48-4	Cobalt	**25.23**	**1.25**	2.50	3.12	1		SW6010C	6D09919	04/14/16 11:32
7440-50-8	Copper	**12.42**	**1.00**	2.00	2.50	1		SW6010C	6D09919	04/14/16 11:32
7439-89-6	Iron	**55.16**	**7.50**	15.0	25.0	1		SW6010C	6D09919	04/14/16 11:32
7439-92-1	Lead	**12.28**	**0.375**	0.750	1.25	1		SW6010C	6D09919	04/14/16 11:32
7439-95-4	Magnesium	**775.8**	**250**	750	1250	1	J	SW6010C	6D09919	04/14/16 11:32
7439-96-5	Manganese	**25.84**	**0.750**	1.50	3.75	1		SW6010C	6D09919	04/14/16 11:32
7440-02-0	Nickel	**25.30**	**0.750**	1.50	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-09-7	Potassium	**764.9**	**250**	750	1250	1	J	SW6010C	6D09919	04/14/16 11:32
7782-49-2	Selenium	**12.44**	**0.750**	1.25	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-22-4	Silver	**11.40**	**0.250**	0.500	2.50	1		SW6010C	6D09919	04/14/16 11:32
7440-23-5	Sodium	**758.5**	**250**	750	1250	1	J	SW6010C	6D09919	04/14/16 11:32
7440-28-0	Thallium	**12.69**	**0.750**	1.00	2.00	1		SW6010C	6D09919	04/14/16 11:32
7440-62-2	Vanadium	**24.73**	**1.25**	2.50	3.12	1		SW6010C	6D09919	04/14/16 11:32
7440-66-6	Zinc	**25.48**	**1.25**	2.50	5.00	1		SW6010C	6D09919	04/14/16 11:32

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604060

Project: Holloman AFB

Laboratory ID: 6D12009-BLK1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	ND	0.0800	0.160	0.200	1	U	SW7470A	6D12009	04/12/16 15:55

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604060

Project: Holloman AFB

Laboratory ID: 6D12009-BS1

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury	**2.008**	**0.0800**	0.160	0.200	1		SW7470A	6D12009	04/12/16 15:56

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-FIMS

SDG: 1604060
Project: Holloman AFB
Calibration: 6103004
Sequence: 6D10311

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10311-ICV1	Mercury	4.000	4.133	103	ug/L	+/- 20.00%
6D10311-CCV3	Mercury	2.000	2.043	102	ug/L	+/- 20.00%
6D10311-CCV4	Mercury	4.000	4.033	101	ug/L	+/- 20.00%
6D10311-CCV5	Mercury	2.000	2.032	102	ug/L	+/- 20.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604060
Project: Holloman AFB
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10503-ICV1	Aluminum	10000	9981	99.8	ug/L	+/- 10.00%
	Antimony	1000	1012	101	ug/L	+/- 10.00%
	Arsenic	1000	1050	105	ug/L	+/- 10.00%
	Barium	1000	984.6	98.5	ug/L	+/- 10.00%
	Beryllium	1000	1038	104	ug/L	+/- 10.00%
	Cadmium	1000	1030	103	ug/L	+/- 10.00%
	Calcium	50000	52110	104	ug/L	+/- 10.00%
	Chromium	1000	981.1	98.1	ug/L	+/- 10.00%
	Cobalt	1000	959.7	96.0	ug/L	+/- 10.00%
	Copper	1000	999.1	99.9	ug/L	+/- 10.00%
	Iron	10000	9909	99.1	ug/L	+/- 10.00%
	Lead	1000	969.5	96.9	ug/L	+/- 10.00%
	Magnesium	50000	49530	99.1	ug/L	+/- 10.00%
	Manganese	1000	985.7	98.6	ug/L	+/- 10.00%
	Nickel	1000	987.8	98.8	ug/L	+/- 10.00%
	Potassium	10000	9971	99.7	ug/L	+/- 10.00%
	Selenium	1000	1045	104	ug/L	+/- 10.00%
	Silver	500.0	486.8	97.4	ug/L	+/- 10.00%
	Sodium	50000	50640	101	ug/L	+/- 10.00%
	Thallium	1000	1006	101	ug/L	+/- 10.00%
	Vanadium	1000	1013	101	ug/L	+/- 10.00%
	Zinc	1000	1019	102	ug/L	+/- 10.00%
6D10503-CCV1	Aluminum	10000	9878	98.8	ug/L	+/- 10.00%
	Antimony	1000	1022	102	ug/L	+/- 10.00%
	Arsenic	1000	1038	104	ug/L	+/- 10.00%
	Barium	1000	976.6	97.7	ug/L	+/- 10.00%
	Beryllium	1000	1036	104	ug/L	+/- 10.00%
	Cadmium	1000	1027	103	ug/L	+/- 10.00%
	Calcium	50000	51960	104	ug/L	+/- 10.00%
	Chromium	1000	996.9	99.7	ug/L	+/- 10.00%
	Cobalt	1000	963.7	96.4	ug/L	+/- 10.00%
	Copper	1000	996.8	99.7	ug/L	+/- 10.00%
	Iron	10000	10040	100	ug/L	+/- 10.00%
	Lead	1000	961.6	96.2	ug/L	+/- 10.00%
	Magnesium	50000	49460	98.9	ug/L	+/- 10.00%
	Manganese	1000	996.0	99.6	ug/L	+/- 10.00%
	Nickel	1000	982.9	98.3	ug/L	+/- 10.00%
	Potassium	10000	10070	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604060
Project: Holloman AFB
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10503-CCV1	Selenium	1000	1035	103	ug/L	+/- 10.00%
	Silver	500.0	490.3	98.1	ug/L	+/- 10.00%
	Sodium	50000	50460	101	ug/L	+/- 10.00%
	Thallium	1000	991.8	99.2	ug/L	+/- 10.00%
	Vanadium	1000	1010	101	ug/L	+/- 10.00%
	Zinc	1000	1004	100	ug/L	+/- 10.00%
6D10503-CCV2	Aluminum	10000	9885	98.8	ug/L	+/- 10.00%
	Antimony	1000	1026	103	ug/L	+/- 10.00%
	Arsenic	1000	1039	104	ug/L	+/- 10.00%
	Barium	1000	980.9	98.1	ug/L	+/- 10.00%
	Beryllium	1000	1037	104	ug/L	+/- 10.00%
	Cadmium	1000	1032	103	ug/L	+/- 10.00%
	Calcium	50000	52100	104	ug/L	+/- 10.00%
	Chromium	1000	1004	100	ug/L	+/- 10.00%
	Cobalt	1000	967.5	96.7	ug/L	+/- 10.00%
	Copper	1000	1004	100	ug/L	+/- 10.00%
	Iron	10000	9931	99.3	ug/L	+/- 10.00%
	Lead	1000	966.1	96.6	ug/L	+/- 10.00%
	Magnesium	50000	49450	98.9	ug/L	+/- 10.00%
	Manganese	1000	1004	100	ug/L	+/- 10.00%
	Nickel	1000	987.1	98.7	ug/L	+/- 10.00%
	Potassium	10000	10040	100	ug/L	+/- 10.00%
	Selenium	1000	1038	104	ug/L	+/- 10.00%
	Silver	500.0	494.9	99.0	ug/L	+/- 10.00%
	Sodium	50000	49760	99.5	ug/L	+/- 10.00%
	Thallium	1000	996.4	99.6	ug/L	+/- 10.00%
	Vanadium	1000	1018	102	ug/L	+/- 10.00%
	Zinc	1000	1008	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604060
Project: Holloman AFB
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10605-ICV1	Antimony	1000	1008	101	ug/L	+/- 10.00%
	Arsenic	1000	1053	105	ug/L	+/- 10.00%
	Barium	1000	989.9	99.0	ug/L	+/- 10.00%
	Beryllium	1000	1043	104	ug/L	+/- 10.00%
	Cobalt	1000	947.1	94.7	ug/L	+/- 10.00%
	Iron	10000	9821	98.2	ug/L	+/- 10.00%
	Lead	1000	959.0	95.9	ug/L	+/- 10.00%
	Manganese	1000	980.4	98.0	ug/L	+/- 10.00%
	Potassium	10000	10420	104	ug/L	+/- 10.00%
	Silver	500.0	476.5	95.3	ug/L	+/- 10.00%
	Thallium	1000	1004	100	ug/L	+/- 10.00%
	Vanadium	1000	1011	101	ug/L	+/- 10.00%
6D10605-CCV1	Antimony	1000	1004	100	ug/L	+/- 10.00%
	Arsenic	1000	1039	104	ug/L	+/- 10.00%
	Barium	1000	997.6	99.8	ug/L	+/- 10.00%
	Beryllium	1000	1048	105	ug/L	+/- 10.00%
	Cobalt	1000	962.9	96.3	ug/L	+/- 10.00%
	Iron	10000	10150	102	ug/L	+/- 10.00%
	Lead	1000	959.5	95.9	ug/L	+/- 10.00%
	Manganese	1000	1006	101	ug/L	+/- 10.00%
	Potassium	10000	10790	108	ug/L	+/- 10.00%
	Silver	500.0	499.9	100	ug/L	+/- 10.00%
	Thallium	1000	1005	100	ug/L	+/- 10.00%
	Vanadium	1000	1038	104	ug/L	+/- 10.00%
6D10605-CCV8	Antimony	1000	1010	101	ug/L	+/- 10.00%
	Arsenic	1000	1029	103	ug/L	+/- 10.00%
	Barium	1000	985.8	98.6	ug/L	+/- 10.00%
	Beryllium	1000	1053	105	ug/L	+/- 10.00%
	Cobalt	1000	967.5	96.8	ug/L	+/- 10.00%
	Iron	10000	10430	104	ug/L	+/- 10.00%
	Lead	1000	958.8	95.9	ug/L	+/- 10.00%
	Manganese	1000	996.6	99.7	ug/L	+/- 10.00%
	Potassium	10000	10860	109	ug/L	+/- 10.00%
	Silver	500.0	514.8	103	ug/L	+/- 10.00%
	Thallium	1000	998.1	99.8	ug/L	+/- 10.00%
	Vanadium	1000	1071	107	ug/L	+/- 10.00%
6D10605-CCV9	Antimony	1000	1008	101	ug/L	+/- 10.00%
	Arsenic	1000	1025	102	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604060
Project: Holloman AFB
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10605-CCV9	Barium	1000	981.7	98.2	ug/L	+/- 10.00%
	Beryllium	1000	1046	105	ug/L	+/- 10.00%
	Cobalt	1000	964.4	96.4	ug/L	+/- 10.00%
	Iron	10000	10260	103	ug/L	+/- 10.00%
	Lead	1000	955.2	95.5	ug/L	+/- 10.00%
	Manganese	1000	998.0	99.8	ug/L	+/- 10.00%
	Potassium	10000	10730	107	ug/L	+/- 10.00%
	Silver	500.0	512.8	103	ug/L	+/- 10.00%
	Thallium	1000	993.0	99.3	ug/L	+/- 10.00%
	Vanadium	1000	1068	107	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604060
Project: Holloman AFB
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D11022-ICV1	Chromium	1000	992.7	99.3	ug/L	+/- 10.00%
	Copper	1000	1000	100	ug/L	+/- 10.00%
	Magnesium	50000	49810	99.6	ug/L	+/- 10.00%
	Nickel	1000	970.7	97.1	ug/L	+/- 10.00%
6D11022-CCV1	Chromium	1000	1001	100	ug/L	+/- 10.00%
	Copper	1000	996.1	99.6	ug/L	+/- 10.00%
	Magnesium	50000	49720	99.4	ug/L	+/- 10.00%
	Nickel	1000	969.9	97.0	ug/L	+/- 10.00%
6D11022-CCV7	Chromium	1000	1038	104	ug/L	+/- 10.00%
	Copper	1000	1080	108	ug/L	+/- 10.00%
	Magnesium	50000	50470	101	ug/L	+/- 10.00%
	Nickel	1000	940.4	94.0	ug/L	+/- 10.00%
6D11022-CCV8	Chromium	1000	1002	100	ug/L	+/- 10.00%
	Copper	1000	1056	106	ug/L	+/- 10.00%
	Magnesium	50000	50120	100	ug/L	+/- 10.00%
	Nickel	1000	935.8	93.6	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010C

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: ME-ICP

SDG: 1604060
Project: Holloman AFB
Calibration: 6112003
Sequence: 6D11107

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D11107-ICV1	Aluminum	10000	10100	101	ug/L	+/- 10.00%
	Cadmium	1000	1028	103	ug/L	+/- 10.00%
	Calcium	50000	52500	105	ug/L	+/- 10.00%
	Selenium	1000	1033	103	ug/L	+/- 10.00%
	Sodium	50000	49070	98.1	ug/L	+/- 10.00%
	Zinc	1000	1010	101	ug/L	+/- 10.00%
6D11107-CCV1	Aluminum	10000	10280	103	ug/L	+/- 10.00%
	Cadmium	1000	1031	103	ug/L	+/- 10.00%
	Calcium	50000	52300	105	ug/L	+/- 10.00%
	Selenium	1000	1028	103	ug/L	+/- 10.00%
	Sodium	50000	48690	97.4	ug/L	+/- 10.00%
	Zinc	1000	999.3	99.9	ug/L	+/- 10.00%
6D11107-CCV5	Aluminum	10000	10750	108	ug/L	+/- 10.00%
	Cadmium	1000	1056	106	ug/L	+/- 10.00%
	Calcium	50000	52740	105	ug/L	+/- 10.00%
	Selenium	1000	1038	104	ug/L	+/- 10.00%
	Sodium	50000	49510	99.0	ug/L	+/- 10.00%
	Zinc	1000	1035	103	ug/L	+/- 10.00%
6D11107-CCV6	Aluminum	10000	10410	104	ug/L	+/- 10.00%
	Cadmium	1000	1036	104	ug/L	+/- 10.00%
	Calcium	50000	52250	104	ug/L	+/- 10.00%
	Selenium	1000	1025	102	ug/L	+/- 10.00%
	Sodium	50000	48700	97.4	ug/L	+/- 10.00%
	Zinc	1000	1010	101	ug/L	+/- 10.00%

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D10503-CRL1	Aluminum	200.0	195.0	97.5	ug/L	80 - 120
	Arsenic	5.000	4.946	98.9	ug/L	80 - 120
	Barium	10.00	10.36	104	ug/L	80 - 120
	Beryllium	2.000	2.005	100	ug/L	80 - 120
	Cadmium	2.000	2.149	107	ug/L	80 - 120
	Calcium	2000	2174	109	ug/L	80 - 120
	Chromium	4.000	3.448	86.2	ug/L	80 - 120
	Cobalt	10.00	10.30	103	ug/L	80 - 120
	Copper	10.00	11.61	116	ug/L	80 - 120
	Iron	100.0	117.0	117	ug/L	80 - 120
	Lead	3.000	2.988	99.6	ug/L	80 - 120
	Magnesium	3000	3135	104	ug/L	80 - 120
	Manganese	6.000	6.434	107	ug/L	80 - 120
	Nickel	6.000	5.775	96.2	ug/L	80 - 120
	Potassium	3000	3002	100	ug/L	80 - 120
	Selenium	5.000	5.438	109	ug/L	80 - 120
	Sodium	3000	3172	106	ug/L	80 - 120
	Thallium	8.000	8.838	110	ug/L	80 - 120
	Vanadium	10.00	10.18	102	ug/L	80 - 120
	Zinc	10.00	10.02	100	ug/L	80 - 120
6D10503-CRL2	Antimony	10.00	11.11	111	ug/L	80 - 120
	Silver	3.000	2.733	91.1	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: 1604060

Client: CB&I

Project: Holloman AFB

Instrument ID: ME-ICP

Calibration: 6106003

Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D10605-CRL1	Antimony	10.00	11.27	113	ug/L	80 - 120
	Arsenic	5.000	5.259	105	ug/L	80 - 120
	Barium	10.00	10.41	104	ug/L	80 - 120
	Beryllium	2.000	2.107	105	ug/L	80 - 120
	Cobalt	10.00	10.38	104	ug/L	80 - 120
	Iron	100.0	119.2	119	ug/L	80 - 120
	Lead	3.000	3.361	112	ug/L	80 - 120
	Manganese	6.000	6.446	107	ug/L	80 - 120
	Potassium	3000	3170	106	ug/L	80 - 120
	Silver	3.000	2.591	86.4	ug/L	80 - 120
	Thallium	8.000	8.773	110	ug/L	80 - 120
	Vanadium	10.00	9.899	99.0	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: 1604060

Client: CB&I

Project: Holloman AFB

Instrument ID: ME-ICP

Calibration: 6110003

Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D11022-CRL1	Chromium	4.000	4.165	104	ug/L	80 - 120
	Copper	10.00	9.787	97.9	ug/L	80 - 120
	Magnesium	3000	3209	107	ug/L	80 - 120
	Nickel	6.000	5.956	99.3	ug/L	80 - 120

CRDL STANDARD

SW6010C

Laboratory: Empirical Laboratories, LLC

SDG: 1604060

Client: CB&I

Project: Holloman AFB

Instrument ID: ME-ICP

Calibration: 6112003

Sequence: 6D11107

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D11107-CRL1	Aluminum	200.0	215.1	108	ug/L	80 - 120
	Cadmium	2.000	2.247	112	ug/L	80 - 120
	Calcium	2000	2231	112	ug/L	80 - 120
	Sodium	3000	3287	110	ug/L	80 - 120
	Zinc	10.00	11.07	111	ug/L	80 - 120
6D11107-CRL2	Selenium	5.000	4.894	97.9	ug/L	80 - 120

BLANKS
SW7470A

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Instrument ID: ME-FIMS
Project: Holloman AFB
Sequence: 6D10311
Calibration: 6103004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10311-ICB1	Mercury	-0.006634	0.0800	0.200	ug/L	U	SW7470A
6D10311-CCB3	Mercury	-0.0455	0.0800	0.200	ug/L	U	SW7470A
6D12009-BLK1	Mercury	-0.0127	0.0800	0.200	ug/L	U	SW7470A
6D10311-CCB4	Mercury	-0.00401	0.0800	0.200	ug/L	U	SW7470A
6D10311-CCB5	Mercury	-0.0103	0.0800	0.200	ug/L	U	SW7470A

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10503
Calibration: 6105001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10503-ICB1	Aluminum	-1.015	50.0	200	ug/L	U	SW6010C
	Antimony	1.188	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.8147	3.00	10.0	ug/L	U	SW6010C
	Barium	0.1002	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.08936	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.04157	1.00	5.00	ug/L	U	SW6010C
	Calcium	0.7100	1000	5000	ug/L	U	SW6010C
	Chromium	-0.1057	2.00	10.0	ug/L	U	SW6010C
	Cobalt	0.07038	5.00	12.5	ug/L	U	SW6010C
	Copper	1.081	4.00	10.0	ug/L	U	SW6010C
	Iron	10.39	30.0	100	ug/L	U	SW6010C
	Lead	-0.1305	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-16.72	1000	5000	ug/L	U	SW6010C
	Manganese	0.04124	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.5782	3.00	10.0	ug/L	U	SW6010C
	Potassium	34.64	1000	5000	ug/L	U	SW6010C
	Selenium	-0.6292	3.00	10.0	ug/L	U	SW6010C
	Silver	0.3384	1.00	10.0	ug/L	U	SW6010C
	Sodium	-30.51	1000	5000	ug/L	U	SW6010C
	Thallium	-0.2195	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.1537	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.1785	5.00	20.0	ug/L	U	SW6010C
6D10503-CCB1	Aluminum	6.87	50.0	200	ug/L	U	SW6010C
	Antimony	-0.448	5.00	10.0	ug/L	U	SW6010C
	Arsenic	1.41	3.00	10.0	ug/L	U	SW6010C
	Barium	0.0736	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0514	1.00	5.00	ug/L	U	SW6010C
	Cadmium	-0.0779	1.00	5.00	ug/L	U	SW6010C
	Calcium	-1.48	1000	5000	ug/L	U	SW6010C
	Chromium	0.0605	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.0424	5.00	12.5	ug/L	U	SW6010C
	Copper	1.19	4.00	10.0	ug/L	U	SW6010C
	Iron	7.42	30.0	100	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10503
Calibration: 6105001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10503-CCB1	Lead	0.164	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-12.6	1000	5000	ug/L	U	SW6010C
	Manganese	0.0587	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.391	3.00	10.0	ug/L	U	SW6010C
	Potassium	46.1	1000	5000	ug/L	U	SW6010C
	Selenium	-0.268	3.00	10.0	ug/L	U	SW6010C
	Silver	0.301	1.00	10.0	ug/L	U	SW6010C
	Sodium	-52.0	1000	5000	ug/L	U	SW6010C
	Thallium	0.233	3.00	8.00	ug/L	U	SW6010C
	Vanadium	-0.275	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.304	5.00	20.0	ug/L	U	SW6010C
6D09919-BLK1	Aluminum	1.88	12.5	50.0	ug/L	U	SW6010C
	Antimony	0.170	1.25	2.50	ug/L	U	SW6010C
	Arsenic	0.0850	0.750	2.50	ug/L	U	SW6010C
	Barium	0.138	1.25	10.0	ug/L	U	SW6010C
	Beryllium	0.00408	0.250	1.25	ug/L	U	SW6010C
	Cadmium	-0.0110	0.250	1.25	ug/L	U	SW6010C
	Calcium	2.64	250	1250	ug/L	U	SW6010C
	Chromium	0.0782	0.500	2.50	ug/L	U	SW6010C
	Cobalt	-0.0113	1.25	3.12	ug/L	U	SW6010C
	Copper	0.247	1.00	2.50	ug/L	U	SW6010C
	Iron	1.97	7.50	25.0	ug/L	U	SW6010C
	Lead	0.0702	0.375	1.25	ug/L	U	SW6010C
	Magnesium	-0.120	250	1250	ug/L	U	SW6010C
	Manganese	0.0340	0.750	3.75	ug/L	U	SW6010C
	Nickel	-0.0580	0.750	2.50	ug/L	U	SW6010C
	Potassium	12.2	250	1250	ug/L	U	SW6010C
	Selenium	-0.214	0.750	2.50	ug/L	U	SW6010C
	Silver	-0.102	0.250	2.50	ug/L	U	SW6010C
	Sodium	-13.8	250	1250	ug/L	U	SW6010C
	Thallium	-0.0564	0.750	2.00	ug/L	U	SW6010C
	Vanadium	-0.0723	1.25	3.12	ug/L	U	SW6010C
	Zinc	0.137	1.25	5.00	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10503
Calibration: 6105001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10503-CCB2	Aluminum	1.44	50.0	200	ug/L	U	SW6010C
	Antimony	0.961	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.0385	3.00	10.0	ug/L	U	SW6010C
	Barium	0.109	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0222	1.00	5.00	ug/L	U	SW6010C
	Cadmium	0.00772	1.00	5.00	ug/L	U	SW6010C
	Calcium	-0.600	1000	5000	ug/L	U	SW6010C
	Chromium	0.0789	2.00	10.0	ug/L	U	SW6010C
	Cobalt	-0.0343	5.00	12.5	ug/L	U	SW6010C
	Copper	1.58	4.00	10.0	ug/L	U	SW6010C
	Iron	-2.75	30.0	100	ug/L	U	SW6010C
	Lead	0.148	1.50	5.00	ug/L	U	SW6010C
	Magnesium	-17.4	1000	5000	ug/L	U	SW6010C
	Manganese	0.0478	3.00	15.0	ug/L	U	SW6010C
	Nickel	-0.603	3.00	10.0	ug/L	U	SW6010C
	Potassium	102	1000	5000	ug/L	U	SW6010C
	Selenium	0.564	3.00	10.0	ug/L	U	SW6010C
	Silver	-0.0771	1.00	10.0	ug/L	U	SW6010C
	Sodium	201	1000	5000	ug/L	U	SW6010C
	Thallium	-0.359	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.0837	5.00	12.5	ug/L	U	SW6010C
	Zinc	0.240	5.00	20.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-ICB1	Antimony	3.234	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.8777	3.00	10.0	ug/L	U	SW6010C
	Barium	0.05285	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.03706	1.00	5.00	ug/L	U	SW6010C
	Cobalt	0.2801	5.00	12.5	ug/L	U	SW6010C
	Iron	17.29	30.0	100	ug/L	U	SW6010C
	Lead	-0.6328	1.50	5.00	ug/L	U	SW6010C
	Manganese	0.01428	3.00	15.0	ug/L	U	SW6010C
	Potassium	12.42	1000	5000	ug/L	U	SW6010C
	Silver	-0.02218	1.00	10.0	ug/L	U	SW6010C
	Thallium	0.4140	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.04797	5.00	12.5	ug/L	U	SW6010C
6D10605-CCB1	Antimony	1.85	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.0340	3.00	10.0	ug/L	U	SW6010C
	Barium	-0.00912	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0177	1.00	5.00	ug/L	U	SW6010C
	Cobalt	0.140	5.00	12.5	ug/L	U	SW6010C
	Iron	10.7	30.0	100	ug/L	U	SW6010C
	Lead	0.134	1.50	5.00	ug/L	U	SW6010C
	Manganese	0.00704	3.00	15.0	ug/L	U	SW6010C
	Potassium	41.6	1000	5000	ug/L	U	SW6010C
	Silver	-0.216	1.00	10.0	ug/L	U	SW6010C
	Thallium	-0.235	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.431	5.00	12.5	ug/L	U	SW6010C
6D10605-CCB8	Antimony	0.102	5.00	10.0	ug/L	U	SW6010C
	Arsenic	0.276	3.00	10.0	ug/L	U	SW6010C
	Barium	0.143	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0545	1.00	5.00	ug/L	U	SW6010C
	Cobalt	0.0310	5.00	12.5	ug/L	U	SW6010C
	Iron	2.54	30.0	100	ug/L	U	SW6010C
	Lead	0.333	1.50	5.00	ug/L	U	SW6010C
	Manganese	0.175	3.00	15.0	ug/L	U	SW6010C
	Potassium	14.1	1000	5000	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D10605
Calibration: 6106003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10605-CCB8	Silver	-0.540	1.00	10.0	ug/L	U	SW6010C
	Thallium	0.869	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.397	5.00	12.5	ug/L	U	SW6010C
6D10605-CCB9	Antimony	-0.988	5.00	10.0	ug/L	U	SW6010C
	Arsenic	-0.468	3.00	10.0	ug/L	U	SW6010C
	Barium	0.107	5.00	40.0	ug/L	U	SW6010C
	Beryllium	0.0851	1.00	5.00	ug/L	U	SW6010C
	Cobalt	-0.145	5.00	12.5	ug/L	U	SW6010C
	Iron	-0.0656	30.0	100	ug/L	U	SW6010C
	Lead	-0.0299	1.50	5.00	ug/L	U	SW6010C
	Manganese	0.919	3.00	15.0	ug/L	U	SW6010C
	Potassium	48.7	1000	5000	ug/L	U	SW6010C
	Silver	-0.277	1.00	10.0	ug/L	U	SW6010C
	Thallium	0.149	3.00	8.00	ug/L	U	SW6010C
	Vanadium	0.109	5.00	12.5	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11022
Calibration: 6110003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11022-ICB1	Chromium	-0.04697	2.00	10.0	ug/L	U	SW6010C
	Copper	1.054	4.00	10.0	ug/L	U	SW6010C
	Magnesium	-2.790	1000	5000	ug/L	U	SW6010C
	Nickel	-0.5990	3.00	10.0	ug/L	U	SW6010C
6D11022-CCB1	Chromium	0.0536	2.00	10.0	ug/L	U	SW6010C
	Copper	0.952	4.00	10.0	ug/L	U	SW6010C
	Magnesium	0.420	1000	5000	ug/L	U	SW6010C
	Nickel	-0.649	3.00	10.0	ug/L	U	SW6010C
6D11022-CCB7	Chromium	-0.128	2.00	10.0	ug/L	U	SW6010C
	Copper	0.574	4.00	10.0	ug/L	U	SW6010C
	Magnesium	-5.84	1000	5000	ug/L	U	SW6010C
	Nickel	0.0694	3.00	10.0	ug/L	U	SW6010C
6D11022-CCB8	Chromium	-0.193	2.00	10.0	ug/L	U	SW6010C
	Copper	-0.114	4.00	10.0	ug/L	U	SW6010C
	Magnesium	-1.93	1000	5000	ug/L	U	SW6010C
	Nickel	-0.0866	3.00	10.0	ug/L	U	SW6010C

BLANKS
SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Instrument ID: ME-ICP
Project: Holloman AFB
Sequence: 6D11107
Calibration: 6112003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11107-ICB1	Aluminum	-19.32	50.0	200	ug/L	U	SW6010C
	Cadmium	-0.008800	1.00	5.00	ug/L	U	SW6010C
	Calcium	-0.6900	1000	5000	ug/L	U	SW6010C
	Selenium	-1.545	3.00	10.0	ug/L	U	SW6010C
	Sodium	43.16	1000	5000	ug/L	U	SW6010C
	Zinc	0.1957	5.00	20.0	ug/L	U	SW6010C
6D11107-CCB1	Aluminum	3.81	50.0	200	ug/L	U	SW6010C
	Cadmium	0.0184	1.00	5.00	ug/L	U	SW6010C
	Calcium	-0.380	1000	5000	ug/L	U	SW6010C
	Selenium	-0.569	3.00	10.0	ug/L	U	SW6010C
	Sodium	13.0	1000	5000	ug/L	U	SW6010C
	Zinc	0.504	5.00	20.0	ug/L	U	SW6010C
6D11107-CCB5	Aluminum	15.9	50.0	200	ug/L	U	SW6010C
	Cadmium	0.0372	1.00	5.00	ug/L	U	SW6010C
	Calcium	3.46	1000	5000	ug/L	U	SW6010C
	Selenium	-1.56	3.00	10.0	ug/L	U	SW6010C
	Sodium	173	1000	5000	ug/L	U	SW6010C
	Zinc	0.189	5.00	20.0	ug/L	U	SW6010C
6D11107-CCB6	Aluminum	4.81	50.0	200	ug/L	U	SW6010C
	Cadmium	0.0947	1.00	5.00	ug/L	U	SW6010C
	Calcium	6.03	1000	5000	ug/L	U	SW6010C
	Selenium	0.0737	3.00	10.0	ug/L	U	SW6010C
	Sodium	213	1000	5000	ug/L	U	SW6010C
	Zinc	0.280	5.00	20.0	ug/L	U	SW6010C

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units
6D10503-IFA1	Aluminum	500000	488,180.00	97.6	ug/L
	Antimony		1.10		ug/L
	Arsenic		0.45		ug/L
	Barium		0.66		ug/L
	Beryllium		-0.05		ug/L
	Cadmium		0.77		ug/L
	Calcium	500000	500,320.00	100	ug/L
	Chromium		-1.42		ug/L
	Cobalt		-2.61		ug/L
	Copper		-1.26		ug/L
	Iron	200000	200,070.00	100	ug/L
	Lead		0.44		ug/L
	Magnesium	500000	462,400.00	92.5	ug/L
	Manganese		-1.96		ug/L
	Nickel		-0.92		ug/L
	Potassium		-42.74		ug/L
	Selenium		0.82		ug/L
	Silver		-0.73		ug/L
	Sodium		119.71		ug/L
	Thallium		-2.28		ug/L
	Vanadium		1.06		ug/L
	Zinc		-1.00		ug/L
6D10503-IFB1	Aluminum	500000	481,230.00	96.2	ug/L
	Antimony	600.0	657.41	110	ug/L
	Arsenic	100.0	108.07	108	ug/L
	Barium	500.0	534.43	107	ug/L
	Beryllium	500.0	517.12	103	ug/L
	Cadmium	1000	1,038.10	104	ug/L
	Calcium	500000	500,090.00	100	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6105001
Sequence: 6D10503

Lab Sample ID	Analyte	True	Found	%R	Units
6D10503-IFB1	Chromium	500.0	479.21	95.8	ug/L
	Cobalt	500.0	487.59	97.5	ug/L
	Copper	500.0	533.70	107	ug/L
	Iron	200000	198,780.00	99.4	ug/L
	Lead	50.00	47.11	94.2	ug/L
	Magnesium	500000	463,620.00	92.7	ug/L
	Manganese	500.0	453.05	90.6	ug/L
	Nickel	1000	961.22	96.1	ug/L
	Potassium		-27.76		ug/L
	Selenium	50.00	54.86	110	ug/L
	Silver	200.0	208.99	104	ug/L
	Sodium		130.01		ug/L
	Thallium	100.0	100.58	101	ug/L
	Vanadium	500.0	493.81	98.8	ug/L
	Zinc	1000	1,002.20	100	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6106003
Sequence: 6D10605

Lab Sample ID	Analyte	True	Found	%R	Units
6D10605-IFA1	Antimony		2.19		ug/L
	Arsenic		0.09		ug/L
	Barium		0.49		ug/L
	Beryllium		-0.04		ug/L
	Cobalt		-2.39		ug/L
	Iron	200000	197,140.00	98.6	ug/L
	Lead		0.10		ug/L
	Manganese		-1.91		ug/L
	Potassium		-43.36		ug/L
	Silver		-0.87		ug/L
	Thallium		-0.07		ug/L
	Vanadium		1.07		ug/L
6D10605-IFB1	Antimony	600.0	655.61	109	ug/L
	Arsenic	100.0	108.45	108	ug/L
	Barium	500.0	541.81	108	ug/L
	Beryllium	500.0	520.95	104	ug/L
	Cobalt	500.0	482.08	96.4	ug/L
	Iron	200000	196,290.00	98.1	ug/L
	Lead	50.00	45.37	90.7	ug/L
	Manganese	500.0	457.29	91.5	ug/L
	Potassium		-45.85		ug/L
	Silver	200.0	199.19	99.6	ug/L
	Thallium	100.0	102.02	102	ug/L
	Vanadium	500.0	489.11	97.8	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6110003
Sequence: 6D11022

Lab Sample ID	Analyte	True	Found	%R	Units
6D11022-IFA1	Chromium		-1.40		ug/L
	Copper		-1.54		ug/L
	Magnesium	500000	463,330.00	92.7	ug/L
	Nickel		-2.18		ug/L
6D11022-IFB1	Chromium	500.0	486.40	97.3	ug/L
	Copper	500.0	538.75	108	ug/L
	Magnesium	500000	464,310.00	92.9	ug/L
	Nickel	1000	943.51	94.4	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Instrument ID: ME-ICP
Calibration: 6112003
Sequence: 6D11107

Lab Sample ID	Analyte	True	Found	%R	Units
6D11107-IFA1	Aluminum	500000	503,340.00	101	ug/L
	Cadmium		0.11		ug/L
	Calcium	500000	508,220.00	102	ug/L
	Selenium		0.10		ug/L
	Sodium		104.64		ug/L
	Zinc		-0.49		ug/L
6D11107-IFB1	Aluminum	500000	499,320.00	99.9	ug/L
	Cadmium	1000	1,049.00	105	ug/L
	Calcium	500000	502,710.00	101	ug/L
	Selenium	50.00	52.68	105	ug/L
	Sodium		102.82		ug/L
	Zinc	1000	1,008.30	101	ug/L

LCS / LCS DUPLICATE RECOVERY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D09919	Laboratory ID:	6D09919-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Aluminum	100.0	103.1	103	80 - 120
Antimony	12.50	12.48	99.8	80 - 120
Arsenic	12.50	12.72	102	80 - 120
Barium	100.0	96.79	96.8	80 - 120
Beryllium	2.500	2.463	98.5	80 - 120
Cadmium	6.250	6.472	104	80 - 120
Calcium	750.0	801.6	107	80 - 120
Chromium	10.00	9.483	94.8	80 - 120
Cobalt	25.00	25.23	101	80 - 120
Copper	12.50	12.42	99.3	80 - 120
Iron	50.00	55.16	110	80 - 120
Lead	12.50	12.28	98.3	80 - 120
Magnesium	750.0	775.8	103	80 - 120
Manganese	25.00	25.84	103	80 - 120
Nickel	25.00	25.30	101	80 - 120
Potassium	750.0	764.9	102	80 - 120
Selenium	12.50	12.44	99.5	80 - 120
Silver	12.50	11.40	91.2	80 - 120
Sodium	750.0	758.5	101	80 - 120
Thallium	12.50	12.69	101	80 - 120
Vanadium	25.00	24.73	98.9	80 - 120
Zinc	25.00	25.48	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12009	Laboratory ID:	6D12009-BS1
Preparation:	pMercury-W SW 7470A	Initial/Final:	30 mL / 30 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Mercury	2.000	2.008	100	80 - 120

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10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604060

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Aluminum	396.152	0.000000	0.997239	0.000043	0.000000	0.000000
Antimony	206.833	0.000000	0.000000	0.000015	0.000000	0.000000
Arsenic	189.042	-0.000016	0.000000	-0.00007	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	0.000000	0.003803	0.000019	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.005608	0.000000
Cobalt	228.616	0.000000	0.000000	0.000041	0.000000	0.000000
Copper	324.754	0.000000	0.000000	-0.000044	0.001001	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.353	-0.000194	0.000000	0.000035	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000025	0.000000	0.000000
Nickel	231.604	0.000000	0.000000	0.000024	0.002042	0.000000
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.00002	-0.003538	0.000000	0.000000	0.000000
Silver	328.068	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000000	0.000000	0.000019	0.000000	0.000000
Vanadium	292.402	0.000000	0.000000	0.000000	0.000000	0.000000
Zinc	206.200	0.000014	0.000827	0.000000	0.000000	0.000000

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604060

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for: As	B	Ba	Be	Cd
Aluminum	396.152	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	-0.000021	0.000000	0.000000	0.000000	0.000000
Arsenic	189.042	0.000000	0.000000	0.000000	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	-0.000125	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.000000	0.000043
Cobalt	228.616	0.000000	0.000000	0.000000	0.000000	0.000000
Copper	324.754	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.353	0.000000	0.000000	0.000000	0.000000	0.000000
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	0.000000	0.000000	0.000000	-0.000039	0.000000
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000000	0.000000	0.000000	0.000000	0.000000
Silver	328.068	0.000000	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000000	0.000000	0.000000	0.000000	0.000000
Vanadium	292.402	0.000000	0.000000	0.000000	0.000000	0.000000
Zinc	206.200	0.000000	0.000000	0.000000	0.001494	0.000729

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604060

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Aluminum	396.152	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	0.000000	0.023282	0.000000	0.000000	0.000000
Arsenic	189.042	0.000000	0.000195	0.000000	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	0.000000	-0.00009	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.000000	0.000412
Cobalt	228.616	0.000000	-0.000032	0.000000	0.000000	0.000000
Copper	324.754	0.000000	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	-0.00372	0.000000	0.000000	-0.000794
Lead	220.353	0.000000	0.000000	0.000535	0.000000	0.000116
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	-0.000486	-0.000079	0.000000	0.000000	0.000000
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000000	0.000000	0.000000	0.000000	0.00061
Silver	328.068	0.000000	0.000000	0.000000	0.000000	0.000319
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.003819	0.000203	0.000000	0.000000	0.001269
Vanadium	292.402	0.000000	-0.009679	0.000000	0.000000	-0.000386
Zinc	206.200	0.000000	0.000078	0.0003	0.000000	0.000688

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604060

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Aluminum	396.152	0.047589	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	-0.001234	0.000000	0.000000	0.000000	0.000000
Arsenic	189.042	0.003155	0.000000	0.000000	0.000000	0.000000
Barium	233.527	0.000000	0.000000	0.000000	0.000000	0.000000
Beryllium	313.042	-0.000025	0.000000	0.000000	0.000000	0.000000
Cadmium	214.438	-0.000105	0.000000	0.000000	0.000000	0.000000
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000000	0.000000	0.000000
Cobalt	228.616	-0.001642	0.000000	0.000049	0.000000	0.000000
Copper	324.754	0.000505	0.000000	0.000000	0.000000	0.000000
Iron	261.187	0.000000	0.000000	-0.000713	0.000000	0.000000
Lead	220.353	-0.001390	0.000000	0.000151	0.000000	0.000000
Magnesium	279.079	-0.000013	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	-0.000735	0.000000	0.000000	0.000017	-0.00003
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000166	0.000000	-0.000022	0.000000	0.000000
Silver	328.068	-0.000046	0.000000	0.000000	0.000000	0.000000
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000230	0.000000	0.000000	0.000000	0.000000
Vanadium	292.402	-0.000106	0.000000	0.000000	0.000000	0.000000
Zinc	206.200	0.000173	0.000000	0.000366	0.000000	0.000004

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604060

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Aluminum	396.152	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.833	0.000000	0.000000	0.000252	0.000000	0.000048
Arsenic	189.042	0.000000	0.000000	-0.00007	0.000000	0.000084
Barium	233.527	0.000000	0.000000	0.000000	0.000000	-0.0002594
Beryllium	313.042	0.000000	0.000000	-0.000956	0.000000	-0.000417
Cadmium	214.438	0.000000	0.000000	0.000000	0.000000	0.00003
Calcium	317.933	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.716	0.000000	0.000000	0.000123	0.000000	-0.000018
Cobalt	228.616	0.000000	0.000000	0.002252	0.000000	0.000000
Copper	324.754	0.000000	0.000000	-0.001215	0.000000	0.000000
Iron	261.187	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.353	0.000000	0.000000	0.000092	0.000000	-0.00007
Magnesium	279.079	0.000000	0.000000	0.000000	0.000000	0.000000
Manganese	257.610	0.000000	0.000000	0.000000	0.000000	0.000000
Nickel	231.604	0.000000	0.000000	0.000078	0.000281	0.000104
Potassium	766.490	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.090	0.000000	0.000000	0.0000022	0.000000	0.00018
Silver	328.068	0.000000	0.000000	0.000000	0.000000	-0.00427
Sodium	589.592	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.856	0.000000	0.000000	-0.001356	0.000000	0.000464
Vanadium	292.402	0.000000	0.000000	0.000000	0.000682	0.000000
Zinc	206.200	0.000000	0.000000	0.000000	0.000000	0.000226

Comments:

FORM XA-IN

USEPA - CLP

10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Empirical Laboratories, LLC Contract: CB&I

SDG No.: 1604060

ICP-AES Instrument ID: Thermo Jarrell Ashe ICAP Date: 1/15/2015

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Aluminum	396.152	0.000000				
Antimony	206.833	0.000000				
Arsenic	189.042	-0.000011				
Barium	233.527	0.000000				
Beryllium	313.042	0.000000				
Cadmium	214.438	0.000000				
Calcium	317.933	0.000000				
Chromium	267.716	0.000000				
Cobalt	228.616	0.000000				
Copper	324.754	0.000000				
Iron	261.187	0.000000				
Lead	220.353	0.000000				
Magnesium	279.079	0.000000				
Manganese	257.610	0.000000				
Nickel	231.604	0.000063				
Potassium	766.490	0.000000				
Selenium	196.090	0.000000				
Silver	328.068	0.000000				
Sodium	589.592	0.000000				
Thallium	190.856	0.000000				
Vanadium	292.402	0.000000				
Zinc	206.200	0.000000				

Comments:

FORM XA-IN

ICP-AES AND ICP-MS LINEAR RANGES

Lab Name: Empirical Laboratories, LLC

Client: CB&I SDG: 1604060

Project: Holloman AFB

ICP Instrument ID: ME-ICP Date: 01/30/2016

Analyte	Integ. Time (Sec.)	Concentration ug/L	M
Aluminum	15	500000	P
Antimony	15	25000	P
Arsenic	15	10000	P
Barium	15	5000	P
Beryllium	15	10000	P
Cadmium	15	10000	P
Calcium	15	500000	P
Chromium	15	10000	P
Cobalt	15	10000	P
Copper	15	25000	P
Iron	15	500000	P
Lead	15	25000	P
Magnesium	15	500000	P
Manganese	15	12000	P
Nickel	15	50000	P
Potassium	15	100000	P
Selenium	15	10000	P
Silver	15	2000	P
Sodium	15	500000	P
Thallium	15	10000	P
Vanadium	15	10000	P
Zinc	15	20000	P

PREPARATION BATCH SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Batch: 6D09919 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW01	1604060-01	04/13/16 07:57	100.00	25.00
OTC538-GW-MW01	1604060-01RE1	04/13/16 07:57	100.00	25.00
OTC538-GW-MW01	1604060-01RE2	04/13/16 07:57	100.00	25.00
Blank	6D09919-BLK1	04/13/16 07:57	100.00	25.00
LCS	6D09919-BS1	04/13/16 07:57	100.00	25.00

PREPARATION BATCH SUMMARY

SW7470A

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Batch: 6D12009 Batch Matrix: Water Preparation: pMercury-W SW 7470A

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW01	1604060-01	04/12/16 08:28	30.00	30.00
Blank	6D12009-BLK1	04/12/16 08:28	30.00	30.00
LCS	6D12009-BS1	04/12/16 08:28	30.00	30.00

INITIAL CALIBRATION STANDARDS

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10311	Instrument:	ME-FIMS
Calibration:	6103004		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0142	Mercury 0.0 ppb H2O calibration std	6D10311-CAL1	20160412w-001	04/12/16 15:01
16D0143	Mercury 0.20 ppb H2O calibration std	6D10311-CAL2	20160412w-002	04/12/16 15:02
16D0144	Mercury 0.50 ppb H2O calibration std	6D10311-CAL3	20160412w-003	04/12/16 15:03
16D0145	Mercury 1.0 ppb H2O calbration standard	6D10311-CAL4	20160412w-004	04/12/16 15:04
16D0146	Mercury 2.0 ppb H2O calibration std	6D10311-CAL5	20160412w-005	04/12/16 15:05
16D0147	Mercury 4.0 ppb H2O calibration std	6D10311-CAL6	20160412w-006	04/12/16 15:07
16D0148	Mercury 6.0 ppb H2O calibration std	6D10311-CAL7	20160412w-007	04/12/16 15:08
16D0149	Mercury 10.0 ppb H2O calibration std	6D10311-CAL8	20160412w-008	04/12/16 15:09

INITIAL CALIBRATION STANDARDS

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10503	Instrument:	ME-ICP
Calibration:	6105001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0092	SEQ-CAL1	6D10503-CAL1	04-14-16A-001	04/14/16 09:43
16D0093	SEQ-CAL3	6D10503-CAL3	04-14-16A-002	04/14/16 09:51
16C0452	SEQ-CAL4	6D10503-CAL4	04-14-16A-003	04/14/16 09:55
16D0153	SEQ-CAL5	6D10503-CAL5	04-14-16A-004	04/14/16 09:58
16D0036	SEQ-CAL6	6D10503-CAL6	04-14-16A-005	04/14/16 10:02
15L0584	SEQ-CAL7	6D10503-CAL7	04-14-16A-006	04/14/16 10:07
15L0751	SEQ-CAL8	6D10503-CAL8	04-14-16A-007	04/14/16 10:11
16B0394	SEQ-CAL2	6D10503-CAL2	04-14-16A-008	04/14/16 10:20

INITIAL CALIBRATION STANDARDS

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10605	Instrument:	ME-ICP
Calibration:	6106003		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0092	SEQ-CAL1	6D10605-CAL1	04-15-16A-001	04/15/16 09:24
16B0394	SEQ-CAL2	6D10605-CAL2	04-15-16A-002	04/15/16 09:35
16D0093	SEQ-CAL3	6D10605-CAL3	04-15-16A-003	04/15/16 09:39
16C0452	SEQ-CAL4	6D10605-CAL4	04-15-16A-004	04/15/16 09:43
16D0153	SEQ-CAL5	6D10605-CAL5	04-15-16A-005	04/15/16 09:47
16D0036	SEQ-CAL6	6D10605-CAL6	04-15-16A-006	04/15/16 09:52
16D0288	SEQ-CAL7	6D10605-CAL7	04-15-16A-007	04/15/16 09:56
16D0289	SEQ-CAL8	6D10605-CAL8	04-15-16A-008	04/15/16 10:00

INITIAL CALIBRATION STANDARDS

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D11022	Instrument:	ME-ICP
Calibration:	6110003		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0092	SEQ-CAL1	6D11022-CAL1	04-19-16A-001	04/19/16 09:52
16B0394	SEQ-CAL2	6D11022-CAL2	04-19-16A-002	04/19/16 09:56
16D0093	SEQ-CAL3	6D11022-CAL3	04-19-16A-003	04/19/16 09:59
16C0452	SEQ-CAL4	6D11022-CAL4	04-19-16A-004	04/19/16 10:03
16D0153	SEQ-CAL5	6D11022-CAL5	04-19-16A-005	04/19/16 10:07
16D0036	SEQ-CAL6	6D11022-CAL6	04-19-16A-006	04/19/16 10:12
16D0288	SEQ-CAL7	6D11022-CAL7	04-19-16A-007	04/19/16 10:17
16D0289	SEQ-CAL8	6D11022-CAL8	04-19-16A-008	04/19/16 10:23

INITIAL CALIBRATION STANDARDS

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D11107	Instrument:	ME-ICP
Calibration:	6112003		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
16D0092	SEQ-CAL1	6D11107-CAL1	04-20-16A-001	04/20/16 09:44
16D0377	SEQ-CAL2	6D11107-CAL2	04-20-16A-002	04/20/16 09:47
16D0093	SEQ-CAL3	6D11107-CAL3	04-20-16A-003	04/20/16 09:51
16C0452	SEQ-CAL4	6D11107-CAL4	04-20-16A-004	04/20/16 10:00
16D0153	SEQ-CAL5	6D11107-CAL5	04-20-16A-005	04/20/16 10:04
16D0036	SEQ-CAL6	6D11107-CAL6	04-20-16A-006	04/20/16 10:08
16D0288	SEQ-CAL7	6D11107-CAL7	04-20-16A-007	04/20/16 10:13
16D0289	SEQ-CAL8	6D11107-CAL8	04-20-16A-008	04/20/16 10:17

ANALYSIS SEQUENCE SUMMARY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10311	Instrument:	ME-FIMS
Calibration:	6103004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D10311-CAL1	20160412w-001	04/12/16 15:01
Cal Standard	6D10311-CAL2	20160412w-002	04/12/16 15:02
Cal Standard	6D10311-CAL3	20160412w-003	04/12/16 15:03
Cal Standard	6D10311-CAL4	20160412w-004	04/12/16 15:04
Cal Standard	6D10311-CAL5	20160412w-005	04/12/16 15:05
Cal Standard	6D10311-CAL6	20160412w-006	04/12/16 15:07
Cal Standard	6D10311-CAL7	20160412w-007	04/12/16 15:08
Cal Standard	6D10311-CAL8	20160412w-008	04/12/16 15:09
Initial Cal Check	6D10311-ICV1	20160412w-009	04/12/16 15:11
Initial Cal Blank	6D10311-ICB1	20160412w-010	04/12/16 15:12
Calibration Check	6D10311-CCV3	20160412w-049	04/12/16 15:53
Calibration Blank	6D10311-CCB3	20160412w-050	04/12/16 15:54
Blank	6D12009-BLK1	20160412w-051	04/12/16 15:55
LCS	6D12009-BS1	20160412w-052	04/12/16 15:56
Calibration Check	6D10311-CCV4	20160412w-065	04/12/16 16:12
Calibration Blank	6D10311-CCB4	20160412w-066	04/12/16 16:13
OTC538-GW-MW01	1604060-01	20160412w-068	04/12/16 16:15
Calibration Check	6D10311-CCV5	20160412w-077	04/12/16 16:24
Calibration Blank	6D10311-CCB5	20160412w-078	04/12/16 16:26

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10503	Instrument:	ME-ICP
Calibration:	6105001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D10503-CAL1	04-14-16A-001	04/14/16 09:43
Cal Standard	6D10503-CAL3	04-14-16A-002	04/14/16 09:51
Cal Standard	6D10503-CAL4	04-14-16A-003	04/14/16 09:55
Cal Standard	6D10503-CAL5	04-14-16A-004	04/14/16 09:58
Cal Standard	6D10503-CAL6	04-14-16A-005	04/14/16 10:02
Cal Standard	6D10503-CAL7	04-14-16A-006	04/14/16 10:07
Cal Standard	6D10503-CAL8	04-14-16A-007	04/14/16 10:11
Cal Standard	6D10503-CAL2	04-14-16A-008	04/14/16 10:20
Initial Cal Check	6D10503-ICV1	04-14-16B-001	04/14/16 10:46
Initial Cal Blank	6D10503-ICB1	04-14-16B-002	04/14/16 10:52
Instrument RL Check	6D10503-CRL1	04-14-16B-003	04/14/16 10:56
Instrument RL Check	6D10503-CRL2	04-14-16B-004	04/14/16 11:01
Interference Check A	6D10503-IFA1	04-14-16B-005	04/14/16 11:05
Interference Check B	6D10503-IFB1	04-14-16B-006	04/14/16 11:10
Calibration Check	6D10503-CCV1	04-14-16B-008	04/14/16 11:19
Calibration Blank	6D10503-CCB1	04-14-16B-009	04/14/16 11:23
Blank	6D09919-BLK1	04-14-16B-010	04/14/16 11:28
LCS	6D09919-BS1	04-14-16B-011	04/14/16 11:32
Calibration Check	6D10503-CCV2	04-14-16B-022	04/14/16 12:21
Calibration Blank	6D10503-CCB2	04-14-16B-023	04/14/16 12:26

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10605	Instrument:	ME-ICP
Calibration:	6106003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D10605-CAL1	04-15-16A-001	04/15/16 09:24
Cal Standard	6D10605-CAL2	04-15-16A-002	04/15/16 09:35
Cal Standard	6D10605-CAL3	04-15-16A-003	04/15/16 09:39
Cal Standard	6D10605-CAL4	04-15-16A-004	04/15/16 09:43
Cal Standard	6D10605-CAL5	04-15-16A-005	04/15/16 09:47
Cal Standard	6D10605-CAL6	04-15-16A-006	04/15/16 09:52
Cal Standard	6D10605-CAL7	04-15-16A-007	04/15/16 09:56
Cal Standard	6D10605-CAL8	04-15-16A-008	04/15/16 10:00
Initial Cal Check	6D10605-ICV1	04-15-16B-001	04/15/16 10:28
Initial Cal Blank	6D10605-ICB1	04-15-16B-002	04/15/16 10:33
Instrument RL Check	6D10605-CRL1	04-15-16B-005	04/15/16 10:47
Interference Check A	6D10605-IFA1	04-15-16B-006	04/15/16 10:51
Interference Check B	6D10605-IFB1	04-15-16B-007	04/15/16 10:56
Calibration Check	6D10605-CCV1	04-15-16B-009	04/15/16 11:05
Calibration Blank	6D10605-CCB1	04-15-16B-010	04/15/16 11:10
Calibration Check	6D10605-CCV8	04-15-16D-011	04/15/16 17:44
Calibration Blank	6D10605-CCB8	04-15-16D-012	04/15/16 17:48
OTC538-GW-MW01	1604060-01	04-15-16D-015	04/15/16 18:02
Calibration Check	6D10605-CCV9	04-15-16D-021	04/15/16 18:29
Calibration Blank	6D10605-CCB9	04-15-16D-022	04/15/16 18:34

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D11022	Instrument:	ME-ICP
Calibration:	6110003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D11022-CAL1	04-19-16A-001	04/19/16 09:52
Cal Standard	6D11022-CAL2	04-19-16A-002	04/19/16 09:56
Cal Standard	6D11022-CAL3	04-19-16A-003	04/19/16 09:59
Cal Standard	6D11022-CAL4	04-19-16A-004	04/19/16 10:03
Cal Standard	6D11022-CAL5	04-19-16A-005	04/19/16 10:07
Cal Standard	6D11022-CAL6	04-19-16A-006	04/19/16 10:12
Cal Standard	6D11022-CAL7	04-19-16A-007	04/19/16 10:17
Cal Standard	6D11022-CAL8	04-19-16A-008	04/19/16 10:23
Initial Cal Check	6D11022-ICV1	04-19-16B-001	04/19/16 10:51
Initial Cal Blank	6D11022-ICB1	04-19-16B-002	04/19/16 10:57
Instrument RL Check	6D11022-CRL1	04-19-16B-003	04/19/16 11:06
Interference Check A	6D11022-IFA1	04-19-16B-005	04/19/16 11:30
Interference Check B	6D11022-IFB1	04-19-16B-006	04/19/16 11:35
Calibration Check	6D11022-CCV1	04-19-16B-008	04/19/16 11:44
Calibration Blank	6D11022-CCB1	04-19-16B-009	04/19/16 11:49
Calibration Check	6D11022-CCV7	04-19-16C-056	04/19/16 18:31
Calibration Blank	6D11022-CCB7	04-19-16C-057	04/19/16 18:35
OTC538-GW-MW01	1604060-01RE1	04-19-16C-066	04/19/16 19:15
Calibration Check	6D11022-CCV8	04-19-16C-067	04/19/16 19:20
Calibration Blank	6D11022-CCB8	04-19-16C-068	04/19/16 19:25

ANALYSIS SEQUENCE SUMMARY

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D11107	Instrument:	ME-ICP
Calibration:	6112003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	6D11107-CAL1	04-20-16A-001	04/20/16 09:44
Cal Standard	6D11107-CAL2	04-20-16A-002	04/20/16 09:47
Cal Standard	6D11107-CAL3	04-20-16A-003	04/20/16 09:51
Cal Standard	6D11107-CAL4	04-20-16A-004	04/20/16 10:00
Cal Standard	6D11107-CAL5	04-20-16A-005	04/20/16 10:04
Cal Standard	6D11107-CAL6	04-20-16A-006	04/20/16 10:08
Cal Standard	6D11107-CAL7	04-20-16A-007	04/20/16 10:13
Cal Standard	6D11107-CAL8	04-20-16A-008	04/20/16 10:17
Initial Cal Check	6D11107-ICV1	04-20-16B-001	04/20/16 10:45
Initial Cal Blank	6D11107-ICB1	04-20-16B-002	04/20/16 10:50
Instrument RL Check	6D11107-CRL1	04-20-16B-003	04/20/16 10:59
Instrument RL Check	6D11107-CRL2	04-20-16B-004	04/20/16 11:08
Interference Check A	6D11107-IFA1	04-20-16B-005	04/20/16 11:12
Interference Check B	6D11107-IFB1	04-20-16B-006	04/20/16 11:17
Calibration Check	6D11107-CCV1	04-20-16B-008	04/20/16 11:26
Calibration Blank	6D11107-CCB1	04-20-16B-009	04/20/16 11:31
Calibration Check	6D11107-CCV5	04-20-16B-070	04/20/16 16:03
Calibration Blank	6D11107-CCB5	04-20-16B-071	04/20/16 16:08
OTC538-GW-MW01	1604060-01RE2	04-20-16B-082	04/20/16 16:57
Calibration Check	6D11107-CCV6	04-20-16B-086	04/20/16 17:15
Calibration Blank	6D11107-CCB6	04-20-16B-087	04/20/16 17:19

INITIAL CALIBRATION DATA

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6103004	Instrument:	ME-FIMS	
Matrix:	Water	Calibration Dates:	4/12/16 15:01	4/12/16 15:09

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Mercury	0	0	0.2	1.366504E-02	0.5	0.010764	1	0.0101917	2	9.556737E-03	4	9.385494E-03

INITIAL CALIBRATION DATA (Continued)

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6103004	Instrument:	ME-FIMS	
Matrix:	Water	Calibration Dates:	4/12/16 15:01	4/12/16 15:09

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Mercury	6	9.415341E-03	10	9.189974E-03								

INITIAL CALIBRATION DATA (Continued)

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6103004	Instrument:	ME-FIMS	
Matrix:	Water	Calibration Dates:	4/12/16 15:01	4/12/16 15:09

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Mercury	9.021034E-03	43.53335	0	0	0.9998962		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Calibration: 6105001
Instrument: ME-ICP
Matrix: Water
Calibration Dates: 4/14/16 9:43 4/14/16 10:20

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	3.0754E-05	10000	3.2341E-05			500000	3.0982E-05		
Antimony	0	0	100	0.0011351	1000	0.0010677					10000	0.0010381
Arsenic	0	0	100	0.0004859	1000	5.1368E-04					10000	4.9916E-04
Barium	0	0	50	0.021074	1000	0.018709	5000	0.0195144				
Beryllium	0	0	100	0.003055	1000	0.0031183					10000	0.0029635
Boron	0	0	50	0.000021	1000	2.008E-05					5000	1.8816E-05
Cadmium	0	0	100	0.036561	1000	0.036054					10000	0.03409
Calcium	0	0	1100	1.031455E-04	50000	9.9346E-05					10000	
Chromium	0	0	100	0.0000595	1000	6.137E-05					10000	5.9275E-05
Cobalt	0	0	100	0.0099684	1000	0.0093287					10000	0.0096373
Copper	0	0	100	0.0000726	1000	6.558E-05					10000	6.1638E-05
Iron	0	0	5100	1.679412E-05	10000	1.6146E-05			500000	1.60378E-05	10000	
Lead	0	0	100	0.0022494	1000	0.0021617					10000	0.0022677
Magnesium	0	0	5100		50000	3.0562E-06			500000	3.0334E-06	10000	
Manganese	0	0	100	0.0003743	1000	0.0003553	10000	3.5514E-04			10000	
Molybdenum	0	0	100	0.0047736	1000	0.0049711					10000	0.0047828
Nickel	0	0	100	0.0058064	1000	0.0051601					10000	0.0052599
Potassium	0	0	1000	9.82E-06	10000	1.4263E-05						
Selenium	0	0	100	0.000585	1000	5.5874E-04					10000	5.2477E-04
Silver	0	0	20	0.0000735	500	7.298E-05	2000	7.262499E-05				
Sodium	0	0	1000		50000	7.9612E-05						
Thallium	0	0	100	0.0008607	1000	8.6691E-04					10000	0.000877
Tin	0	0	50	0.0016858	1000	0.0018174					5000	0.0017863
Titanium	0	0	100	0.0002632	1000	2.5268E-04					10000	2.4819E-04
Vanadium	0	0	100	0.0000454	1000	5.096E-05					10000	4.8578E-05
Zinc	0	0	100	0.014997	1000	0.013943					10000	0.01346
Strontium	0	0	100	0.003259	1000	0.003146					10000	0.003189
Lithium (outside certification)	0	0	100	0.0000135	1000	1.289E-05					10000	1.1838E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Calibration:	6105001	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/14/16 9:43 4/14/16 10:20

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.3464E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.0829E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.3508E-05										
Selenium												
Silver												
Sodium	100000	7.2321E-05	500000	7.639801E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6105001	Instrument:	ME-ICP	
Matrix:	Water	Calibration Dates:	4/14/16 9:43	4/14/16 10:20

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.351925E-05	66.73319	12.7251	191.2198	0.9999993		0.998	
Antimony	8.10225E-04	66.85463	6.65896	188.3947	0.9999952		0.998	
Arsenic	3.74685E-04	66.73539	6.90856	181.9441	0.999989		0.998	
Barium	1.482435E-02	66.99478	1.061307	173.2053	0.9999179		0.998	
Beryllium	0.0022842	66.72469	9.498332	192.3921	0.999974		0.998	
Boron	1.4974E-05	66.93424	5.342533	146.6331	0.9998215		0.998	
Cadmium	2.667625E-02	66.78624	2.636627	151.7058	0.9999702		0.998	
Calcium	7.398886E-05	66.88364	2.072545	174.7494	0.9999618		0.998	
Chromium	4.503625E-05	66.69927	4.24755	133.226	0.9999872		0.998	
Cobalt	0.0072336	66.76439	2.91665	192.1971	0.999988		0.998	
Copper	4.99545E-05	67.28157	0.9836325	25.97101	0.9999781		0.998	
Iron	1.224448E-05	66.72243	83.50411	198.8533	0.9999998		0.998	
Lead	0.0016697	66.72422	10.33778	193.5574	0.9999792		0.998	
Magnesium	2.293125E-06	66.67251	7.516512	195.7335	0.9999895		0.998	
Manganese	2.71185E-04	66.74912	2.280602	107.784	0.9999998		0.998	
Molybdenum	3.631875E-03	66.71375	17.4798	198.2225	0.9999843		0.998	
Nickel	0.0040566	67.03347	0.313615	96.12466	0.9999926		0.998	
Potassium	9.39775E-06	69.79313	5.818255	169.672	0.999931		0.998	
Selenium	4.171275E-04	66.92819	3.01532	166.4576	0.9999684		0.998	
Silver	5.477625E-05	66.66989	5.389473	147.8322	0.9999988		0.998	
Sodium	5.708275E-05	66.87123	2.189045	109.6394	0.999806		0.998	
Thallium	6.511525E-04	66.67465	2.978035	186.3992	0.9999992		0.998	
Tin	1.322375E-03	66.8018	3.989205	185.1807	0.999984		0.998	
Titanium	1.910175E-04	66.74795	4.31648	173.9079	0.9999984		0.998	
Vanadium	3.62345E-05	66.96234	4.20573	158.9017	0.9999715		0.998	
Zinc	0.0106	66.94101	1.48098	147.9939	0.9999898		0.998	
Strontium	0.0023985	66.69493	1.693275	179.3483	0.9999979		0.998	
Lithium (outside certification)	9.557E-06	67.05249	4.178918	153.6107	0.9999238		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Calibration:	6106003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/15/16 9:24 4/15/16 10:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	4.4018E-05	10000	4.2844E-05			500000	0.000041		
Antimony	0	0	100	0.0010919	1000	0.0010301					10000	0.0010115
Arsenic	0	0	100	0.0004741	1000	4.9391E-04					10000	4.8239E-04
Barium	0	0	50	0.020032	1000	0.018123	5000	0.0188396				
Beryllium	0	0	100	0.0029784	1000	0.0030245					10000	0.0028622
Boron	0	0	50	0.0000214	1000	1.986E-05					5000	1.8756E-05
Cadmium	0	0	100	0.036882	1000	0.035962					10000	0.034099
Calcium	0	0	1100	1.015727E-04	50000	9.7324E-05					10000	
Chromium	0	0	100	0.0000513	1000	4.736E-05					10000	4.5433E-05
Cobalt	0	0	100	0.0098029	1000	0.0091662					10000	0.0095849
Copper	0	0	100	0.0000932	1000	8.868E-05					10000	8.7928E-05
Iron	0	0	5100	1.703922E-05	10000	1.5657E-05			500000	1.54388E-05	10000	
Lead	0	0	100	0.0021477	1000	0.0021033					10000	0.0022345
Magnesium	0	0	5100		50000	2.8914E-06			500000	2.8774E-06	10000	
Manganese	0	0	100	0.0003783	1000	3.4821E-04	10000	3.5363E-04			10000	
Molybdenum	0	0	100	0.0048454	1000	0.0049595					10000	0.0047685
Nickel	0	0	100	0.0056061	1000	0.005017					10000	0.0051747
Potassium	0	0	1000	1.677E-05	10000	2.0633E-05						
Selenium	0	0	100	0.0006002	1000	5.5364E-04					10000	5.1956E-04
Silver	0	0	20	0.000067	500	5.444E-05	2000	5.426E-05				
Sodium	0	0	1000		50000	7.817E-05						
Thallium	0	0	100	0.0008353	1000	8.4171E-04					10000	8.5936E-04
Tin	0	0	50	0.0016842	1000	0.0017967					5000	1.76444E-03
Titanium	0	0	100	0.0002641	1000	2.5136E-04					10000	2.4376E-04
Vanadium	0	0	100	0.0000526	1000	5.292E-05					10000	5.0352E-05
Zinc	0	0	100	0.014371	1000	0.013153					10000	0.012647
Strontium	0	0	100	0.003059	1000	0.00301					10000	0.003031
Lithium (outside certification)	0	0	100	8.999999E-06	1000	8.75E-06					10000	8.119E-06

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Calibration:	6106003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/15/16 9:24 4/15/16 10:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.146E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	2.9099E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.9788E-05										
Selenium												
Silver												
Sodium	100000	7.2199E-05	500000	7.9008E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060		
Client:	CB&I	Project:	Holloman AFB		
Calibration:	6106003	Instrument:	ME-ICP		
Matrix:	Water	Calibration Dates:	4/15/16 9:24	4/15/16 10:00	

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	3.19655E-05	66.77983	4.316557	161.9175	0.9999995		0.998	
Antimony	7.83375E-04	66.81085	3.025613	188.7787	0.9999987		0.998	
Arsenic	0.0003626	66.7043	3.36711	182.0644	0.9999926		0.998	
Barium	1.424865E-02	66.8953	1.761215	183.186	0.9999308		0.998	
Beryllium	2.216275E-03	66.73783	3.497312	149.0214	0.9999696		0.998	
Boron	1.5004E-05	67.05721	7.949522	185.1962	0.9998671		0.998	
Cadmium	2.673575E-02	66.80715	2.532935	166.0795	0.9999737		0.998	
Calcium	7.258918E-05	66.91089	2.020428	140.1666	0.9999604		0.998	
Chromium	3.602325E-05	67.01036	1.202615	89.55812	0.9999865		0.998	
Cobalt	0.0071385	66.76932	1.264205	170.9612	0.9999791		0.998	
Copper	6.7452E-05	66.75597	1.395795	107.6013	0.9999997		0.998	
Iron	1.203375E-05	66.92626	16.72274	197.0855	0.9999992		0.998	
Lead	1.621375E-03	66.75131	14.56205	197.4102	0.9999685		0.998	
Magnesium	2.169675E-06	66.66948	127.0702	199.6481	0.9999949		0.998	
Manganese	2.70035E-04	66.84282	4.458695	167.583	0.9999962		0.998	
Molybdenum	3.64335E-03	66.70145	23.86769	198.4983	0.9999843		0.998	
Nickel	3.94945E-03	66.96413	0.50965	114.6475	0.9999857		0.998	
Potassium	1.429775E-05	67.66788	3.890098	103.4497	0.9999606		0.998	
Selenium	4.1835E-04	67.13318	0.5608025	93.84438	0.9999702		0.998	
Silver	4.3925E-05	68.03514	2.062977	83.1977	0.9999991		0.998	
Sodium	5.734425E-05	66.87596	1.154955	99.18991	0.9996705		0.998	
Thallium	6.340925E-04	66.68597	6.352	188.1896	0.9999969		0.998	
Tin	1.311335E-03	66.76417	2.73892	165.829	0.9999826		0.998	
Titanium	1.89805E-04	66.81311	2.525995	171.0895	0.9999937		0.998	
Vanadium	3.8968E-05	66.73112	2.703168	148.7303	0.9999745		0.998	
Zinc	1.004275E-02	67.05484	3.966272	182.7987	0.9999874		0.998	
Strontium	0.002275	66.6725	9.1654	186.7688	0.9999995		0.998	
Lithium (outside certification)	6.46725E-06	66.91264	4.175458	150.0442	0.9999288		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Calibration:	6110003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/19/16 9:52 4/19/16 10:23

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	3.4304E-05	10000	3.3657E-05			500000	3.1842E-05		
Antimony	0	0	100	0.001117	1000	0.0010532					10000	0.0010321
Arsenic	0	0	100	0.0004825	1000	5.1044E-04					10000	4.9794E-04
Barium	0	0	50	0.019636	1000	0.017761	5000	0.0186666				
Beryllium	0	0	100	0.0031103	1000	0.0031497					10000	0.0030247
Boron	0	0	50	0.0000208	1000	0.0000204					5000	1.9116E-05
Cadmium	0	0	100	0.038134	1000	0.036978					10000	0.035023
Calcium	0	0	1100	1.065182E-04	50000	9.9662E-05					10000	
Chromium	0	0	100	0.0000639	1000	6.276E-05					10000	6.0761E-05
Cobalt	0	0	100	0.0098928	1000	9.250901E-03					10000	9.657701E-03
Copper	0	0	100	0.0000793	1000	6.889E-05					10000	6.4894E-05
Iron	0	0	5100	1.848039E-05	10000	1.7306E-05			500000	1.72264E-05	10000	
Lead	0	0	100	0.0021808	1000	0.0021263					10000	0.00225
Magnesium	0	0	5100		50000	3.1444E-06			500000	3.1364E-06	10000	
Manganese	0	0	100	0.0003722	1000	3.4745E-04	10000	3.4677E-04			10000	
Molybdenum	0	0	100	0.0050442	1000	0.0051944					10000	0.004997
Nickel	0	0	100	0.0055518	1000	0.004997					10000	0.0051497
Potassium	0	0	1000	1.164E-05	10000	1.767E-05						
Selenium	0	0	100	0.0006242	1000	5.7889E-04					10000	5.4255E-04
Silver	0	0	20	0.0000785	500	7.436E-05	2000	7.3765E-05				
Sodium	0	0	1000		50000	7.2256E-05						
Thallium	0	0	100	0.0008352	1000	8.3758E-04					10000	8.5324E-04
Tin	0	0	50	0.001763	1000	0.0017993					5000	0.0017733
Titanium	0	0	100	0.0002619	1000	2.5111E-04					10000	2.4736E-04
Vanadium	0	0	100	0.0000501	1000	5.264E-05					10000	4.9832E-05
Zinc	0	0	100	0.014934	1000	0.014469					10000	0.013944
Strontium	0	0	100	0.003009	1000	0.002904					10000	0.002969
Lithium (outside certification)	0	0	100	0.000012	1000	1.131E-05					10000	1.0727E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6110003	Instrument:	ME-ICP	
Matrix:	Water	Calibration Dates:	4/19/16 9:52	4/19/16 10:23

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.4324E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.1556E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.744E-05										
Selenium												
Silver												
Sodium	100000	6.7283E-05	500000	7.4678E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	6110003	Instrument:	ME-ICP	
Matrix:	Water	Calibration Dates:	4/19/16 9:52	4/19/16 10:23

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.495075E-05	66.79737	2.387923	146.249	0.9999993		0.998	
Antimony	8.00575E-04	66.81892	6.448552	191.2967	0.9999983		0.998	
Arsenic	3.7272E-04	66.73713	4.296353	172.7831	0.9999917		0.998	
Barium	0.0140159	66.89008	0.863985	153.5447	0.9998907		0.998	
Beryllium	2.321175E-03	66.70455	6.642378	188.8876	0.9999839		0.998	
Boron	1.5079E-05	66.83667	8.833525	171.8002	0.9998185		0.998	
Cadmium	2.753375E-02	66.82956	2.373125	169.3301	0.9999727		0.998	
Calcium	7.512604E-05	66.99689	1.995662	157.6729	0.9999695		0.998	
Chromium	4.685525E-05	66.72415	1.226402	67.60934	0.9999899		0.998	
Cobalt	7.20035E-03	66.7683	1.241345	162.0006	0.9999804		0.998	
Copper	5.3271E-05	67.6342	0.9282925	44.99925	0.999982		0.998	
Iron	1.32532E-05	66.80685	12.48406	192.3109	0.9999995		0.998	
Lead	1.639275E-03	66.73814	11.64144	194.5539	0.9999722		0.998	
Magnesium	2.3591E-06	66.6675	22.46426	196.6935	0.9999985		0.998	
Manganese	2.66605E-04	66.81419	2.494885	148.2165	0.9999996		0.998	
Molybdenum	0.0038089	66.70328	10.18234	196.058	0.9999846		0.998	
Nickel	3.924625E-03	66.93276	0.3797925	123.1062	0.9999867		0.998	
Potassium	1.16875E-05	70.81155	6.454458	148.4441	0.9999764		0.998	
Selenium	4.3641E-04	67.10455	2.488188	182.847	0.9999686		0.998	
Silver	5.665625E-05	66.77021	2.28031	88.05948	0.9999975		0.998	
Sodium	5.355425E-05	66.914	9.6638	169.694	0.9995997		0.998	
Thallium	6.31505E-04	66.67871	7.723095	189.2552	0.9999974		0.998	
Tin	0.0013339	66.6765	6.81109	186.3406	0.9999893		0.998	
Titanium	1.900925E-04	66.74547	0.9003875	156.1361	0.9999991		0.998	
Vanadium	3.8143E-05	66.74914	5.267027	159.5265	0.9999669		0.998	
Zinc	1.083675E-02	66.77103	5.000103	187.5909	0.9999878		0.998	
Strontium	0.0022205	66.69514	2.82645	184.0685	0.999995		0.998	
Lithium (outside certification)	8.50925E-06	66.9465	37.00545	192.6473	0.9999736		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION DATA

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Calibration:	6112003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/20/16 9:44 4/20/16 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum	0	0	5000	3.4822E-05	10000	3.3917E-05			500000	3.281E-05		
Antimony	0	0	100	0.0010623	1000	0.0010222					10000	9.9473E-04
Arsenic	0	0	100	0.0004602	1000	4.8831E-04					10000	4.7375E-04
Barium	0	0	50	0.0188846	1000	0.017385	5000	0.018028				
Beryllium	0	0	100	0.0030651	1000	0.0031143					10000	0.002959
Boron	0	0	50	0.0000204	1000	2.009E-05					5000	1.8848E-05
Cadmium	0	0	100	0.037795	1000	0.036539					10000	0.034685
Calcium	0	0	1100	0.000104	50000	9.8078E-05					10000	
Chromium	0	0	100	0.0000648	1000	6.313E-05					10000	6.2877E-05
Cobalt	0	0	100	0.009604	1000	0.009085					10000	0.0093857
Copper	0	0	100	0.0000802	1000	7.012E-05					10000	6.7638E-05
Iron	0	0	5100	1.796863E-05	10000	1.717E-05			500000	1.7208E-05	10000	
Lead	0	0	100	0.0021116	1000	0.0020794					10000	0.0021738
Magnesium	0	0	5100		50000	3.1248E-06			500000	3.1002E-06	10000	
Manganese	0	0	100	0.0003632	1000	3.3942E-04	10000	3.4289E-04			10000	
Molybdenum	0	0	100	0.0050194	1000	0.0051407					10000	0.0050151
Nickel	0	0	100	0.0053452	1000	0.0048358					10000	0.0049442
Potassium	0	0	1000	1.131E-05	10000	1.6842E-05						
Selenium	0	0	100	0.0006138	1000	5.6564E-04					10000	5.3532E-04
Silver	0	0	20	8.149999E-05	500	7.464E-05	2000	7.145001E-05				
Sodium	0	0	1000		50000	7.3308E-05						
Thallium	0	0	100	0.0007995	1000	8.2079E-04					10000	8.2681E-04
Tin	0	0	50	0.0017424	1000	0.0017787					5000	1.75608E-03
Titanium	0	0	100	0.0002505	1000	2.4342E-04					10000	2.3737E-04
Vanadium	0	0	100	0.0000509	1000	5.338E-05					10000	5.1293E-05
Zinc	0	0	100	0.014762	1000	0.014269					10000	0.013941
Strontium	0	0	100	0.00296	1000	0.002857					10000	0.002878
Lithium (outside certification)	0	0	100	0.0000111	1000	0.0000106					10000	1.0084E-05

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Calibration:	6112003	Instrument:	ME-ICP
Matrix:	Water	Calibration Dates:	4/20/16 9:44 4/20/16 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Boron												
Cadmium												
Calcium	100000		500000	9.2504E-05								
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium			100000	3.1367E-06								
Manganese												
Molybdenum												
Nickel												
Potassium	100000	1.6552E-05										
Selenium												
Silver												
Sodium	100000	6.9375E-05	500000	7.564601E-05								
Thallium												
Tin												
Titanium												
Vanadium												
Zinc												
Strontium												
Lithium (outside certification)												

INITIAL CALIBRATION DATA (Continued)

SW6010C

Laboratory:	Empirical Laboratories, LLC		SDG:	1604060	
Client:	CB&I		Project:	Holloman AFB	
Calibration:	6112003		Instrument:	ME-ICP	
Matrix:	Water		Calibration Dates:	4/20/16 9:44	4/20/16 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aluminum	2.538725E-05	66.7454	5.983225	183.6688	0.9999997		0.998	
Antimony	7.698075E-04	66.76402	5.610115	189.7638	0.9999952		0.998	
Arsenic	3.55565E-04	66.74478	2.717357	166.9643	0.999988		0.998	
Barium	0.0135744	66.82008	1.29203	175.6631	0.9999398		0.998	
Beryllium	0.0022846	66.72699	14.80136	191.6244	0.9999739		0.998	
Boron	1.48345E-05	66.81976	3.053485	131.615	0.9998251		0.998	
Cadmium	2.725475E-02	66.83123	4.607913	190.6211	0.9999751		0.998	
Calcium	7.36455E-05	66.97066	0.4261925	31.01748	0.9999653		0.998	
Chromium	4.770175E-05	66.69065	1.988885	52.8681	0.9999998		0.998	
Cobalt	7.018675E-03	66.73555	1.248662	179.9049	0.9999884		0.998	
Copper	5.44895E-05	67.40791	1.747225	43.21425	0.9999959		0.998	
Iron	1.308666E-05	66.72588	3.92192	176.1088	0.9999998		0.998	
Lead	0.0015912	66.71213	8.824977	192.1761	0.9999827		0.998	
Magnesium	2.340425E-06	66.66983	31.19216	197.9298	0.9999946		0.998	
Manganese	2.613775E-04	66.78732	5.264415	163.5093	0.9999981		0.998	
Molybdenum	0.0037938	66.68433	31.9062	198.6947	0.9999937		0.998	
Nickel	0.0037813	66.91799	0.1632075	83.83001	0.9999918		0.998	
Potassium	1.1176E-05	70.44057	1.783445	104.9599	0.9999772		0.998	
Selenium	4.2869E-04	67.09146	2.427625	174.1624	0.9999787		0.998	
Silver	5.68975E-05	67.07276	6.841758	165.7729	0.999881		0.998	
Sodium	5.458225E-05	66.83501	2.055722	113.0689	0.9997224		0.998	
Thallium	6.11775E-04	66.69417	5.152635	192.6387	0.9999998		0.998	
Tin	1.319295E-03	66.67632	7.171405	192.0107	0.9999916		0.998	
Titanium	1.828225E-04	66.73124	5.097128	172.9157	0.9999959		0.998	
Vanadium	3.889325E-05	66.72537	4.113903	145.5345	0.9999822		0.998	
Zinc	0.010743	66.74062	4.094415	172.3363	0.9999955		0.998	
Strontium	2.17375E-03	66.69801	2.550075	146.1129	0.9999992		0.998	
Lithium (outside certification)	7.946E-06	66.87073	11.02306	177.357	0.9999743		0.998	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

SW6010C

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW01	04/07/16 10:05	04/08/16 09:50	04/13/16 07:57	N/A	180.00	04/15/16 18:02	8.29	180.00	
OTC538-GW-MW01	04/07/16 10:05	04/08/16 09:50	04/13/16 07:57	N/A	180.00	04/19/16 19:15	12.34	180.00	
OTC538-GW-MW01	04/07/16 10:05	04/08/16 09:50	04/13/16 07:57	N/A	180.00	04/20/16 16:57	13.24	180.00	

HOLDING TIME SUMMARY

SW7470A

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW01	04/07/16 10:05	04/08/16 09:50	04/12/16 08:28	4.89	28.00	04/12/16 16:15	0.32	28.00	

Data for
SW6010C/SW7470A
Supporting Raw Data / Logs

Mercury

Client:

Empirical Laboratories

Curve Date: 4/9/2016 Curve age OK
Correlation (r): 0.99995 Corr. OK
Correlation (r2) 0.99990 Corr. OK
Slope: 0.009137
Intercept: 0.000955

RL= 0.20 ug/l for H2O and TCLP
0.033 mg/kg (using 0.30 g) for soils or other
MDL= 0.08 ug/L WATER AND 0.013 mg/Kg SOIL
QC Criteria: Method Blank < 1/2 RL
LCS = ±20% of True Value
CCB =<MDL

Curve Data*			
Analysis Time	Conc.(ug/L)	Pk Height	Cal. ID
3:01:18 PM	0	0.000832	16D0142
3:02:12 PM	0.2	0.002733	16D0143
3:03:25 PM	0.5	0.005382	16D0144
3:04:38 PM	1	0.010192	16D0145
3:05:52 PM	2	0.019113	16D0146
3:07:05 PM	4	0.037542	16D0147
3:08:17 PM	6	0.056492	16D0148
3:09:30 PM	10	0.0919	16D0149

***Mercury calibration standards were digested using the same reagents and in the same manner as samples in batch 6A08003.**

Block Temperature(s): B=96 A=94.3; 96.3
Analysis Date: 4/12/2016
Time On: 13:15 9:15
Time Off: 15:15 11:15
Digestion by: JDB JDB
Digestion Date: 4/9/2016 4/12/2016
Analyst: JDB JDB
Analyst Authorization: JDB 4-12-16
Method#: 245.1/7470A for H2O
7471A or 7471B for soils
Method Type: Cold Vapor
Batch: 6D09922 6D12005 D12009
Sequence: 6D10311
Cal ID: 6103004

Concentration (ug/L) = (Peak Height - intercept)/slope * dilution
Conversion for soils from concentration (ug/L) to mg/kg (wet weight) = concentration (ug/L) * final volume (mL)/initial weight (g) * 1L/1000mL * 1000g/1kg * 1g/1000mg

Lab. #	Client	Waste Description	T.V. (ug/L) (mg/kg)	Analysis Time HH:MM (Military)	Matrix Type	Digestion Initial Sample Volume	Digestion Final Sample Volume (mL)	Analysis Initial Sample Volume (mL)	Analysis Final Sample Volume (mL)	Dilution	Peak Height	[Hg] ug/L	[Hg] mg/kg	Recovery %	Control Limits Low Limit %	Control Limits High Limit %	RPD	Block	Method
6D10311-CAL1	QC	16D0142		3:01:18 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000832	-0.0135						A	7470A
6D10311-CAL2	QC	16D0143		3:02:12 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.002733	0.1946						A	7470A
6D10311-CAL3	QC	16D0144		3:03:25 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.005382	0.4845						A	7470A
6D10311-CAL4	QC	16D0145		3:04:38 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.010192	1.0109						A	7470A
6D10311-CAL5	QC	16D0146		3:05:52 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019113	1.9874						A	7470A
6D10311-CAL6	QC	16D0147		3:07:05 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.037542	4.0043						A	7470A
6D10311-CAL7	QC	16D0148		3:08:17 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.056492	6.0783						A	7470A
6D10311-CAL8	QC	16D0149		3:09:30 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.0919	9.9536						A	7470A
6D10311-ICV	QC	16D0150	4.0000	3:11:19 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.038716	4.1328		103.32	90.0	110.0		A	7470A
6D10311-ICB	QC			3:12:33 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000895	-0.0066						A	7470A
6D09922-BLK1	QC			3:13:26 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000897	-0.0064						A	7470A
6D09922-BLK2	QC			3:14:20 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.00095	-0.0006						A	7470A
6D09922-BS1	QC	15C0686	2.0000	3:15:14 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019283	2.0059		100.30	82.0	119.0		A	7470A
1603246-01				3:16:27 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000903	-0.0057						A	7470A
1603266-01				3:17:21 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.00092	-0.0039						A	7470A
1603273-01				3:18:15 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000898	-0.0063						A	7470A
6D09922-DUP1	QC	1603273-01		3:19:08 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000862	-0.0102						A	7470A
1604010-01				3:20:02 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000874	-0.0089						A	7470A
1604010-02				3:20:56 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000894	-0.0067						A	7470A
6D09922-MS1	QC	15C0686	2.0000	3:21:50 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.018902	1.9643		98.21	82.0	119.0		A	7470A
6D09922-MSD1	QC	15C0686	2.0000	3:23:03 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.018995	1.9744		98.72	82.0	119.0		A	7470A
6D10311-CCV1	QC	16D0146	2.0000	3:24:16 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019798	2.0623		103.11	90.0	110.0		A	7470A
6D10311-CCB1	QC			3:25:31 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000896	-0.0065						A	7470A
6D12005-BLK1				3:26:24 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001141	0.0203						B	7470A
6D12005-BS1	QC	15C0686	2.0000	3:27:39 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019581	2.0385		101.93				B	7470A
1603279-01				3:28:53 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000929	-0.0029185						B	7470A
1603281-01				3:29:47 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001242	0.03141011						B	7470A
1603282-01				3:31:00 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001108	0.01669534						B	7470A
1604034-02				3:32:12 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001154	0.02173172						B	7470A
1604034-03				3:33:24 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000976	0.00222973						B	7470A
1604034-04				3:34:36 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001178	0.02442452						B	7470A
6D12005-MS1	QC	15C0686	2.0000	3:35:48 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.01682	1.73638441		86.8192	82.0	119.0		B	7470A
6D12005-MSD1	QC	15C0686	2.0000	3:37:02 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.01683	1.73738958		86.8695	82.0	119.0		B	7470A
1604034-05				3:38:15 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000925	-0.0032826						B	7470A
6D12005-MS2	QC	15C0686	2.0000	3:39:08 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.0173	1.78891212		89.4456	82.0	119.0		B	7470A
6D12005-MSD2	QC	15C0686	2.0000	3:40:22 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.017714	1.83414542		91.7073	82.0	119.0		B	7470A
6D10311-CCV2	QC	16D0147	4.0000	3:41:37 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.038695	4.13049262		103.26	90.0	110.0		B	7470A

Lab. #	Client	Waste Description	T.V. (ug/L) (mg/kg)	Analysis Time HH:MM (Military)	Matrix Type	Digestion		Analysis		Dilution	Peak Height	[Hg] ug/L	[Hg] mg/kg	Recovery %	Control Limits		RPD	Block	Method
						Initial Sample Volume	Final Sample Volume (mL)	Initial Sample Volume (mL)	Final Sample Volume (mL)						Low Limit %	High Limit %			
6D10311-CCB2	QC			3:42:51 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000908	-0.0051719						B	7470A
1604034-06				3:43:44 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.00121	0.0279117						B	7470A
1604034-07				3:44:58 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001043	0.00964627						B	7470A
1604036-01				3:46:11 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000632	-0.0353462						B	7470A
1604036-02				3:47:04 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000819	-0.0149565						B	7470A
1604036-03				3:47:58 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000854	-0.011097						B	7470A
1604036-04				3:48:52 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000693	-0.0287063						B	7470A
1604036-05				3:49:46 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000753	-0.022142						B	7470A
1604036-06				3:50:40 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000675	-0.030726						B	7470A
1604036-07				3:51:34 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000715	-0.0263202						B	7470A
1604036-08				3:52:28 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000803	-0.0167116						B	7470A
6D10311-CCV3	QC	16D0146	2.0000	3:53:21 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019626	2.04346465		102.17	90.0	110.0		B	7470A
6D10311-CCB3	QC			3:54:35 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000539	-0.0455223						B	7470A
6D12009-BLK1				3:55:29 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000839	-0.0126863						A	7470A
6D12009-BS1				3:56:23 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019307	2.00849349						A	7470A
1604019-02				3:57:36 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000993	0.00412601						A	7470A
6D12009-MS1	QC	15C0686	2.0000	3:58:50 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019197	1.99645365		99.82	82.0	119.0		A	7470A
6D12009-MSD1	QC	15C0686	2.0000	4:00:04 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019243	2.00156763		100.078	82.0	119.0		A	7470A
1604019-03				4:01:17 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001014	0.0064393						A	7470A
1604035-03				4:02:31 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001239	0.03109355						A	7470A
6D12009-MS2	QC	15C0686	2.0000	4:03:44 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019511	2.03091081		101.546	82.0	119.0		A	7470A
6D12009-MSD2	QC	15C0686	2.0000	4:04:59 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019292	2.00687522		100.344	82.0	119.0		A	7470A
1604035-04				4:06:12 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.00098	0.00270232						A	7470A
1604042-02				4:07:27 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001007	0.00571087						A	7470A
1604043-04				4:08:41 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000683	-0.0297699						A	7470A
1604053-04				4:09:36 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001119	0.01794048						A	7470A
1604053-05				4:10:49 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000998	0.00468924						A	7470A
6D10311-CCV4	QC	16D0147	4.0000	4:12:03 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.037805	4.03304443		100.83	90.0	110.0		A	7470A
6D10311-CCB4	QC			4:13:17 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000919	-0.0040073						A	7470A
1604059-06				4:14:12 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001049	0.01027391						A	7470A
1604060-01				4:15:26 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000915	-0.004466						A	7470A
1604061-01				4:16:20 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.00067	-0.0312004						A	7470A
1604064-01				4:17:14 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001028	0.00794685						A	7470A
1604065-01				4:18:28 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000961	0.00062804						A	7470A
1604066-02				4:19:43 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000992	0.00402514						A	7470A
1604066-03				4:20:58 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000837	-0.0129193						A	7470A
1604066-04				4:21:53 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000387	-0.0621498						A	7470A
1604073-01				4:22:47 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000941	-0.0016195						A	7470A
1604074-01				4:23:42 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.001065	0.01201164						A	7470A
6D10311-CCV5	QC	16D0146	2.0000	4:24:56 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.019525	2.0323606		101.62	90.0	110.0		A	7470A
6D10311-CCB5	QC			4:26:10 PM	H2O	30.0	30.0	30.0	30.0	1.00	0.000861	-0.0102895						A	7470A

6D12009

Table 1 - Mercury:
Circle Applicable Digestion/Spike and 0.1mL Eppendorf option then staple to bench sheet

Reminder: Make sure pipettes are verified daily at volume of use for QSM5 batches!

Water

Amount	Curve Standards 7470 Water
0.0 mL	
0.03mL	Mercury 1st Source (0.2ug/mL)
0.075mL	Mercury 1st Source (0.2ug/mL)
0.15mL	Mercury 1st Source (0.2ug/mL)
0.30mL	Mercury 1st Source (0.2ug/mL)
0.60mL	Mercury 1st Source (0.2ug/mL)
0.90mL	Mercury 1st Source (0.2ug/mL)
1.5mL	Mercury 1st Source (0.2ug/mL)
Circle	0.1ml Eppendorf 148897Z or 250847
Circle	1.0mL Eppendorf 1854694 or FinnPipette 1FJ61693
	5mL FinnPipette KU04206

Amount	BS/MS/MSD Standards 7470 Water
0.30mL	Mercury 2nd Source (0.2ug/mL)
Circle	1.0mL Eppendorf 1854694 or FinnPipette 1FJ61693
Amount	**Reagents for Digestion Water/TCLP**
1.5mL	H2SO4
0.75mL	HNO3
4.5mL	Potassium Permanganate
2.4mL	Potassium Persulfate

File Description
Default Sample Information File

Parameters Common to All Samples

Batch ID	20160412w
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Initial Sample Wt.
1	11	6D09922-BLK1	
2	12	6D09922-BLK2	
3	13	6D09922-BS1	
4	14	1603246-01	
5	15	1603266-01	
6	16	1603273-01	
7	17	6D09922-DUP1	
8	18	1604010-01	
9	19	1604010-02	
10	20	6D09922-MS1	
11	21	6D09922-MSD1	
12	22	6D10311-CCV1	
13	23	6D10311-CCB1	
14	24	6D12005-BLK1	
15	25	6D12005-BS1	
16	26	1603279-01	
17	27	1603281-01	
18	28	1603282-01	
19	29	1604034-02	
20	30	1604034-03	
21	31	1604034-04	
22	32	6D12005-MS1	
23	33	6D12005-MSD1	
24	34	1604034-05	
25	35	6D12005-MS2	
26	36	6D12005-MSD2	
27	37	6D10311-CCV2	
28	38	6D10311-CCB2	
29	39	1604034-06	
30	40	1604034-07	
31	41	1604036-01	
32	42	1604036-02	
33	43	1604036-03	
34	44	1604036-04	
35	45	1604036-05	
36	46	1604036-06	
37	47	1604036-07	
38	48	1604036-08	
39	49	6D10311-CCV3	
40	50	6D10311-CCB3	
41	51	6D12009-BLK1	
42	52	6D12009-BS1	
43	53	1604019-02	
44	54	6D12009-MS1	
45	55	6D12009-MSD1	
46	56	1604019-03	
47	57	1604035-03	
48	58	6D12009-MS2	
49	59	6D12009-MSD2	
50	60	1604035-04	
51	61	1604042-02	
52	62	1604043-04	
53	63	1604053-04	
54	64	1604053-05	
55	65	6D10311-CCV4	
56	66	6D10311-CCB4	
57	67	1604059-06	
58	68	1604060-01	
59	69	1604061-01	
60	70	1604064-01	
61	71	1604065-01	
62	72	1604066-02	
63	73	1604066-03	

64	74	1604066-04
65	75	1604073-01
66	76	1604074-01
67	77	6D10311-CCV5
68	78	6D10311-CCB5

Sample No	Sample Prep. Vol.	Aliquot Volume	Diluted To Vol.
1			
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68			

Reprocessing Begun
Logged In Analyst: mercury
Technique: AA FIMS-MHS

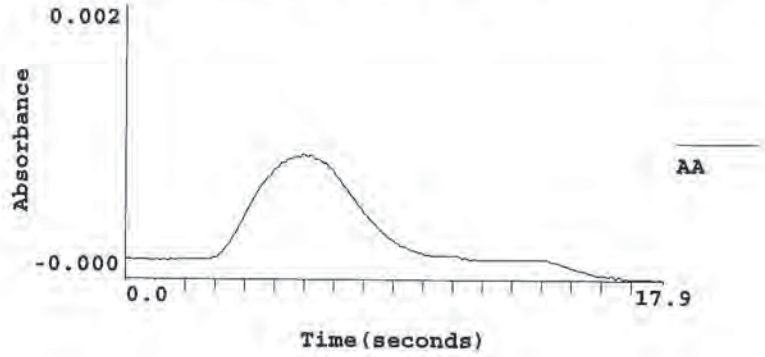
Results Data Set (original): 20160412w
Results Library (original): C:\data-AA\Results\Results.mdb
Results Data Set (reprocessed):
Results Library (reprocessed):

Method Loaded
Method Name: Hg CAL2 PAPERLESS
Method Last Saved: 4/12/2016 2:53:30 PM
Method Description: Hg CAL2

Sequence No.: 1
Sample ID: 6D10311-CAL1
Analyst:
Logged In Analyst (Original) :
Autosampler Location: 1
Date Collected: 4/12/2016 3:00:26 PM
Data Type: Reprocessed on 4/12/2016 5:35:56 PM

Replicate Data: 6D10311-CAL1

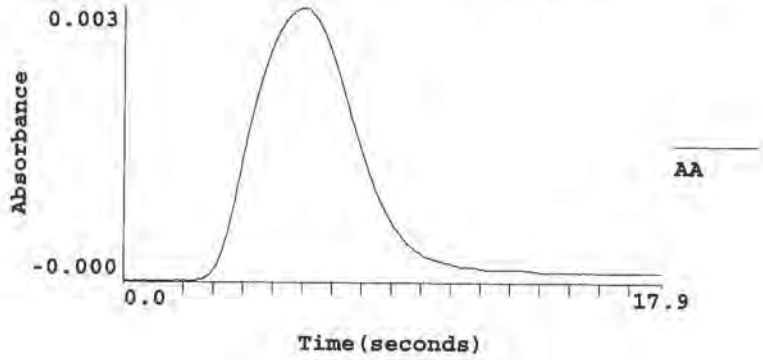
Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.00]	0.0008	0.0027	0.0008	15:01:18	No



Sequence No.: 2
Sample ID: 6D10311-CAL2
Analyst:
Logged In Analyst (Original) :
Autosampler Location: 2
Date Collected: 4/12/2016 3:01:19 PM
Data Type: Reprocessed on 4/12/2016 5:35:56 PM

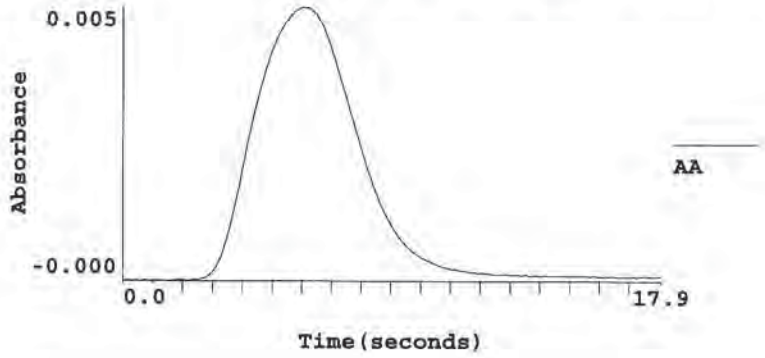
Replicate Data: 6D10311-CAL2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.20]	0.0019	0.0116	0.0027	15:02:12	No



Sequence No.: 3
Sample ID: 6D10311-CAL3
Analyst:
Logged In Analyst (Original) :
Autosampler Location: 3
Date Collected: 4/12/2016 3:02:32 PM
Data Type: Reprocessed on 4/12/2016 5:35:56 PM

#	ug/L	ug/L	Signal	Area	Height		Stored
1		[0.50]	0.0046	0.0217	0.0054	15:03:25	No



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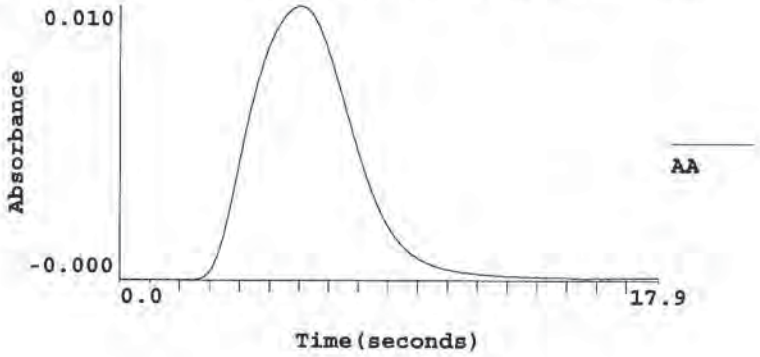
Sequence No.: 4
Sample ID: 6D10311-CAL4
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 4
Date Collected: 4/12/2016 3:03:45 PM
Data Type: Reprocessed on 4/12/2016 5:35:56 PM

Replicate Data: 6D10311-CAL4

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[1.00]	0.0094	0.0403	0.0102	15:04:38	No



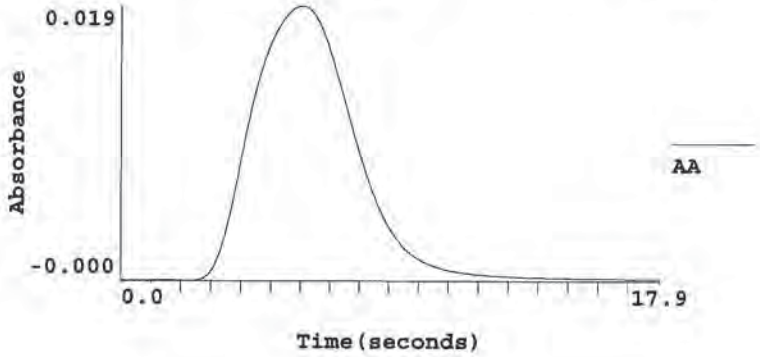
==========

Sequence No.: 5
Sample ID: 6D10311-CAL5
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 5
Date Collected: 4/12/2016 3:04:58 PM
Data Type: Reprocessed on 4/12/2016 5:35:56 PM

Replicate Data: 6D10311-CAL5

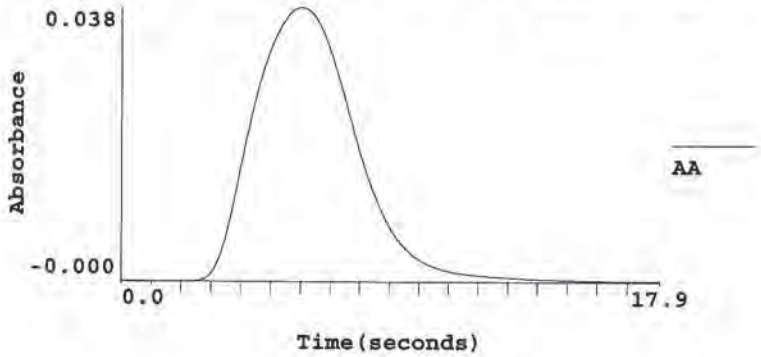
Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[2.00]	0.0183	0.0762	0.0191	15:05:52	No



Logged In Analyst (Original) :

Replicate Data: 6D10311-CAL6

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[4.00]	0.0367	0.1489	0.0375	15:07:05	No



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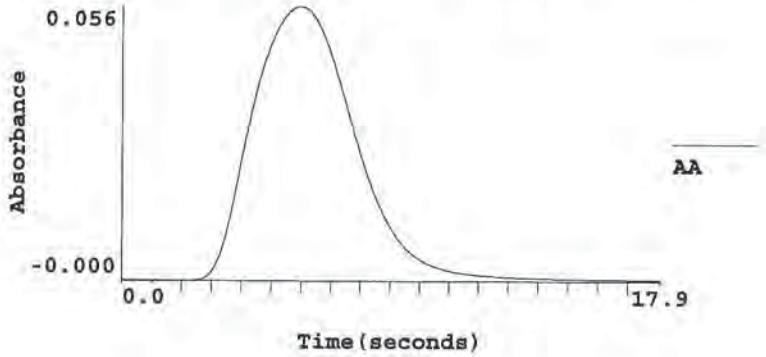
Sequence No.: 7
Sample ID: 6D10311-CAL7
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 7
Date Collected: 4/12/2016 3:07:24 PM
Data Type: Reprocessed on 4/12/2016 5:35:57 PM

Replicate Data: 6D10311-CAL7

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[6.00]	0.0557	0.2244	0.0565	15:08:17	No



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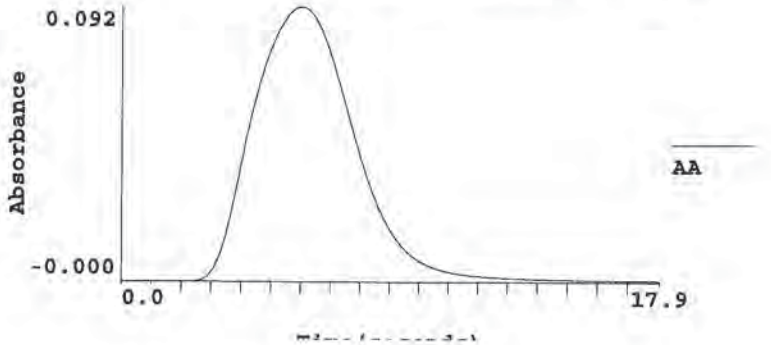
Sequence No.: 8
Sample ID: 6D10311-CAL8
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 8
Date Collected: 4/12/2016 3:08:36 PM
Data Type: Reprocessed on 4/12/2016 5:35:57 PM

Replicate Data: 6D10311-CAL8

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[10.00]	0.0911	0.3615	0.0919	15:09:30	No



Calibration data for Hg 253.7 — Equation: Linear, Calculated Intercept

ID	Mean Signal (Abs)	Entered Conc. ug/L	Calculated Conc. ug/L	Standard Deviation	%RSD
6D10311-CAL1	0.0000	0	-0.014	----	----
6D10311-CAL2	0.0019	0.20	0.195	----	----
6D10311-CAL3	0.0046	0.50	0.484	----	----
6D10311-CAL4	0.0094	1.00	1.011	----	----
6D10311-CAL5	0.0183	2.00	1.987	----	----
6D10311-CAL6	0.0367	4.00	4.004	----	----
6D10311-CAL7	0.0557	6.00	6.078	----	----
6D10311-CAL8	0.0911	10.00	9.954	----	----

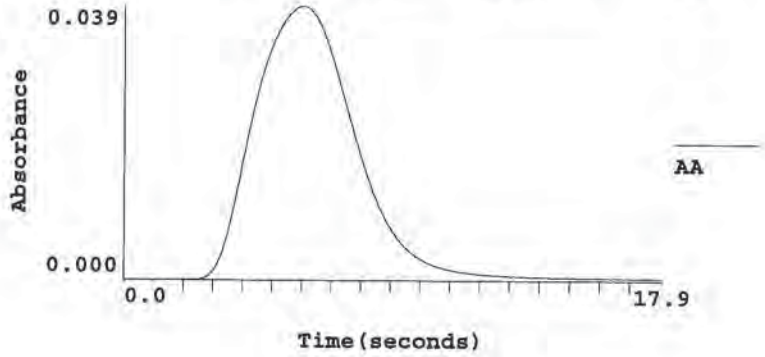
Correlation Coef.: 0.999948 Slope: 0.00914 Intercept: 0.00012

Sequence No.: 9
Sample ID: 6D10311-ICV
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 9
Date Collected: 4/12/2016 3:10:26 PM
Data Type: Reprocessed on 4/12/2016 5:36:00 PM

Replicate Data: 6D10311-ICV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.133	4.133	0.0379	0.1533	0.0387	15:11:19	No



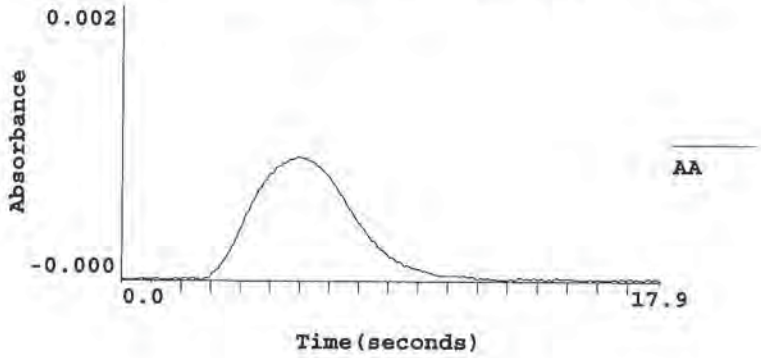
All analyte(s) passed QC.

Sequence No.: 10
Sample ID: 6D10311-ICB
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 10
Date Collected: 4/12/2016 3:11:39 PM
Data Type: Reprocessed on 4/12/2016 5:36:00 PM

Replicate Data: 6D10311-ICB

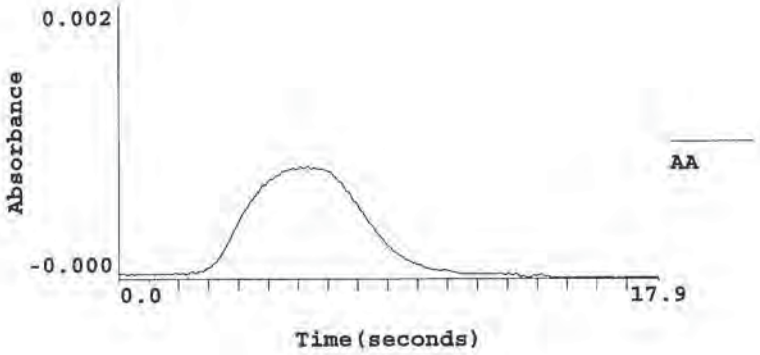
Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.007	-0.007	0.0001	0.0035	0.0009	15:12:33	No



All analyte(s) passed QC.

Sequence No.: 11
Sample ID: 6D0922-BLK1

Autosampler Location: 11
Date Collected: 4/12/2016 3:12:34 PM



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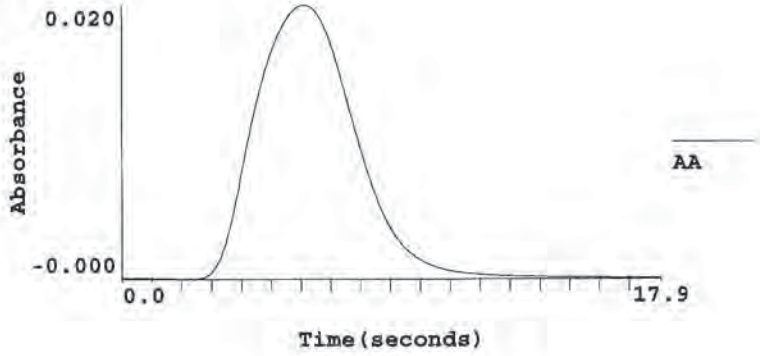
Sequence No.: 49
Sample ID: 6D10311-CCV3
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 49
Date Collected: 4/12/2016 3:52:30 PM
Data Type: Reprocessed on 4/12/2016 5:36:25 PM

Replicate Data: 6D10311-CCV3

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.043	2.043	0.0188	0.0750	0.0196	15:53:21	No



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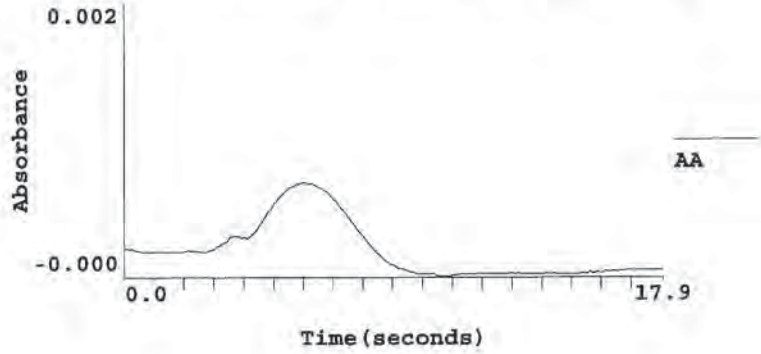
Sequence No.: 50
Sample ID: 6D10311-CCB3
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 50
Date Collected: 4/12/2016 3:53:42 PM
Data Type: Reprocessed on 4/12/2016 5:36:25 PM

Replicate Data: 6D10311-CCB3

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.046	-0.046	-0.0003	-0.0004	0.0005	15:54:35	No



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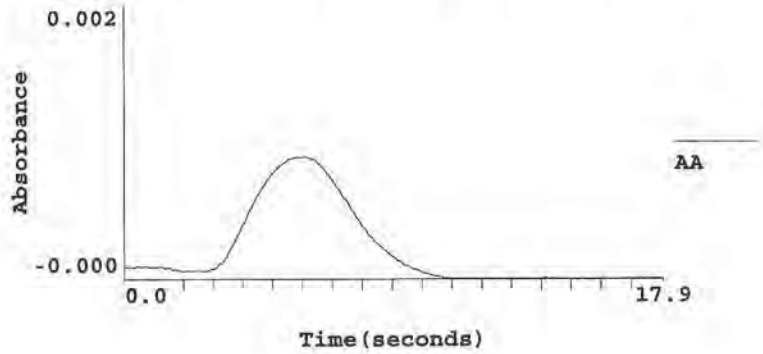
Sequence No.: 51
Sample ID: [illegible]
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 51
Date Collected: 4/12/2016 3:54:37 PM
Data Type: Reprocessed on 4/12/2016 5:36:25 PM

Replicate Data: 6D12009-BLK1

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.013	-0.013	0.0000	0.0022	0.0008	15:55:29	No

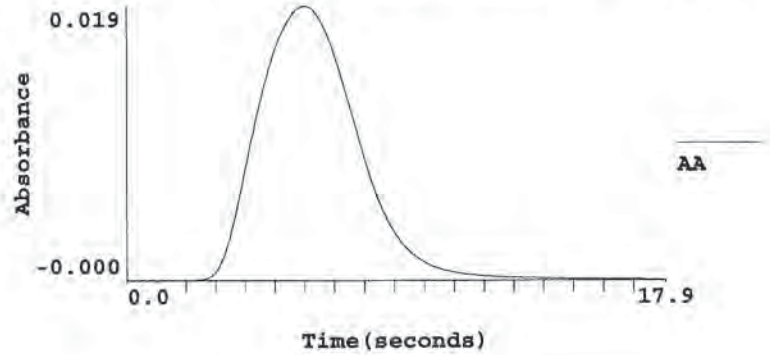


Sequence No.: 52
Sample ID: 6D12009-BS1
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 52
Date Collected: 4/12/2016 3:55:31 PM
Data Type: Reprocessed on 4/12/2016 5:36:28 PM

Replicate Data: 6D12009-BS1

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.008	2.008	0.0185	0.0738	0.0193	15:56:23	No

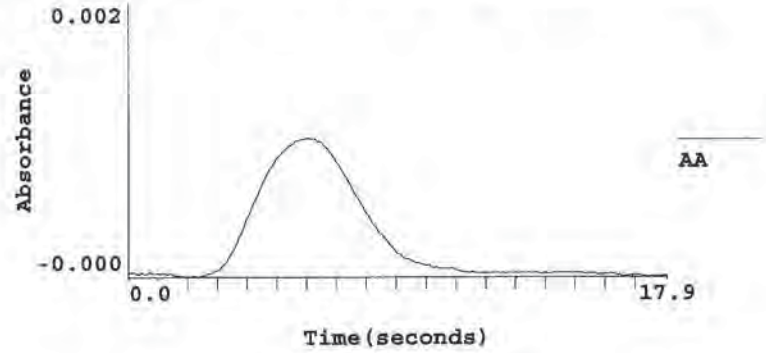


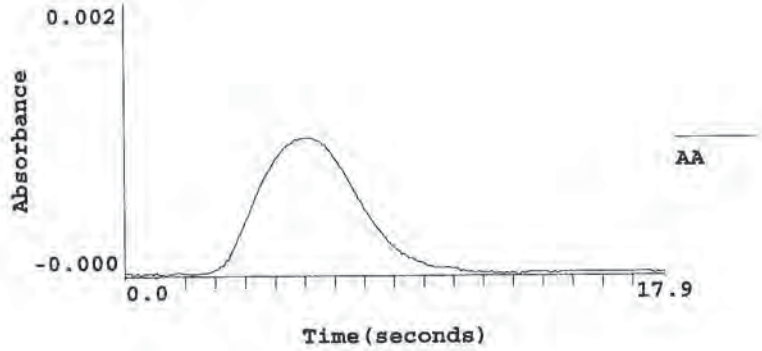
Sequence No.: 53
Sample ID: 1604019-02
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 53
Date Collected: 4/12/2016 3:56:43 PM
Data Type: Reprocessed on 4/12/2016 5:36:28 PM

Replicate Data: 1604019-02

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.004	0.004	0.0002	0.0036	0.0010	15:57:36	No





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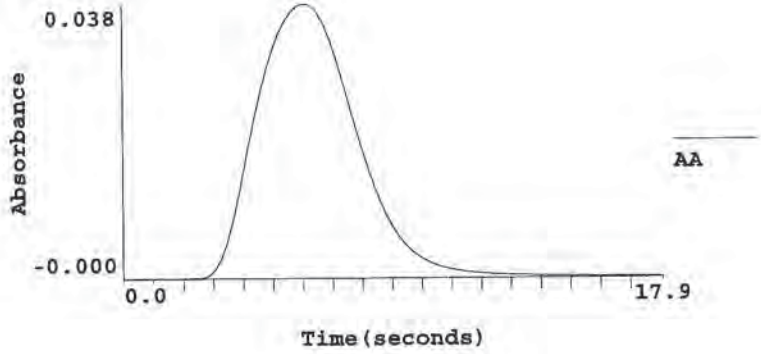
Sequence No.: 65
Sample ID: 6D10311-CCV4
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 65
Date Collected: 4/12/2016 4:11:10 PM
Data Type: Reprocessed on 4/12/2016 5:36:35 PM

Replicate Data: 6D10311-CCV4

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.033	4.033	0.0370	0.1461	0.0378	16:12:03	No



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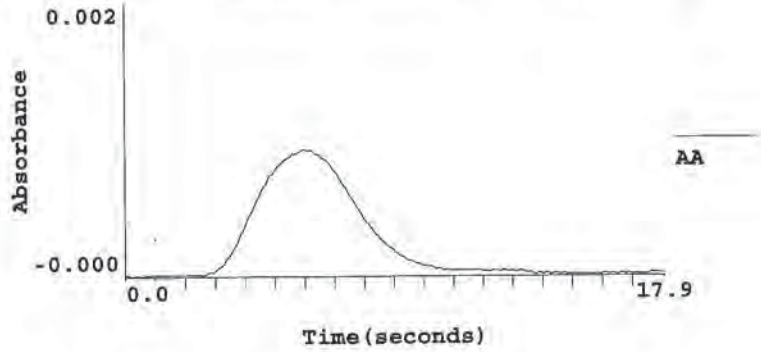
Sequence No.: 66
Sample ID: 6D10311-CCB4
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 66
Date Collected: 4/12/2016 4:12:23 PM
Data Type: Reprocessed on 4/12/2016 5:36:35 PM

Replicate Data: 6D10311-CCB4

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.004	-0.004	0.0001	0.0035	0.0009	16:13:17	No



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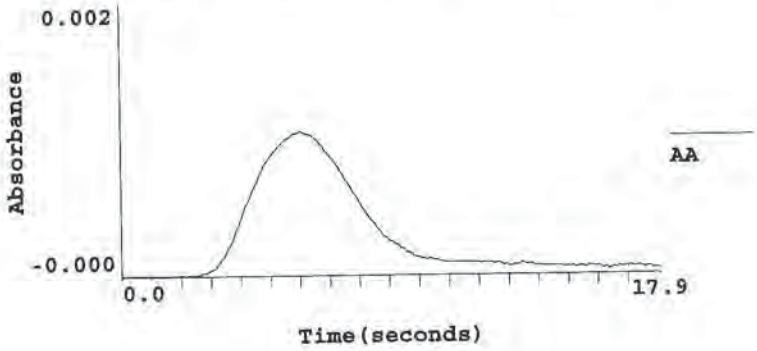
Sequence No.: 67
Sample ID: 6D14059-06

Autosampler Location: 67
Date Collected: 4/12/2016 4:13:18 PM

Replicate Data: 1604059-06

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.010	0.010	0.0002	0.0046	0.0010	16:14:12	No

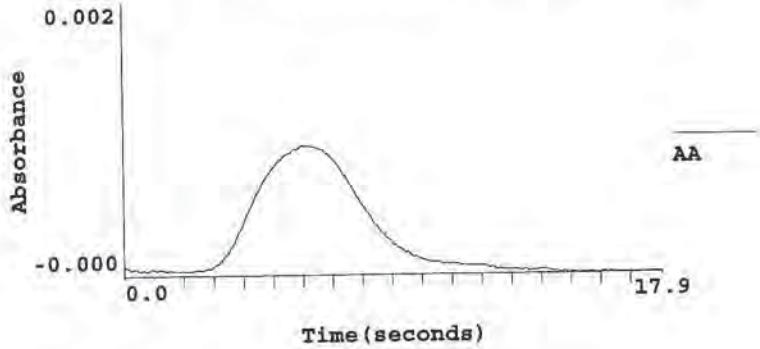


Sequence No.: 68
Sample ID: 1604060-01
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 68
Date Collected: 4/12/2016 4:14:32 PM
Data Type: Reprocessed on 4/12/2016 5:36:38 PM

Replicate Data: 1604060-01

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.004	-0.004	0.0001	0.0032	0.0009	16:15:26	No

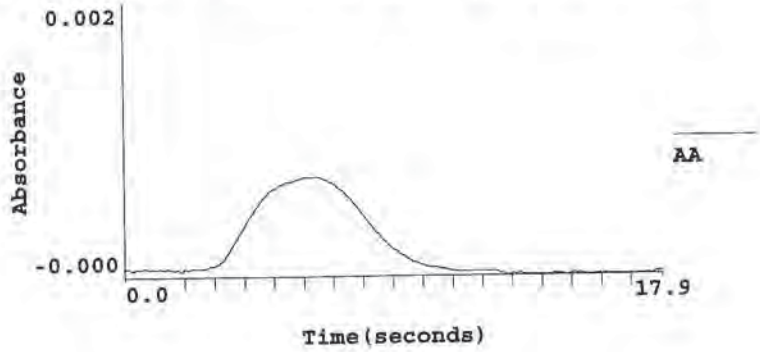


Sequence No.: 69
Sample ID: 1604061-01
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 69
Date Collected: 4/12/2016 4:15:27 PM
Data Type: Reprocessed on 4/12/2016 5:36:38 PM

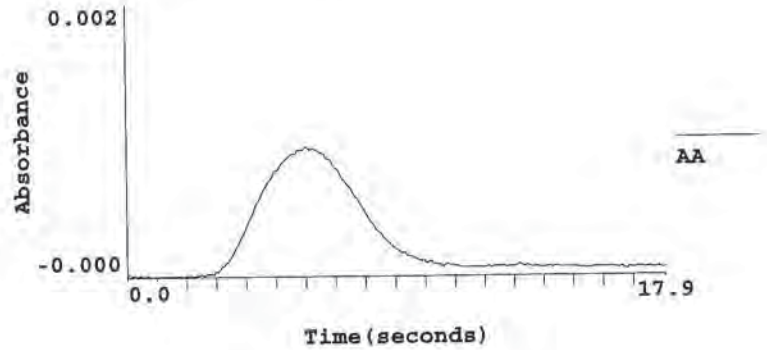
Replicate Data: 1604061-01

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.031	-0.031	-0.0002	0.0021	0.0007	16:16:20	No



Replicate Data: 1604073-01

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.002	-0.002	0.0001	0.0039	0.0009	16:22:47	No

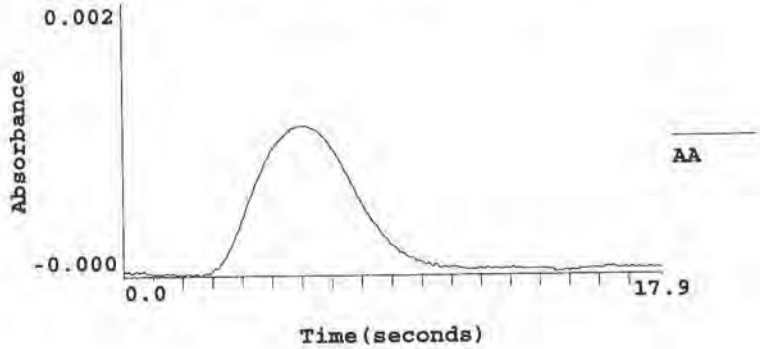


Sequence No.: 76
Sample ID: 1604074-01
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 76
Date Collected: 4/12/2016 4:22:49 PM
Data Type: Reprocessed on 4/12/2016 5:36:43 PM

Replicate Data: 1604074-01

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.012	0.012	0.0002	0.0037	0.0011	16:23:42	No

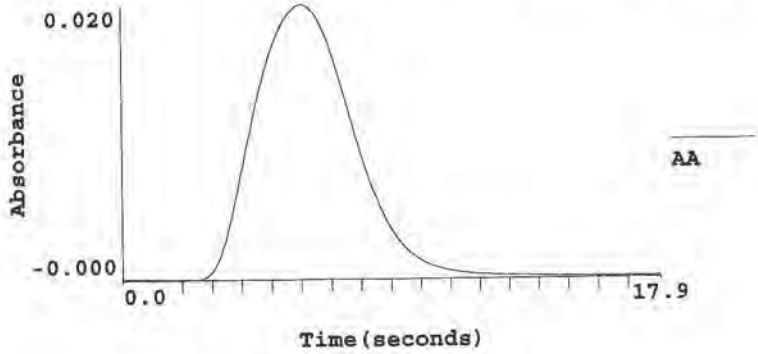


Sequence No.: 77
Sample ID: 6D10311-CCV5
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 77
Date Collected: 4/12/2016 4:24:02 PM
Data Type: Reprocessed on 4/12/2016 5:36:44 PM

Replicate Data: 6D10311-CCV5

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.032	2.032	0.0187	0.0740	0.0195	16:24:56	No

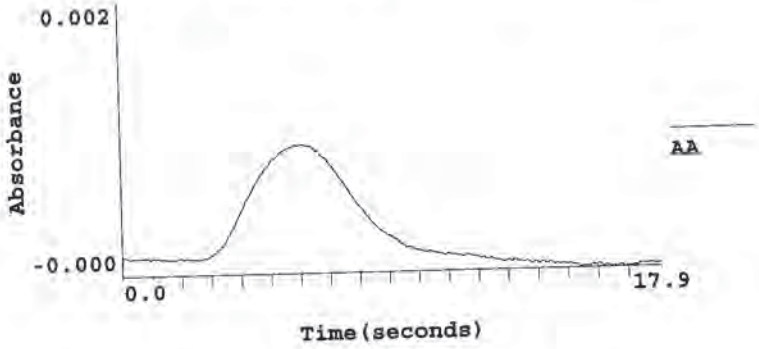


Sequence No.: 78
Sample ID: 6D10311-CCB5
Analyst:
Logged In Analyst (Original) :

Autosampler Location: 78
Date Collected: 4/12/2016 4:25:16 PM
Data Type: Reprocessed on 4/12/2016 5:36:44 PM

Replicate Data: 6D10311-CCB5

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.010	-0.010	0.0000	0.0024	0.0009	16:26:10	No



ANALYSIS SEQUENCE

6D10503

Instrument: ME-ICP

Calibration ID: 6105001

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
6D10503-CAL1	Cal Standard	QC		1		16D0092	
6D10503-CAL3	Cal Standard	QC		2		16D0093	
6D10503-CAL4	Cal Standard	QC		3		16C0452	
6D10503-CAL5	Cal Standard	QC		4		16D0153	
6D10503-CAL6	Cal Standard	QC		5		16D0036	
6D10503-CAL7	Cal Standard	QC		6		15L0584	
6D10503-CAL8	Cal Standard	QC		7		15L0751	
6D10503-CAL2	Cal Standard	QC		8		16B0394	
6D10503-ICV1	Initial Cal Check	QC		9		16D0245	
6D10503-ICB1	Initial Cal Blank	QC		10		16D0092	
6D10503-CRL1	Instrument RL Check	QC		11		16D0157	
6D10503-CRL2	Instrument RL Check	QC		12		16D0157	
6D10503-IFA1	Interference Check A	QC		13		16D0155	
6D10503-IFB1	Interference Check B	QC		14		16D0156	
6D10503-CCV1	Calibration Check	QC		15		16D0246	
6D10503-CCB1	Calibration Blank	QC		16		16D0092	
6D09919-BLK1	Blank	QC		17			
6D09919-BS1	LCS	QC		18			
1604036-01	T105A-INF01-160406	MET_ICP_LOW6010C_FULI	E	19			
1604036-03	T105A-EFF01-160406	MET_ICP_LOW6010C_FULI	E	20			
1604036-05	T105B-INF01-160406	MET_ICP_LOW6010C_FULI	E	21			
1604036-07	T105B-EFF01-160406	MET_ICP_LOW6010C_FULI	E	22			
1604036-01RE1	T105A-INF01-160406	MET_ICP_LOW6010C_FULI	E	23			
1604036-03RE1	T105A-EFF01-160406	MET_ICP_LOW6010C_FULI	E	24			
1604036-05RE1	T105B-INF01-160406	MET_ICP_LOW6010C_FULI	E	25			
1604036-07RE1	T105B-EFF01-160406	MET_ICP_LOW6010C_FULI	E	26			
1604036-01RE2	T105A-INF01-160406	MET_ICP_LOW6010C_FULI	E	27			
1604036-05RE2	T105B-INF01-160406	MET_ICP_LOW6010C_FULI	E	28			
6D10503-CCV2	09H0632	QC		29		16D0246	
6D10503-CCB2	Calibration Blank	QC		30		16D0092	
1604036-02	T105A-INF01-160406	T_ICP_LOW6010C_FULL_I	A	31			
1604036-04	T105A-EFF01-160406	T_ICP_LOW6010C_FULL_I	A	32			
1604036-06	T105B-INF01-160406	T_ICP_LOW6010C_FULL_I	A	33			
1604036-08	T105B-EFF01-160406	T_ICP_LOW6010C_FULL_I	A	34			
1604036-02RE1	T105A-INF01-160406	T_ICP_LOW6010C_FULL_I	A	35			
1604036-04RE1	T105A-EFF01-160406	T_ICP_LOW6010C_FULL_I	A	36			

Samples Loaded By — Date: 4/18/16

Data Processed By: Betty Quillen — Date: 4/18/16

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6105001

6D10503

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
1604036-06RE1	T105B-INF01-160406	T_ICP_LOW6010C_FULL_I	A	37			
1604036-08RE1	T105B-EFF01-160406	T_ICP_LOW6010C_FULL_I	A	38			
6D10503-CCV3	10A0473	QC		39		16D0246	
6D10503-CCB3	Calibration Blank	QC		40		16D0092	
6D09918-BLK1	Blank	QC		41			
6D09918-BS1	LCS	QC		42			
1604019-02	AGL3021	MET_ICP_6010C_FULL_Q5	AG	43			
6D09918-MS1	Matrix Spike	QC		44			
6D09918-MSD1	Matrix Spike Dup	QC		45			
6D09918-PS1	Post Spike	QC		46			
6D09918-DUP1	Serial Dilution	QC		47			
1604019-03	AGL3022	MET_ICP_6010C_FULL_Q5	K	48			
1604023-01	Polished Water	MET_ICP_6010C_FULL	C	49			
1604023-02	City Water	MET_ICP_6010C_FULL	C	50			
1604050-09	04MW21S-0416	MET_ICP_6010C_FULL	D	51			
1604050-10	04MW21-0416	MET_ICP_6010C_FULL	D	52			
1604050-11	FD-2	MET_ICP_6010C_FULL	D	53			
1604050-13	04MW01I-040416	MET_ICP_6010C_FULL	D	54			
1604050-14	04MW01-040416	MET_ICP_6010C_FULL	D	55			
1604050-15	04MW22I-040416	MET_ICP_6010C_FULL	D	56			
6D10503-CCV4	10A0473	QC		57		16D0292	
6D10503-CCB4	Calibration Blank	QC		58		16D0092	
1604050-16	04MW22D-040416	MET_ICP_6010C_FULL	D	59			
1604050-17	FD-1	MET_ICP_6010C_FULL	D	60			
1604050-18	04MW15I-040516	MET_ICP_6010C_FULL	D	61			
1604050-19	04MW15D-040516	MET_ICP_6010C_FULL	D	62			
1604050-20	04MW03I-040516	MET_ICP_6010C_FULL	D	63			
1604050-21	04MW03-040516	MET_ICP_6010C_FULL	D	64			
1604050-22	04MW02-040516	MET_ICP_6010C_FULL	D	65			
1604078-01	KAFB-10620-WW01	MET_ICP_6010C_FULL	I	66			
6D10503-CCV5	10A0473	QC		67		16D0152	
6D10503-CCB5	Calibration Blank	QC		68		16D0092	
6D13009-BLK1	Blank	QC		69			
6D13009-BS1	LCS	QC		70			
1604013-03	Sludge-1	MET_ICP_6010C_FULL	B	71			
1604090-03	16TM-VEX-GM-C-041216	MET_ICP_6010C_FULL	B	72			

Samples Loaded By 4/18/16 Date

Data Processed By Betty Quillen 4/18/16 Date

ANALYSIS SEQUENCE

Instrument: ME-ICP

6D10503

Calibration ID: 6105001

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
6C31011-BS2	LCS	QC		73			
6C31011-BLK2	Blank	QC		74			
1603269-17RE1	D-118-SS-021-0-0.5-032916	T_ICP_LOW6010C_FULL_	A	75			
6C31011-MS2	Matrix Spike	QC		76			
6C31011-MSD2	Matrix Spike Dup	QC		77			
6C31011-PS2	Post Spike	QC		78			
6C31011-DUP2	Serial Dilution	QC		79			
6D10503-CCV6	09H0575	QC		80		16D0152	
6D10503-CCB6	Calibration Blank	QC		81		16D0092	

Samples Loaded By 4/18/16 Date

Data Processed By Betty Quillen 4/18/16 Date

4-14-16 ,2D

	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
1	0	0	0	QC	6D10503-ICV	16D0245	☒	ICV
2	0	0	0	QC	6D10503-ICB		☒	ICB
3	0	0	0	QC	6D10503-CRL	RLSTDA	☒	RLSTD-A
4	0	0	0	Unk	6D10503-IFA		☐	
5	0	0	0	QC	6D10503-IFB		☒	ICSAB
6	0	0	0	Unk	RINSE		☒	SAMPLE
7	0	0	0	QC	6D10503-CCV1	16D0246	☒	CCV
8	0	0	0	QC	6D10503-CCB1		☒	CCB
9	1	9	1	QC	6D09918-BLK1	PBW041316	☒	PREPBLANK
10	1	10	1	QC	6D09918-BS1	LCSW041316	☒	2007LCS
11	1	11	1	Unk	1604019-02		☒	SAMPLE
12	1	12	1	Unk	6D09918-MS1		☒	SAMPLE
13	1	1	2	Unk	6D09918-MSD1		☒	SAMPLE
14	1	2	2	Unk	6D09918-PS1		☒	SAMPLE
15	1	3	2	Unk	6D09918-DUP1@5X	X5 SRL	☒	SAMPLE
16	1	4	2	Unk	1604019-03		☒	SAMPLE
17	1	5	2	Unk	1604023-01		☒	SAMPLE
18	1	6	2	Unk	1604023-02		☒	SAMPLE
19	1	7	2	Unk	1604050-09		☒	SAMPLE
20	1	8	2	Unk	1604050-10		☒	SAMPLE
21	1	9	2	Unk	1604050-11		☒	SAMPLE
22	1	10	2	Unk	1604050-13		☒	SAMPLE
23	1	11	2	Unk	1604050-14		☒	SAMPLE
24	1	12	2	Unk	1604050-15		☒	SAMPLE
25	1	1	3	QC	6D10503-CCV4	16D0246	☒	CCV
26	1	2	3	QC	6D10503-CCB4		☒	CCB
27	1	3	3	Unk	1604050-16		☒	SAMPLE
28	1	4	3	Unk	1604050-17		☒	SAMPLE
29	1	5	3	Unk	1604050-18		☒	SAMPLE
30	1	6	3	Unk	1604050-19		☒	SAMPLE
31	1	7	3	Unk	1604050-20		☒	SAMPLE
32	1	8	3	Unk	1604050-21		☒	SAMPLE
33	1	9	3	Unk	1604050-22		☒	SAMPLE
34	1	10	3	Unk	1604078-01		☒	SAMPLE
35	1	11	3	QC	6D10503-CCV5	16D0246	☒	CCV
36	1	12	3	QC	6D10503-CCB5		☒	CCB
37	1	1	4	QC	6D13009-BLK1	PBS041316 1g->200ml	☒	PREPBLANK
38	1	2	4	QC	6D13009-BS1	LCSS041316 1g->200ml	☒	2007LCS
39	1	3	4	Unk	1604013-03		☒	SAMPLE
40	1	4	4	Unk	1604090-03		☒	SAMPLE
41	1	5	4	Unk	1604090-04		☒	SAMPLE
42	1	6	4	Unk	6D13009-MS1		☒	SAMPLE
43	1	7	4	Unk	6D13009-MSD1		☒	SAMPLE
44	1	8	4	Unk	6D13009-PS1		☒	SAMPLE
45	1	9	4	Unk	6D13009-DUP1@5X	X5 SRL	☒	SAMPLE
46	1	10	4	QC	6C31011-BLK2	PBS041316 2g->100ml	☒	PREPBLANK
47	1	11	4	QC	6C31011-BS2	LCSS041316 2g->100ml	☒	2007LCS
48	1	12	4	Unk	1603269-17RE1@5X		☒	SAMPLE
49	1	1	5	Unk	6C31011-MS2@5X		☒	SAMPLE
50	1	2	5	Unk	6C31011-MSD2@5X		☒	SAMPLE
51	1	3	5	Unk	6C31011-PS2@5X		☒	SAMPLE
52	1	4	5	Unk	6C31011-DUP2@25X	X25 SRL	☒	SAMPLE
53	1	5	5	QC	6D10503-CCV6	16D0246	☒	CCV
54	1	6	5	QC	6D10503-CCB6		☒	CCB
55	1	7	5	QC	6D09919-BLK1	PBW041316 LL H20	☒	PREPBLANK
56	1	8	5	QC	6D09919-BS1	LCSW041316 LL H20	☒	LCSWLOW
57	1	9	5	Unk	1604034-02@2X	LL H20 X2	☒	SAMPLE
58	1	10	5	Unk	1604034-04	LL H20	☒	SAMPLE
59	1	11	5	Unk	6D09919-MS1	LL H20	☒	SAMPLE
60	1	12	5	Unk	6D09919-MSD1	LL H20	☒	SAMPLE
61	2	1	1	Unk	6D09919-PS1	LL H20	☒	SAMPLE

4-14-16
RN

②

	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
62	2	2	1	Unk	6D09919-DUP1@5X	LL H20 X5 SRL	☒	SAMPLE
63	2	3	1	Unk	1604034-06@2X	LL H20 X2	☒	SAMPLE
64	2	4	1	Unk	1604036-01@2X	LL H20 X2	☒	SAMPLE
65	2	5	1	Unk	1604036-03@5X	LL H20 X5	☒	SAMPLE
66	2	6	1	Unk	1604036-05@2X	LL H20 X2	☒	SAMPLE
67	2	7	1	Unk	1604036-07@5X	LL H20 X5	☒	SAMPLE
68	2	8	1	Unk	1604042-02	LL H20	☒	SAMPLE
69	2	9	1	Unk	1604043-04	LL H20	☒	SAMPLE
70	2	10	1	Unk	1604044-18	LL H20	☒	SAMPLE
71	2	11	1	QC	6D10503-CCV7	16D0246	☒	CCV
72	2	12	1	QC	6D10503-CCB7		☒	CCB
73	2	1	2	Unk	1604056-03	LL H20	☒	SAMPLE
74	2	2	2	Unk	1604059-06	LL H20	☒	SAMPLE
75	2	3	2	Unk	1604060-01@2X	LL H20 X2	☒	SAMPLE
76	2	4	2	Unk	1604061-01@2X	LL H20 X2	☒	SAMPLE
77	2	5	2	Unk	1604063-14	LL H20	☒	SAMPLE
78	2	6	2	Unk	1604066-02	LL H20	☒	SAMPLE
79	2	7	2	Unk	1604066-03	LL H20	☒	SAMPLE
80	2	8	2	Unk	1604066-04	LL H20	☒	SAMPLE
81	2	9	2	QC	6D10503-CCV8	16D0246	☒	CCV
82	2	10	2	QC	6D10503-CCB8		☒	CCB
83	2	11	2	Unk	1603237-01RE1@5X	2g->100ml	☒	SAMPLE
84	2	12	2	Unk	1603237-02RE1@5X		☒	SAMPLE
85	2	1	3	Unk	1603237-03RE1@5X		☒	SAMPLE
86	2	2	3	Unk	1603237-04RE1@5X		☒	SAMPLE
87	2	3	3	Unk	1603237-05RE1@5X		☒	SAMPLE
88	2	4	3	Unk	1603237-06RE1@5X		☒	SAMPLE
89	2	5	3	Unk	1603237-07RE1@5X		☒	SAMPLE
90	2	6	3	Unk	1603237-08RE1@5X		☒	SAMPLE
91	2	7	3	Unk	1603237-09RE1@5X		☒	SAMPLE
92	2	8	3	Unk	1603237-10RE1@5X		☒	SAMPLE
93	2	9	3	QC	6D10503-CCV9	16D0246	☒	CCV
94	2	10	3	QC	6D10503-CCB9		☒	CCB
95	2	11	3	Unk	1603237-11RE1@5X	2g->100ml	☒	SAMPLE
96	2	12	3	Unk	1603237-13RE2@50X		☒	SAMPLE
97	2	1	4	Unk	6C29002-MS2@50X		☒	SAMPLE
98	2	2	4	Unk	6C29002-MSD2@50X		☒	SAMPLE
99	2	3	4	Unk	6C29002-PS2@50X		☒	SAMPLE
100	2	4	4	Unk	6C29002-DUP2@250X	X250 SRL	☒	SAMPLE
101	2	5	4	Unk	1603237-14RE1@5X		☒	SAMPLE
102	2	6	4	Unk	1603237-15RE1@5X		☒	SAMPLE
103	2	7	4	Unk	1603237-16RE1@5X		☒	SAMPLE
104	2	8	4	Unk	1603237-17RE1@5X		☒	SAMPLE
105	2	9	4	Unk	1603237-18RE1@5X		☒	SAMPLE
106	2	10	4	Unk	1603237-19RE1@5X		☒	SAMPLE
107	2	11	4	Unk	1603237-20RE1@5X		☒	SAMPLE
108	2	12	4	Unk	1603237-21RE1@5X		☒	SAMPLE
109	2	1	5	QC	6D10503-CCVA	16D0246	☒	CCV
110	2	2	5	QC	6D10503-CCBA		☒	CCB
111	2	3	5	QC	6D10204-CRL		☒	RLSTD-A
112	2	4	5	QC	6D10204-CRL		☒	RLSTD-A
113	2	5	5	QC	6D10503-CCVB	16D0246	☒	CCV
114	2	6	5	QC	6D10503-CCBB		☒	CCB

6D09919

26.1 Circle Sheet for Eppendorfs and Solutions

ICP Metals: Circle Applicable Digestion/Spike and pipette option then staple to bench sheet

Reminder: Make sure pipettes are verified daily at volume of use for QSM5 batches!

Soil 2g-100mL (3050B)

Amount	BS/MS/MSD Standards 6010 Soil
0.10mL	#01 CLP-CAL-1 (50-33000ug/mL)
0.10mL	SM-391-001 (125->1000ug/mL)
Circle	0.1ml Eppendorf 148897Z or 250847
	1mL FinnPipette FJ61963
Amount	**Reagents for Digestion 6010 Soil**
5mL	HNO3
5mL	HNO3
2mL	DI H2O
3mL	H2O2
3mL	H2O2
3mL	H2O2
2.5mL	DI H2O
2.5mL	Conc HCl
10mL	DI H2O

Soil 1g-200mL (3050B)

Amount	BS/MS/MSD Standards 6010 Soil
0.20mL	#01 CLP-CAL-1 (50-33000ug/mL)
0.20mL	SM-391-001 (125->1000ug/mL)
Circle	0.1ml Eppendorf 148897Z or 250847
	1mL FinnPipette FJ61963
5mL	HNO3
5mL	HNO3
2mL	DI H2O
3mL	H2O2
3mL	H2O2
3mL	H2O2
2.5mL	DI H2O
2.5mL	Conc HCl
10mL	DI H2O

TCLP 5mL-50mL (3010A)

Amount	MS/MSD Standards 6010 TCLP
5.0mL	Silver TCLP Spike
0.50mL	Main TCLP Spike
Circle	1mL Transfer 06M15889 or FinnPipette FJ61963
Circle	5mL FinnPipette KU04206 or Transfer 04M88005
Amount	**BS Standards TCLP 6010**
50mL	Water LCS (0.050-5.0ug/mL)
Amount	**Reagents for Digestion TCLP**
1.5mL	HNO3
1.5mL	HNO3
2.5mL	HCl

Water 100mL-25mL (3005A)

Amount	MS/MSD Standards 6010 Water
0.025m	#01 CLP-CAL-1 (50-33000ug/mL)
0.025m	#02 CAL-CAL-1 Solution B (250ug/mL)
0.0125m	#03 CLP-CAL-2 (1000ug/mL)
0.0125m	#04 CLP-CAL-3 (500ug/mL-1000ug/mL)
0.025m	#05 Boron (1000ug/mL)
0.025m	#06 Tin (1000ug/mL)
0.025m	#07 Molybdenum (1000ug/mL)
0.025m	#08 Titanium (1000ug/mL)
0.025m	#09 Strontium (1000ug/mL)
0.025m	#10 Lithium (1000ug/mL)
Circle	0.1ml Eppendorf 148897Z or 250847
Amount	**BS Standards 6010 Water**
5.0mL ~~2.0mL~~	Water LCS (0.050-5.0ug/mL)
0.5mL	Salt Spike (25ug/mL)
Circle	1mL Transfer 06M15889 or FinnPipette FJ61963
Circle	5mL FinnPipette KU04206 or Transfer 04M88005
Amount	**Reagents for Digestion Low Water**
0.5mL	HNO3
1.25mL	HCl

Water 50mL-50mL (3005A)

Amount	MS/MSD Standards 6010 Water
0.050m	#01 CLP-CAL-1 (50-33000ug/mL)
0.050m	SM-391-001 (125->1000ug/mL)
Circle	0.1ml Eppendorf 148897Z or 250847
Amount	**BS Standards 6010 Water**
50mL	Water LCS (0.050-5.0ug/mL)
Amount	**Reagents for Digestion 6010 Water**
1.0mL	HNO3
2.5mL	HCl

Water 50mL-50mL (200.7)

Amount	MS/MSD Standards 6010 Water
0.050m	#01 CLP-CAL-1 (50-33000ug/mL)
0.050m	SM-391-001 (125->1000ug/mL)
Circle	0.1ml Eppendorf 148897Z or 250847
Amount	**BS Standards 6010 Water**
50mL	Water LCS (0.050-5.0ug/mL)
Amount	**Reagents for Digestion 6010 Water**
0.50mL	HNO3
0.25mL	HCl

Sample Name: SEQ-CAL1 Acquired: 4/14/2016 9:43:57 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00010**	**.00182**	**-.00291**	**.00005**	**.02400**	**.00048**	**.00203**
Stddev	.00002	.00090	.00075	.00001	.00092	.00018	.00015
%RSD	17.294	49.222	25.736	16.957	3.8167	36.906	7.4950
#1	.00010	.00285	-.00377	.00004	.02433	.00034	.00185
#2	.00008	.00145	-.00250	.00005	.02471	.00068	.00210
#3	.00011	.00118	-.00245	.00005	.02297	.00041	.00213

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01948**	**.02086**	**-.00006**	**.00128**	**-.00005**	**-.00437**	**-.00007**
Stddev	.00167	.00236	.00001	.00001	.00017	.00090	.00001
%RSD	8.5750	11.325	12.708	1.1633	332.58	20.528	13.774
#1	.02081	.02354	-.00005	.00126	-.00007	-.00343	-.00006
#2	.01760	.01997	-.00007	.00129	.00013	-.00521	-.00008
#3	.02001	.01907	-.00006	.00129	-.00021	-.00447	-.00008

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00005**	**.00012**	**-.00086**	**.00961**	**.03825**	**-.00402**	**.00618**
Stddev	.00001	.00001	.00059	.00050	.00028	.00162	.00157
%RSD	29.585	5.9567	69.453	5.1769	.73294	40.348	25.469
#1	.00005	.00011	-.00153	.00946	.03809	-.00236	.00752
#2	.00003	.00013	-.00060	.00921	.03857	-.00560	.00444
#3	.00006	.00011	-.00043	.01017	.03808	-.00410	.00657

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00424**	**5.102**	**-.00260**	**-.0021**	**.00160**	**-.00312**	**-.00012**
Stddev	.00044	.394	.00039	.0001	.00025	.00035	.00002
%RSD	10.486	7.712	15.056	6.240	15.555	11.304	14.211
#1	.00468	5.424	-.00238	-.0021	.00166	-.00338	-.00013
#2	.00380	4.663	-.00238	-.0019	.00132	-.00326	-.00012
#3	.00424	5.218	-.00306	-.0021	.00181	-.00272	-.00010

Sample Name: SEQ-CAL1 Acquired: 4/14/2016 9:43:57 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Zn2062
Units	Cts/S
Avg	**.00857**
Stddev	.00041
%RSD	4.7511
#1	.00812
#2	.00866
#3	.00892

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2394.6**	**698860.**	**21005.**
Stddev	2.3	4250.	129.
%RSD	.09431	.60810	.61399
#1	2394.6	698300.	20943.
#2	2396.9	703370.	20918.
#3	2392.4	694920.	21153.

Sample Name: SEQ-CAL3 Acquired: 4/14/2016 9:51:22 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03649**	**.32341**	**.51368**	**.02008**	**18.709**	**3.1183**	**4.9673**	**36.054**
Stddev	.00037	.00102	.00125	.00022	.010	.0031	.0064	.077
%RSD	1.0072	.31480	.24421	1.0721	.05306	.09939	.12948	.21373
#1	.03648	.32251	.51340	.02004	18.708	3.1160	4.9599	35.976
#2	.03687	.32451	.51259	.02032	18.699	3.1171	4.9699	36.055
#3	.03613	.32322	.51505	.01989	18.719	3.1218	4.9720	36.130

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**9.3287**	**.06137**	**.06558**	**.16146**	**.14263**	**.01289**	**.15281**	**.35530**
Stddev	.0116	.00057	.00060	.00122	.00008	.00013	.00023	.00280
%RSD	.12424	.92080	.91742	.75492	.05644	1.0090	.15248	.78851
#1	9.3221	.06133	.06557	.16006	.14253	.01287	.15271	.35650
#2	9.3219	.06196	.06618	.16228	.14268	.01303	.15308	.35730
#3	9.3421	.06083	.06498	.16204	.14266	.01277	.15265	.35210

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4.9711**	**3.9806**	**5.1601**	**2.1617**	**1.0677**	**.55874**	**321.5**	**1.8174**
Stddev	.0132	.0081	.0053	.0033	.0031	.00013	.7	.0012
%RSD	.26595	.20371	.10186	.15386	.28579	.02337	.2259	.06551
#1	4.9612	3.9896	5.1541	2.1622	1.0663	.55860	320.6	1.8162
#2	4.9661	3.9785	5.1639	2.1581	1.0655	.55876	321.8	1.8176
#3	4.9861	3.9738	5.1624	2.1647	1.0712	.55886	322.0	1.8185

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.146**	**.25268**	**.86691**	**.05096**	**13.943**
Stddev	.001	.00139	.00194	.00041	.031
%RSD	.0349	.54903	.22370	.79934	.22490
#1	3.146	.25108	.86471	.05087	13.910
#2	3.145	.25356	.86837	.05141	13.948
#3	3.147	.25340	.86765	.05061	13.972

Sample Name: SEQ-CAL3 Acquired: 4/14/2016 9:51:22 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2420.5	702900.	20955.
Stddev	1.8	7337.	3.
%RSD	.07419	1.0438	.01561
#1	2420.0	706350.	20951.
#2	2422.5	694470.	20957.
#3	2419.1	707870.	20956.

Sample Name: SEQ-CAL4 Acquired: 4/14/2016 9:55:09 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Ba2335	Mn2576
Units	Cts/S	Cts/S	Cts/S
Avg	**.14525**	**97.572**	**3.5514**
Stddev	.00123	.217	.0411
%RSD	.84639	.22215	1.1559
#1	.14507	97.442	3.5641
#2	.14657	97.822	3.5846
#3	.14413	97.452	3.5055

Int. Std.	Sc1880	Sc3613
Units	Cts/S	Cts/S
Avg	2447.6	716340.
Stddev	4.7	6527.
%RSD	.19378	.91112
#1	2450.6	719940.
#2	2442.1	708810.
#3	2450.1	720280.

Sample Name: SEQ-CAL5 Acquired: 4/14/2016 9:58:58 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Al3961	Fe2611	Mg2790
Units	Cts/S	Cts/S	Cts/S
Avg	**15.491**	**8.0189**	**1.5167**
Stddev	.148	.0268	.0028
%RSD	.95537	.33478	.18236
#1	15.446	8.0320	1.5136
#2	15.656	7.9880	1.5175
#3	15.370	8.0367	1.5189

Int. Std.	Sc3613-2
Units	Cts/S
Avg	20127.
Stddev	63.
%RSD	.31138
#1	20200.
#2	20097.
#3	20086.

Sample Name: SEQ-CAL6 Acquired: 4/14/2016 10:02:53 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	B_2496	Be3130	Cd2144	Co2286	Cr2677	Cu3247	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4.9916**	**.09408**	**29.635**	**340.90**	**96.373**	**.59275**	**.61638**	**.11838**
Stddev	.0037	.00024	.226	4.99	.057	.01203	.00401	.00037
%RSD	.07313	.25433	.76231	1.4637	.05913	2.0296	.65061	.30847
#1	4.9958	.09431	29.412	338.92	96.425	.60574	.61905	.11874
#2	4.9900	.09410	29.629	346.58	96.381	.58199	.61832	.11840
#3	4.9890	.09383	29.864	337.21	96.312	.59052	.61177	.11801

Elem	Mo2020	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899	Sr4215
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**47.828**	**52.599**	**22.677**	**10.381**	**5.2477**	**421.4**	**8.9315**	**31.89**
Stddev	.034	.045	.012	.001	.0078	40.7	.0009	.14
%RSD	.07160	.08650	.05201	.01160	.14921	9.652	.00989	.4406
#1	47.836	52.578	22.678	10.382	5.2559	465.1	8.9319	31.73
#2	47.857	52.651	22.688	10.381	5.2402	414.3	8.9320	32.00
#3	47.790	52.568	22.665	10.380	5.2469	384.7	8.9304	31.93

Elem	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.4819**	**8.7700**	**.48578**	**134.60**
Stddev	.0003	.0100	.00196	.96
%RSD	.01299	.11370	.40378	.71042
#1	2.4815	8.7683	.48606	133.65
#2	2.4822	8.7808	.48369	134.58
#3	2.4820	8.7610	.48758	135.56

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2453.8**	**711390.**	**21209.**
Stddev	2.1	4025.	40.
%RSD	.08596	.56573	.19016
#1	2451.6	707260.	21163.
#2	2453.8	711630.	21230.
#3	2455.8	715290.	21235.

Sample Name: SEQ-CAL7 Acquired: 4/14/2016 10:07:36 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	K_7664	Na5895
Units	Cts/S	Cts/S
Avg	**1.3508**	**7.2321**
Stddev	.0023	.0210
%RSD	.16988	.28967
#1	1.3534	7.2375
#2	1.3492	7.2498
#3	1.3497	7.2090

Int. Std.	Sc3613-2
Units	Cts/S
Avg	**21064.**
Stddev	71.
%RSD	.33655
#1	21136.
#2	20994.
#3	21062.

Sample Name: SEQ-CAL8 Acquired: 4/14/2016 10:11:22 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ca3179	Mg2790	Na5895
Units	Cts/S	Cts/S	Cts/S
Avg	**46.732**	**.30829**	**38.199**
Stddev	.270	.00045	1.179
%RSD	.57766	.14621	3.0859
#1	46.501	.30816	39.386
#2	47.029	.30792	38.182
#3	46.667	.30879	37.028

Int. Std.	Sc3613-2
Units	Cts/S
Avg	20070.
Stddev	100.
%RSD	.49691
#1	19970.
#2	20170.
#3	20069.

Sample Name: SEQ-CAL2 Acquired: 4/14/2016 10:20:39 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00147**	**.15377**	**.04859**	**.00105**	**1.0537**	**.30550**	**.11346**	**3.6561**
Stddev	.00004	.00063	.00077	.00003	.0016	.00069	.00010	.0107
%RSD	2.4103	.40824	1.5809	3.0867	.15332	.22563	.08804	.29408
#1	.00151	.15426	.04878	.00108	1.0528	.30518	.11340	3.6453
#2	.00144	.15306	.04925	.00106	1.0556	.30503	.11342	3.6668
#3	.00146	.15398	.04775	.00102	1.0527	.30629	.11358	3.6562

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.99684**	**.00595**	**.00726**	**.08565**	**.00982**	**.00135**	**.03743**	**.47736**
Stddev	.00158	.00008	.00009	.00030	.00025	.00002	.00046	.00061
%RSD	.15823	1.3318	1.2032	.34676	2.5187	1.6242	1.2213	.12863
#1	.99503	.00601	.00730	.08531	.01007	.00136	.03773	.47680
#2	.99765	.00598	.00732	.08586	.00958	.00137	.03764	.47725
#3	.99785	.00586	.00716	.08578	.00980	.00133	.03690	.47802

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899	Sr4215	Ti3349
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.58064**	**.22494**	**.11351**	**.05850**	**5.143**	**.08429**	**.3259**	**.02632**
Stddev	.00193	.00179	.00099	.00082	1.156	.00070	.0002	.00030
%RSD	.33316	.79724	.86945	1.4027	22.47	.82542	.0576	1.1489
#1	.57867	.22700	.11272	.05796	4.031	.08490	.3259	.02614
#2	.58253	.22369	.11462	.05944	6.338	.08445	.3261	.02667
#3	.58072	.22413	.11320	.05809	5.061	.08353	.3257	.02615

Elem	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S
Avg	**.08607**	**.00454**	**1.4997**
Stddev	.00023	.00006	.0036
%RSD	.27074	1.4088	.23750
#1	.08627	.00457	1.4956
#2	.08612	.00459	1.5023
#3	.08581	.00447	1.5011

Sample Name: SEQ-CAL2 Acquired: 4/14/2016 10:20:39 Type: Cal
Method: 6500DUOBB(v964) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2463.6**	**727630.**	**21663.**
Stddev	7.9	8796.	131.
%RSD	.31997	1.2089	.60304
#1	2459.5	719800.	21776.
#2	2472.6	725930.	21693.
#3	2458.6	737150.	21520.

Sample Name: 6D10503-ICV Acquired: 4/14/2016 10:46:49 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0245

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**486.78**	**9980.9**	**1049.8**	F **1051.0**	**984.64**	**1038.5**	**52.109**
Stddev	10.54	24.6	1.7	17.7	.96	1.7	.068
%RSD	2.1654	.24631	.15789	1.6876	.09798	.16111	.13113
#1	498.09	10009.	1048.0	1070.9	984.28	1036.6	52.032
#2	485.04	9964.7	1050.0	1045.4	985.74	1039.8	52.134
#3	477.22	9968.7	1051.3	1036.8	983.92	1039.2	52.162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1000.0			
Range				±50.000			

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1030.0**	**959.67**	**981.07**	**999.10**	**9909.2**	**9.9708**	F **1053.0**
Stddev	.8	.32	22.52	18.66	46.2	.0819	17.9
%RSD	.08233	.03283	2.2953	1.8674	.46605	.82124	1.7020
#1	1030.3	959.34	1005.5	1019.1	9952.6	10.065	1071.1
#2	1029.1	959.96	976.60	996.14	9860.7	9.9183	1052.8
#3	1030.7	959.72	961.13	982.10	9914.3	9.9290	1035.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							1000.0
Range							±50.000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**49.534**	**985.72**	**1020.6**	**50.645**	**987.76**	**969.49**	**1012.0**
Stddev	.078	25.04	.8	.119	.65	1.22	1.0
%RSD	.15822	2.5406	.07736	.23500	.06533	.12591	.10233
#1	49.492	1014.1	1021.5	50.519	987.33	968.35	1011.1
#2	49.624	976.40	1020.2	50.756	988.50	970.78	1011.8
#3	49.485	966.67	1020.1	50.660	987.44	969.36	1013.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D10503-ICV Acquired: 4/14/2016 10:46:49 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0245

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**1045.0**	F **21780.**	**988.13**	**989.8**	**993.64**	**1005.9**	**1013.3**
Stddev	1.1	115.	.92	3.7	3.46	2.7	15.1
%RSD	.10956	.5255	.09266	.3743	.34863	.26630	1.4859
#1	1045.9	21900.	988.01	985.5	992.65	1008.7	1029.3
#2	1043.7	21770.	987.28	992.3	990.79	1005.5	1011.2
#3	1045.4	21670.	989.10	991.6	997.50	1003.4	999.42
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		500.0					
Range		±25.00					

Elem	Zn2062
Units	ppb
Avg	**1018.9**
Stddev	2.5
%RSD	.24666
#1	1018.5
#2	1016.7
#3	1021.7
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2397.3**	**704120.**	**21018.**
Stddev	9.6	12207.	98.
%RSD	.40049	1.7337	.46489
#1	2408.1	690670.	21116.
#2	2394.3	707170.	21019.
#3	2389.6	714510.	20920.

Sample Name: 6D10503-ICB Acquired: 4/14/2016 10:52:09 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**.33836**	**-1.0147**	**-.81467**	**1.5239**	**.10024**	**.08936**	**.00071**
Stddev	.19059	13.607	.34738	.2131	.08651	.03259	.00293
%RSD	56.327	1341.0	42.641	13.985	86.307	36.471	413.59
#1	.28240	-1.1257	-.43465	1.6518	.02594	.09194	-.00173
#2	.18202	12.647	-.89350	1.2779	.19522	.12059	-.00011
#3	.55067	-14.565	-1.1159	1.6421	.07955	.05556	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.04157**	**.07038**	**-.10572**	**1.0812**	**10.390**	**.03464**	**.69326**
Stddev	.04379	.15942	.20590	.1250	4.219	.06535	.73542
%RSD	105.33	226.52	194.77	11.558	40.607	188.68	106.08
#1	-.09084	.24256	-.27536	1.0493	14.955	.05296	1.2655
#2	-.02676	.04070	-.16515	1.2190	9.5813	.08888	.95046
#3	-.00711	-.07212	.12336	.97525	6.6342	-.03792	-.13621
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**-.01672**	**.04124**	**.15598**	**-.03051**	**-.57815**	**-.13049**	**1.1875**
Stddev	.00556	.04658	.12876	.00293	.13800	.59513	1.3129
%RSD	33.285	112.94	82.544	9.5936	23.869	456.07	110.56
#1	-.02039	.08671	.28440	-.03027	-.42322	.08773	2.1949
#2	-.01945	-.00637	.15667	-.02771	-.68790	-.80393	-.29728
#3	-.01032	.04337	.02689	-.03355	-.62334	.32472	1.6649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: 6D10503-ICB Acquired: 4/14/2016 10:52:09 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**-.62925**	F **-10.31**	**-.39260**	**-.1494**	**-.70998**	**-.21947**	**.15373**
Stddev	1.6480	13.11	.03327	.1127	.27559	.84997	.28143
%RSD	261.89	127.2	8.4756	75.46	38.817	387.28	183.07
#1	-.18226	.9722	-.35571	-.2712	-1.0189	.46734	.19719
#2	-2.4546	-24.70	-.42036	-.0487	-.62145	.04431	.41090
#3	.74912	-7.210	-.40171	-.1283	-.48953	-1.1700	-.14691
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		1.000					
Low Limit		-1.000					

Elem	Zn2062
Units	ppb
Avg	**.17852**
Stddev	.09821
%RSD	55.013
#1	.12993
#2	.29154
#3	.11407
Check ?	Chk Pass
High Limit	
Low Limit	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2403.6**	**698270.**	**20818.**
Stddev	2.1	3471.	64.
%RSD	.08557	.49709	.30959
#1	2403.3	694830.	20891.
#2	2405.8	698210.	20792.
#3	2401.7	701780.	20770.

Sample Name: 6D10503-CRL Acquired: 4/14/2016 10:56:40 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	F **2.3737**	**195.00**	**4.9464**	**31.813**	**10.364**	**2.0054**	**2.1739**
Stddev	.2658	5.94	.2617	.641	.102	.0332	.0042
%RSD	11.199	3.0468	5.2905	2.0148	.98303	1.6550	.19325
#1	2.1026	194.24	5.2245	32.352	10.300	1.9957	2.1699
#2	2.6339	201.29	4.9096	31.983	10.311	1.9782	2.1736
#3	2.3848	189.48	4.7050	31.104	10.481	2.0424	2.1783
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	3.0000						
Range	±-.60000						

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**2.1492**	**10.300**	**3.4477**	**11.613**	**116.98**	**3.0023**	F **9.0031**
Stddev	.0189	.140	.2197	.114	9.21	.0296	.8262
%RSD	.87990	1.3564	6.3717	.98281	7.8762	.98657	9.1769
#1	2.1594	10.139	3.6351	11.699	120.33	3.0162	8.5848
#2	2.1609	10.388	3.2059	11.484	106.55	2.9683	8.4697
#3	2.1274	10.373	3.5021	11.658	124.04	3.0224	9.9548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							6.0000
Range							±1.2000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**3.1350**	**6.4342**	**10.374**	**3.1722**	**5.7746**	**2.9885**	F **12.765**
Stddev	.0073	.0535	.057	.0257	.0215	.8816	1.547
%RSD	.23255	.83099	.54905	.81027	.37217	29.500	12.117
#1	3.1428	6.3732	10.338	3.1588	5.7994	2.0424	11.157
#2	3.1283	6.4564	10.440	3.2019	5.7628	3.1362	12.895
#3	3.1341	6.4730	10.345	3.1560	5.7615	3.7869	14.243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							±2.0000

Sample Name: 6D10503-CRL Acquired: 4/14/2016 10:56:40 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**5.4385**	F **-45.47**	**19.228**	**5.904**	**9.6295**	**8.8381**	**10.182**
Stddev	.9262	29.86	.480	.070	1.3271	.4695	.444
%RSD	17.031	65.66	2.4943	1.189	13.781	5.3123	4.3609
#1	4.7036	-18.95	18.679	5.853	8.0993	8.5754	10.684
#2	5.1329	-39.65	19.443	5.984	10.465	8.5589	10.025
#3	6.4788	-77.80	19.564	5.874	10.324	9.3802	9.8388
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		3.000					
Range		±-.6000					

Elem	Zn2062
Units	ppb
Avg	**10.024**
Stddev	.086
%RSD	.86219
#1	10.123
#2	9.9770
#3	9.9704
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2406.2**	**697260.**	**20970.**
Stddev	8.2	1147.	71.
%RSD	.34275	.16445	.33889
#1	2415.7	698210.	21025.
#2	2401.3	695980.	20890.
#3	2401.5	697580.	20994.

Sample Name: 6D10503-CRL Acquired: 4/14/2016 11:01:05 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**2.7334**	**213.80**	**5.1569**	**30.827**	**10.212**	**2.0125**	**2.1826**
Stddev	.1810	5.28	.6015	.807	.031	.0374	.0032
%RSD	6.6224	2.4686	11.664	2.6173	.30050	1.8560	.14625
#1	2.7250	207.82	5.2777	30.414	10.244	1.9881	2.1861
#2	2.5567	217.81	4.5042	31.757	10.209	1.9939	2.1819
#3	2.9184	215.77	5.6889	30.310	10.183	2.0555	2.1798
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**2.1477**	**10.435**	**3.8184**	**10.755**	**116.99**	**3.0527**	F **8.0250**
Stddev	.0378	.039	.1665	.347	3.65	.0551	1.4811
%RSD	1.7580	.37099	4.3599	3.2270	3.1168	1.8034	18.456
#1	2.1654	10.404	3.6277	10.628	119.57	3.0758	7.5175
#2	2.1734	10.423	3.8929	11.148	118.58	3.0924	9.6932
#3	2.1044	10.479	3.9346	10.490	112.82	2.9899	6.8644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							6.0000
Range							±1.2000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**3.1490**	**6.3385**	**10.209**	**3.1596**	**5.6551**	**2.6702**	**11.108**
Stddev	.0163	.1063	.105	.0045	.1130	.1786	.659
%RSD	.51885	1.6771	1.0313	.14248	1.9979	6.6903	5.9327
#1	3.1328	6.3946	10.151	3.1586	5.7782	2.8722	11.784
#2	3.1488	6.4050	10.145	3.1645	5.5561	2.6053	10.468
#3	3.1655	6.2159	10.331	3.1557	5.6310	2.5330	11.071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D10503-CRL Acquired: 4/14/2016 11:01:05 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**5.5640**	F **-44.48**	**18.989**	**5.784**	**10.502**	**8.5219**	**9.7965**
Stddev	1.6129	2.26	.140	.124	.143	.5582	.3041
%RSD	28.987	5.086	.73960	2.135	1.3595	6.5495	3.1044
#1	5.1722	-43.42	18.951	5.678	10.643	8.2153	9.5357
#2	7.3367	-47.08	19.144	5.756	10.357	9.1662	10.131
#3	4.1832	-42.95	18.871	5.920	10.506	8.1843	9.7234
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		3.000					
Range		±-.6000					

Elem	Zn2062
Units	ppb
Avg	**10.208**
Stddev	.066
%RSD	.64545
#1	10.136
#2	10.265
#3	10.223
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2429.1**	**707870.**	**21081.**
Stddev	.9	6409.	67.
%RSD	.03910	.90536	.31596
#1	2428.5	707740.	21005.
#2	2430.2	701520.	21118.
#3	2428.6	714330.	21122.

Sample Name: 6D10503-IFA Acquired: 4/14/2016 11:05:08 Type: Unk
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.73124**	**488180.**	**.44645**	**-.29477**	**.66086**	**-.05011**	**500.32**
Stddev	.34103	2317.	.37632	.12644	.03193	.05527	3.86
%RSD	46.638	.47466	84.291	42.894	4.8318	110.29	.77162
#1	-.68693	490120.	.86337	-.14945	.68325	.00564	497.41
#2	-.41452	485620.	.34403	-.35527	.62430	-.10488	504.70
#3	-1.0923	488810.	.13194	-.37960	.67505	-.05110	498.86

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.77197**	**-2.6128**	**-1.4198**	**-1.2615**	**200070.**	**-.04274**	**-54.086**
Stddev	.04972	.2420	.1537	.3053	394.	.08577	.543
%RSD	6.4403	9.2609	10.824	24.196	.19684	200.70	1.0044
#1	.80580	-2.8680	-1.2511	-1.5813	200030.	-.06985	-54.487
#2	.71488	-2.5839	-1.4565	-1.2300	200490.	.05332	-53.468
#3	.79522	-2.3867	-1.5518	-.97326	199710.	-.11168	-54.304

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**462.40**	**-1.9591**	**.31087**	**.11971**	**-.92010**	**.43803**	**1.0972**
Stddev	.29	.0371	.17837	.01324	.09577	1.0575	.3640
%RSD	.06214	1.8925	57.379	11.062	10.409	241.43	33.178
#1	462.16	-1.9223	.11341	.10442	-.88721	-.72319	1.3968
#2	462.30	-1.9965	.35885	.12744	-.84511	.69149	.69207
#3	462.72	-1.9585	.46034	.12727	-1.0280	1.3458	1.2028

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**.81651**	**64.64**	**-4.4741**	**-1.940**	**-31.890**	**-2.2835**	**1.0604**
Stddev	1.4845	38.86	.3286	.092	.716	.6808	.3043
%RSD	181.81	60.12	7.3436	4.771	2.2463	29.813	28.696
#1	1.8928	20.95	-4.6125	-1.835	-31.600	-2.0989	.90239
#2	-.87703	95.37	-4.7107	-2.010	-32.706	-3.0375	.86759
#3	1.4337	77.59	-4.0989	-1.975	-31.364	-1.7140	1.4112

Sample Name: 6D10503-IFA Acquired: 4/14/2016 11:05:08 Type: Unk
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Zn2062
Units	ppb
Avg	**-1.0033**
Stddev	.0305
%RSD	3.0371
#1	-.98611
#2	-.98539
#3	-1.0385

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2088.6**	**645250.**	**19613.**
Stddev	.3	8638.	60.
%RSD	.01235	1.3387	.30778
#1	2088.6	635700.	19600.
#2	2088.3	647500.	19679.
#3	2088.8	652530.	19560.

Sample Name: 6D10503-IFB Acquired: 4/14/2016 11:10:04 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**208.99**	**481230.**	**108.07**	**2.4244**	**534.43**	**517.12**	**500.09**
Stddev	3.18	6121.	2.93	.5086	1.79	.36	4.34
%RSD	1.5195	1.2720	2.7127	20.980	.33461	.07049	.86811
#1	205.78	487090.	110.80	2.0865	532.96	516.72	495.10
#2	212.13	481720.	104.97	2.1773	533.91	517.44	502.97
#3	209.06	474880.	108.43	3.0094	536.42	517.20	502.21
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1038.1**	**487.59**	**479.21**	**533.70**	**198780.**	**-.02776**	**-53.223**
Stddev	4.4	2.19	6.99	10.13	505.	.04905	1.322
%RSD	.42510	.44838	1.4586	1.8979	.25403	176.71	2.4836
#1	1034.5	486.32	472.54	524.42	198210.	.02397	-51.726
#2	1036.7	486.33	486.48	544.50	199170.	-.03365	-54.229
#3	1043.0	490.12	478.62	532.19	198970.	-.07359	-53.713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**463.62**	**453.05**	**.33865**	**.13001**	**961.22**	**47.105**	**657.41**
Stddev	.38	8.00	.36820	.00195	3.42	2.427	3.08
%RSD	.08248	1.7654	108.72	1.4965	.35619	5.1520	.46844
#1	463.30	445.47	.15718	.12883	959.34	48.725	654.03
#2	463.51	461.41	.76236	.12895	959.15	48.275	660.06
#3	464.04	452.27	.09642	.13226	965.17	44.315	658.15
Check ?	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D10503-IFB Acquired: 4/14/2016 11:10:04 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**54.859**	F **251.3**	**-4.2096**	**1035.**	**-31.464**	**100.58**	**493.81**
Stddev	3.631	27.4	.2218	1.	.489	1.86	10.23
%RSD	6.6190	10.91	5.2688	.1081	1.5556	1.8478	2.0708
#1	57.271	269.3	-4.3067	1035.	-31.732	101.95	484.97
#2	56.623	219.8	-4.3662	1036.	-31.761	98.466	505.01
#3	50.683	265.0	-3.9558	1034.	-30.899	101.32	491.45
Check ?	Chk Pass	Chk Fail	None	Chk Pass	None	Chk Pass	Chk Pass
Value		200.0					
Range		±40.00					

Elem	Zn2062
Units	ppb
Avg	**1002.2**
Stddev	5.1
%RSD	.51194
#1	997.96
#2	1000.8
#3	1007.9
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2087.3**	**655990.**	**19760.**
Stddev	15.6	10449.	74.
%RSD	.74915	1.5929	.37284
#1	2094.5	664240.	19809.
#2	2098.0	644240.	19795.
#3	2069.4	659480.	19675.

Sample Name: 6D10503-CCV1 Acquired: 4/14/2016 11:19:02 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0246

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**490.34**	**9877.9**	**1038.1**	**1054.3**	**976.64**	**1035.5**	**51.962**	**1027.0**
Stddev	5.51	23.5	2.2	7.5	2.91	1.1	.005	3.0
%RSD	1.1241	.23830	.21378	.71487	.29762	.10836	.00919	.28892
#1	496.36	9903.1	1035.7	1062.7	973.44	1035.7	51.962	1023.6
#2	485.54	9856.5	1038.5	1048.1	977.35	1036.5	51.967	1029.1
#3	489.13	9874.1	1040.1	1052.1	979.12	1034.3	51.957	1028.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**963.68**	**996.89**	**996.76**	**10037.**	**10.066**	**1025.7**	**49.463**	**996.02**
Stddev	2.66	11.74	9.19	46.	.058	6.3	.057	11.57
%RSD	.27597	1.1775	.92224	.45692	.57461	.61349	.11532	1.1612
#1	960.62	1010.1	1007.1	10080.	10.125	1032.7	49.422	1009.4
#2	965.08	987.78	989.60	10042.	10.009	1020.5	49.528	989.41
#3	965.35	992.76	993.56	9988.4	10.065	1023.8	49.440	989.26
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1013.5**	**50.459**	**982.92**	**961.60**	**1021.7**	**1034.9**	F **5440.**	**997.13**
Stddev	2.8	.137	3.04	2.73	2.7	5.3	30.	2.84
%RSD	.27235	.27094	.30961	.28386	.26103	.51062	.5582	.28443
#1	1010.3	50.350	979.41	958.50	1018.7	1029.1	5473.	993.86
#2	1014.7	50.413	984.72	962.69	1022.6	1036.2	5436.	998.66
#3	1015.4	50.612	984.64	963.62	1023.8	1039.4	5412.	998.88
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

Sample Name: 6D10503-CCV1 Acquired: 4/14/2016 11:19:02 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0246

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**979.8**	**1006.3**	**991.83**	**1010.4**	**1004.4**
Stddev	3.5	4.7	2.67	8.3	2.5
%RSD	.3530	.46383	.26904	.82554	.25183
#1	976.1	1009.1	989.04	1019.8	1001.7
#2	980.4	1008.9	992.10	1003.7	1006.6
#3	982.9	1000.9	994.35	1007.8	1005.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2401.6**	**703600.**	**21054.**
Stddev	6.1	5817.	77.
%RSD	.25381	.82673	.36673
#1	2404.8	697350.	21110.
#2	2394.6	708860.	21086.
#3	2405.5	704590.	20966.

Sample Name: 6D10503-CCB1 Acquired: 4/14/2016 11:23:27 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**.30131**	**6.8678**	**1.4069**	**1.3902**	**.07362**	**.05138**	**-.00148**
Stddev	.57453	15.791	1.2455	.3530	.01852	.02018	.00053
%RSD	190.68	229.93	88.529	25.393	25.153	39.285	36.014
#1	-.30728	-5.5654	.23151	1.2525	.06593	.07258	-.00205
#2	.37691	1.5337	2.7123	1.1267	.09474	.03240	-.00139
#3	.83431	24.635	1.2768	1.7912	.06018	.04914	-.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.07794**	**-.04242**	**.06049**	**1.1918**	**7.4173**	**.04606**	**2.3079**
Stddev	.01965	.08664	.10756	.2645	3.9665	.02243	.4200
%RSD	25.217	204.21	177.81	22.194	53.476	48.690	18.200
#1	-.06890	.04639	.06453	1.2932	2.8546	.06222	2.7901
#2	-.06443	-.12671	-.04903	1.3907	9.3532	.05549	2.1120
#3	-.10049	-.04695	.16597	.89163	10.044	.02046	2.0217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**-.01255**	**.05873**	**.10956**	**-.05205**	**-.39053**	**.16422**	**-.44765**
Stddev	.01828	.03465	.11022	.00353	.13161	.67565	1.0071
%RSD	145.64	58.997	100.61	6.7833	33.700	411.43	224.98
#1	-.03362	.02177	.22301	-.05170	-.49541	-.18460	.35897
#2	-.00307	.09047	.00288	-.05575	-.43332	.94298	-1.5764
#3	-.00096	.06394	.10277	-.04871	-.24285	-.26573	-.12548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: 6D10503-CCB1 Acquired: 4/14/2016 11:23:27 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**-.26777**	F **-24.09**	**-.40478**	**-.1323**	**.44737**	**.23267**	**-.27514**
Stddev	.32521	17.29	.24089	.1240	.85293	.59259	.35630
%RSD	121.45	71.74	59.511	93.69	190.65	254.69	129.50
#1	-.47777	-34.76	-.25360	-.1575	-.02601	.20784	-.01510
#2	-.43237	-33.37	-.68258	.0023	1.4320	.83729	-.12905
#3	.10684	-4.150	-.27818	-.2418	-.06388	-.34712	-.68126
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		1.000					
Low Limit		-1.000					

Elem	Zn2062
Units	ppb
Avg	**.30397**
Stddev	.08135
%RSD	26.764
#1	.25308
#2	.39779
#3	.26103
Check ?	Chk Pass
High Limit	
Low Limit	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2395.1**	**694760.**	**20892.**
Stddev	3.2	3185.	48.
%RSD	.13541	.45849	.22839
#1	2398.7	691540.	20935.
#2	2394.3	694830.	20841.
#3	2392.4	697910.	20899.

Sample Name: 6D09919-BLK1 Acquired: 4/14/2016 11:28:13 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: PBW041316 LL H20

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.40903**	**7.5074**	**.34010**	**3.5568**	**.55012**	**.01632**	**.01056**	**-.04419**
Stddev	.24320	4.1715	.44602	.2998	.05106	.05476	.00041	.02730
%RSD	59.457	55.565	131.14	8.4292	9.2811	335.59	3.8768	61.773
#1	-.14499	5.2350	-.16261	3.7789	.60829	-.01198	.01087	-.07426
#2	-.62386	4.9655	.68840	3.6757	.51272	-.01851	.01070	-.02097
#3	-.45823	12.322	.49452	3.2158	.52936	.07944	.01009	-.03734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**-.04502**	**.31270**	**.98984**	**7.8944**	**.04893**	**.30077**	**-.00048**	**.13608**
Stddev	.16024	.31772	.61268	.8529	.02663	1.2653	.01451	.01375
%RSD	355.89	101.60	61.897	10.804	54.420	420.69	3047.6	10.106
#1	.12483	-.05415	.63441	8.8423	.07672	.81066	.00837	.15055
#2	-.06641	.49309	1.6973	7.6520	.04642	1.2316	-.01722	.13451
#3	-.19350	.49918	.63780	7.1889	.02364	-1.1399	.00742	.12318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.23935**	**-.05508**	**-.23198**	**.28083**	**.67913**	**-.85421**	F **22.45**	**-.00169**
Stddev	.31674	.00790	.12173	.58295	.98701	.52062	29.57	.30559
%RSD	132.33	14.339	52.473	207.58	145.33	60.948	131.7	18133.
#1	-.00869	-.06269	-.11122	.95235	-.43572	-.43210	-9.502	-.32092
#2	.59613	-.04693	-.23008	-.09516	1.4415	-1.4360	28.02	.02774
#3	.13061	-.05563	-.35465	-.01472	1.0316	-.69455	48.84	.28812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							1.000	
Low Limit							-1.000	

Sample Name: 6D09919-BLK1 Acquired: 4/14/2016 11:28:13 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: PBW041316 LL H20

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**-.1796**	**-1.1238**	**-.22551**	**-.28904**	**.54876**
Stddev	.2060	.4853	1.6345	.18812	.01603
%RSD	114.7	43.186	724.80	65.085	2.9212
#1	-.4100	-1.0785	.20892	-.50598	.55409
#2	-.1155	-1.6301	1.1479	-.17085	.53074
#3	-.0132	-.66265	-2.0334	-.19030	.56144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2452.9	**715840.**	**21564.**
Stddev	6.3	5770.	23.
%RSD	.25659	.80612	.10498
#1	2452.2	721850.	21549.
#2	2459.5	710340.	21590.
#3	2446.9	715340.	21553.

Sample Name: 6D09919-BS1 Acquired: 4/14/2016 11:32:38 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: LCSW041316 LL H20

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**45.589**	**412.30**	**50.885**	**195.22**	**387.16**	**9.8526**	**3.2062**	**25.887**
Stddev	.657	8.15	.402	1.99	.20	.0726	.0063	.053
%RSD	1.4409	1.9764	.78957	1.0171	.05234	.73642	.19587	.20513
#1	44.963	418.52	50.838	193.45	387.03	9.7752	3.2059	25.895
#2	45.532	403.08	50.508	194.83	387.40	9.9190	3.2127	25.830
#3	46.273	415.31	51.307	197.37	387.07	9.8638	3.2001	25.935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**100.93**	**37.931**	**49.667**	**220.63**	**3.0597**	**214.47**	**3.1032**	**103.34**
Stddev	.12	.366	.635	2.50	.0513	3.33	.0170	.75
%RSD	.11444	.96397	1.2777	1.1353	1.6779	1.5506	.54807	.72857
#1	101.05	37.559	48.940	223.34	3.0061	211.85	3.0941	102.74
#2	100.90	37.943	49.954	218.41	3.0644	213.35	3.1228	103.10
#3	100.83	38.290	50.108	220.13	3.1085	218.22	3.0926	104.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**198.12**	**3.0339**	**101.19**	**49.140**	**49.924**	**49.763**	F **15.97**	**196.34**
Stddev	.43	.0074	.12	1.212	.473	1.150	14.19	.35
%RSD	.21517	.24411	.11460	2.4674	.94765	2.3106	88.85	.17935
#1	197.65	3.0256	101.25	50.488	49.648	50.116	24.48	196.38
#2	198.48	3.0399	101.06	48.793	50.470	50.694	-.4106	195.98
#3	198.25	3.0362	101.27	48.139	49.653	48.477	23.85	196.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							50.00	
Range							±-7.500	

Sample Name: 6D09919-BS1 Acquired: 4/14/2016 11:32:38 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: LCSW041316 LL H20

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**191.5**	**200.41**	**50.743**	**98.915**	**101.93**
Stddev	.2	.44	2.139	1.173	.16
%RSD	.1181	.22043	4.2157	1.1854	.15429
#1	191.4	200.05	48.999	98.042	101.75
#2	191.8	200.28	50.099	98.455	102.00
#3	191.5	200.90	53.130	100.25	102.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2463.9**	**716930.**	**21632.**
Stddev	12.8	4800.	91.
%RSD	.52070	.66946	.42206
#1	2449.1	719340.	21612.
#2	2472.3	720040.	21552.
#3	2470.2	711400.	21731.

Sample Name: 6D10503-CCV2 Acquired: 4/14/2016 12:21:42 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0246

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**494.89**	**9884.7**	**1039.4**	**1066.1**	**980.86**	**1037.0**	**52.098**	**1031.8**
Stddev	5.21	46.3	3.7	10.9	3.71	1.4	.072	2.9
%RSD	1.0528	.46815	.35332	1.0250	.37833	.13907	.13730	.28447
#1	489.71	9858.4	1038.1	1057.0	980.33	1035.3	52.022	1030.8
#2	500.13	9938.1	1036.6	1078.2	977.44	1037.6	52.106	1029.5
#3	494.84	9857.6	1043.6	1063.1	984.81	1038.0	52.164	1035.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**967.49**	**1004.2**	**1003.9**	**9931.0**	**10.041**	**1034.4**	**49.449**	**1003.6**
Stddev	2.90	11.7	11.6	49.9	.081	13.0	.121	17.7
%RSD	.29931	1.1616	1.1558	.50216	.80400	1.2595	.24497	1.7659
#1	967.69	991.82	995.66	9904.5	9.9890	1022.7	49.319	984.53
#2	964.50	1015.0	1017.2	9899.9	10.000	1048.4	49.469	1019.6
#3	970.28	1005.8	998.98	9988.5	10.134	1032.2	49.559	1006.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1017.2**	**49.765**	**987.12**	**966.12**	**1025.9**	**1038.2**	F **5939.**	**1002.7**
Stddev	3.0	.026	3.45	2.72	2.7	2.0	3.	2.1
%RSD	.29778	.05177	.34930	.28155	.25978	.19723	.0530	.21440
#1	1018.4	49.742	986.51	965.60	1026.1	1037.1	5935.	1001.4
#2	1013.8	49.793	984.01	963.71	1023.2	1036.9	5939.	1001.5
#3	1019.5	49.760	990.83	969.07	1028.5	1040.6	5941.	1005.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

Sample Name: 6D10503-CCV2 Acquired: 4/14/2016 12:21:42 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0246

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**979.8**	**1005.5**	**996.41**	**1018.0**	**1008.4**
Stddev	1.7	4.5	4.26	12.2	1.8
%RSD	.1733	.44617	.42797	1.2014	.17993
#1	977.9	1001.3	996.28	1011.6	1008.1
#2	980.9	1004.9	992.21	1032.1	1006.7
#3	980.7	1010.2	1000.7	1010.3	1010.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2391.9**	**697650.**	**20827.**
Stddev	13.3	7969.	74.
%RSD	.55530	1.1423	.35425
#1	2394.8	706070.	20887.
#2	2403.6	690230.	20850.
#3	2377.5	696660.	20745.

Sample Name: 6D10503-CCB2 Acquired: 4/14/2016 12:26:44 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.07706**	**1.4389**	**.03848**	**2.3778**	**.10887**	**.02220**	**-.00060**
Stddev	.30399	12.255	1.0815	.5019	.08397	.03962	.00196
%RSD	394.49	851.69	2810.6	21.108	77.127	178.43	327.73
#1	.14152	8.8113	-.60228	1.8654	.18952	.03087	-.00214
#2	.05151	-12.708	1.2871	2.3995	.02193	.05677	.00161
#3	-.42421	8.2133	-.56942	2.8686	.11516	-.02103	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.00772**	**-.03426**	**.07887**	F **1.5818**	**-2.7509**	**.10178**	**1.7495**
Stddev	.04514	.04296	.20838	.1291	4.1751	.12820	1.0604
%RSD	584.53	125.39	264.21	8.1589	151.77	125.95	60.608
#1	-.02277	-.02934	-.09539	1.4423	1.4738	-.03517	1.2075
#2	.05957	.00603	.02231	1.6063	-2.8521	.21891	2.9714
#3	-.01363	-.07947	.30969	1.6969	-6.8745	.12161	1.0698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				1.5000			
Low Limit				-1.5000			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**-.01743**	**.04780**	**.10437**	**.20137**	**-.60339**	**.14844**	**.96080**
Stddev	.00968	.02031	.15273	.00678	.13023	.55080	1.4447
%RSD	55.555	42.497	146.34	3.3659	21.584	371.04	150.36
#1	-.00656	.06008	.12987	.20428	-.45302	.67490	2.4511
#2	-.02512	.02435	-.05950	.20620	-.68012	.19426	.86489
#3	-.02060	.05897	.24275	.19362	-.67703	-.42383	-.43356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: 6D10503-CCB2 Acquired: 4/14/2016 12:26:44 Type: QC
Method: 6500DUOBB(v965) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**.56394**	F **188.6**	**-.46843**	**-.1192**	**-.94721**	**-.35946**	**.08368**
Stddev	.65580	48.4	.14746	.1285	1.2207	.43818	.28566
%RSD	116.29	25.64	31.480	107.8	128.87	121.90	341.38
#1	-.09738	233.8	-.63859	.0015	-2.1046	-.80472	-.14270
#2	1.2141	137.6	-.38883	-.2543	-1.0652	-.34494	-.01090
#3	.57512	194.4	-.37788	-.1047	.32819	.07129	.40463
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		1.000					
Low Limit		-1.000					

Elem	Zn2062
Units	ppb
Avg	**.23952**
Stddev	.05625
%RSD	23.484
#1	.20446
#2	.30440
#3	.20969
Check ?	Chk Pass
High Limit	
Low Limit	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2392.5**	**697700.**	**20763.**
Stddev	5.5	8956.	161.
%RSD	.22977	1.2836	.77363
#1	2396.6	706540.	20842.
#2	2386.3	688630.	20578.
#3	2394.6	697920.	20869.

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6106003

6D10605

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
6D10605-CAL1	Cal Standard	QC		1		16D0092	
6D10605-CAL2	Cal Standard	QC		2		16B0394	
6D10605-CAL3	Cal Standard	QC		3		16D0093	
6D10605-CAL4	Cal Standard	QC		4		16C0452	
6D10605-CAL5	Cal Standard	QC		5		16D0153	
6D10605-CAL6	Cal Standard	QC		6		16D0036	
6D10605-CAL7	Cal Standard	QC		7		16D0288	
6D10605-CAL8	Cal Standard	QC		8		16D0289	
6D10605-ICV1	Initial Cal Check	QC		9		16D0291	
6D10605-ICB1	Initial Cal Blank	QC		10		16D0092	
6D10605-CRL1	Instrument RL Check	QC		11		16D0157	
6D10605-IFA1	Interference Check A	QC		12		16D0155	
6D10605-IFB1	Interference Check B	QC		13		16D0156	
6D10605-CCV1	Calibration Check	QC		14		16D0292	
6D10605-CCB1	Calibration Blank	QC		15		16D0092	
6D09917-BLK1	Blank	QC		16			
6D09917-BS1	LCS	QC		17			
1604030-02	PROD-1	MET_ICP_6010C_FULL_DIS	A	18			
1604030-02	PROD-1	ET_ICP_6010C_FULL_DIS_	A	19			
6D09917-MS1	Matrix Spike	QC		20			
6D09917-MSD1	Matrix Spike Dup	QC		21			
6D09917-PS1	Post Spike	QC		22			
6D09917-DUP1	Serial Dilution	QC		23			
1604030-04	MW-4	ET_ICP_6010C_FULL_DIS_	A	24			
1604045-07	MW-3	ET_ICP_6010C_FULL_DIS_	A	25			
1604045-08	MW-5	ET_ICP_6010C_FULL_DIS_	A	26			
1604045-09	MW-1	ET_ICP_6010C_FULL_DIS_	A	27			
1604045-10	MW-7	ET_ICP_6010C_FULL_DIS_	A	28			
1604045-11	USFS-1	ET_ICP_6010C_FULL_DIS_	A	29			
1604045-12	USFS-2	ET_ICP_6010C_FULL_DIS_	A	30			
1604058-02	MW-2	ET_ICP_6010C_FULL_DIS_	A	31			
1604058-04	MW-6	ET_ICP_6010C_FULL_DIS_	A	32			
6D10605-CCV2	09H0632	QC		33		16D0292	
6D10605-CCB2	Calibration Blank	QC		34		16D0092	
1604078-02	KAFB-10620-WW01	MET_ICP_6010C_FULL_DIS	A	35			
1603271-02RE1	18MW112-2Q2016	T_ICP_LOW6010C_FULL_	G	36			

Samples Loaded By — Date: 4/19/16

Data Processed By: Betty Quillen — Date: 4/19/16

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6106003

6D10605

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
1604014-03RE1	I8MW119-2Q2016	T_ICP_LOW6010C_FULL_I	G	37			
1604014-04RE1	18MW126-2Q2016	T_ICP_LOW6010C_FULL_I	G	38			
1604034-03RE1	OTC538-GW-MW02	T_ICP_LOW6010C_FULL_I	A	39			
1604034-05RE1	OTC537-GW-MW01	T_ICP_LOW6010C_FULL_I	A	40			
6D09920-DUP2	Serial Dilution	QC		41			
6D10605-CCV3	10A0473	QC		42		16D0292	
6D10605-CCB3	Calibration Blank	QC		43		16D0092	
1604090-04	16TM-VEX-DGM-C-041216	MET_ICP_6010C_FULL	B	44			
6D13009-MS1	Matrix Spike	QC		45			
6D13009-MSD1	Matrix Spike Dup	QC		46			
6D13009-PS1	Post Spike	QC		47			
1604014-03RE2	I8MW119-2Q2016	T_ICP_LOW6010C_FULL_I	G	48			
6D10605-CCV4	10A0473	QC		49		16D0292	
6D10605-CCB4	Calibration Blank	QC		50		16D0092	
1603237-01RE1	CC211-SS/SB-01-0-0.5-032216	T_ICP_LOW6010C_FULL_	A	51			
1603237-02RE1	CC211-SS/SB-01-0-3-4-032216	T_ICP_LOW6010C_FULL_	A	52			
1603237-03RE1	CC211-SS-02-0-0.5-032216	T_ICP_LOW6010C_FULL_	A	53			
1603237-04RE1	CC211-SS/SB-03-0-0.5-032216	T_ICP_LOW6010C_FULL_	A	54			
1603237-05RE1	CC2I1-SS/SB-03-3-4-032216	T_ICP_LOW6010C_FULL_	A	55			
1603237-06RE1	CC211-SS-04-0-0.5-032216	T_ICP_LOW6010C_FULL_	A	56			
1603237-07RE1	CC211-SS/SB-05-0-0.5-032216	T_ICP_LOW6010C_FULL_	A	57			
1603237-08RE1	CC211-SS/SB-05-3-4-032216	T_ICP_LOW6010C_FULL_	A	58			
1603237-09RE1	CC211-SS06-0-0.5-032216	T_ICP_LOW6010C_FULL_	A	59			
1603237-10RE1	CC211-SS/SB-07-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	60			
6DI0605-CCV5	10A0473	QC		61		16D0292	
6D10605-CCB5	Calibration Blank	QC		62		16D0092	
1603237-11RE1	CC211-SS/SB-07-3-4-032316	T_ICP_LOW6010C_FULL_	A	63			
1603237-13RE2	CC211-B-01-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	64			
1603237-14RE1	CC211-B-02-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	65			
1603237-15RE2	CC211-B-03-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	66			
1603237-16RE2	CC211-B-04-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	67			
1603237-17RE2	CC211-B-05-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	68			
1603237-18RE2	CC211-B-06-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	69			
1603237-19RE1	CC211-B-07-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	70			
1603237-20RE1	CC211-B-08-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	71			
1603237-21RE3	C211-B-0000-0-0.5-DUP-0323	T_ICP_LOW6010C_FULL_	A	72			

Samples Loaded By — Date: 4/19/16

Data Processed By: Betty Quillen — Date: 4/19/16

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6106003

6D10605

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
6D10605-CCV6	09H0575	QC		73		16D0292	
6D10605-CCB6	Calibration Blank	QC		74		16D0092	
1603237-15RE3	CC211-B-03-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	75			
1603237-16RE3	CC211-B-04-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	76			
1603237-17RE3	CC211-B-05-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	77			
1603237-18RE3	CC211-B-06-0-0.5-032316	T_ICP_LOW6010C_FULL_	A	78			
1603237-21RE4	C211-B-0000-0-0.5-DUP-0323	T_ICP_LOW6010C_FULL_	A	79			
6D10605-CCV7	09H0575	QC		80		16D0292	
6D10605-CCB7	Calibration Blank	QC		81		16D0092	
1604034-02	OTC538-GW-MW02	MET_ICP_LOW6010C_FULI	E	82			
1604034-04	OTC537-GW-MW01	T_ICP_LOW6010C_FULL_	N	83			
1604034-04	OTC537-GW-MW01	MET_ICP_LOW6010C_FULI	N	84			
6D09919-MS1	Matrix Spike	QC		85			
6D09919-MSD1	Matrix Spike Dup	QC		86			
6D09919-PS1	Post Spike	QC		87			
6D09919-DUP1	Serial Dilution	QC		88			
1604034-06	OTC537-GW-MW01-FD	MET_ICP_LOW6010C_FULI	D	89			
1604042-02	ADS3238	T_ICP_LOW6010C_FULL_	F	90			
1604043-04	OU8-MW-67-040516-	T_ICP_LOW6010C_FULL_	H	91			
1604044-18	RNAS1-EB-1	MET_ICP_LOW6010C_FULI	A	92			
6D10605-CCV8	09H0475	QC		93		16D0292	
6D10605-CCB8	Calibration Blank	QC		94		16D0092	
1604056-03	16MW084-2Q2016	MET_ICP_LOW6010C_FULI	H	95			
1604059-06	SDS-EB040716	T_ICP_LOW6010C_FULL_	D	96			
1604060-01	OTC538-GW-MW01	MET_ICP_LOW6010C_FULI	A	97			
1604061-01	OU8-MW-50_040516	T_ICP_LOW6010C_FULL_	H	98			
1604063-14	RNAS1-EB-2	MET_ICP_LOW6010C_FULI	A	99			
1604066-02	ADS3235	T_ICP_LOW6010C_FULL_	F	100			
1604066-03	ADS3236	T_ICP_LOW6010C_FULL_	F	101			
1604066-04	ADS3237	T_ICP_LOW6010C_FULL_	F	102			
6D10605-CCV9	09H0475	QC		103		16D0292	
6D10605-CCB9	Calibration Blank	QC		104		16D0092	
6D10605-CRL2	Instrument RL Check	QC		105		16D0157	
6D10605-CRL3	Instrument RL Check	QC		106		16D0157	
6D10605-CCVA	09H0475	QC		107		16D0292	
6D10605-CCBA	Calibration Blank	QC		108		16D0092	

Samples Loaded By — Date 4/19/16

Data Processed By Betty Quillen — Date 4/19/16

ANALYSIS SEQUENCE

6D10605

Instrument: ME-ICP

Calibration ID: 6106003

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I

Samples Loaded By — Date: 4/19/16

Data Processed By: Betty Quillen — Date: 4/19/16

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	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
1	1	1	1	QC	6D10605-ICV	16D0291	☒	ICV
2	1	2	1	QC	6D10605-ICB		☒	ICB
3	1	3	1	QC	6D10605-CRL	RLSTDA	☒	RLSTD-A
4	1	4	1	Unk	6D10605-IFA		☐	
5	1	5	1	QC	6D10605-IFB		☒	ICSAB
6	1	6	1	Unk	RINSE		☒	SAMPLE
7	1	7	1	QC	6D10605-CCV1	16D0292	☒	CCV
8	1	8	1	QC	6D10605-CCB1		☒	CCB
9	1	9	1	QC	6D09917-BLK1	PBW041316	☒	PREPBLANK
10	1	10	1	QC	6D09917-BS1	LCSW041316	☒	2007LCS
11	1	11	1	Unk	1604030-02		☒	SAMPLE
12	1	12	1	Unk	6D09917-MS1		☒	SAMPLE
13	1	1	2	Unk	6D09917-MSD1		☒	SAMPLE
14	1	2	2	Unk	6D09917-PS1		☒	SAMPLE
15	1	3	2	Unk	6D09917-DUP1@5X	X5 SRL	☒	SAMPLE
16	1	4	2	Unk	1604030-04		☒	SAMPLE
17	1	5	2	Unk	1604045-07		☒	SAMPLE
18	1	6	2	Unk	1604045-08		☒	SAMPLE
19	1	7	2	Unk	1604045-09		☒	SAMPLE
20	1	8	2	Unk	1604045-10		☒	SAMPLE
21	1	9	2	Unk	1604045-11		☒	SAMPLE
22	1	10	2	Unk	1604045-12		☒	SAMPLE
23	1	11	2	Unk	1604058-02		☒	SAMPLE
24	1	12	2	Unk	1604058-04		☒	SAMPLE
25	1	1	3	QC	6D10605-CCV2	16D0292	☒	CCV
26	1	2	3	QC	6D10605-CCB2		☒	CCB
27	1	3	3	Unk	1604078-02		☒	SAMPLE
28	1	4	3	Unk	1603271-02RE1@5X	LL H20 X5 Mn	☒	SAMPLE
29	1	5	3	Unk	1604014-03RE1@5X	LL H20 X5 Mn	☒	SAMPLE
30	1	6	3	Unk	1604014-04RE1@2X	LL H20 X2 Mn	☒	SAMPLE
31	1	7	3	Unk	1604034-03RE1@5X	LL H20 X5 Ca Mg	☒	SAMPLE
32	1	8	3	Unk	1604034-05RE1@5X	LL H20 X5 Ca Mg	☒	SAMPLE
33	1	9	3	Unk	6D09920-DUP2@25X	LL H20 X25 SRL Ca Mg	☒	SAMPLE
34	0	0	0	Unk			☒	SAMPLE
35	1	11	3	QC	6D10605-CCV3	16D0292	☒	CCV
36	1	12	3	QC	6D10605-CCB3		☒	CCB
37	0	0	0	QC			☒	PREPBLANK
38	0	0	0	QC			☒	2007LCS
39	1	3	4	Unk	1604090-04		☒	SAMPLE
40	1	4	4	Unk	6D13009-MS1		☒	SAMPLE
41	1	5	4	Unk	6D13009-MSD1		☒	SAMPLE
42	1	6	4	Unk	6D13009-PS1		☒	SAMPLE
43	1	7	4	Unk	6D13009-DUP1@5X	X5 SRL	☒	SAMPLE
44	0	0	0	Unk			☒	SAMPLE
45	0	0	0	Unk			☒	SAMPLE
46	0	0	0	QC			☒	PREPBLANK
47	0	0	0	QC			☒	2007LCS
48	0	0	0	Unk			☒	SAMPLE
49	0	0	0	Unk			☒	SAMPLE
50	0	0	0	Unk			☒	SAMPLE
51	0	0	0	Unk			☒	SAMPLE
52	0	0	0	Unk			☒	SAMPLE
53	1	5	5	QC	6D10605-CCV4	16D0292	☒	CCV
54	1	6	5	QC	6D10605-CCB4		☒	CCB
55	1	7	5	QC	6D09919-BLK1	PBW041316 LL H20	☒	PREPBLANK
56	1	8	5	QC	6D09919-BS1	LCSW041316 LL H20	☒	LCSWLOW
57	1	9	5	Unk	1604034-02@5X	LL H20 X5	☒	SAMPLE
58	1	10	5	Unk	1604034-04@5X	LL H20 X5	☒	SAMPLE
59	1	11	5	Unk	6D09919-MS1@5X	LL H20 X5	☒	SAMPLE
60	1	12	5	Unk	6D09919-MSD1@5X	LL H20 X5	☒	SAMPLE
61	2	1	1	Unk	6D09919-PS1@5X	LL H20 X5	☒	SAMPLE

4-15-16
RB

(2)

	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
62	2	2	1	Unk	6D09919-DUP1@25X	LL H20 X25 SRL	☒	SAMPLE
63	2	3	1	Unk	1604034-06@5X	LL H20 X5	☒	SAMPLE
64	2	4	1	Unk			☒	SAMPLE
65	2	5	1	Unk			☒	SAMPLE
66	2	6	1	Unk			☒	SAMPLE
67	2	7	1	Unk			☒	SAMPLE
68	2	8	1	Unk	1604042-02	LL H20	☒	SAMPLE
69	2	9	1	Unk	1604043-04	LL H20	☒	SAMPLE
70	2	10	1	Unk	1604044-18	LL H20	☒	SAMPLE
71	2	11	1	QC	6D10605-CCV5	16D0292	☒	CCV
72	2	12	1	QC	6D10605-CCB5		☒	CCB
73	2	1	2	Unk	1604056-03@5X	LL H20 X5	☒	SAMPLE
74	2	2	2	Unk	1604059-06	LL H20	☒	SAMPLE
75	2	3	2	Unk	1604060-01@2X	LL H20 X2	☒	SAMPLE
76	2	4	2	Unk	1604061-01@2X	LL H20 X2	☒	SAMPLE
77	2	5	2	Unk	1604063-14	LL H20	☒	SAMPLE
78	2	6	2	Unk	1604066-02	LL H20	☒	SAMPLE
79	2	7	2	Unk	1604066-03	LL H20	☒	SAMPLE
80	2	8	2	Unk	1604066-04	LL H20	☒	SAMPLE
81	2	9	2	QC	6D10605-CCV6	16D0292	☒	CCV
82	2	10	2	QC	6D10605-CCB6		☒	CCB
83	2	11	2	Unk	1603237-01RE1@5X	2g->100ml	☒	SAMPLE
84	2	12	2	Unk	1603237-02RE1@5X		☒	SAMPLE
85	2	1	3	Unk	1603237-03RE1@5X		☒	SAMPLE
86	2	2	3	Unk	1603237-04RE1@5X		☒	SAMPLE
87	2	3	3	Unk	1603237-05RE1@5X		☒	SAMPLE
88	2	4	3	Unk	1603237-06RE1@5X		☒	SAMPLE
89	2	5	3	Unk	1603237-07RE1@5X		☒	SAMPLE
90	2	6	3	Unk	1603237-08RE1@5X		☒	SAMPLE
91	2	7	3	Unk	1603237-09RE1@5X		☒	SAMPLE
92	2	8	3	Unk	1603237-10RE1@5X		☒	SAMPLE
93	2	9	3	QC	6D10605-CCV7	16D0292	☒	CCV
94	2	10	3	QC	6D10605-CCB7		☒	CCB
95	2	11	3	Unk	1603237-11RE1@5X	2g->100ml	☒	SAMPLE
96	2	12	3	Unk	1603237-13RE2@50X		☒	SAMPLE
97	2	1	4	Unk	6C29002-MS2@50X		☒	SAMPLE
98	2	2	4	Unk	6C29002-MSD2@50X		☒	SAMPLE
99	2	3	4	Unk	6C29002-PS2@50X		☒	SAMPLE
100	2	4	4	Unk	6C29002-DUP2@250X	X250 SRL	☒	SAMPLE
101	2	5	4	Unk	1603237-14RE1@5X		☒	SAMPLE
102	2	6	4	Unk	1603237-15RE1@5X	RE2	☒	SAMPLE
103	2	7	4	Unk	1603237-16RE1@5X	RE2	☒	SAMPLE
104	2	8	4	Unk	1603237-17RE1@5X	RE2	☒	SAMPLE
105	2	9	4	Unk	1603237-18RE1@5X	RE2	☒	SAMPLE
106	2	10	4	Unk	1603237-19RE1@5X		☒	SAMPLE
107	2	11	4	Unk	1603237-20RE1@5X		☒	SAMPLE
108	2	12	4	Unk	1603237-21RE1@5X	RE3	☒	SAMPLE
109	2	1	5	QC	6D10605-CCV8	16D0292	☒	CCV
110	2	2	5	QC	6D10605-CCB8		☒	CCB
111	2	3	5	QC	6D10204-CRL		☒	RLSTD-A
112	2	4	5	QC	6D10204-CRL		☒	RLSTD-A
113	2	5	5	QC	6D10605-CCV9	16D0292	☒	CCV
114	2	6	5	QC	6D10605-CCB9		☒	CCB

Sample Name: SEQ-CAL1 Acquired: 4/15/2016 9:24:46 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00024**	**.00220**	**-.00251**	**.00005**	**.02513**	**.00044**	**.00225**
Stddev	.00001	.00032	.00032	.00002	.00166	.00005	.00014
%RSD	4.4297	14.789	12.552	30.025	6.6002	11.240	6.2315
#1	.00025	.00229	-.00227	.00006	.02355	.00039	.00239
#2	.00023	.00184	-.00287	.00004	.02686	.00044	.00211
#3	.00024	.00246	-.00239	.00007	.02499	.00049	.00224

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02045**	**.02027**	**.00011**	**.00027**	**-.00016**	**-.00538**	**-.00014**
Stddev	.00180	.00091	.00000	.00001	.00011	.00044	.00002
%RSD	8.7987	4.4959	2.7636	3.6222	66.159	8.1721	13.560
#1	.01990	.01938	.00011	.00027	-.00028	-.00489	-.00012
#2	.02247	.02120	.00011	.00029	-.00015	-.00574	-.00015
#3	.01900	.02023	.00011	.00027	-.00006	-.00552	-.00014

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**.00008**	**-.00086**	**.00989**	**.03989**	**-.00436**	**.00755**
Stddev	.00003	.00001	.00082	.00019	.00054	.00251	.00087
%RSD	507.61	15.657	94.933	1.8786	1.3647	57.682	11.592
#1	-.00002	.00009	.00005	.00991	.04051	-.00146	.00688
#2	.00004	.00008	-.00154	.01007	.03968	-.00560	.00722
#3	.00000	.00006	-.00110	.00970	.03949	-.00600	.00854

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00512**	**7.375**	**-.00336**	**-.0022**	**.00133**	**-.00336**	**-.00011**
Stddev	.00006	.435	.00032	.0008	.00012	.00082	.00001
%RSD	1.2327	5.904	9.4951	34.84	9.0057	24.277	8.7234
#1	.00514	6.886	-.00299	-.0031	.00145	-.00403	-.00013
#2	.00505	7.517	-.00350	-.0019	.00134	-.00359	-.00011
#3	.00517	7.722	-.00358	-.0017	.00121	-.00245	-.00011

Sample Name: SEQ-CAL1 Acquired: 4/15/2016 9:24:46 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Zn2062
Units	Cts/S
Avg	**.00694**
Stddev	.00103
%RSD	14.841
#1	.00756
#2	.00751
#3	.00575

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2420.1**	**693330.**	**19892.**
Stddev	3.7	2469.	121.
%RSD	.15268	.35603	.60643
#1	2417.6	695810.	19767.
#2	2424.3	693320.	20008.
#3	2418.4	690870.	19900.

Sample Name: SEQ-CAL2 Acquired: 4/15/2016 9:35:58 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00134**	**.22009**	**.04741**	**.00107**	**1.0016**	**.29784**	**.11173**	**3.6882**
Stddev	.00003	.00144	.00034	.00001	.0021	.00172	.00077	.0050
%RSD	2.2232	.65595	.71528	.83235	.20893	.57859	.68691	.13679
#1	.00137	.21872	.04765	.00107	.99915	.29585	.11089	3.6872
#2	.00134	.21996	.04702	.00108	1.0028	.29877	.11241	3.6838
#3	.00131	.22160	.04757	.00106	1.0028	.29890	.11189	3.6937

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.98029**	**.00513**	**.00932**	**.08690**	**.01677**	**.00090**	**.03783**	**.48454**
Stddev	.00421	.00002	.00005	.00044	.00108	.00001	.00018	.00133
%RSD	.42985	.29714	.56687	.51165	6.4617	1.1315	.47707	.27471
#1	.98243	.00514	.00937	.08648	.01733	.00090	.03801	.48531
#2	.97544	.00512	.00931	.08737	.01747	.00089	.03783	.48300
#3	.98301	.00512	.00927	.08685	.01552	.00091	.03765	.48531

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899	Sr4215	Ti3349
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.56061**	**.21477**	**.10919**	**.06002**	**9.709**	**.08421**	**.3059**	**.02641**
Stddev	.00228	.00081	.00031	.00043	1.105	.00111	.0019	.00014
%RSD	.40612	.37605	.28250	.72270	11.38	1.3138	.6170	.53898
#1	.56167	.21384	.10906	.05978	9.794	.08340	.3037	.02625
#2	.55799	.21529	.10897	.06052	8.563	.08376	.3071	.02652
#3	.56216	.21518	.10954	.05977	10.77	.08547	.3068	.02645

Elem	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S
Avg	**.08353**	**.00526**	**1.4371**
Stddev	.00067	.00002	.0044
%RSD	.80212	.36650	.30394
#1	.08294	.00528	1.4390
#2	.08426	.00525	1.4321
#3	.08340	.00525	1.4402

Sample Name: SEQ-CAL2 Acquired: 4/15/2016 9:35:58 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2480.2**	**702740.**	**20422.**
Stddev	5.0	1647.	87.
%RSD	.20000	.23430	.42737
#1	2475.4	702830.	20353.
#2	2485.3	701040.	20393.
#3	2480.0	704330.	20520.

Sample Name: SEQ-CAL4 Acquired: 4/15/2016 9:43:43 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Ba2335	Mn2576
Units	Cts/S	Cts/S	Cts/S
Avg	**.10852**	**94.198**	**3.5363**
Stddev	.00077	.125	.0190
%RSD	.70518	.13314	.53611
#1	.10937	94.097	3.5248
#2	.10788	94.339	3.5259
#3	.10831	94.158	3.5582

Int. Std.	Sc1880	Sc3613
Units	Cts/S	Cts/S
Avg	2478.9	**708230.**
Stddev	4.1	2637.
%RSD	.16476	.37237
#1	2476.7	705810.
#2	2483.6	711040.
#3	2476.4	707830.

Sample Name: SEQ-CAL3 Acquired: 4/15/2016 9:39:37 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02722**	**.42844**	**.49391**	**.01986**	**18.123**	**3.0245**	**4.8662**	**35.962**
Stddev	.00024	.00231	.00020	.00018	.019	.0077	.0063	.018
%RSD	.89383	.53868	.04039	.90301	.10259	.25366	.12970	.05025
#1	.02748	.42645	.49404	.02000	18.144	3.0162	4.8608	35.942
#2	.02717	.43097	.49401	.01992	18.109	3.0313	4.8731	35.969
#3	.02700	.42791	.49368	.01966	18.115	3.0261	4.8648	35.976

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**9.1662**	**.04736**	**.08868**	**.15657**	**.20633**	**.00875**	**.14457**	**.34821**
Stddev	.0057	.00038	.00086	.00007	.00152	.00012	.00029	.00406
%RSD	.06203	.80915	.96778	.04288	.73733	1.4021	.20078	1.1646
#1	9.1604	.04778	.08939	.15654	.20580	.00882	.14441	.35138
#2	9.1664	.04726	.08892	.15664	.20804	.00881	.14490	.34960
#3	9.1718	.04703	.08772	.15652	.20514	.00860	.14440	.34364

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4.9595**	**3.9085**	**5.0170**	**2.1033**	**1.0301**	**.55364**	**307.1**	**1.7967**
Stddev	.0102	.0071	.0066	.0009	.0005	.00050	3.3	.0015
%RSD	.20502	.18072	.13261	.04491	.05027	.09074	1.079	.08277
#1	4.9500	3.9003	5.0233	2.1041	1.0307	.55373	308.0	1.7950
#2	4.9584	3.9123	5.0100	2.1023	1.0297	.55310	303.4	1.7977
#3	4.9702	3.9128	5.0178	2.1036	1.0300	.55409	309.8	1.7973

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.010**	**.25136**	**.84171**	**.05292**	**13.153**
Stddev	.009	.00082	.00162	.00043	.035
%RSD	.3064	.32785	.19250	.81662	.26365
#1	3.000	.25131	.84355	.05340	13.115
#2	3.018	.25221	.84048	.05280	13.162
#3	3.012	.25056	.84110	.05257	13.182

Sample Name: SEQ-CAL3 Acquired: 4/15/2016 9:39:37 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2420.4	701790.	20059.
Stddev	6.5	7242.	49.
%RSD	.26693	1.0320	.24633
#1	2416.3	697690.	20081.
#2	2427.8	697520.	20003.
#3	2417.1	710150.	20094.

Sample Name: SEQ-CAL5 Acquired: 4/15/2016 9:47:49 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Al3961	Fe2611	Mg2790
Units	Cts/S	Cts/S	Cts/S
Avg	**20.500**	**7.7194**	**1.4387**
Stddev	.263	.0137	.0030
%RSD	1.2826	.17745	.21158
#1	20.299	7.7334	1.4353
#2	20.404	7.7060	1.4395
#3	20.798	7.7187	1.4412

Int. Std.	Sc3613-2
Units	Cts/S
Avg	**19250.**
Stddev	65.
%RSD	.33781
#1	19281.
#2	19293.
#3	19175.

Sample Name: SEQ-CAL6 Acquired: 4/15/2016 9:52:01 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	B_2496	Be3130	Cd2144	Co2286	Cr2677	Cu3247	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4.8239**	**.09378**	**28.622**	**340.99**	**95.849**	**.45433**	**.87928**	**.08119**
Stddev	.0078	.00004	.549	3.91	.066	.00427	.00375	.00049
%RSD	.16077	.03773	1.9170	1.1460	.06904	.94057	.42633	.60823
#1	4.8324	.09382	28.546	343.64	95.925	.45504	.87503	.08062
#2	4.8221	.09376	29.205	336.50	95.806	.44974	.88214	.08139
#3	4.8172	.09376	28.116	342.84	95.816	.45820	.88065	.08155

Elem	Mo2020	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899	Sr4215
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**47.685**	**51.747**	**22.345**	**10.115**	**5.1956**	**897.3**	**8.8222**	**30.31**
Stddev	.028	.070	.032	.018	.0102	19.5	.0056	.27
%RSD	.05803	.13517	.14523	.17768	.19707	2.171	.06401	.8982
#1	47.715	51.827	22.380	10.133	5.2030	919.6	8.8245	30.44
#2	47.660	51.719	22.340	10.115	5.1999	888.7	8.8157	29.99
#3	47.681	51.696	22.316	10.097	5.1839	883.6	8.8263	30.49

Elem	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.4376**	**8.5936**	**.50352**	**126.47**
Stddev	.0056	.0117	.00456	.58
%RSD	.23145	.13638	.90615	.45650
#1	2.4311	8.6070	.50452	127.07
#2	2.4402	8.5853	.49854	126.43
#3	2.4414	8.5885	.50750	125.92

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2427.7**	**703410.**	**20289.**
Stddev	4.9	1081.	92.
%RSD	.20083	.15370	.45197
#1	2422.4	704530.	20202.
#2	2428.7	702380.	20279.
#3	2432.0	703310.	20385.

Sample Name: SEQ-CAL7 Acquired: 4/15/2016 9:56:55 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	K_7664	Na5895
Units	Cts/S	Cts/S
Avg	**1.9788**	**7.2199**
Stddev	.0037	.0128
%RSD	.18926	.17730
#1	1.9806	7.2314
#2	1.9745	7.2223
#3	1.9813	7.2061

Int. Std.	Sc3613-2
Units	Cts/S
Avg	**19963.**
Stddev	122.
%RSD	.61309
#1	19822.
#2	20020.
#3	20046.

Sample Name: SEQ-CAL8 Acquired: 4/15/2016 10:00:34 Type: Cal
Method: 6500DUOBB(v965) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ca3179	Mg2790	Na5895
Units	Cts/S	Cts/S	Cts/S
Avg	**45.730**	**.29099**	**39.504**
Stddev	.473	.00075	.941
%RSD	1.0336	.25846	2.3832
#1	45.228	.29100	39.700
#2	46.167	.29173	40.332
#3	45.793	.29023	38.480

Int. Std.	Sc3613-2
Units	Cts/S
Avg	**18804.**
Stddev	126.
%RSD	.66891
#1	18940.
#2	18691.
#3	18783.

Sample Name: 6D10605-ICV Acquired: 4/15/2016 10:28:58 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0245

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**476.54**	F **10560.**	F **1052.7**	F **1059.2**	**989.94**	**1042.6**	**52.332**
Stddev	6.63	19.	3.0	14.4	.49	1.2	.048
%RSD	1.3908	.17999	.28503	1.3642	.04947	.11688	.09260
#1	481.14	10542.	1051.0	1068.9	989.74	1041.7	52.373
#2	468.94	10580.	1056.1	1042.6	990.50	1044.0	52.345
#3	479.54	10559.	1050.9	1066.2	989.58	1042.1	52.279
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value		10000.	1000.0	1000.0			
Range		±500.00	±50.000	±50.000			

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1019.7**	F **947.07**	**970.95**	**1033.2**	**9821.2**	**10.424**	F **1050.9**
Stddev	1.8	.93	12.89	14.3	30.0	.075	7.2
%RSD	.17886	.09778	1.3279	1.3810	.30585	.72366	.68972
#1	1019.4	946.57	981.11	1041.3	9808.0	10.337	1055.3
#2	1021.6	948.14	956.44	1016.8	9800.1	10.460	1042.6
#3	1018.0	946.50	975.29	1041.7	9855.6	10.474	1054.9
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		1000.0					1000.0
Range		±-50.000					±50.000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**49.789**	**980.38**	**1010.4**	**48.974**	**974.50**	**959.05**	**1008.3**
Stddev	.084	4.08	1.6	.099	.56	2.92	.7
%RSD	.16860	.41610	.15931	.20157	.05740	.30452	.06971
#1	49.706	982.99	1009.8	49.086	973.91	960.49	1007.8
#2	49.786	982.48	1012.2	48.901	975.03	960.98	1009.1
#3	49.874	975.68	1009.2	48.934	974.55	955.69	1008.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D10605-ICV Acquired: 4/15/2016 10:28:58 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0245

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**1034.9**	F **12300.**	**987.28**	**1009.**	**999.83**	**1004.2**	**1011.2**
Stddev	1.0	61.	.82	2.	.69	1.3	14.2
%RSD	.09776	.4955	.08313	.1902	.06916	.13050	1.4043
#1	1035.8	12340.	987.96	1011.	999.04	1004.4	1020.2
#2	1035.2	12320.	986.37	1008.	1000.1	1005.4	994.79
#3	1033.8	12230.	987.51	1008.	1000.3	1002.8	1018.5
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		500.0					
Range		±25.00					

Elem	Zn2062
Units	ppb
Avg	**1010.0**
Stddev	1.7
%RSD	.16356
#1	1009.9
#2	1011.7
#3	1008.4
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2377.9**	**690870.**	**19873.**
Stddev	2.4	7857.	71.
%RSD	.09927	1.1373	.35896
#1	2380.5	685120.	19871.
#2	2376.0	699820.	19945.
#3	2377.1	687660.	19803.

Sample Name: 6D10605-ICB Acquired: 4/15/2016 10:33:39 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.02218**	**6.6210**	**.87771**	**1.8664**	**.05285**	**.03706**	**-.00092**
Stddev	.23253	5.4925	.57408	.7172	.06206	.04937	.00266
%RSD	1048.2	82.956	65.407	38.427	117.41	133.21	288.46
#1	-.27398	12.046	.98310	2.0318	.08482	.03479	-.00144
#2	.18446	6.7535	.25823	2.4865	-.01867	-.01113	-.00329
#3	.02297	1.0634	1.3918	1.0810	.09241	.08753	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.05739**	**.28006**	**.12194**	F **1.9460**	**17.289**	**.01242**	**.39733**
Stddev	.01242	.02076	.21339	.2961	6.792	.03786	.94307
%RSD	21.633	7.4145	175.00	15.214	39.283	304.84	237.35
#1	.05742	.26030	.26254	2.0313	12.553	-.01503	-.50386
#2	.04496	.27816	-.12360	1.6167	14.244	.05561	1.3773
#3	.06980	.30170	.22688	2.1900	25.070	-.00332	.31851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				1.5000			
Low Limit				-1.5000			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**-.00760**	**.01428**	**.30286**	**-.02558**	**-.69825**	**-.63276**	**3.2344**
Stddev	.01353	.02171	.17726	.00476	.20573	.70477	.2184
%RSD	178.06	152.09	58.528	18.625	29.464	111.38	6.7515
#1	-.01634	-.00678	.20979	-.02743	-.46082	-.72680	2.9845
#2	.00799	.01303	.19153	-.02017	-.81014	-1.2858	3.3885
#3	-.01445	.03658	.50728	-.02915	-.82380	.11430	3.3302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: 6D10605-ICB Acquired: 4/15/2016 10:33:39 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**-.80269**	F **24.52**	**.34961**	**-.1857**	**1.3483**	**.41405**	**.04797**
Stddev	2.5501	22.99	.12023	.1132	1.0351	.59189	.34337
%RSD	317.70	93.76	34.390	60.94	76.769	142.95	715.83
#1	-3.7140	14.48	.26186	-.3152	.45892	.99368	.07463
#2	1.0353	8.250	.48665	-.1057	1.1015	.43783	-.30795
#3	.27061	50.81	.30031	-.1363	2.4844	-.18937	.37723
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		1.000					
Low Limit		-1.000					

Elem	Zn2062
Units	ppb
Avg	**.10670**
Stddev	.10836
%RSD	101.55
#1	.21142
#2	.11367
#3	-.00497
Check ?	Chk Pass
High Limit	
Low Limit	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2368.5	685000.	19647.
Stddev	3.4	811.	67.
%RSD	.14364	.11844	.34156
#1	2371.2	684060.	19633.
#2	2369.7	685510.	19589.
#3	2364.7	685410.	19721.

Sample Name: 6D10605-CRL Acquired: 4/15/2016 10:47:48 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**2.5907**	**213.25**	**5.2587**	**32.012**	**10.410**	**2.1068**	**2.2119**	**2.1414**
Stddev	.2862	22.93	1.5950	.122	.078	.0521	.0025	.0117
%RSD	11.048	10.755	30.330	.38124	.74622	2.4748	.11396	.54700
#1	2.4627	188.26	6.2751	32.112	10.322	2.1293	2.2131	2.1300
#2	2.3908	218.15	6.0806	31.876	10.470	2.0472	2.2135	2.1409
#3	2.9186	233.34	3.4204	32.050	10.437	2.1439	2.2090	2.1534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**10.383**	**4.2898**	**11.154**	**119.18**	**3.1700**	**5.9531**	**3.1976**	**6.4460**
Stddev	.142	.2052	.252	4.68	.0540	.4921	.0115	.0742
%RSD	1.3652	4.7825	2.2632	3.9262	1.7026	8.2663	.36009	1.1507
#1	10.221	4.0977	10.863	116.45	3.2245	6.5159	3.2056	6.4400
#2	10.441	4.2658	11.296	116.50	3.1166	5.6040	3.1844	6.3750
#3	10.485	4.5059	11.304	124.58	3.1687	5.7394	3.2029	6.5230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**10.348**	**3.1246**	**5.6659**	**3.3608**	**11.270**	**4.3836**	F **51.31**	**20.326**
Stddev	.046	.0079	.0669	.7289	.698	1.4914	5.17	.285
%RSD	.44275	.25402	1.1815	21.689	6.1966	34.023	10.08	1.4046
#1	10.395	3.1337	5.5980	2.8596	10.469	2.9080	50.05	20.027
#2	10.346	3.1210	5.7318	3.0258	11.588	4.3525	56.99	20.595
#3	10.304	3.1192	5.6678	4.1971	11.752	5.8903	46.88	20.356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							3.000	
Range							±.6000	

Sample Name: 6D10605-CRL Acquired: 4/15/2016 10:47:48 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**6.053**	**10.570**	**8.7727**	**9.8988**	**10.307**
Stddev	.109	.450	.8472	.1094	.090
%RSD	1.800	4.2593	9.6577	1.1054	.87254
#1	6.135	10.400	8.2579	9.9225	10.203
#2	5.929	10.230	9.7506	9.9944	10.362
#3	6.095	11.081	8.3097	9.7795	10.356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2433.5**	**698100.**	**19946.**
Stddev	7.1	5550.	18.
%RSD	.29275	.79499	.09032
#1	2441.0	695550.	19962.
#2	2432.7	704470.	19950.
#3	2426.9	694280.	19926.

Sample Name: 6D10605-IFA Acquired: 4/15/2016 10:51:51 Type: Unk
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.87341**	**521550.**	**.09057**	**2.1411**	**.49262**	**-.04166**	**503.58**
Stddev	.30234	5102.	1.1806	.7130	.02457	.06726	2.15
%RSD	34.616	.97814	1303.5	33.299	4.9878	161.44	.42735
#1	-.53850	518680.	-.85420	1.6383	.47766	-.10491	501.14
#2	-.95549	518540.	1.4141	1.8280	.52098	-.04906	504.39
#3	-1.1262	527440.	-.28817	2.9571	.47923	.02899	505.21

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.44581**	**-2.3901**	**-.79524**	**.71985**	**197140.**	**-.04336**	**-19.566**
Stddev	.06317	.1973	.16702	.06464	404.	.03686	.219
%RSD	14.170	8.2551	21.003	8.9803	.20499	85.015	1.1189
#1	.51201	-2.3061	-.74339	.70857	197570.	-.02700	-19.349
#2	.38618	-2.2487	-.66029	.66159	196770.	-.08558	-19.561
#3	.43924	-2.6156	-.98204	.78939	197080.	-.01751	-19.787

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**462.62**	**-1.9116**	**.22600**	**.11228**	**-1.0679**	**.10405**	**2.1882**
Stddev	1.60	.0406	.18232	.01038	.2817	2.1131	2.9445
%RSD	.34560	2.1254	80.673	9.2445	26.382	2030.7	134.56
#1	464.35	-1.8687	.02537	.10045	-1.1101	-2.2556	.90842
#2	461.19	-1.9167	.38155	.11652	-1.3262	1.8216	5.5560
#3	462.34	-1.9495	.27109	.11986	-.76745	.74611	.10022

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**3.1526**	**162.9**	**-5.2658**	**-1.981**	**-30.920**	**-.06520**	**1.0674**
Stddev	4.0304	9.3	.4395	.124	.234	1.9833	.2062
%RSD	127.85	5.702	8.3470	6.271	.75683	3042.1	19.314
#1	-1.4886	156.5	-5.4061	-2.124	-31.097	2.1879	1.1288
#2	5.1747	158.6	-4.7733	-1.897	-31.007	-1.5468	.83750
#3	5.7716	173.5	-5.6181	-1.921	-30.655	-.83672	1.2359

Sample Name: 6D10605-IFA Acquired: 4/15/2016 10:51:51 Type: Unk
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Zn2062
Units	ppb
Avg	**-.98335**
Stddev	.05085
%RSD	5.1712
#1	-.99044
#2	-.92933
#3	-1.0303

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2077.6**	**638200.**	**18566.**
Stddev	6.4	4435.	89.
%RSD	.30996	.69491	.47771
#1	2077.0	633140.	18465.
#2	2071.5	640050.	18631.
#3	2084.3	641420.	18603.

Sample Name: 6D10605-IFB Acquired: 4/15/2016 10:56:41 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**199.19**	**514160.**	**108.45**	**3.5170**	**541.81**	**520.95**	**495.49**
Stddev	1.22	5012.	1.92	.9873	.79	.46	2.04
%RSD	.61358	.97487	1.7725	28.071	.14542	.08758	.41173
#1	199.74	508770.	110.45	2.7547	542.19	521.46	496.73
#2	200.04	515010.	108.29	4.6322	540.91	520.79	496.60
#3	197.79	518690.	106.62	3.1640	542.34	520.59	493.13
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1017.3**	**482.08**	**463.79**	**549.84**	**196290.**	**-.04585**	**-18.155**
Stddev	2.4	.84	2.29	1.20	310.	.03393	3.143
%RSD	.23741	.17414	.49392	.21760	.15788	73.993	17.315
#1	1019.1	482.79	464.77	551.22	196220.	-.07479	-18.783
#2	1014.5	481.15	465.43	549.02	196020.	-.00851	-14.745
#3	1018.2	482.31	461.17	549.29	196630.	-.05426	-20.937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**462.14**	**457.29**	**.78845**	**.12592**	**956.27**	**45.374**	**655.61**
Stddev	.71	1.13	.47983	.01552	1.78	.171	2.02
%RSD	.15370	.24754	60.857	12.322	.18630	.37730	.30754
#1	462.95	458.60	1.2987	.10939	956.62	45.205	656.28
#2	461.67	456.64	.34636	.14018	954.34	45.369	653.34
#3	461.78	456.64	.72028	.12818	957.85	45.547	657.20
Check ?	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D10605-IFB Acquired: 4/15/2016 10:56:41 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**54.312**	**235.5**	**-5.4220**	**1060.**	**-31.246**	**102.02**	**489.11**
Stddev	1.340	9.1	.4190	1.	.406	1.76	2.38
%RSD	2.4680	3.873	7.7270	.0953	1.3000	1.7223	.48587
#1	54.902	232.9	-5.0236	1059.	-31.232	100.63	489.68
#2	55.257	228.1	-5.8588	1061.	-31.659	104.00	491.14
#3	52.778	245.7	-5.3836	1061.	-30.847	101.45	486.50
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Zn2062
Units	ppb
Avg	**984.27**
Stddev	1.85
%RSD	.18781
#1	985.84
#2	982.23
#3	984.75
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2067.5**	**643550.**	**18794.**
Stddev	2.7	1927.	21.
%RSD	.13300	.29946	.11422
#1	2070.2	642420.	18775.
#2	2067.4	645770.	18818.
#3	2064.7	642450.	18790.

Sample Name: 6D10605-CCV1 Acquired: 4/15/2016 11:05:39 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0246

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**499.92**	**10538.**	**1039.4**	**1053.9**	**997.64**	**1047.9**	**52.379**	**1007.9**
Stddev	2.00	4.	2.2	2.1	1.23	2.1	.054	1.7
%RSD	.40081	.03931	.20727	.19732	.12309	.19818	.10285	.16899
#1	499.84	10540.	1039.2	1056.2	997.49	1045.6	52.318	1006.4
#2	497.95	10533.	1037.4	1052.3	996.49	1048.2	52.416	1007.7
#3	501.96	10540.	1041.7	1053.1	998.94	1049.7	52.404	1009.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**962.94**	**1013.6**	**1061.1**	**10150.**	**10.786**	**1084.9**	**49.287**	**1006.3**
Stddev	.93	4.3	3.9	12.	.039	3.8	.163	10.5
%RSD	.09671	.42719	.36477	.12117	.36316	.35242	.33013	1.0423
#1	962.13	1012.8	1065.0	10149.	10.797	1082.6	49.102	994.18
#2	962.73	1009.7	1057.3	10138.	10.742	1089.3	49.410	1012.0
#3	963.96	1018.3	1061.1	10163.	10.818	1082.7	49.349	1012.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1015.9**	**48.161**	**982.93**	**959.46**	**1004.0**	**1020.7**	F **2641.**	**995.13**
Stddev	2.0	.124	1.28	1.42	1.1	2.6	8.	1.98
%RSD	.20057	.25668	.13059	.14805	.10842	.25124	.2869	.19868
#1	1014.0	48.059	982.22	958.14	1005.2	1020.1	2633.	993.60
#2	1015.6	48.298	982.16	959.28	1003.6	1023.5	2642.	994.43
#3	1018.0	48.125	984.41	960.96	1003.2	1018.4	2648.	997.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

Sample Name: 6D10605-CCV1 Acquired: 4/15/2016 11:05:39 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0246

Elem	Sr4215	Ti3349	TI1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**992.9**	**1042.8**	**1005.0**	**1037.8**	**1000.8**
Stddev	3.0	.7	2.4	4.1	2.4
%RSD	.3003	.06536	.24147	.39987	.23885
#1	990.0	1043.6	1003.9	1035.4	998.62
#2	996.0	1042.4	1003.4	1035.4	1000.3
#3	992.7	1042.5	1007.8	1042.6	1003.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2375.2**	**690680.**	**19799.**
Stddev	2.0	552.	68.
%RSD	.08487	.07998	.34159
#1	2376.7	691320.	19723.
#2	2375.9	690340.	19851.
#3	2372.9	690390.	19823.

Sample Name: 6D10605-CCB1 Acquired: 4/15/2016 11:10:04 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.21586**	**1.0687**	**-.03395**	**1.5663**	**-.00912**	**.01771**	**-.00249**	**.00142**
Stddev	.32133	3.1077	1.2097	.3542	.08357	.08112	.00121	.01895
%RSD	148.87	290.78	3563.3	22.614	916.14	458.08	48.530	1339.0
#1	.10910	3.7397	-1.3181	1.1614	-.05466	-.03315	-.00251	-.01836
#2	-.53344	-2.3421	.13217	1.8185	-.06004	.11126	-.00370	.01943
#3	-.22323	1.8086	1.0841	1.7191	.08733	-.02498	-.00128	.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**.14032**	**.19071**	**1.2775**	**10.748**	**.04163**	**-2.2118**	**-.00510**	**.00704**
Stddev	.06599	.15053	.3496	3.567	.04384	2.6552	.01834	.03083
%RSD	47.028	78.933	27.363	33.190	105.31	120.05	359.40	438.03
#1	.08423	.29654	1.4620	9.5937	.00699	.75259	-.00451	-.02741
#2	.21303	.01838	1.4963	7.9012	.02697	-4.3717	-.02373	.01651
#3	.12369	.25720	.87436	14.750	.09092	-3.0164	.01293	.03202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.29602**	**-.04810**	**-.68536**	**.13368**	**1.8483**	**-1.2111**	F **20.52**	**.07412**
Stddev	.16901	.00237	.32334	.81951	.8333	1.6479	20.81	.07770
%RSD	57.093	4.9214	47.179	613.06	45.086	136.07	101.4	104.83
#1	.19493	-.04576	-.99575	-.79626	2.1811	-.69436	30.33	.02704
#2	.20201	-.05049	-.35046	.75038	.90004	.11662	-3.385	.16380
#3	.49113	-.04807	-.70989	.44691	2.4639	-3.0554	34.61	.03152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							1.000	
Low Limit							-1.000	

Sample Name: 6D10605-CCB1 Acquired: 4/15/2016 11:10:04 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4215	Ti3349	TI1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**-.0808**	**.88582**	**-.23505**	**.43111**	**.08296**
Stddev	.2095	1.7834	.03442	.18256	.14398
%RSD	259.4	201.33	14.642	42.347	173.56
#1	-.1586	2.2555	-.26768	.46506	.24819
#2	.1566	-1.1308	-.19909	.23395	-.01563
#3	-.2402	1.5328	-.23840	.59431	.01631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2424.7**	**698370.**	**20008.**
Stddev	4.4	444.	104.
%RSD	.18237	.06354	.52134
#1	2426.0	698790.	20100.
#2	2428.3	698410.	20031.
#3	2419.7	697910.	19895.

6 BLQ 4/15/16

Sample Name: 6D10605-CCV~~5~~ Acquired: 4/15/2016 17:44:33 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0292

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**514.78**	**10857.**	**1029.2**	**1063.6**	**985.82**	**1053.1**	**52.858**	**1035.7**
Stddev	4.86	17.	6.0	8.8	3.97	2.3	.094	4.2
%RSD	.94363	.15616	.58443	.82947	.40233	.22130	.17791	.40866
#1	515.58	10840.	1031.2	1064.8	988.07	1055.6	52.955	1034.7
#2	509.58	10874.	1022.4	1054.2	981.24	1052.8	52.850	1032.0
#3	519.19	10855.	1033.9	1071.7	988.15	1051.0	52.768	1040.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**967.52**	**1058.1**	**1044.5**	**10430.**	**10.862**	**1066.2**	**49.508**	**996.56**
Stddev	3.54	9.9	8.3	24.	.055	11.7	.040	14.49
%RSD	.36599	.93585	.79214	.23364	.50327	1.0956	.08097	1.4539
#1	968.88	1059.0	1046.1	10406.	10.804	1066.2	49.532	992.98
#2	963.50	1047.8	1035.5	10429.	10.912	1054.6	49.530	984.20
#3	970.17	1067.6	1051.8	10454.	10.872	1077.9	49.461	1012.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1037.4**	**47.893**	**974.49**	**958.75**	**1009.7**	**1034.7**	F **3388.**	**1006.7**
Stddev	3.7	.186	3.38	4.40	6.5	2.9	26.	3.5
%RSD	.35722	.38837	.34652	.45856	.64348	.27660	.7688	.34826
#1	1037.0	48.098	975.89	957.21	1009.1	1033.4	3408.	1007.0
#2	1033.9	47.845	970.64	955.34	1003.5	1032.8	3359.	1003.1
#3	1041.2	47.735	976.95	963.71	1016.4	1038.0	3398.	1010.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

8 BLQ 4/15/16

Sample Name: 6D10605-CCV~~5~~ Acquired: 4/15/2016 17:44:33 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0292

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**1001.**	**1049.0**	**998.12**	**1070.9**	**1026.5**
Stddev	2.	1.2	5.62	11.0	3.4
%RSD	.2210	.11260	.56295	1.0253	.33482
#1	1003.	1047.8	999.60	1071.3	1026.1
#2	999.9	1050.1	991.92	1059.7	1023.3
#3	999.4	1049.1	1002.9	1081.6	1030.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2460.3**	**714990.**	**20233.**
Stddev	9.6	5851.	103.
%RSD	.39154	.81836	.50779
#1	2458.0	711670.	20227.
#2	2470.9	721740.	20133.
#3	2452.1	711550.	20338.

q BLQ 4/15/16

Sample Name: 6D10605-CCB~~5~~ Acquired: 4/15/2016 17:48:59 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.54038**	**-15.927**	**.27644**	**1.2341**	**.14264**	**.05450**	**.00003**	**-.04233**
Stddev	.34253	9.729	.84736	.6260	.08196	.03139	.00177	.04301
%RSD	63.387	61.082	306.52	50.724	57.460	57.598	6086.2	101.60
#1	-.92215	-24.908	.76397	.62532	.09578	.02382	-.00076	-.06203
#2	-.43904	-17.282	-.70200	1.8759	.09486	.05312	-.00121	-.07198
#3	-.25996	-5.5923	.76736	1.2009	.23728	.08655	.00206	.00700
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**.03105**	**-.10469**	**.59819**	**2.5440**	**.01407**	**.30555**	**-.00084**	**.17527**
Stddev	.22205	.35892	.22588	2.9983	.01085	2.0462	.01585	.02293
%RSD	715.13	342.83	37.760	117.86	77.124	669.68	1877.9	13.084
#1	.26902	-.34178	.85822	1.6670	.02660	-1.6526	-.01909	.20095
#2	-.00527	-.28055	.48573	5.8830	.00759	2.4297	.00703	.15684
#3	-.17060	.30824	.45061	.08193	.00803	.13959	.00953	.16801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.32662**	**.14335**	**-.69453**	**.33261**	**.10204**	**-.60996**	F **87.39**	**.53645**
Stddev	.05888	.00949	.14797	.67853	1.0771	.55304	13.07	.23166
%RSD	18.028	6.6174	21.304	204.00	1055.6	90.669	14.96	43.184
#1	.37621	.14208	-.55141	-.00674	-.48667	-.00824	98.98	.71528
#2	.26154	.15342	-.84691	1.1139	1.3452	-1.0961	89.97	.61932
#3	.34211	.13457	-.68529	-.10929	-.55244	-.72559	73.22	.27475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							1.000	
Low Limit							-1.000	

6 BLQ 4/15/16

Sample Name: 6D10605-CCB~~5~~ Acquired: 4/15/2016 17:48:59 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4215	Ti3349	TI1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**.1450**	**1.5156**	**.86883**	**.39666**	**.41156**
Stddev	.0648	1.5668	.45905	.29097	.05106
%RSD	44.66	103.38	52.836	73.354	12.405
#1	.0865	3.0675	1.3898	.68320	.36600
#2	.2146	-.06578	.69278	.10146	.46674
#3	.1338	1.5451	.52385	.40532	.40193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2496.2**	**720580.**	**20484.**
Stddev	13.4	3112.	42.
%RSD	.53627	.43182	.20726
#1	2503.7	717350.	20484.
#2	2504.1	723560.	20442.
#3	2480.7	720830.	20527.

Sample Name: 1604060-01@2X Acquired: 4/15/2016 18:02:20 Type: Unk
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: LL H20 X2

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	F **-1.8260**	**454.76**	**4.3171**	**744.79**	**34.016**	**-.03799**	F **846.58**
Stddev	.5381	41.09	3.1085	4.53	.107	.07669	13.25
%RSD	29.469	9.0360	72.004	.60823	.31448	201.86	1.5646
#1	-2.0733	424.82	5.0083	741.60	33.920	-.10312	860.99
#2	-1.2087	501.61	7.0217	749.98	33.997	-.05738	834.95
#3	-2.1959	437.85	.92117	742.80	34.132	.04653	843.80

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	F **-2.8070**	**8.5260**	**5.0027**	**4.8377**	**599.90**	**20.840**	**410.41**
Stddev	.0068	.1328	.1697	.2525	4.91	.180	6.01
%RSD	.24236	1.5574	3.3927	5.2186	.81919	.86172	1.4647
#1	-2.8128	8.5065	5.1984	4.5866	595.09	20.633	404.83
#2	-2.7995	8.4041	4.8953	4.8351	599.70	20.933	416.78
#3	-2.8088	8.6675	4.9144	5.0915	604.92	20.953	409.63

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	F **739.25**	**252.40**	**41.391**	F **508.92**	**493.63**	**.19818**	**.63588**
Stddev	.42	1.10	.282	41.68	1.36	.37009	.87470
%RSD	.05626	.43628	.68215	8.1895	.27589	186.75	137.56
#1	739.69	251.67	41.283	546.01	492.56	.18349	-.32358
#2	739.22	253.67	41.178	516.93	493.17	.57539	1.3889
#3	738.86	251.87	41.711	463.82	495.16	-.16435	.84233

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**28.568**	F **56090.**	**.33172**	F **26520.**	F **-50.359**	**1.5422**	**26.310**
Stddev	.811	1139.	.34076	305.	.807	.1714	.438
%RSD	2.8383	2.031	102.73	1.151	1.6029	11.113	1.6653
#1	29.500	54830.	.04535	26420.	-50.786	1.7112	25.837
#2	28.026	56400.	.24121	26270.	-49.428	1.5470	26.702
#3	28.177	57040.	.70859	26860.	-50.864	1.3685	26.389

Sample Name: 1604060-01@2X Acquired: 4/15/2016 18:02:20 Type: Unk
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: LL H20 X2

Elem	Zn2062
Units	ppb
Avg	**11.150**
Stddev	.033
%RSD	.29624
#1	11.161
#2	11.113
#3	11.176

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**1812.4**	**581010.**	**18127.**
Stddev	3.7	2166.	97.
%RSD	.20502	.37284	.53608
#1	1811.3	579210.	18018.
#2	1816.5	580410.	18159.
#3	1809.3	583420.	18204.

9 4/15/16

Sample Name: 6D10605-CCV~~6~~ Acquired: 4/15/2016 18:29:58 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0292

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**512.85**	**10738.**	**1024.7**	**1067.2**	**981.74**	**1045.6**	**52.577**	**1038.1**
Stddev	1.38	40.	1.3	3.0	1.14	1.4	.058	.4
%RSD	.26876	.37197	.12721	.27809	.11649	.13834	.10960	.03515
#1	513.28	10702.	1023.3	1070.4	982.09	1044.1	52.511	1037.7
#2	511.31	10781.	1025.1	1066.4	982.67	1046.9	52.618	1038.4
#3	513.97	10730.	1025.8	1064.6	980.46	1045.9	52.602	1038.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**964.35**	**1055.1**	**1036.3**	**10259.**	**10.729**	**1040.1**	**49.156**	**997.97**
Stddev	.66	5.3	3.8	29.	.056	5.5	.049	1.28
%RSD	.06894	.50160	.36650	.28094	.52401	.52972	.09884	.12811
#1	964.63	1054.9	1040.5	10229.	10.668	1043.1	49.139	997.21
#2	964.83	1049.9	1035.4	10286.	10.778	1043.4	49.119	999.44
#3	963.59	1060.4	1033.1	10264.	10.742	1033.7	49.211	997.24
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1038.8**	**47.833**	**970.06**	**955.15**	**1007.6**	**1036.3**	F **3405.**	**1008.1**
Stddev	1.0	.105	.70	1.80	1.3	2.9	43.	1.4
%RSD	.10069	.21972	.07245	.18856	.12867	.27647	1.257	.13945
#1	1039.5	47.847	970.15	956.66	1007.8	1033.0	3452.	1007.9
#2	1037.6	47.722	970.72	955.64	1008.9	1038.0	3395.	1009.5
#3	1039.3	47.931	969.32	953.16	1006.3	1037.9	3368.	1006.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

9 BLQ 4/15/16

Sample Name: 6D10605-CCV~~6~~ Acquired: 4/15/2016 18:29:58 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0292

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**999.1**	**1037.9**	**992.96**	**1067.5**	**1027.9**
Stddev	1.8	3.3	2.33	4.2	.9
%RSD	.1782	.31870	.23494	.38968	.08501
#1	997.3	1034.1	990.94	1067.6	1028.7
#2	999.0	1040.1	995.51	1063.2	1026.9
#3	1001.	1039.5	992.42	1071.6	1028.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2494.6**	**725750.**	**20488.**
Stddev	4.9	2971.	29.
%RSD	.19647	.40939	.14176
#1	2498.8	722410.	20513.
#2	2489.2	726740.	20496.
#3	2495.9	728100.	20456.

9 BLQ 4/15/16

Sample Name: 6D10605-CCB~~0~~ Acquired: 4/15/2016 18:34:24 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.27661**	**-1.4112**	**-.46847**	**2.3294**	**.10664**	**.08509**	**.00159**	**-.01597**
Stddev	.34170	10.353	.75956	.4578	.09504	.04100	.00247	.01629
%RSD	123.53	733.62	162.14	19.652	89.122	48.185	155.42	102.05
#1	-.61672	-12.229	-1.1233	1.9081	.20874	.04074	.00406	-.00864
#2	.06665	-.4075	-.64642	2.2635	.09043	.09293	.00160	-.03464
#3	-.27976	8.4033	.36427	2.8165	.02075	.12161	-.00089	-.00463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**-.14505**	**-.00823**	**.35816**	**-.06562**	**.04867**	**-.34899**	**.00223**	**.91882**
Stddev	.20890	.13535	.32692	6.3897	.02648	5.5893	.00996	.03545
%RSD	144.02	1645.5	91.276	9737.8	54.402	1601.6	447.52	3.8578
#1	-.31556	-.14905	.02026	-6.1528	.06570	1.4741	.01232	.93302
#2	-.20756	.12089	.67286	6.5888	.01816	4.1011	-.00760	.94497
#3	.08797	.00348	.38138	-.63288	.06213	-6.6222	.00196	.87848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.24479**	**.22180**	**-1.0849**	**-.02992**	**-.98771**	**-.31679**	F **48.04**	**.19796**
Stddev	.20481	.00367	.2120	.78557	.18340	.29202	13.96	.31469
%RSD	83.665	1.6536	19.543	2625.9	18.568	92.180	29.06	158.97
#1	.37764	.21758	-1.2124	.81118	-.86952	-.33585	61.27	.48903
#2	.34781	.22357	-.84017	-.74463	-.89463	-.59881	49.42	.24081
#3	.00893	.22425	-1.2022	-.15629	-1.1990	-.01571	33.45	-.13596
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							1.000	
Low Limit							-1.000	

9 4/15/16

Sample Name: 6D10605-CCB~~6~~ Acquired: 4/15/2016 18:34:24 Type: QC
Method: 6500DUOBB(v966) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**.1328**	**.51866**	**.14948**	**.10941**	**.36619**
Stddev	.0850	.85072	.78683	.38391	.02671
%RSD	64.04	164.02	526.38	350.87	7.2950
#1	.0367	-.23374	1.0526	.50081	.34531
#2	.1634	1.4418	-.38811	.09396	.39629
#3	.1983	.34792	-.21603	-.26653	.35696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2507.5**	**722420.**	**20681.**
Stddev	11.1	13315.	96.
%RSD	.44408	1.8432	.46626
#1	2507.9	730600.	20791.
#2	2518.5	707060.	20639.
#3	2496.2	729610.	20612.

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6110003

6D11022

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
6D11022-CAL1	Cal Standard	QC		1		16D0092	
6D11022-CAL2	Cal Standard	QC		2		16B0394	
6D11022-CAL3	Cal Standard	QC		3		16D0093	
6D11022-CAL4	Cal Standard	QC		4		16C0452	
6D11022-CAL5	Cal Standard	QC		5		16D0153	
6D11022-CAL6	Cal Standard	QC		6		16D0036	
6D11022-CAL7	Cal Standard	QC		7		16D0288	
6D11022-CAL8	Cal Standard	QC		8		16D0289	
6D11022-ICV1	Initial Cal Check	QC		9		16D0378	
6D11022-ICB1	Initial Cal Blank	QC		10		16D0092	
6D11022-CRL1	Instrument RL Check	QC		11		16D0388	
6D11022-CRL2	Instrument RL Check	QC		12		16D0388	
6D11022-IFA1	Interference Check A	QC		13		16D0155	
6D11022-IFB1	Interference Check B	QC		14		16D0156	
6D11022-CCV1	Calibration Check	QC		15		16D0379	
6D11022-CCB1	Calibration Blank	QC		16		16D0092	
6D18001-BLK1	Blank	QC		17			
6D18001-BSI	LCS	QC		18			
1604063-01	RNASI-SS3301-0-0.5	MET_ICP_LOW6010C_FULI	A	19			
1604063-02	RNASI-SB3301-0.5-2	MET_ICP_LOW6010C_FULI	A	20			
1604063-05	RNASI-SS3201-0-0.5	MET_ICP_LOW6010C_FULI	A	21			
1604063-06	RNASI-SB3201-0.5-2	MET_ICP_LOW6010C_FULI	A	22			
1604063-09	RNASI-SS3101-0-0.5	MET_ICP_LOW6010C_FULI	A	23			
1604063-10	RNASI-SB3101-0.5-2	MET_ICP_LOW6010C_FULI	A	24			
6D18001-MS1	Matrix Spike	QC		25			
6D18001-MSD1	Matrix Spike Dup	QC		26			
6D18001-PS1	Post Spike	QC		27			
6D18001-DUP1	Serial Dilution	QC		28			
1604120-01	T187-SP-SO-CS03	MET_ICP_LOW6010C_FULI	D	29			
1604120-02	T187-SP-SO-CS04	MET_ICP_LOW6010C_FULI	D	30			
1604128-01	187-SO-TB01	MET_ICP_LOW6010C_FULI	D	31			
1604128-02	187-SO-TB02	MET_ICP_LOW6010C_FULI	D	32			
6D11022-CCV2	09H0632	QC		33		16D0379	
6D11022-CCB2	Calibration Blank	QC		34		16D0092	
1604128-03	187-SO-TB03	MET_ICP_LOW6010C_FULI	C	35			
1604138-01	JM33-SB201-0002-041516	T_ICP_LOW6010C_FULL_	B	36			

Samples Loaded By — Date: 4/21/16

Data Processed By: Betty Quillen — Date: 4/20/16

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6110003

6D11022

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
1604138-02	JM33-SB202-0002-041516	T_ICP_LOW6010C_FULL_	B	37			
1604138-03	JM33-SB203-0002-041516	T_ICP_LOW6010C_FULL_	B	38			
1604138-04	JM33-SB204-0002-041516	T_ICP_LOW6010C_FULL_	B	39			
1604138-05	JM33-SB205-0002-041516	T_ICP_LOW6010C_FULL_	B	40			
1604138-06	JM33-SB206-0002-041516	T_ICP_LOW6010C_FULL_	B	41			
1604138-07	JM33-SB207-0002-041516	T_ICP_LOW6010C_FULL_	B	42			
1604138-08	JM33-SB208-0002-041516	T_ICP_LOW6010C_FULL_	B	43			
6D11022-CCV3	10A0473	QC		44		16D0379	
6D11022-CCB3	Calibration Blank	QC		45		16D0092	
1604009-01	NASKW-NTCRA-SB-21-1	MET_ICP_6010C_FULL	A	46			
1604009-02	NASKW-NTCRA-SB-21-2	MET_ICP_6010C_FULL	A	47			
1604009-03	NASKW-NTCRA-SB-21-2-D	MET_ICP_6010C_FULL	A	48			
1604009-04	NASKW-NTCRA-SB-21-3	MET_ICP_6010C_FULL	A	49			
6D11011-MS1	Matrix Spike	QC		50			
6D11011-MSD1	Matrix Spike Dup	QC		51			
6D11011-PS1	Post Spike	QC		52			
6D11011-DUP1	Serial Dilution	QC		53			
1604009-05	NASKW-NTCRA-SB-21-4	MET_ICP_6010C_FULL	A	54			
1604009-06	NASKW-NTCRA-SB-21-5	MET_ICP_6010C_FULL	A	55			
1604009-07	NASKW-NTCRA-SB-21-6	MET_ICP_6010C_FULL	A	56			
1604009-08	NASKW-NTCRA-SB-21-7	MET_ICP_6010C_FULL	A	57			
1604009-09	NASKW-NTCRA-SB-21-8	MET_ICP_6010C_FULL	A	58			
6D11022-CCV4	10A0473	QC		59		16D0379	
6D11022-CCB4	Calibration Blank	QC		60		16D0092	
1604009-10	NASKW-NTCRA-SB-17-1	MET_ICP_6010C_FULL	A	61			
1604009-11	NASKW-NTCRA-SB-17-2	MET_ICP_6010C_FULL	A	62			
1604009-12	NASKW-NTCRA-SB-17-3	MET_ICP_6010C_FULL	A	63			
1604009-13	NASKW-NTCRA-SB-17-4	MET_ICP_6010C_FULL	A	64			
1604009-14	NASKW-NTCRA-SB-30-1	MET_ICP_6010C_FULL	A	65			
1604009-15	NASKW-NTCRA-SB-30-2	MET_ICP_6010C_FULL	A	66			
1604009-16	NASKW-NTCRA-SB-30-3	MET_ICP_6010C_FULL	A	67			
1604009-17	NASKW-NTCRA-SB-30-4	MET_ICP_6010C_FULL	A	68			
1604013-02	Comp-1	MET_ICP_6010C_FULL	A	69			
1604040-01	Dust	MET_ICP_6010C_FULL	A	70			
6D11022-CCV5	10A0473	QC		71		16D0379	
6D11022-CCB5	Calibration Blank	QC		72		16D0092	

Samples Loaded By 4/21/16 Date

Data Processed By Betty Quillen 4/20/16 Date

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6110003

6D11022

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
6D11012-BLK1	Blank	QC		73			
6D11012-BS1	LCS	QC		74			
1604009-18	NASKW-NTCRA-SB-30-4-D	MET_ICP_6010C_FULL	A	75			
1604009-19	NASKW-NTCRA-SB-30-5	MET_ICP_6010C_FULL	A	76			
1604009-20	NASKW-NTCRA-SB-30-6	MET_ICP_6010C_FULL	A	77			
1604009-21	NASKW-NTCRA-SB-30-7	MET_ICP_6010C_FULL	A	78			
1604009-22	NASKW-NTCRA-SB-30-8	MET_ICP_6010C_FULL	A	79			
1604009-23	NASKW-NTCRA-SB-45-1	MET_ICP_6010C_FULL	A	80			
1604009-24	NASKW-NTCRA-SB-45-2	MET_ICP_6010C_FULL	A	81			
1604009-25	NASKW-NTCRA-SB-45-3	MET_ICP_6010C_FULL	A	82			
1604009-26	NASKW-NTCRA-SB-45-4	MET_ICP_6010C_FULL	A	83			
1604009-27	NASKW-NTCRA-SB-45-5	MET_ICP_6010C_FULL	A	84			
6D11022-CCV6	09H0575	QC		85		16D0379	
6D11022-CCB6	Calibration Blank	QC		86		16D0092	
1604009-28	NASKW-NTCRA-SB-45-6	MET_ICP_6010C_FULL	A	87			
1604009-29	NASKW-NTCRA-SB-45-6-D	MET_ICP_6010C_FULL	A	88			
1604009-30	NASKW-NTCRA-SB-45-7	MET_ICP_6010C_FULL	C	89			
6D11012-MS1	Matrix Spike	QC		90			
6D11012-MSD1	Matrix Spike Dup	QC		91			
6D11012-PS1	Post Spike	QC		92			
6D11012-DUP1	Serial Dilution	QC		93			
1604009-31	NASKW-NTCRA-SB-45-8	MET_ICP_6010C_FULL	A	94			
1604009-32	NASKW-NTCRA-SB-17-5	MET_ICP_6010C_FULL	A	95			
1604009-33	NASKW-NTCRA-SB-17-7	MET_ICP_6010C_FULL	A	96			
1604009-34	NASKW-NTCRA-SB-17-6	MET_ICP_6010C_FULL	A	97			
1604009-35	NASKW-NTCRA-SB-17-6-D	MET_ICP_6010C_FULL	A	98			
1604009-36	NASKW-NTCRA-SB-17-8	MET_ICP_6010C_FULL	A	99			
6D11022-CCV7	09H0575	QC		100		16D0379	
6D11022-CCB7	Calibration Blank	QC		101		16D0092	
1604034-03RE2	OTC538-GW-MW02	T_ICP_LOW6010C_FULL_I	A	102			
1604034-05RE2	OTC537-GW-MW01	T_ICP_LOW6010C_FULL_I	A	103			
6D09920-DUP3	Serial Dilution	QC		104			
1604034-02RE1	OTC538-GW-MW02	MET_ICP_LOW6010C_FULI	E	105			
1604034-04RE1	OTC537-GW-MW01	MET_ICP_LOW6010C_FULI	N	106			
6D09919-DUP2	Serial Dilution	QC		107			
1604034-06RE1	OTC537-GW-MW01-FD	MET_ICP_LOW6010C_FULI	D	108			

Samples Loaded By — Date: 4/21/16

Data Processed By: Betty Quillen — Date: 4/20/16

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6110003

6D11022

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
1604056-03RE1	16MW084-2Q2016	MET_ICP_LOW6010C_FULL	H	109			
1604060-01RE1	OTC538-GW-MW01	MET_ICP_LOW6010C_FULL	A	110			
6D11022-CCV8	09H0475	QC		111		16D0379	
6D11022-CCB8	Calibration Blank	QC		112		16D0092	
6D18004-BLK1	Blank	QC		113			
6D18004-BLK2	Blank	QC		114			
6D18004-BS1	LCS	QC		115			
1604008-02	18MW107-2Q2016	T_ICP_LOW6010C_FULL_	G	116			
1604008-04	18MW105-2Q2016	T_ICP_LOW6010C_FULL_	G	117			
1604008-05	18MW120-2Q2016	T_ICP_LOW6010C_FULL_	G	118			
1604008-06	18MW122-2Q2016	T_ICP_LOW6010C_FULL_	G	119			
1604071-01	RNASI-MW001	MET_ICP_LOW6010C_FULL	A	120			
1604071-02	RNASI-MW002	MET_ICP_LOW6010C_FULL	A	121			
6D18004-MS1	Matrix Spike	QC		122			
6D18004-MSD1	Matrix Spike Dup	QC		123			
6D18004-PS1	Post Spike	QC		124			
6D18004-DUP1	Serial Dilution	QC		125			
1604071-03	RNASI-MW003	MET_ICP_LOW6010C_FULL	A	126			
1604071-04	RNASI-MW004	MET_ICP_LOW6010C_FULL	A	127			
1604071-05	RNASI-DUP-3	MET_ICP_LOW6010C_FULL	A	128			
1604071-06	RNASI-EB-3	MET_ICP_LOW6010C_FULL	A	129			
6D11022-CCV9	09H0475	QC		130		16D0379	
6D11022-CCB9	Calibration Blank	QC		131		16D0092	
1604091-01	MW-2 QA	T_ICP_LOW6010C_FULL_	G	132			
1604091-02	MW-2 QA	ICP_LOW6010C_FULL_DI	A	133			
1604108-01	T502-INF01-160413	MET_ICP_LOW6010C_FULL	E	134			
1604108-02	T502-INF01-160413	T_ICP_LOW6010C_FULL_	A	135			
1604108-03	T502-EFF01-160413	MET_ICP_LOW6010C_FULL	E	136			
1604108-04	T502-EFF01-160413	T_ICP_LOW6010C_FULL_	A	137			
1604124-01	SE-18-MID QA	T_ICP_LOW6010C_FULL_	A	138			
1604124-02	SE-18-MID QA	ICP_LOW6010C_FULL_DI	A	139			
1604124-03	XX-9 QA	T_ICP_LOW6010C_FULL_	B	140			
1604124-05	CDG-17 QA	T_ICP_LOW6010C_FULL_	B	141			
6D11022-CCVA	09H0475	QC		142		16D0379	
6D11022-CCBA	Calibration Blank	QC		143		16D0092	
6D11022-CRL3	Instrument RL Check	QC		144		16D0388	

Samples Loaded By — Date: 4/21/16

Data Processed By: Betty Quillen — Date: 4/20/16

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6110003

6D11022

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD 1
6D11022-CRL4	Instrument RL Check	QC		145		16D0388	
6D11022-CCVB	09H0475	QC		146		16D0379	
6D11022-CCBB	Calibration Blank	QC		147		16D0092	

Samples Loaded By — Date: 4/21/16

Data Processed By: Betty Quillen — Date: 4/20/16

4-19-16
RB

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	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
1	0	0	0	QC	6D11022-ICV1	16D0378	☒	ICV
2	0	0	0	QC	6D11022-ICB1		☒	ICB
3	0	0	0	QC	6D11022-CRL	RLSTDA	☒	RLSTD-A
4	0	0	0	Unk	6D11022-IFA		☐	
5	0	0	0	QC	6D11022-IFB		☒	ICSAB
6	0	0	0	Unk	RINSE		☒	SAMPLE
7	0	0	0	QC	6D11022-CCV1	16D0379	☒	CCV
8	0	0	0	QC	6D11022-CCB1		☒	CCB
9	0	0	0	QC	6D18001-BLK1	PBS041916 2g->100	☒	PREPBLANK
10	0	0	0	QC	6D18001-BS1	LCSS041916 2g->100	☒	2007LCS
11	0	0	0	Unk	1604063-01@2X		☒	SAMPLE
12	0	0	0	Unk	1604063-02@2X		☒	SAMPLE
13	0	0	0	Unk	1604063-05@2X		☒	SAMPLE
14	0	0	0	Unk	1604063-06@2X		☒	SAMPLE
15	0	0	0	Unk	1604063-09@2X		☒	SAMPLE
16	0	0	0	Unk	1604063-10		☒	SAMPLE
17	0	0	0	Unk	6D18001-MS1		☒	SAMPLE
18	0	0	0	Unk	6D18001-MSD1		☒	SAMPLE
19	0	0	0	Unk	6D18001-PS1		☒	SAMPLE
20	0	0	0	Unk	6D18001-DUP1@5X	X5 SRL	☒	SAMPLE
21	0	0	0	Unk	1604120-01@2X		☒	SAMPLE
22	0	0	0	Unk	1604120-02@2X		☒	SAMPLE
23	0	0	0	Unk	1604128-01@2X		☒	SAMPLE
24	0	0	0	Unk	1604128-02@2X		☒	SAMPLE
25	0	0	0	QC	6D11022-CCV2	16D0379	☒	CCV
26	0	0	0	QC	6D11022-CCB2		☒	CCB
27	0	0	0	Unk	1604128-03@2X		☒	SAMPLE
28	0	0	0	Unk	1604138-01@2X		☒	SAMPLE
29	0	0	0	Unk	1604138-02@2X		☒	SAMPLE
30	0	0	0	Unk	1604138-03@2X		☒	SAMPLE
31	0	0	0	Unk	1604138-04@2X		☒	SAMPLE
32	0	0	0	Unk	1604138-05@5X		☒	SAMPLE
33	0	0	0	Unk	1604138-06@5X		☒	SAMPLE
34	0	0	0	Unk	1604138-07@2X		☒	SAMPLE
35	0	0	0	Unk	1604138-08@5X		☒	SAMPLE
36	0	0	0	QC	6D11022-CCV3	16D0379	☒	CCV
37	0	0	0	QC	6D11022-CCB3		☒	CCB
38	0 —	0 NA	0 X	QC	6D11011-BLK1	PBS041216 1g->200	☒	PREPBLANK
39	0 —	0 NA	0 X	QC	6D11011-BS1	LCSS041216 1g->200	☒	2007LCS
40	0 —	0 NA	0 X	Unk	1603240-01@2X		☒	SAMPLE
41	1	5	4	Unk	1604009-01		☒	SAMPLE
42	1	6	4	Unk	1604009-02		☒	SAMPLE
43	1	7	4	Unk	1604009-03		☒	SAMPLE
44	1	8	4	Unk	1604009-04		☒	SAMPLE
45	1	9	4	Unk	6D11011-MS1		☒	SAMPLE
46	1	10	4	Unk	6D11011-MSD1		☒	SAMPLE
47	1	11	4	QC	6D11011-PS1		☒	PREPBLANK
48	1	12	4	QC	6D11011-DUP1@5X	X5 SRL	☒	2007LCS
49	1	1	5	Unk	1604009-05		☒	SAMPLE
50	1	2	5	Unk	1604009-06		☒	SAMPLE
51	1	3	5	Unk	1604009-07		☒	SAMPLE
52	1	4	5	Unk	1604009-08		☒	SAMPLE
53	1	5	5	Unk	1604009-09		☒	SAMPLE
54	1	6	5	QC	6D11022-CCV4	16D0379	☒	CCV
55	1	7	5	QC	6D11022-CCB4		☒	CCB
56	1	8	5	Unk	1604009-10		☒	SAMPLE
57	1	9	5	Unk	1604009-11		☒	SAMPLE
58	1	10	5	Unk	1604009-12		☒	SAMPLE
59	1	11	5	Unk	1604009-13		☒	SAMPLE
60	1	12	5	Unk	1604009-14		☒	SAMPLE
61	2	1	1	Unk	1604009-15		☒	SAMPLE

Already Analyzed Skipped

4-19-16
RB

	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
62	2	2	1	Unk	1604009-16		☒	SAMPLE
63	2	3	1	Unk	1604009-17		☒	SAMPLE
64	2	4	1	Unk	1604013-02@2X		☒	SAMPLE
65	2	5	1	Unk	1604040-01@5X		☒	SAMPLE
66	2	6	1	Unk	RINSE	RINSE	☒	SAMPLE
67	2	7	1	QC	6D11022-CCV5	16D0379	☒	CCV
68	2	8	1	QC	6D11022-CCB5		☒	CCB
69	2	9	1	QC	6D11012-BLK1	PBS041216 1g->200	☒	PREPBLANK
70	2	10	1	QC	6D11012-BS1	LCSS041216 1g->200	☒	2007LCS
71	2	11	1	Unk	1604009-18		☒	SAMPLE
72	2	12	1	Unk	1604009-19		☒	SAMPLE
73	2	1	2	Unk	1604009-20		☒	SAMPLE
74	2	2	2	Unk	1604009-21		☒	SAMPLE
75	2	3	2	Unk	1604009-22		☒	SAMPLE
76	2	4	2	Unk	1604009-23		☒	SAMPLE
77	2	5	2	Unk	1604009-24		☒	SAMPLE
78	2	6	2	Unk	1604009-25		☒	SAMPLE
79	2	7	2	Unk	1604009-26		☒	SAMPLE
80	2	8	2	Unk	1604009-27		☒	SAMPLE
81	2	9	2	QC	6D11022-CCV6	16D0379	☒	CCV
82	2	10	2	QC	6D11022-CCB6		☒	CCB
83	2	11	2	Unk	1604009-28		☒	SAMPLE
84	2	12	2	Unk	1604009-29		☒	SAMPLE
85	2	1	3	Unk	1604009-30		☒	SAMPLE
86	2	2	3	Unk	6D11012-MS1		☒	SAMPLE
87	2	3	3	Unk	6D11012-MSD1		☒	SAMPLE
88	2	4	3	Unk	6D11012-PS1		☒	SAMPLE
89	2	5	3	Unk	6D11012-DUP1@5X	X5 SRL	☒	SAMPLE
90	2	6	3	Unk	1604009-31		☒	SAMPLE
91	2	7	3	Unk	1604009-32		☒	SAMPLE
92	2	8	3	Unk	1604009-33		☒	SAMPLE
93	2	9	3	Unk	1604009-34		☒	SAMPLE
94	2	10	3	Unk	1604009-35		☒	SAMPLE
95	2	11	3	Unk	1604009-36		☒	SAMPLE
96	2	12	3	QC	6D11022-CCV7	16D0379	☒	CCV
97	2	1	4	QC	6D11022-CCB7		☒	CCB
98	2	2	4	Unk	1604034-03RE2@25X	LL H20 X25	☒	SAMPLE
99	2	3	4	Unk	1604034-05RE2@25X	LL H20 X25	☒	SAMPLE
100	2	4	4	Unk	6D09920-DUP3@125X	LL H20 X125 SRL	☒	SAMPLE
101	2	5	4	Unk	1604034-02RE1@25X	LL H20 X25	☒	SAMPLE
102	2	6	4	Unk	1604034-04RE1@25X	LL H20 X25	☒	SAMPLE
103	2	7	4	Unk	6D09919-DUP2@125X	LL H20 X125 SRL	☒	SAMPLE
104	2	8	4	Unk	1604034-06RE1@25X	LL H20 X25	☒	SAMPLE
105	2	9	4	Unk	1604056-03RE1@25X	LL H20 X25	☒	SAMPLE
106	2	10	4	Unk	1604060-01RE1@5X	LL H20 X5	☒	SAMPLE
107	2	11	4	QC	6D11022-CCV8	16D0379	☒	CCV
108	2	12	4	QC	6D11022-CCB8		☒	CCB
109	2	1	5	QC	6D18004-BLK1	PBW041816 LL H20	☒	PREPBLANK
110	2	2	5	QC	6D18004-BLK2	FILTER BLANK	☒	PREPBLANK
111	2	3	5	QC	6D18004-BS1	LCSW041816 LL H20	☒	LCSWLOW
112	2	4	5	Unk	1604008-02@2X	LL H20 X5	☒	SAMPLE
113	2	5	5	Unk	1604008-04@2X	LL H20 X5	☒	SAMPLE
114	2	6	5	Unk	1604008-05@2X		☒	SAMPLE
115	2	7	5	Unk	1604008-06@2X		☒	SAMPLE
116	2	8	5	Unk	1604071-01		☒	SAMPLE
117	2	9	5	Unk	1604071-02		☒	SAMPLE
118	2	10	5	Unk	6D18004-MS1		☒	SAMPLE
119	2	11	5	Unk	6D18004-MSD1		☒	SAMPLE
120	2	12	5	Unk	6D18004-PS1		☒	SAMPLE
121	3	1	1	Unk	6D18004-DUP1@5X	X5 SRL LL H20	☒	SAMPLE
122	3	2	1	Unk	1604071-03		☒	SAMPLE

4-18-16
AB

(3)

	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
123	3	3	1	Unk	1604071-04		☒	SAMPLE
124	3	4	1	Unk	1604071-05		☒	SAMPLE
125	3	5	1	Unk	1604071-06		☒	SAMPLE
126	3	6	1	QC	6D11022-CCV9	16D0379	☒	CCV
127	3	7	1	QC	6D11022-CCB9		☒	CCB
128	3	8	1	Unk	1604091-01		☒	SAMPLE
129	3	9	1	Unk	1604091-02		☒	SAMPLE
130	3	10	1	Unk	1604108-01@5X	LL H20 X5	☒	SAMPLE
131	3	11	1	Unk	1604108-02@5X	LL H20 X5	☒	SAMPLE
132	3	12	1	Unk	1604108-03@5X	LL H20 X5	☒	SAMPLE
133	3	1	2	Unk	1604108-04@5X	LL H20 X5	☒	SAMPLE
134	3	2	2	Unk	1604124-01@5X	LL H20 X5	☒	SAMPLE
135	3	3	2	Unk	1604124-02@5X	LL H20 X5	☒	SAMPLE
136	3	4	2	Unk	1604124-03@2X	LL H20 X2	☒	SAMPLE
137	3	5	2	Unk	1604124-05@2X	LL H20 X2	☒	SAMPLE
138	3	6	2	QC	6D11022-CCVA	16D0379	☒	CCV
139	3	7	2	QC	6D11022-CCBA		☒	CCB
140	3	8	2	QC	6D11022-CRL		☒	RLSTD-A
141	3	9	2	QC	6D11022-CRL		☒	RLSTD-A
142	3	10	2	QC	6D11022-CCVB	16D0379	☒	CCV
143	3	11	2	QC	6D11022-CCBB		☒	CCB

Sample Name: SEQ-CAL1 Acquired: 4/19/2016 9:52:32 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00224**	**-.00249**	**.00005**	**.02661**	**.00044**	**.00226**
Stddev	.00001	.00017	.00038	.00002	.00076	.00011	.00015
%RSD	5.2541	7.5710	15.394	31.590	2.8526	25.461	6.6748
#1	.00012	.00243	-.00219	.00007	.02578	.00038	.00241
#2	.00011	.00219	-.00292	.00004	.02677	.00038	.00228
#3	.00011	.00211	-.00235	.00006	.02727	.00058	.00211

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02222**	**.02225**	**-.00009**	**.00135**	**-.00005**	**-.00757**	**-.00002**
Stddev	.00186	.00095	.00000	.00002	.00002	.00156	.00003
%RSD	8.3924	4.2529	2.3988	1.5505	48.496	20.593	143.94
#1	.02423	.02124	-.00009	.00136	-.00004	-.00935	-.00003
#2	.02055	.02240	-.00009	.00133	-.00003	-.00643	-.00005
#3	.02187	.02311	-.00009	.00136	-.00007	-.00695	.00001

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00004**	**.00009**	**-.00033**	**.00067**	**.03607**	**-.00447**	**.00863**
Stddev	.00003	.00001	.00013	.00023	.00039	.00204	.00215
%RSD	88.742	8.0240	40.127	34.116	1.0803	45.613	24.949
#1	.00001	.00009	-.00030	.00088	.03636	-.00590	.00620
#2	.00003	.00008	-.00048	.00043	.03562	-.00538	.00936
#3	.00007	.00009	-.00022	.00071	.03622	-.00214	.01031

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00546**	**6.628**	**-.00354**	**-.0021**	**.00161**	**-.00249**	**-.00013**
Stddev	.00051	.681	.00092	.0002	.00005	.00074	.00002
%RSD	9.3029	10.27	25.833	10.63	2.9964	29.640	17.865
#1	.00543	7.260	-.00287	-.0022	.00164	-.00199	-.00016
#2	.00497	6.717	-.00318	-.0018	.00156	-.00334	-.00011
#3	.00598	5.907	-.00458	-.0021	.00165	-.00214	-.00013

Sample Name: SEQ-CAL1 Acquired: 4/19/2016 9:52:32 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Zn2062
Units	Cts/S
Avg	**.00532**
Stddev	.00101
%RSD	19.059
#1	.00460
#2	.00648
#3	.00488

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2296.9**	**660780.**	**21288.**
Stddev	5.2	9838.	83.
%RSD	.22831	1.4888	.39154
#1	2302.9	654820.	21199.
#2	2293.4	672130.	21300.
#3	2294.4	655380.	21365.

Sample Name: SEQ-CAL2 Acquired: 4/19/2016 9:56:13 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00157**	**.17152**	**.04825**	**.00104**	**.98180**	**.31103**	**.11717**	**3.8134**
Stddev	.00002	.00101	.00070	.00002	.00211	.00087	.00014	.0099
%RSD	1.5367	.58639	1.4546	1.7888	.21478	.27850	.11629	.26069
#1	.00160	.17207	.04818	.00105	.98233	.31027	.11732	3.8245
#2	.00157	.17212	.04899	.00102	.98359	.31197	.11714	3.8101
#3	.00155	.17036	.04759	.00104	.97948	.31084	.11705	3.8055

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.98928**	**.00639**	**.00793**	**.09425**	**.01164**	**.00120**	**.03722**	**.50442**
Stddev	.00388	.00003	.00006	.00037	.00048	.00002	.00024	.00155
%RSD	.39202	.45313	.72407	.38769	4.1415	1.4147	.63796	.30678
#1	.99323	.00641	.00798	.09392	.01110	.00121	.03748	.50435
#2	.98914	.00635	.00793	.09464	.01179	.00122	.03716	.50290
#3	.98548	.00640	.00787	.09418	.01203	.00119	.03701	.50600

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899	Sr4215	Ti3349
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.55518**	**.21808**	**.11170**	**.06242**	**6.265**	**.08815**	**.3009**	**.02619**
Stddev	.00099	.00140	.00069	.00035	1.200	.00106	.0005	.00011
%RSD	.17812	.64309	.61357	.55818	19.16	1.2013	.1735	.41451
#1	.55632	.21925	.11231	.06249	5.404	.08932	.3008	.02615
#2	.55470	.21653	.11096	.06205	5.754	.08786	.3015	.02631
#3	.55453	.21845	.11182	.06273	7.636	.08726	.3004	.02610

Elem	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S
Avg	**.08352**	**.00501**	**1.4934**
Stddev	.00080	.00007	.0002
%RSD	.95640	1.3408	.01303
#1	.08429	.00509	1.4934
#2	.08358	.00496	1.4932
#3	.08269	.00498	1.4936

Sample Name: SEQ-CAL2 Acquired: 4/19/2016 9:56:13 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2368.0**	**675610.**	**21786.**
Stddev	9.2	2363.	135.
%RSD	.38684	.34968	.62120
#1	2361.0	673510.	21648.
#2	2364.7	675160.	21790.
#3	2378.4	678170.	21919.

Sample Name: SEQ-CAL3 Acquired: 4/19/2016 9:59:59 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03718**	**.33657**	**.51044**	**.02040**	**17.761**	**3.1497**	**4.9831**	**36.978**
Stddev	.00031	.00027	.00114	.00018	.045	.0079	.0086	.066
%RSD	.83864	.08010	.22325	.87960	.25156	.25072	.17276	.17761
#1	.03691	.33683	.50961	.02021	17.790	3.1406	4.9749	36.952
#2	.03711	.33659	.51174	.02041	17.783	3.1544	4.9920	37.053
#3	.03752	.33629	.50998	.02057	17.709	3.1541	4.9824	36.930

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**9.2509**	**.06276**	**.06889**	**.17306**	**.17670**	**.01131**	**.15722**	**.34745**
Stddev	.0188	.00060	.00054	.00110	.00156	.00012	.00091	.00104
%RSD	.20356	.95468	.77962	.63412	.88186	1.0910	.57728	.29818
#1	9.2608	.06218	.06839	.17257	.17511	.01118	.15631	.34790
#2	9.2627	.06274	.06881	.17431	.17823	.01132	.15812	.34818
#3	9.2292	.06338	.06946	.17228	.17675	.01142	.15724	.34626

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5.1944**	**3.6128**	**4.9970**	**2.1263**	**1.0532**	**.57889**	**272.6**	**1.7993**
Stddev	.0102	.0028	.0065	.0037	.0013	.00017	.2	.0013
%RSD	.19709	.07835	.12919	.17477	.12256	.02953	.0819	.07459
#1	5.1916	3.6095	5.0001	2.1296	1.0546	.57900	272.4	1.7980
#2	5.2058	3.6143	5.0013	2.1270	1.0527	.57869	272.9	1.8006
#3	5.1859	3.6145	4.9896	2.1223	1.0522	.57897	272.5	1.7993

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.904**	**.25111**	**.83758**	**.05264**	**14.469**
Stddev	.006	.00034	.00185	.00039	.014
%RSD	.2101	.13690	.22097	.74101	.09958
#1	2.899	.25073	.83888	.05223	14.457
#2	2.903	.25141	.83839	.05268	14.485
#3	2.911	.25118	.83546	.05300	14.465

Sample Name: SEQ-CAL3 Acquired: 4/19/2016 9:59:59 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2304.1	670380.	21364.
Stddev	3.2	3607.	66.
%RSD	.13995	.53799	.30868
#1	2300.7	674500.	21313.
#2	2304.5	668850.	21341.
#3	2307.1	667800.	21439.

Sample Name: SEQ-CAL4 Acquired: 4/19/2016 10:03:49 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Ba2335	Mn2576
Units	Cts/S	Cts/S	Cts/S
Avg	**.14753**	**93.333**	**3.4677**
Stddev	.00220	.128	.0353
%RSD	1.4918	.13700	1.0194
#1	.14979	93.359	3.4978
#2	.14540	93.446	3.4288
#3	.14740	93.194	3.4765

Int. Std.	Sc1880	Sc3613
Units	Cts/S	Cts/S
Avg	**2352.2**	**682110.**
Stddev	7.7	9495.
%RSD	.32713	1.3920
#1	2351.1	673630.
#2	2345.1	692370.
#3	2360.4	680310.

Sample Name: SEQ-CAL5 Acquired: 4/19/2016 10:07:53 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Al3961	Fe2611	Mg2790
Units	Cts/S	Cts/S	Cts/S
Avg	**15.921**	**8.6132**	**1.5682**
Stddev	.209	.0360	.0076
%RSD	1.3142	.41843	.48324
#1	16.007	8.5734	1.5625
#2	15.682	8.6229	1.5652
#3	16.073	8.6435	1.5768

Int. Std.	Sc3613-2
Units	Cts/S
Avg	20507.
Stddev	156.
%RSD	.75977
#1	20601.
#2	20593.
#3	20327.

Sample Name: SEQ-CAL6 Acquired: 4/19/2016 10:12:12 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	B_2496	Be3130	Cd2144	Co2286	Cr2677	Cu3247	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4.9794**	**.09558**	**30.247**	**350.23**	**96.577**	**.60761**	**.64894**	**.10727**
Stddev	.0056	.00103	.175	2.32	.113	.00668	.00428	.00169
%RSD	.11356	1.0757	.57929	.66180	.11690	1.0990	.65898	1.5761
#1	4.9742	.09676	30.198	352.81	96.556	.60986	.65387	.10918
#2	4.9854	.09492	30.101	348.32	96.698	.61288	.64658	.10665
#3	4.9786	.09505	30.441	349.56	96.476	.60010	.64636	.10597

Elem	Mo2020	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899	Sr4215
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**49.970**	**51.497**	**22.500**	**10.321**	**5.4255**	**778.5**	**8.8665**	**29.69**
Stddev	.049	.068	.030	.011	.0034	36.2	.0120	.09
%RSD	.09848	.13156	.13492	.10908	.06214	4.650	.13547	.2922
#1	49.925	51.480	22.482	10.320	5.4217	818.6	8.8589	29.75
#2	50.022	51.572	22.535	10.333	5.4270	768.4	8.8804	29.73
#3	49.962	51.440	22.483	10.311	5.4280	748.4	8.8603	29.59

Elem	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.4736**	**8.5324**	**.49832**	**139.44**
Stddev	.0013	.0064	.00559	1.16
%RSD	.05374	.07501	1.1213	.82880
#1	2.4721	8.5325	.49999	140.22
#2	2.4747	8.5388	.50288	139.97
#3	2.4740	8.5260	.49209	138.11

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2325.5**	**682080.**	**21601.**
Stddev	3.7	8976.	31.
%RSD	.15948	1.3159	.14377
#1	2322.5	672060.	21601.
#2	2324.4	684810.	21570.
#3	2329.6	689380.	21632.

Sample Name: SEQ-CAL7 Acquired: 4/19/2016 10:17:45 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	K_7664	Na5895
Units	Cts/S	Cts/S
Avg	**1.7440**	**6.7283**
Stddev	.0035	.0291
%RSD	.20147	.43185
#1	1.7468	6.7528
#2	1.7452	6.7358
#3	1.7401	6.6962

Int. Std.	Sc3613-2
Units	Cts/S
Avg	**21190.**
Stddev	126.
%RSD	.59501
#1	21062.
#2	21193.
#3	21315.

Sample Name: SEQ-CAL8 Acquired: 4/19/2016 10:23:54 Type: Cal
Method: 6500DUOBB(v969) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ca3179	Mg2790	Na5895
Units	Cts/S	Cts/S	Cts/S
Avg	**47.162**	**.31556**	**37.339**
Stddev	.481	.00017	1.504
%RSD	1.0188	.05454	4.0290
#1	47.221	.31572	38.924
#2	46.655	.31538	37.163
#3	47.610	.31557	35.930

Int. Std.	Sc3613-2
Units	Cts/S
Avg	**20175.**
Stddev	117.
%RSD	.58236
#1	20040.
#2	20253.
#3	20233.

Sample Name: 6D11022-ICV1 Acquired: 4/19/2016 10:51:00 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0378

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**493.14**	**9894.9**	**1043.8**	F **1065.8**	**976.64**	**1025.2**	**51.839**
Stddev	2.29	86.4	3.8	5.1	2.25	9.5	.472
%RSD	.46456	.87318	.36286	.47812	.23048	.92989	.90997
#1	494.07	9800.8	1039.7	1070.9	974.39	1014.3	51.302
#2	494.81	9970.6	1047.2	1066.0	978.89	1028.9	52.032
#3	490.52	9913.2	1044.6	1060.7	976.63	1032.3	52.184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1000.0			
Range				±50.000			

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1018.6**	F **943.72**	**992.73**	**1000.5**	**9544.6**	**10.292**	F **1056.2**
Stddev	.7	1.24	3.87	6.0	84.6	.013	10.3
%RSD	.06841	.13103	.39015	.60426	.88627	.12208	.97857
#1	1018.0	942.40	993.73	1005.1	9447.3	10.281	1044.5
#2	1018.4	944.86	996.01	1002.9	9584.9	10.290	1064.1
#3	1019.4	943.89	988.46	993.69	9601.4	10.306	1060.0
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		1000.0					1000.0
Range		±-50.000					±50.000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**49.811**	**995.93**	**1017.2**	**48.486**	**970.74**	**952.75**	**993.87**
Stddev	.463	2.40	.7	.305	1.85	2.34	1.61
%RSD	.93035	.24114	.06568	.62999	.19008	.24595	.16224
#1	49.316	998.68	1017.5	48.145	968.77	950.12	992.11
#2	49.881	994.80	1016.5	48.578	972.42	954.63	994.21
#3	50.235	994.29	1017.7	48.735	971.03	953.50	995.29
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D11022-ICV1 Acquired: 4/19/2016 10:51:00 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0378

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**1040.9**	F **13240.**	**984.38**	**988.9**	**979.31**	**1000.6**	**1024.6**
Stddev	2.6	139.	1.34	11.2	14.53	2.1	7.6
%RSD	.25195	1.047	.13581	1.127	1.4839	.20741	.73918
#1	1039.0	13090.	984.01	976.5	962.62	999.88	1032.8
#2	1039.8	13280.	983.27	992.1	986.21	999.04	1023.1
#3	1043.9	13360.	985.87	998.1	989.11	1003.0	1017.9
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		500.0					
Range		±25.00					

Elem	Zn2062
Units	ppb
Avg	**1010.8**
Stddev	1.0
%RSD	.09829
#1	1010.8
#2	1009.9
#3	1011.8
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2288.6**	**662990.**	**21087.**
Stddev	3.9	2503.	109.
%RSD	.16991	.37756	.51844
#1	2292.3	660380.	21029.
#2	2284.6	663230.	21213.
#3	2289.0	665370.	21019.

Sample Name: 6D11022-ICB1 Acquired: 4/19/2016 10:57:42 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.54658**	**-18.648**	**-.25446**	**2.8335**	**-.02854**	**.00269**	**-.00240**	**.03192**
Stddev	.06020	21.411	1.2118	.4190	.01151	.05533	.00256	.05638
%RSD	11.013	114.81	476.23	14.788	40.314	2055.1	106.69	176.61
#1	-.56652	-13.633	.39389	2.3538	-.04159	.05253	-.00534	.02010
#2	-.47895	-42.122	-1.6525	3.0187	-.01986	.01239	-.00064	-.01761
#3	-.59428	-.1905	.49523	3.1281	-.02417	-.05685	-.00123	.09328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**-.01477**	**-.04697**	**1.0543**	**10.090**	**-.02601**	**-1.6454**	**-.00279**	**-.02493**
Stddev	.27993	.04807	.0526	6.914	.03428	2.2402	.00901	.05871
%RSD	1894.9	102.34	4.9857	68.526	131.78	136.15	323.16	235.50
#1	-.33771	.00749	1.0801	10.272	-.06234	.85585	.00357	.03687
#2	.15876	-.06490	1.0890	16.911	-.02147	-2.3250	-.01310	-.03169
#3	.13463	-.08348	.99384	3.0862	.00577	-3.4671	.00116	-.07996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.27283**	**.06376**	**-.59901**	**.23045**	**2.5355**	**-.60497**	F **6.429**	**.33976**
Stddev	.24187	.00937	.06203	.30214	.3854	2.0762	25.34	.32493
%RSD	88.655	14.692	10.355	131.11	15.201	343.20	394.1	95.637
#1	.52452	.06051	-.66522	.03937	2.4457	-1.9233	35.67	.29055
#2	.04214	.07432	-.58957	.57878	2.9579	1.7883	-9.016	.04224
#3	.25182	.05645	-.54224	.07318	2.2030	-1.6800	-7.366	.68649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							1.000	
Low Limit							-1.000	

Sample Name: 6D11022-ICB1 Acquired: 4/19/2016 10:57:42 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**-.1223**	**-.07723**	**-1.1512**	**-.32092**	**.05968**
Stddev	.2812	.47047	.9022	.39629	.08202
%RSD	229.9	609.21	78.371	123.48	137.43
#1	-.1338	-.41004	-2.0332	-.26170	.12094
#2	.1644	-.28268	-1.1901	-.74348	.09158
#3	-.3976	.46103	-.23015	.04242	-.03350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2292.2**	**659750.**	**21193.**
Stddev	6.8	2686.	118.
%RSD	.29610	.40716	.55597
#1	2284.4	659640.	21076.
#2	2295.1	662490.	21311.
#3	2297.0	657120.	21191.

Sample Name: 6D11022-CRL Acquired: 4/19/2016 11:06:48 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**3.2385**	**218.87**	**4.6434**	**32.669**	**10.163**	**2.0960**	**2.1792**
Stddev	.2244	15.44	.8591	1.334	.038	.0636	.0015
%RSD	6.9305	7.0537	18.502	4.0835	.37432	3.0325	.06948
#1	3.4262	205.03	4.3681	34.122	10.144	2.0301	2.1779
#2	2.9899	235.52	3.9557	32.388	10.206	2.1570	2.1809
#3	3.2994	216.06	5.6065	31.498	10.137	2.1008	2.1790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**2.1038**	**10.354**	**4.1654**	**9.7871**	**106.69**	**3.0995**	F **2.5869**
Stddev	.0203	.237	.1743	.5330	6.39	.0215	.7336
%RSD	.96328	2.2874	4.1838	5.4456	5.9935	.69224	28.358
#1	2.0811	10.430	4.3426	10.400	106.11	3.0859	3.3928
#2	2.1201	10.543	3.9943	9.4324	100.60	3.1242	2.4100
#3	2.1102	10.088	4.1591	9.5290	113.35	3.0884	1.9579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							6.0000
Range							±-1.2000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**3.2086**	**6.4835**	**10.418**	**3.1999**	**5.9563**	**3.2762**	**9.3384**
Stddev	.0124	.1010	.204	.0092	.2877	.4229	1.8673
%RSD	.38774	1.5572	1.9552	.28673	4.8293	12.910	19.996
#1	3.2052	6.5852	10.359	3.1950	5.6637	3.5754	9.4268
#2	3.2224	6.4821	10.250	3.2105	5.9664	3.4608	11.160
#3	3.1983	6.3833	10.645	3.1941	6.2388	2.7923	7.4285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D11022-CRL Acquired: 4/19/2016 11:06:48 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	F **2.3930**	F **-9.551**	**20.077**	**6.034**	**10.243**	**6.8598**	**10.084**
Stddev	1.5695	16.03	.170	.031	.938	.7524	.550
%RSD	65.587	167.8	.84794	.5102	9.1587	10.968	5.4494
#1	1.1690	-25.24	20.065	6.016	11.154	6.2564	10.611
#2	1.8475	-10.22	20.253	6.069	9.2799	6.6202	9.5147
#3	4.1625	6.801	19.914	6.016	10.294	7.7029	10.126
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	5.0000	3.000					
Range	±-1.0000	±-.6000					

Elem	Zn2062
Units	ppb
Avg	**10.882**
Stddev	.082
%RSD	.75421
#1	10.946
#2	10.910
#3	10.790
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2336.9**	**671410.**	**21355.**
Stddev	7.6	8955.	61.
%RSD	.32406	1.3338	.28544
#1	2330.1	663360.	21420.
#2	2345.0	669830.	21344.
#3	2335.5	681060.	21300.

Sample Name: 6D11022-IFA Acquired: 4/19/2016 11:30:40 Type: Unk
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.48429**	**498340.**	**.70206**	**14.425**	**.45770**	**-.06111**	**497.91**
Stddev	.31504	4348.	2.4068	.413	.10231	.10752	4.10
%RSD	65.050	.87250	342.82	2.8603	22.353	175.94	.82408
#1	-.63250	502680.	-1.7077	13.952	.52387	.02904	493.42
#2	-.12249	498350.	3.1060	14.617	.50936	-.03225	498.82
#3	-.69790	493980.	.70787	14.707	.33986	-.18012	501.48

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.52552**	**-2.4881**	**-1.3999**	**-1.5352**	**200210.**	**.16836**	**-68.227**
Stddev	.03645	.2163	.0983	.2776	306.	.04360	.554
%RSD	6.9367	8.6920	7.0202	18.084	.15280	25.896	.81260
#1	.49360	-2.6881	-1.4937	-1.4367	199890.	.12204	-67.813
#2	.56525	-2.2586	-1.4082	-1.3202	200240.	.20860	-68.857
#3	.51772	-2.5176	-1.2977	-1.8486	200500.	.17445	-68.010

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**463.33**	**-1.8890**	**.35893**	**.14218**	**-2.1780**	**-.42596**	**.70494**
Stddev	.98	.0436	.24896	.01209	.2289	2.7292	1.4896
%RSD	.21162	2.3091	69.363	8.5069	10.511	640.72	211.31
#1	463.21	-1.9141	.08452	.12890	-2.4316	1.8357	-.48737
#2	462.42	-1.8386	.57034	.15256	-2.1159	.34378	2.3747
#3	464.37	-1.9143	.42192	.14507	-1.9866	-3.4574	.22745

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**-.97814**	**437.7**	**-3.9443**	**-1.839**	**-33.251**	**-3.0288**	**1.2991**
Stddev	3.0288	10.1	.6799	.183	1.325	.9773	.1461
%RSD	309.65	2.300	17.237	9.978	3.9833	32.268	11.243
#1	1.9071	439.5	-3.5066	-1.675	-31.810	-3.4134	1.1336
#2	-4.1325	426.8	-3.5988	-1.803	-33.525	-1.9177	1.4102
#3	-.70896	446.7	-4.7276	-2.037	-34.416	-3.7553	1.3535

Sample Name: 6D11022-IFA Acquired: 4/19/2016 11:30:40 Type: Unk
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Zn2062
Units	ppb
Avg	**-1.0261**
Stddev	.0656
%RSD	6.3964
#1	-.95266
#2	-1.0790
#3	-1.0467

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2016.2**	**623920.**	**19929.**
Stddev	1.7	3025.	69.
%RSD	.08507	.48480	.34438
#1	2017.4	623580.	19938.
#2	2017.0	621090.	19856.
#3	2014.2	627110.	19992.

Sample Name: 6D11022-IFB Acquired: 4/19/2016 11:35:07 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**212.38**	**485390.**	**104.98**	**10.547**	**527.81**	**513.63**	**497.21**
Stddev	1.10	5791.	1.28	.378	1.95	.58	4.66
%RSD	.51955	1.1931	1.2169	3.5820	.37018	.11333	.93734
#1	211.58	486290.	104.33	10.314	525.56	512.96	498.83
#2	213.64	479200.	106.46	10.983	528.86	513.97	500.85
#3	211.93	490680.	104.16	10.344	529.02	513.96	491.95
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1026.8**	**479.48**	**486.40**	**538.75**	**196200.**	**.17796**	**-69.208**
Stddev	2.9	2.05	3.69	3.90	1099.	.05645	2.415
%RSD	.28660	.42741	.75871	.72453	.56014	31.721	3.4896
#1	1023.5	477.27	484.86	535.68	197150.	.12522	-70.779
#2	1027.8	479.83	490.61	543.14	196460.	.23750	-70.418
#3	1029.1	481.33	483.73	537.42	195000.	.17115	-66.427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**464.31**	**458.60**	**.84337**	**.14914**	**943.51**	**43.169**	**649.76**
Stddev	.77	2.71	.24072	.01314	3.78	1.704	2.66
%RSD	.16581	.59070	28.542	8.8103	.40115	3.9466	.41003
#1	463.42	455.96	.74765	.14106	939.20	44.498	646.93
#2	464.76	461.38	1.1172	.14206	945.04	41.248	650.11
#3	464.74	458.47	.66524	.16430	946.30	43.759	652.23
Check ?	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D11022-IFB Acquired: 4/19/2016 11:35:07 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**53.710**	F **369.2**	**-4.1522**	**1046.**	**-32.967**	**100.23**	**501.90**
Stddev	3.711	9.6	.6920	4.	.659	1.66	1.79
%RSD	6.9097	2.591	16.665	.4108	1.9978	1.6522	.35678
#1	49.425	379.5	-4.4579	1043.	-32.736	99.555	499.94
#2	55.803	360.6	-4.6388	1043.	-33.710	99.010	503.44
#3	55.902	367.6	-3.3601	1051.	-32.455	102.11	502.32
Check ?	Chk Pass	Chk Fail	None	Chk Pass	None	Chk Pass	Chk Pass
Value		200.0					
Range		±40.00					

Elem	Zn2062
Units	ppb
Avg	**994.95**
Stddev	1.98
%RSD	.19926
#1	992.69
#2	995.79
#3	996.37
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2024.6**	**619890.**	**19961.**
Stddev	11.9	4029.	93.
%RSD	.58853	.65003	.46425
#1	2038.2	623910.	20026.
#2	2019.7	615850.	19854.
#3	2016.0	619910.	20001.

Sample Name: 6D11022-CCV1 Acquired: 4/19/2016 11:44:06 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0379

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**493.72**	**9945.5**	**1028.4**	**1048.0**	**975.44**	**1023.2**	**51.805**	**1018.0**
Stddev	7.83	43.1	2.9	20.0	2.75	1.8	.051	2.4
%RSD	1.5855	.43334	.28152	1.9066	.28180	.17228	.09803	.23692
#1	488.23	9897.4	1026.9	1030.2	974.89	1023.8	51.833	1019.7
#2	490.25	9980.5	1026.7	1044.1	973.01	1021.2	51.746	1015.2
#3	502.69	9958.7	1031.8	1069.6	978.42	1024.6	51.836	1019.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**953.53**	**1000.9**	**996.10**	**9645.4**	**10.208**	**1027.7**	**49.718**	**1003.1**
Stddev	2.27	16.4	20.53	10.4	.035	22.1	.053	13.6
%RSD	.23847	1.6360	2.0607	.10817	.34764	2.1466	.10701	1.3602
#1	954.52	989.08	977.86	9644.2	10.177	1006.8	49.735	989.57
#2	950.93	994.06	992.11	9635.6	10.247	1025.5	49.659	1002.9
#3	955.14	1019.6	1018.3	9656.4	10.200	1050.8	49.761	1016.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1014.1**	**48.672**	**969.86**	**950.88**	**1004.3**	**1030.6**	F **2810.**	**997.91**
Stddev	2.8	.103	2.81	2.91	3.5	1.0	29.	1.41
%RSD	.27617	.21129	.29025	.30644	.34357	.09377	1.035	.14160
#1	1015.7	48.677	969.70	949.17	1004.0	1031.2	2776.	998.29
#2	1010.8	48.567	967.12	949.23	1001.1	1029.4	2825.	996.35
#3	1015.7	48.773	972.75	954.24	1007.9	1031.1	2827.	999.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

Sample Name: 6D11022-CCV1 Acquired: 4/19/2016 11:44:06 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0379

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**992.5**	**992.86**	**989.99**	**1018.0**	**997.71**
Stddev	1.5	1.51	3.14	19.8	2.91
%RSD	.1530	.15183	.31759	1.9492	.29153
#1	991.2	991.63	988.67	998.65	1000.1
#2	992.1	992.41	987.71	1017.1	994.46
#3	994.2	994.54	993.58	1038.3	998.61
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2300.2**	**666980.**	**20946.**
Stddev	8.2	9883.	132.
%RSD	.35597	1.4818	.62899
#1	2308.2	676180.	20810.
#2	2300.7	668230.	20957.
#3	2291.8	656530.	21072.

Sample Name: 6D11022-CCB1 Acquired: 4/19/2016 11:49:02 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.48498**	**-8.5361**	**.51609**	**1.3151**	**-.00054**	**.08119**	**-.00457**
Stddev	.45819	12.397	1.1134	.6768	.10782	.03777	.00126
%RSD	94.476	145.23	215.74	51.463	20102.	46.516	27.657
#1	-.35958	2.8373	1.6237	1.5658	-.11413	.08898	-.00317
#2	-.99281	-21.750	-.60301	.54874	.01215	.11446	-.00562
#3	-.10254	-6.6952	.52758	1.8308	.10038	.04014	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.04864**	**-.08511**	**.05357**	**.95198**	**8.6537**	**-.00384**	**-1.6854**
Stddev	.02691	.18933	.25320	.21270	4.2058	.00710	1.3873
%RSD	55.325	222.47	472.70	22.343	48.602	185.16	82.309
#1	.02299	.09196	-.15016	.70645	12.472	-.00371	-.14805
#2	.04628	-.28470	.33704	1.0804	9.3440	-.01100	-2.0644
#3	.07666	-.06257	-.02618	1.0691	4.1454	.00320	-2.8438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**.00042**	**.02518**	**.34204**	**.01934**	**-.64896**	**.71909**	**.93054**
Stddev	.01466	.05057	.21872	.00383	.16699	1.5243	.30890
%RSD	3509.5	200.87	63.947	19.811	25.731	211.97	33.196
#1	.01713	.05138	.51112	.01940	-.70354	1.3071	.72560
#2	-.01027	.05727	.09502	.01548	-.46152	1.8618	1.2858
#3	-.00561	-.03312	.41998	.02315	-.78183	-1.0116	.78018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: 6D11022-CCB1 Acquired: 4/19/2016 11:49:02 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**.20130**	F **-9.624**	**.58936**	**-.0996**	**.31610**	**-1.1782**	**-.05948**
Stddev	1.1660	21.12	.20729	.0588	.53275	1.4977	.18442
%RSD	579.21	219.4	35.173	59.02	168.54	127.12	310.05
#1	.71863	-4.381	.82723	-.0579	.74981	-2.8079	.11687
#2	1.0191	-32.87	.44729	-.1669	-.27857	.13789	-.25103
#3	-1.1338	8.378	.49356	-.0742	.47706	-.86464	-.04428
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		1.000					
Low Limit		-1.000					

Elem	Zn2062
Units	ppb
Avg	**.16281**
Stddev	.08702
%RSD	53.451
#1	.25592
#2	.14897
#3	.08353
Check ?	Chk Pass
High Limit	
Low Limit	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2294.9	661570.	21141.
Stddev	5.9	936.	67.
%RSD	.25793	.14141	.31750
#1	2288.1	662650.	21064.
#2	2297.8	661030.	21186.
#3	2298.8	661030.	21172.

Sample Name: 6D11022-CCV7 Acquired: 4/19/2016 18:31:08 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0379

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**508.99**	**10715.**	**993.19**	**1055.9**	**941.33**	**1033.4**	**52.150**	**1043.5**
Stddev	3.78	64.	6.03	8.2	1.91	3.3	.088	.4
%RSD	.74353	.59956	.60667	.77473	.20328	.31970	.16857	.04220
#1	513.21	10648.	994.58	1064.3	939.30	1029.9	52.049	1043.1
#2	507.86	10776.	986.59	1055.2	941.61	1033.7	52.198	1043.6
#3	505.89	10721.	998.39	1048.0	943.09	1036.5	52.203	1043.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**948.99**	**1038.2**	**1079.9**	**9982.2**	**9.8642**	**986.89**	**50.470**	**983.52**
Stddev	2.54	8.5	9.6	63.6	.0442	2.55	.050	7.20
%RSD	.26712	.81649	.88816	.63673	.44821	.25814	.09813	.73159
#1	946.54	1047.7	1089.1	9916.8	9.8176	989.79	50.425	988.72
#2	948.85	1035.8	1080.7	9986.2	9.8694	985.02	50.462	986.54
#3	951.60	1031.2	1069.9	10044.	9.9055	985.87	50.523	975.31
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1028.7**	**49.725**	**940.38**	**935.37**	**981.56**	**1037.6**	F **2774.**	**999.19**
Stddev	.5	.111	.68	1.18	1.50	2.5	22.	1.76
%RSD	.04585	.22357	.07262	.12650	.15313	.24069	.7972	.17637
#1	1029.3	49.847	939.59	934.12	983.30	1039.9	2757.	998.73
#2	1028.5	49.630	940.74	935.53	980.66	1037.9	2767.	997.69
#3	1028.4	49.698	940.80	936.47	980.73	1034.9	2799.	1001.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

Sample Name: 6D11022-CCV7 Acquired: 4/19/2016 18:31:08 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0379

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**982.0**	**983.74**	**969.65**	**1088.4**	**1022.9**
Stddev	.6	5.15	3.07	7.8	1.4
%RSD	.0615	.52384	.31690	.71400	.14039
#1	981.3	978.38	966.98	1095.6	1024.2
#2	982.1	984.20	968.94	1089.4	1021.3
#3	982.5	988.66	973.01	1080.1	1023.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2371.1**	**685410.**	**21749.**
Stddev	3.8	4810.	97.
%RSD	.16099	.70179	.44430
#1	2371.2	680170.	21668.
#2	2374.8	686450.	21724.
#3	2367.2	689620.	21856.

Sample Name: 6D11022-CCB7 Acquired: 4/19/2016 18:35:33 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.08041**	**-22.740**	**-.29060**	**1.6010**	**-.00853**	**.10395**	**.03570**
Stddev	.07109	12.261	1.4106	.0468	.01445	.06894	.00201
%RSD	88.416	53.919	485.42	2.9221	169.35	66.319	5.6169
#1	-.10455	-30.763	-.63936	1.5725	-.02349	.03464	.03339
#2	-.13629	-28.832	-1.4942	1.6550	-.00746	.17251	.03702
#3	-.00039	-8.6260	1.2617	1.5755	.00535	.10471	.03668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.00225**	**-.11112**	**-.12786**	**.57351**	**-5.4787**	**.11719**	F **-3.4240**
Stddev	.05389	.15347	.31120	.62203	2.4569	.01045	2.4988
%RSD	2393.5	138.11	243.40	108.46	44.844	8.9184	72.979
#1	.06233	.03870	-.24828	1.2833	-8.2724	.12249	-4.1434
#2	-.04181	-.10407	-.36085	.12351	-3.6543	.12393	-.64440
#3	-.01377	-.26800	.22556	.31369	-4.5095	.10515	-5.4842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							3.0000
Low Limit							-3.0000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**-.00584**	**-.00709**	**.48770**	**-.01742**	**.06935**	**-.04544**	**.04830**
Stddev	.00539	.02445	.02763	.00820	.13728	.53985	.71908
%RSD	92.427	344.82	5.6648	47.079	197.96	1188.2	1488.8
#1	-.00535	.01835	.50043	-.02054	.22132	-.16293	.83314
#2	-.01146	-.03041	.50666	-.00812	.03241	-.51686	-.10940
#3	-.00070	-.00921	.45600	-.02361	-.04568	.54349	-.57884
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: 6D11022-CCB7 Acquired: 4/19/2016 18:35:33 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**-.10948**	F **-17.83**	**.70572**	**2.328**	**-.88420**	**-1.8095**	**.67322**
Stddev	1.3434	14.48	.17212	.121	.81623	1.3625	.31005
%RSD	1227.1	81.23	24.390	5.176	92.312	75.301	46.054
#1	-.86472	-12.57	.57727	2.284	-1.7207	-.24393	.32004
#2	-.90528	-6.706	.63859	2.464	-.08988	-2.4567	.90059
#3	1.4416	-34.20	.90129	2.235	-.84203	-2.7277	.79903
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		1.000					
Low Limit		-1.000					

Elem	Zn2062
Units	ppb
Avg	**.46421**
Stddev	.08553
%RSD	18.424
#1	.55544
#2	.45134
#3	.38585
Check ?	Chk Pass
High Limit	
Low Limit	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2375.4**	**678040.**	**21628.**
Stddev	1.3	5810.	35.
%RSD	.05456	.85681	.16261
#1	2374.2	673830.	21658.
#2	2376.8	675630.	21636.
#3	2375.3	684670.	21589.

Sample Name: 1604060-01RE1@5X Acquired: 4/19/2016 19:15:51 Type: Unk
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: LL H20 X5

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.90324**	**735.41**	**1.2424**	**299.87**	**12.188**	**.00218**	F **508.54**
Stddev	.50742	15.82	.9534	5.20	.108	.07371	5.34
%RSD	56.178	2.1515	76.740	1.7331	.88981	3377.1	1.0508
#1	-1.4874	725.22	1.8488	302.69	12.247	.06765	512.05
#2	-.57237	753.64	1.7348	303.04	12.063	-.07765	502.39
#3	-.64989	727.37	.14345	293.87	12.255	.01655	511.19

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-1.8737**	**3.4529**	**2.1230**	**.91159**	**241.97**	**6.8477**	**66.559**
Stddev	.0154	.1129	.0596	.19660	7.13	.0822	2.477
%RSD	.81954	3.2687	2.8062	21.567	2.9485	1.2002	3.7220
#1	-1.8881	3.3842	2.1612	.98632	234.26	6.7542	68.587
#2	-1.8576	3.3914	2.1534	1.0599	243.32	6.8804	67.292
#3	-1.8754	3.5832	2.0543	.68858	248.33	6.9085	63.798

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**307.54**	**99.592**	**15.573**	F **548.72**	**185.82**	**1.1022**	**-1.0168**
Stddev	.45	1.401	.128	11.81	.31	.7860	1.5890
%RSD	.14669	1.4065	.81974	2.1519	.16629	71.309	156.28
#1	307.85	100.25	15.680	553.32	185.50	.46047	.81298
#2	307.76	100.54	15.608	535.31	186.12	.86730	-2.0493
#3	307.03	97.983	15.432	557.54	185.86	1.9789	-1.8139

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**7.3046**	F **24430.**	**.25335**	F **11350.**	F **-24.704**	**-.55796**	**11.728**
Stddev	.5877	130.	.46314	84.	.777	1.6008	.419
%RSD	8.0459	.5335	182.81	.7378	3.1471	286.90	3.5749
#1	7.8030	24290.	-.15756	11420.	-24.476	-2.1033	12.141
#2	7.4542	24550.	.75522	11390.	-24.066	1.0930	11.740
#3	6.6565	24450.	.16239	11260.	-25.570	-.66362	11.303

Sample Name: 1604060-01RE1@5X Acquired: 4/19/2016 19:15:51 Type: Unk
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: LL H20 X5

Elem	Zn2062
Units	ppb
Avg	**4.4995**
Stddev	.1240
%RSD	2.7561
#1	4.3901
#2	4.4742
#3	4.6342

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2001.2**	**618850.**	**20446.**
Stddev	7.8	5526.	80.
%RSD	.38991	.89287	.38972
#1	2004.1	620030.	20515.
#2	2007.2	612830.	20464.
#3	1992.4	623690.	20359.

Sample Name: 6D11022-CCV8 Acquired: 4/19/2016 19:20:38 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0379

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**492.89**	**10673.**	**985.78**	**1040.3**	**943.90**	**1031.0**	**52.167**	**1028.1**
Stddev	2.85	7.	5.19	8.1	2.44	1.1	.092	4.4
%RSD	.57913	.06891	.52643	.78183	.25897	.10306	.17702	.42548
#1	494.47	10680.	988.56	1047.7	943.68	1029.9	52.069	1027.4
#2	494.61	10675.	979.79	1041.6	941.57	1031.3	52.182	1024.2
#3	489.60	10666.	988.99	1031.5	946.45	1032.0	52.251	1032.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**945.56**	**1002.3**	**1055.6**	**10239.**	**10.233**	**963.31**	**50.116**	**982.88**
Stddev	2.99	5.0	6.8	49.	.053	10.88	.144	8.47
%RSD	.31570	.50266	.64533	.48272	.51747	1.1296	.28750	.86203
#1	945.04	1005.1	1058.8	10257.	10.289	965.30	49.971	975.92
#2	942.87	1005.4	1060.2	10183.	10.226	973.05	50.119	992.31
#3	948.77	996.50	1047.8	10277.	10.183	951.57	50.259	980.40
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1014.1**	**47.860**	**935.82**	**930.94**	**971.32**	**1024.8**	F **3170.**	**989.92**
Stddev	5.2	.172	3.38	4.19	3.87	5.1	9.	4.28
%RSD	.51188	.36000	.36127	.45035	.39802	.49373	.2727	.43218
#1	1013.6	47.723	935.95	931.36	971.99	1022.1	3177.	989.34
#2	1009.2	47.803	932.37	926.56	967.17	1021.6	3172.	985.96
#3	1019.5	48.053	939.13	934.91	974.82	1030.6	3160.	994.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

Sample Name: 6D11022-CCV8 Acquired: 4/19/2016 19:20:38 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0379

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**978.3**	**1002.6**	**970.14**	**1085.7**	**1005.4**
Stddev	1.8	.1	2.30	7.7	6.1
%RSD	.1825	.00501	.23711	.70628	.60862
#1	976.5	1002.7	969.99	1089.7	1004.1
#2	978.3	1002.6	967.92	1090.6	1000.1
#3	980.0	1002.6	972.51	1076.9	1012.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2416.7**	**696540.**	**21763.**
Stddev	9.1	7001.	46.
%RSD	.37719	1.0051	.21150
#1	2415.7	692860.	21715.
#2	2426.2	692140.	21807.
#3	2408.0	704610.	21765.

Sample Name: 6D11022-CCB8 Acquired: 4/19/2016 19:25:05 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.34367**	**-36.346**	**-1.1490**	**1.0881**	**.10467**	**.04816**	**.02739**
Stddev	.34104	6.598	.9244	.1507	.02224	.10397	.00648
%RSD	99.235	18.154	80.451	13.851	21.251	215.89	23.657
#1	-.36040	-37.231	-1.5599	1.0096	.08549	-.06329	.02165
#2	-.67605	-42.456	-.09041	1.2619	.09946	.06522	.02611
#3	.00543	-29.349	-1.7968	.99288	.12905	.14255	.03441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.10572**	**-.04676**	**-.19341**	**-.11425**	**-2.5999**	**.18181**	F **-5.6126**
Stddev	.00339	.13585	.12041	.12126	5.3047	.03905	3.5174
%RSD	3.2047	290.52	62.258	106.14	204.04	21.479	62.671
#1	.10189	-.20111	-.07901	-.23864	-6.5967	.15019	-1.6492
#2	.10698	.05464	-.31905	-.10772	3.4184	.22546	-6.8253
#3	.10831	.00619	-.18217	.00361	-4.6215	.16977	-8.3632
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							3.0000
Low Limit							-3.0000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**-.00193**	**.05702**	**.37193**	**.26299**	**-.08661**	**.62087**	**.82839**
Stddev	.00341	.08661	.07755	.02563	.15499	.60635	1.0455
%RSD	176.54	151.91	20.851	9.7469	178.96	97.661	126.21
#1	-.00574	.02912	.33559	.23639	-.19528	1.1887	1.4284
#2	-.00087	-.01221	.46098	.26504	.09088	.69169	-.37889
#3	.00082	.15414	.31923	.28754	-.15543	-.01778	1.4356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: 6D11022-CCB8 Acquired: 4/19/2016 19:25:05 Type: QC
Method: 6500DUOBB(v970) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**-.21063**	F **72.48**	**.50317**	**1.107**	**-.38868**	**-.19526**	**.83027**
Stddev	.28943	12.16	.41836	.140	1.0536	.56739	.37880
%RSD	137.41	16.78	83.145	12.62	271.08	290.59	45.624
#1	-.54451	73.22	.43477	.9509	.71689	.45795	.84154
#2	-.05651	59.97	.12323	1.150	-.50166	-.47804	.44596
#3	-.03087	84.26	.95152	1.220	-1.3813	-.56567	1.2033
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		1.000					
Low Limit		-1.000					

Elem	Zn2062
Units	ppb
Avg	**.40669**
Stddev	.08186
%RSD	20.128
#1	.47302
#2	.43184
#3	.31520
Check ?	Chk Pass
High Limit	
Low Limit	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2418.7**	**693140.**	**22061.**
Stddev	5.0	6140.	87.
%RSD	.20847	.88583	.39623
#1	2424.3	697450.	22134.
#2	2417.2	695860.	21964.
#3	2414.6	686110.	22084.

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6112003

6D11107

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
6D11107-CAL1	Cal Standard	QC		1		16D0092	
6D11107-CAL2	Cal Standard	QC		2		16D0377	
6D11107-CAL3	Cal Standard	QC		3		16D0093	
6D11107-CAL4	Cal Standard	QC		4		16C0452	
6D11107-CAL5	Cal Standard	QC		5		16D0153	
6D11107-CAL6	Cal Standard	QC		6		16D0036	
6D11107-CAL7	Cal Standard	QC		7		16D0288	
6D11107-CAL8	Cal Standard	QC		8		16D0289	
6D11107-ICV1	Initial Cal Check	QC		9		16D0422	
6D11107-ICB1	Initial Cal Blank	QC		10		16D0092	
6D11107-CRL1	Instrument RL Check	QC		11		16D0388	
6D11107-CRL2	Instrument RL Check	QC		12		16D0388	
6D11107-IFA1	Interference Check A	QC		13		16D0155	
6D11107-IFB1	Interference Check B	QC		14		16D0156	
6D11107-CCV1	Calibration Check	QC		15		16D0423	
6D11107-CCB1	Calibration Blank	QC		16		16D0092	
6D19006-BLK1	Blank	QC		17			
6D19006-BS1	LCS	QC		18			
1604030-01	PROD-1	MET_ICP_6010C_FULL_Q5	B	19			
1604030-03	MW-4	MET_ICP_6010C_FULL_Q5	B	20			
1604035-03	M6A006	MET_ICP_6010C_FULL	M	21			
6D19006-MS1	Matrix Spike	QC		22			
6D19006-MSD1	Matrix Spike Dup	QC		23			
6D19006-PS1	Post Spike	QC		24			
6D19006-DUP1	Serial Dilution	QC		25			
1604035-04	M6A007FD	MET_ICP_6010C_FULL	E	26			
1604045-01	MW-3	MET_ICP_6010C_FULL_Q5	B	27			
1604045-02	MW-5	MET_ICP_6010C_FULL_Q5	B	28			
1604045-03	MW-1	MET_ICP_6010C_FULL_Q5	B	29			
1604045-04	MW-7	MET_ICP_6010C_FULL_Q5	B	30			
1604045-05	USFS-1	MET_ICP_6010C_FULL_Q5	B	31			
6D11107-CCV2	09H0632	QC		32		16D0423	
6D11107-CCB2	Calibration Blank	QC		33		16D0092	
1604045-06	USFS-2	MET_ICP_6010C_FULL_Q5	B	34			
1604050-01	04MW05-0416	MET_ICP_6010C_FULL	D	35			
1604050-02	04MW04I-0416	MET_ICP_6010C_FULL	D	36			

4/21/16

Samples Loaded By Date

Betty Quillen 4/21/16

Data Processed By Date

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6112003

6D11107

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
1604050-03	03MW09-0416	MET_ICP_6010C_FULL	D	37			
1604084-01	T2621601	MET_ICP_6010C_FULL	C	38			
1604085-01	OVR-041216	MET_ICP_6010C_FULL	B	39			
1604085-02	CLR-041216	MET_ICP_6010C_FULL	B	40			
1604085-03	T3521601	MET_ICP_6010C_FULL	B	41			
1604091-01	MW-2 QA	MET_HARDNESS	G	42			
6D11107-CCV3	10A0473	QC		43		16D0423	
6D11107-CCB3	Calibration Blank	QC		44		16D0092	
6D19003-BLK1	Blank	QC		45			
6D19003-BS1	LCS	QC		46			
1604087-01	MW-BB	MET_ICP_6010C_FULL	D	47			
6D19003-MS1	Matrix Spike	QC		48			
6D19003-MSD1	Matrix Spike Dup	QC		49			
6D19003-PS1	Post Spike	QC		50			
6D19003-DUP1	Serial Dilution	QC		51			
1604087-02	MW-BB	MET_ICP_6010C_FULL_DIS	A	52			
1604087-03	MW-2	MET_ICP_6010C_FULL	D	53			
1604087-04	MW-2	MET_ICP_6010C_FULL_DIS	A	54			
1604087-05	MW-3	MET_ICP_6010C_FULL	D	55			
1604087-06	MW-3	MET_ICP_6010C_FULL_DIS	A	56			
1604087-07	MW-BA	MET_ICP_6010C_FULL	D	57			
1604087-08	MW-BA	MET_ICP_6010C_FULL_DIS	A	58			
1604087-09	MW-5	MET_ICP_6010C_FULL	D	59			
1604087-10	MW-5	MET_ICP_6010C_FULL_DIS	A	60			
6D11107-CCV4	10A0473	QC		61		16D0423	
6D11107-CCB4	Calibration Blank	QC		62		16D0092	
1604087-11	MW-1	MET_ICP_6010C_FULL	D	63			
1604087-12	MW-1	MET_ICP_6010C_FULL_DIS	A	64			
1604087-13	MW-6	MET_ICP_6010C_FULL	D	65			
1604087-14	MW-6	MET_ICP_6010C_FULL_DIS	A	66			
1604087-15	MW-8	MET_ICP_6010C_FULL	D	67			
1604087-16	MW-8	MET_ICP_6010C_FULL_DIS	A	68			
1604087-17	MW-7	MET_ICP_6010C_FULL	D	69			
1604087-18	MW-7	MET_ICP_6010C_FULL_DIS	A	70			
1604087-19	MW-4	MET_ICP_6010C_FULL	D	71			
1604087-20	MW-4	MET_ICP_6010C_FULL_DIS	A	72			

Samples Loaded By — 4/21/16 Date

Data Processed By — Betty Quillen 4/21/16 Date

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6112003

6D11107

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
6D11107-CCV5	10A0473	QC		73		16D0423	
6D11107-CCB5	Calibration Blank	QC		74		16D0092	
6D19008-BLK1	Blank	QC		75			
6D19008-BS1	LCS	QC		76			
1604058-05	1DW-1	MET_TCLP_6010C	A	77			
1604077-01	B-1	MET_TCLP_6010C	A	78			
6D19008-MS1	Matrix Spike	QC		79			
6D19008-MSD1	Matrix Spike Dup	QC		80			
1604077-03	B-2	MET_TCLP_6010C	A	81			
1604013-02RE1	Comp-1	MET_ICP_6010C_FULL	A	82			
1604013-02RE1	Comp-1	MET_TCLP_6010C	-	83			
1604040-01RE1	Dust	MET_ICP_6010C_FULL	A	84			
1604040-01RE2	Dust	MET_ICP_6010C_FULL	A	85			
1604060-01RE2	OTC538-GW-MW01	MET_ICP_LOW6010C_FULL	A	86			
1604008-02RE1	18MW107-2Q2016	T_ICP_LOW6010C_FULL_I	G	87			
1604091-01RE1	MW-2 QA	MET_HARDNESS	G	88			
1604091-01RE1	MW-2 QA	T_ICP_LOW6010C_FULL_	G	89			
1604091-02RE1	MW-2 QA	ICP_LOW6010C_FULL_DI	A	90			
6D11107-CCV6	09H0575	QC		91		16D0423	
6D11107-CCB6	Calibration Blank	QC		92		16D0092	
6D18004-BLK3	Blank	QC		93			
6D18004-BS2	LCS	QC		94			
6D18002-BLK1	Blank	QC		95			
6D18002-BS1	LCS	QC		96			
1604098-01	41216-BP-01	MET_ICP_6010C_FULL	A	97			
1604098-02	41216-BP-02	MET_ICP_6010C_FULL	A	98			
1604098-03	41216-BP-03	MET_ICP_6010C_FULL	A	99			
1604098-04	41216-BP-04	MET_ICP_6010C_FULL	A	100			
1604098-05	41216-BP-05	MET_ICP_6010C_FULL	A	101			
1604098-06	41216-BP-06	MET_ICP_6010C_FULL	A	102			
1604098-07	41216-BP-07	MET_ICP_6010C_FULL	A	103			
1604098-08	41216-BP-08	MET_ICP_6010C_FULL	A	104			
1604098-09	41216-BP-09	MET_ICP_6010C_FULL	A	105			
1604098-10	41216-BP-10	MET_ICP_6010C_FULL	A	106			
6D11107-CCV7	09H0575	QC		107		16D0423	
6D11107-CCB7	Calibration Blank	QC		108		16D0092	

Samples Loaded By — Date: 4/21/16

Data Processed By: Betty Quillen — Date: 4/21/16

ANALYSIS SEQUENCE

Instrument: ME-ICP

Calibration ID: 6112003

6D11107

Lab Number	Sample Name	Analysis	Container	Order	Position	STD ID	ISTD I
1604118-01	Effluent Flume Sediment	MET_ICP_6010C_FULL	A	109			
6D18002-MS1	Matrix Spike	QC		110			
6D18002-MSD1	Matrix Spike Dup	QC		111			
6D18002-PS1	Post Spike	QC		112			
6D18002-DUP1	Serial Dilution	QC		113			
1604108-01RE1	T502-INF01-160413	MET_ICP_LOW6010C_FULL	E	114			
1604108-02RE1	T502-INF01-160413	T_ICP_LOW6010C_FULL_	A	115			
1604108-03RE1	T502-EFF01-160413	MET_ICP_LOW6010C_FULL	E	116			
1604108-04RE1	T502-EFF01-160413	T_ICP_LOW6010C_FULL_	A	117			
6D11107-CCV8	09H0475	QC		118		16D0423	
6D11107-CCB8	Calibration Blank	QC		119		16D0092	
6D18003-BLK1	Blank	QC		120			
6D18003-BS1	LCS	QC		121			
1604059-01	SDS-SB01-0105-0416	T_ICP_LOW6010C_FULL_	D	122			
1604059-02	SDS-SB01D-0105-0416	T_ICP_LOW6010C_FULL_	D	123			
1604059-03	SDS-SB02-0105-0416	T_ICP_LOW6010C_FULL_	D	124			
1604059-04	SDS-SB03-0204-0416	T_ICP_LOW6010C_FULL_	D	125			
6D18003-MS1	Matrix Spike	QC		126			
6D18003-MSD1	Matrix Spike Dup	QC		127			
6D18003-PS1	Post Spike	QC		128			
6D18003-DUP1	Serial Dilution	QC		129			
1604059-04RE1	SDS-SB03-0204-0416	T_ICP_LOW6010C_FULL_	D	130			
6D18003-DUP2	Serial Dilution	QC		131			
6D11107-CCV9	09H0475	QC		132		16D0423	
6D11107-CCB9	Calibration Blank	QC		133		16D0092	
6D11107-CRL3	Instrument RL Check	QC		134		16D0388	
6D11107-CRL4	Instrument RL Check	QC		135		16D0388	
6D11107-CCVA	09H0475	QC		136		16D0423	
6D11107-CCBA	Calibration Blank	QC		137		16D0092	

R.T. 4/21/16
Samples Loaded By Date

Betty Quillen 4/21/16
Data Processed By Date

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	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
1	1	1	1	QC	6D11107-ICV1	16D0422	☒	ICV
2	1	2	1	QC	6D11107-ICB1		☒	ICB
3	1	3	1	QC	6D11107-CRL	RLSTDA	☒	RLSTD-A
4	1	4	1	Unk	6D11107-IFA		☐	
5	1	5	1	QC	6D11107-IFB		☒	ICSAB
6	1	6	1	Unk	RINSE		☒	SAMPLE
7	1	7	1	QC	6D11107-CCV1	16D0423	☒	CCV
8	1	8	1	QC	6D11107-CCB1		☒	CCB
9	1	9	1	QC	6D19006-BLK1	LCSW041916	☒	PREPBLANK
10	1	10	1	Unk	6D19006-MRL1	LOD #1	☒	SAMPLE
11	1	11	1	Unk	6D19006-MRL2	LOQ #1	☒	SAMPLE
12	1	12	1	Unk	6D19006-MRL3	LOD #2	☒	SAMPLE
13	1	1	2	Unk	6D19006-MRL4	LOQ #2	☒	SAMPLE
14	1	2	2	QC	6D19006-BS1	LCSW041916	☒	2007LCS
15	1	3	2	Unk	1604030-01		☒	SAMPLE
16	1	4	2	Unk	1604030-03		☒	SAMPLE
17	1	5	2	Unk	1604035-03		☒	SAMPLE
18	1	6	2	Unk	6D19006-MS1		☒	SAMPLE
19	1	7	2	Unk	6D19006-MSD1		☒	SAMPLE
20	1	8	2	Unk	6D19006-PS1		☒	SAMPLE
21	1	9	2	Unk	6D19006-DUP1@5X	X5 SRL	☒	SAMPLE
22	1	10	2	Unk	1604035-04		☒	SAMPLE
23	1	11	2	Unk	1604045-01		☒	SAMPLE
24	1	12	2	Unk	1604045-02		☒	SAMPLE
25	1	1	3	Unk	1604045-03@2X	X2	☒	SAMPLE
26	1	2	3	Unk	1604045-04@2X	X2	☒	SAMPLE
27	1	3	3	Unk	1604045-05		☒	SAMPLE
28	1	4	3	QC	6D11107-CCV2	16D0423	☒	CCV
29	1	5	3	QC	6D11107-CCB2		☒	CCB
30	1	6	3	Unk	1604045-06		☒	SAMPLE
31	1	7	3	Unk	1604050-01		☒	SAMPLE
32	1	8	3	Unk	1604050-02		☒	SAMPLE
33	1	9	3	Unk	1604050-03		☒	SAMPLE
34	1	10	3	Unk	1604084-01		☒	SAMPLE
35	1	11	3	Unk	1604085-01		☒	SAMPLE
36	1	12	3	Unk	1604085-02		☒	SAMPLE
37	1	1	4	Unk	1604085-03		☒	SAMPLE
38	1	2	4	Unk	1604091-01		☒	SAMPLE
39	1	3	4	QC	6D11107-CCV3	16D0423	☒	CCV
40	1	4	4	QC	6D11107-CCB3		☒	CCB
41	1	5	4	QC	6D19003-BLK1	PBW041916	☒	PREPBLANK
42	1	6	4	QC	6D19003-BS1	LCSW041916	☒	2007LCS
43	1	7	4	Unk	1604087-01		☒	SAMPLE
44	1	8	4	Unk	6D19003-MS1		☒	SAMPLE
45	1	9	4	Unk	6D19003-MSD1		☒	SAMPLE
46	1	10	4	Unk	6D19003-PS1		☒	SAMPLE
47	1	11	4	Unk	6D19003-DUP1@5X	X5 SRL	☒	SAMPLE
48	1	12	4	Unk	1604087-02		☒	SAMPLE
49	1	1	5	Unk	1604087-03		☒	SAMPLE
50	1	2	5	Unk	1604087-04		☒	SAMPLE
51	1	3	5	Unk	1604087-05		☒	SAMPLE
52	1	4	5	Unk	1604087-06		☒	SAMPLE
53	1	5	5	Unk	1604087-07		☒	SAMPLE
54	1	6	5	Unk	1604087-08		☒	SAMPLE
55	1	7	5	Unk	1604087-09		☒	SAMPLE
56	1	8	5	Unk	1604087-10		☒	SAMPLE
57	1	9	5	QC	6D11107-CCV4	16D0423	☒	CCV
58	1	10	5	QC	6D11107-CCB4		☒	CCB
59	1	11	5	Unk	1604087-11		☒	SAMPLE
60	1	12	5	Unk	1604087-12		☒	SAMPLE
61	2	1	1	Unk	1604087-13		☒	SAMPLE

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	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
62	2	2	1	Unk	1604087-14		☒	SAMPLE
63	2	3	1	Unk	1604087-15		☒	SAMPLE
64	2	4	1	Unk	1604087-16		☒	SAMPLE
65	2	5	1	Unk	1604087-17		☒	SAMPLE
66	2	6	1	Unk	1604087-18		☒	SAMPLE
67	2	7	1	Unk	1604087-19		☒	SAMPLE
68	2	8	1	Unk	1604087-20		☒	SAMPLE
69	2	9	1	QC	6D11107-CCV5	16D0423	☒	CCV
70	2	10	1	QC	6D11107-CCB5		☒	CCB
71	2	11	1	QC	6D19008-BLK1	PBW041916 TCLP	☒	PREPBLANK
72	2	12	1	QC	6D19008-BS1	LCSW041916 TCLP	☒	2007LCS
73	2	1	2	Unk	1604058-05	TCLP	☒	SAMPLE
74	2	2	2	Unk	1604077-01	TCLP	☒	SAMPLE
75	2	3	2	Unk	6D19008-MS1	TCLP	☒	SAMPLE
76	2	4	2	Unk	6D19008-MSD1	TCLP	☒	SAMPLE
77	2	5	2	Unk	1604077-03	TCLP	☒	SAMPLE
78	2	6	2	Unk	1604013-02RE1@5	1g->200ml X5 Ca	☒	SAMPLE
79	2	7	2	Unk	1604040-01RE1@2	1g->200ml X25 Cr	☒	SAMPLE
80	2	8	2	Unk	1604040-01RE2@1	1g->200ml X125 Cr	☒	SAMPLE
81	2	9	2	Unk	1604060-01RE2@1	X10 Na Ca	☒	SAMPLE
82	2	10	2	Unk	1604008-02RE1@5	LL H20 X5 Mn	☒	SAMPLE
83	2	11	2	Unk	1604091-01RE1@5	LL H20 X5 Ca Mg N	☒	SAMPLE
84	2	12	2	Unk	1604091-02RE1@5	LL H20 X5 Ca Mg N	☒	SAMPLE
85	2	1	3	QC	6D11107-CCV6	16D0423	☒	CCV
86	2	2	3	QC	6D11107-CCB6		☒	CCB
87	2	3	3	QC	6D18004-BLK3	PBW041816 LL H2	☒	PREPBLANK
88	2	4	3	QC	6D18004-BS2	LCSW041816 LL H	☒	LCSWLOW
89	2	5	3	QC	6D18002-BLK1	PBS041816 1g->200	☒	PREPBLANK
90	2	6	3	QC	6D18002-BS1	LCSS041816 1g->2	☒	2007LCS
91	2	7	3	Unk	1604098-01		☒	SAMPLE
92	2	8	3	Unk	1604098-02		☒	SAMPLE
93	2	9	3	Unk	1604098-03		☒	SAMPLE
94	2	10	3	Unk	1604098-04		☒	SAMPLE
95	2	11	3	Unk	1604098-05		☒	SAMPLE
96	2	12	3	Unk	1604098-06		☒	SAMPLE
97	2	1	4	Unk	1604098-07		☒	SAMPLE
98	2	2	4	Unk	1604098-08		☒	SAMPLE
99	2	3	4	Unk	1604098-09		☒	SAMPLE
100	2	4	4	Unk	1604098-10		☒	SAMPLE
101	2	5	4	QC	6D11107-CCV7	16D0423	☒	CCV
102	2	6	4	QC	6D11107-CCB7		☒	CCB
103	2	7	4	Unk	1604118-01		☒	SAMPLE
104	2	8	4	Unk	6D18002-MS1		☒	SAMPLE
105	2	9	4	Unk	6D18002-MSD1		☒	SAMPLE
106	2	10	4	Unk	6D18002-PS1		☒	SAMPLE
107	2	11	4	Unk	6D18002-DUP1@5X	X5 SRL	☒	SAMPLE
108	2	12	4	Unk	1604108-01RE1@1	LL H20 X10 Na	☒	SAMPLE
109	2	1	5	Unk	1604108-02RE1@1	LL H20 X10 Na	☒	SAMPLE
110	2	2	5	Unk	1604108-03RE1@1	LL H20 X10 Na	☒	SAMPLE
111	2	3	5	Unk	1604108-04RE1@1	LL H20 X10 Na	☒	SAMPLE
112	2	4	5	QC	6D11107-CCV8	16D0423	☒	CCV
113	2	5	5	QC	6D11107-CCB8		☒	CCB
114	2	6	5	QC	6D18003-BLK1	PBS041816 2g->100	☒	PREPBLANK
115	2	7	5	QC	6D18003-BS1	LCSS041816 2g->1	☒	2007LCS
116	2	8	5	Unk	1604059-01@2X	X2	☒	SAMPLE
117	2	9	5	Unk	1604059-02@2X	X2	☒	SAMPLE
118	2	10	5	Unk	1604059-03@2X	X2	☒	SAMPLE
119	2	11	5	Unk	1604059-04		☒	SAMPLE
120	2	12	5	Unk	6D18003-MS1		☒	SAMPLE
121	3	1	1	Unk	6D18003-MSD1		☒	SAMPLE
122	3	2	1	Unk	6D18003-PS1		☒	SAMPLE

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	Rack	Row	Col	Type	Samplename	Comment	Check	Check Table
123	3	3	1	Unk	6D18003-DUP1@5X	X5 SRL	☒	SAMPLE
124	3	4	1	Unk	1604059-04RE1@2	X2	☒	SAMPLE
125	3	5	1	Unk	6D18003-DUP2@10	X10 SRL	☒	SAMPLE
126	3	6	1	QC	6D11107-CCV9	16D0423	☒	CCV
127	3	7	1	QC	6D11107-CCB9		☒	CCB
128	3	8	1	QC	6D11107-CRL		☒	RLSTD-A
129	3	9	1	QC	6D11107-CRL		☒	RLSTD-A
130	3	10	1	QC	6D11107-CCVA	16D0423	☒	CCV
131	3	11	1	QC	6D11107-CCBA		☒	CCB

Sample Name: SEQ-CAL1 Acquired: 4/20/2016 9:44:02 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00013**	**.00172**	**-.00254**	**.00005**	**.02514**	**.00044**	**.00221**
Stddev	.00003	.00039	.00024	.00000	.00118	.00025	.00001
%RSD	23.847	22.463	9.4871	9.0815	4.6964	57.340	.62171
#1	.00016	.00127	-.00282	.00005	.02650	.00071	.00221
#2	.00012	.00191	-.00240	.00005	.02460	.00040	.00220
#3	.00010	.00197	-.00241	.00004	.02433	.00021	.00223

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01944**	**.02036**	**-.00008**	**.00123**	**-.00014**	**-.00579**	**-.00005**
Stddev	.00346	.00094	.00000	.00003	.00002	.00011	.00002
%RSD	17.781	4.6141	3.0211	2.5443	14.277	1.9521	40.339
#1	.02173	.01970	-.00008	.00123	-.00016	-.00569	-.00007
#2	.01546	.01994	-.00009	.00120	-.00014	-.00591	-.00004
#3	.02112	.02143	-.00008	.00127	-.00012	-.00577	-.00004

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00004**	**.00041**	**.00086**	**.03323**	**-.00273**	**.00593**
Stddev	.00002	.00001	.00053	.00004	.00012	.00094	.00128
%RSD	123.80	18.167	127.00	5.1731	.36553	34.260	21.578
#1	-.00002	.00004	.00010	.00083	.03321	-.00184	.00612
#2	-.00004	.00005	.00013	.00084	.03336	-.00371	.00456
#3	.00000	.00004	.00102	.00091	.03312	-.00264	.00710

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00513**	**3.268**	**-.00333**	**-.0023**	**.00146**	**-.00328**	**-.00011**
Stddev	.00045	1.732	.00093	.0002	.00027	.00066	.00001
%RSD	8.7452	52.98	27.822	8.102	18.290	20.041	12.996
#1	.00550	3.700	-.00415	-.0025	.00158	-.00256	-.00011
#2	.00463	4.743	-.00352	-.0022	.00164	-.00345	-.00013
#3	.00526	1.362	-.00233	-.0021	.00115	-.00384	-.00010

Sample Name: SEQ-CAL1 Acquired: 4/20/2016 9:44:02 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Zn2062
Units	Cts/S
Avg	**.00473**
Stddev	.00069
%RSD	14.639
#1	.00552
#2	.00422
#3	.00444

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2453.4**	**701530.**	**21026.**
Stddev	1.3	7184.	58.
%RSD	.05422	1.0240	.27543
#1	2453.6	709800.	21086.
#2	2454.5	696840.	20971.
#3	2451.9	697940.	21020.

Sample Name: SEQ-CAL2 Acquired: 4/20/2016 9:47:51 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00163**	**.17411**	**.04602**	**.00102**	**.94423**	**.30651**	**.11440**	**3.7795**
Stddev	.00002	.00030	.00051	.00001	.00146	.00054	.00043	.0022
%RSD	1.3038	.17474	1.1123	1.0554	.15430	.17654	.37795	.05853
#1	.00164	.17377	.04644	.00102	.94584	.30605	.11391	3.7799
#2	.00161	.17437	.04545	.00101	.94385	.30710	.11473	3.7771
#3	.00165	.17418	.04618	.00103	.94301	.30637	.11456	3.7815

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.96040**	**.00648**	**.00802**	**.09164**	**.01131**	**.00111**	**.03632**	**.50194**
Stddev	.00272	.00005	.00008	.00049	.00049	.00001	.00027	.00174
%RSD	.28326	.78024	.98960	.53054	4.3596	.55832	.74763	.34683
#1	.96082	.00648	.00802	.09192	.01160	.00111	.03625	.50146
#2	.96289	.00643	.00794	.09193	.01074	.00110	.03609	.50050
#3	.95750	.00653	.00810	.09108	.01159	.00112	.03662	.50387

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899	Sr4215	Ti3349
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.53452**	**.21116**	**.10623**	**.06138**	**4.527**	**.08712**	**.2960**	**.02505**
Stddev	.00034	.00165	.00044	.00052	1.502	.00059	.0010	.00037
%RSD	.06397	.77904	.41017	.84616	33.17	.67855	.3528	1.4847
#1	.53477	.21021	.10663	.06136	5.652	.08648	.2951	.02520
#2	.53413	.21022	.10577	.06087	5.108	.08724	.2958	.02532
#3	.53466	.21306	.10629	.06191	2.822	.08765	.2971	.02463

Elem	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S
Avg	**.07995**	**.00509**	**1.4762**
Stddev	.00020	.00001	.0017
%RSD	.24484	.25176	.11194
#1	.08000	.00509	1.4763
#2	.08011	.00508	1.4745
#3	.07973	.00511	1.4778

Sample Name: SEQ-CAL2 Acquired: 4/20/2016 9:47:51 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2524.2	714630.	21627.
Stddev	7.1	2885.	61.
%RSD	.28226	.40376	.28093
#1	2523.5	717770.	21696.
#2	2517.5	714010.	21585.
#3	2531.7	712100.	21599.

Sample Name: SEQ-CAL4 Acquired: 4/20/2016 10:00:27 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Ba2335	Mn2576
Units	Cts/S	Cts/S	Cts/S
Avg	**.14290**	**90.140**	**3.4289**
Stddev	.00102	.158	.0248
%RSD	.71363	.17501	.72203
#1	.14230	90.312	3.4243
#2	.14407	90.105	3.4557
#3	.14232	90.003	3.4068

Int. Std.	Sc1880	Sc3613
Units	Cts/S	Cts/S
Avg	2525.9	724030.
Stddev	3.5	5554.
%RSD	.13726	.76709
#1	2525.2	724730.
#2	2529.7	718150.
#3	2522.9	729190.

Sample Name: SEQ-CAL3 Acquired: 4/20/2016 9:51:39 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03732**	**.33917**	**.48831**	**.02009**	**17.385**	**3.1143**	**4.9039**	**36.539**
Stddev	.00056	.00174	.00102	.00020	.025	.0129	.0184	.052
%RSD	1.5026	.51386	.20898	.99484	.14241	.41451	.37521	.14362
#1	.03688	.33717	.48724	.01995	17.363	3.0995	4.8828	36.586
#2	.03795	.33998	.48840	.02032	17.412	3.1233	4.9121	36.548
#3	.03712	.34035	.48927	.02000	17.381	3.1200	4.9168	36.482

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**9.0850**	**.06313**	**.07012**	**.17170**	**.16842**	**.01060**	**.15624**	**.33942**
Stddev	.0062	.00092	.00086	.00121	.00103	.00016	.00061	.00482
%RSD	.06778	1.4546	1.2274	.70259	.61109	1.5368	.39108	1.4210
#1	9.0895	.06240	.06954	.17034	.16725	.01046	.15559	.33442
#2	9.0875	.06416	.07111	.17211	.16916	.01078	.15631	.34405
#3	9.0780	.06283	.06971	.17265	.16886	.01058	.15681	.33978

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5.1407**	**3.6654**	**4.8358**	**2.0794**	**1.0222**	**.56564**	**249.1**	**1.7787**
Stddev	.0076	.0122	.0057	.0039	.0034	.00032	1.1	.0010
%RSD	.14739	.33380	.11718	.18566	.33281	.05618	.4574	.05805
#1	5.1481	3.6522	4.8378	2.0830	1.0230	.56555	247.8	1.7798
#2	5.1409	3.6677	4.8402	2.0798	1.0252	.56599	249.6	1.7786
#3	5.1330	3.6764	4.8294	2.0753	1.0185	.56537	249.9	1.7778

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.857**	**.24342**	**.82079**	**.05338**	**14.269**
Stddev	.013	.00114	.00213	.00045	.026
%RSD	.4425	.46780	.25934	.85225	.18512
#1	2.842	.24230	.82222	.05315	14.299
#2	2.864	.24339	.81835	.05390	14.254
#3	2.864	.24457	.82181	.05309	14.253

Sample Name: SEQ-CAL3 Acquired: 4/20/2016 9:51:39 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2427.8	701140.	21090.
Stddev	4.7	6080.	135.
%RSD	.19513	.86713	.63884
#1	2422.4	708000.	21098.
#2	2430.7	696400.	21221.
#3	2430.5	699030.	20952.

Sample Name: SEQ-CAL5 Acquired: 4/20/2016 10:04:32 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Al3961	Fe2611	Mg2790
Units	Cts/S	Cts/S	Cts/S
Avg	**16.405**	**8.6040**	**1.5501**
Stddev	.128	.0153	.0050
%RSD	.78130	.17755	.32549
#1	16.312	8.6216	1.5450
#2	16.352	8.5954	1.5551
#3	16.551	8.5950	1.5500

Int. Std.	Sc3613-2
Units	Cts/S
Avg	**20481.**
Stddev	19.
%RSD	.09495
#1	20475.
#2	20503.
#3	20465.

Sample Name: SEQ-CAL6 Acquired: 4/20/2016 10:08:50 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	B_2496	Be3130	Cd2144	Co2286	Cr2677	Cu3247	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4.7375**	**.09424**	**29.590**	**346.85**	**93.857**	**.62877**	**.67638**	**.10084**
Stddev	.0029	.00102	.377	1.56	.028	.01697	.01507	.00167
%RSD	.06105	1.0822	1.2744	.44850	.02951	2.6996	2.2276	1.6581
#1	4.7382	.09353	29.254	348.38	93.877	.62281	.67525	.09974
#2	4.7343	.09541	29.998	345.27	93.825	.64792	.69198	.10276
#3	4.7400	.09378	29.519	346.89	93.869	.61558	.66191	.10000

Elem	Mo2020	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899	Sr4215
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**50.151**	**49.442**	**21.738**	**9.9473**	**5.3532**	**599.5**	**8.7804**	**28.78**
Stddev	.065	.052	.016	.0119	.0034	2.7	.0112	.38
%RSD	.13057	.10615	.07521	.11948	.06296	.4471	.12702	1.303
#1	50.221	49.500	21.752	9.9595	5.3570	596.9	8.7929	28.89
#2	50.092	49.397	21.720	9.9357	5.3504	599.3	8.7716	28.36
#3	50.138	49.429	21.742	9.9466	5.3524	602.3	8.7767	29.09

Elem	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.3737**	**8.2681**	**.51293**	**139.41**
Stddev	.0035	.0054	.01208	2.01
%RSD	.14601	.06536	2.3556	1.4416
#1	2.3697	8.2728	.50016	141.28
#2	2.3756	8.2622	.52418	137.28
#3	2.3758	8.2693	.51446	139.68

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2477.0**	**712750.**	**21411.**
Stddev	3.9	10182.	92.
%RSD	.15933	1.4286	.43025
#1	2473.8	718940.	21329.
#2	2481.4	700990.	21510.
#3	2475.8	718310.	21393.

Sample Name: SEQ-CAL7 Acquired: 4/20/2016 10:13:50 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	K_7664	Na5895
Units	Cts/S	Cts/S
Avg	**1.6552**	**6.9375**
Stddev	.0035	.0159
%RSD	.21099	.22849
#1	1.6514	6.9283
#2	1.6582	6.9558
#3	1.6560	6.9284

Int. Std.	Sc3613-2
Units	Cts/S
Avg	21022.
Stddev	25.
%RSD	.12118
#1	21008.
#2	21052.
#3	21007.

Sample Name: SEQ-CAL8 Acquired: 4/20/2016 10:17:31 Type: Cal
Method: 6500DUOBB(v970) Mode: IR Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ca3179	Mg2790	Na5895
Units	Cts/S	Cts/S	Cts/S
Avg	**46.252**	**.31367**	**37.823**
Stddev	.153	.00079	.941
%RSD	.32990	.25205	2.4875
#1	46.078	.31277	38.866
#2	46.363	.31425	37.563
#3	46.316	.31398	37.039

Int. Std.	Sc3613-2
Units	Cts/S
Avg	19803.
Stddev	19.
%RSD	.09441
#1	19799.
#2	19787.
#3	19824.

Sample Name: 6D11107-ICV1 Acquired: 4/20/2016 10:45:37 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0422

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**502.93**	**10102.**	**1030.2**	F **1055.3**	**966.08**	**1036.0**	**52.496**
Stddev	2.83	72.	1.0	4.9	2.56	4.2	.174
%RSD	.56246	.71160	.09479	.46715	.26489	.40360	.33051
#1	499.67	10033.	1030.5	1050.1	967.92	1031.2	52.311
#2	504.79	10177.	1031.0	1059.9	967.17	1039.0	52.654
#3	504.32	10097.	1029.1	1056.0	963.16	1037.8	52.524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1000.0			
Range				±50.000			

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1027.8**	**950.45**	**962.88**	**1012.2**	**9788.5**	F **10.763**	**1039.5**
Stddev	2.0	2.05	5.72	3.9	67.3	.050	4.9
%RSD	.19632	.21597	.59418	.38800	.68801	.46842	.46666
#1	1027.0	951.50	956.27	1007.8	9711.3	10.705	1035.2
#2	1030.1	951.77	966.21	1015.5	9819.3	10.796	1044.8
#3	1026.3	948.09	966.15	1013.3	9835.0	10.789	1038.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value						10.000	
Range						±.50000	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**49.724**	**981.49**	**1005.6**	**49.068**	**962.96**	**956.10**	**989.05**
Stddev	.092	8.98	1.6	.117	1.22	2.07	1.53
%RSD	.18525	.91468	.15504	.23859	.12673	.21690	.15504
#1	49.635	974.72	1005.2	49.031	964.22	955.98	990.70
#2	49.819	991.67	1007.4	49.199	962.85	958.22	988.76
#3	49.720	978.07	1004.3	48.973	961.79	954.08	987.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D11107-ICV1 Acquired: 4/20/2016 10:45:37 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0422

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**1032.8**	F **15090.**	**974.97**	**997.3**	**1012.3**	**1002.9**	**1047.7**
Stddev	2.0	87.	2.14	2.8	6.1	2.0	4.0
%RSD	.19624	.5775	.21907	.2804	.59909	.20088	.38567
#1	1032.2	15020.	975.73	994.2	1005.7	1002.3	1044.5
#2	1035.1	15070.	976.62	999.7	1013.9	1005.2	1052.3
#3	1031.1	15190.	972.56	998.0	1017.5	1001.3	1046.4
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		500.0					
Range		±25.00					

Elem	Zn2062
Units	ppb
Avg	**1010.3**
Stddev	1.9
%RSD	.18924
#1	1009.9
#2	1012.4
#3	1008.6
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2433.1	700230.	20745.
Stddev	6.2	3859.	45.
%RSD	.25534	.55116	.21808
#1	2432.0	702440.	20754.
#2	2427.6	695780.	20697.
#3	2439.8	702480.	20786.

Sample Name: 6D11107-ICB1 Acquired: 4/20/2016 10:50:39 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.41110**	**-19.325**	**-.08476**	**1.1357**	**-.01445**	**.00623**	**-.00069**	**-.00880**
Stddev	.18773	22.372	1.4524	.7073	.02786	.08007	.00225	.05464
%RSD	45.666	115.77	1713.5	62.277	192.75	1286.0	325.50	621.16
#1	-.27051	-10.047	-1.0970	1.8816	.00727	.02289	-.00172	-.00479
#2	-.33850	-44.842	1.5794	.47472	-.04586	-.08087	.00189	-.06533
#3	-.62429	-3.0842	-.73665	1.0507	-.00476	.07666	-.00224	.04373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**.19708**	**-.07642**	**.87021**	**17.073**	**.05551**	**.82471**	**.00029**	**.12300**
Stddev	.10994	.33405	.59562	3.607	.03156	.64350	.01402	.02771
%RSD	55.785	437.11	68.446	21.127	56.855	78.028	4764.1	22.530
#1	.15551	-.08100	.77162	20.320	.08325	1.1985	.00344	.15181
#2	.11399	.25989	.33004	13.191	.02117	1.1939	.01247	.09653
#3	.32175	-.40816	1.5090	17.708	.06212	.08166	-.01503	.12066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.02268**	**.04316**	**-.02463**	**-.80720**	**.52159**	**-1.5450**	F **42.22**	**.33349**
Stddev	.18607	.00563	.20003	.62545	.62712	1.6232	20.75	.28081
%RSD	820.35	13.035	812.27	77.484	120.23	105.06	49.16	84.202
#1	.18112	.03673	.11990	-.64748	-.08923	-2.2838	52.51	.26635
#2	-.06566	.04556	-.25293	-.27710	1.1638	-2.6674	18.33	.09234
#3	-.18350	.04719	.05914	-1.4970	.49018	.31622	55.82	.64179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							1.000	
Low Limit							-1.000	

Sample Name: 6D11107-ICB1 Acquired: 4/20/2016 10:50:39 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**.1175**	**.80504**	**.14599**	**.02643**	**.19571**
Stddev	.1594	.77192	.77872	.45487	.07163
%RSD	135.7	95.885	533.40	1720.9	36.602
#1	-.0204	1.0531	.92216	-.11645	.19721
#2	.0809	1.4224	.15107	.53559	.26658
#3	.2920	-.06041	-.63525	-.33984	.12334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2458.4**	**703220.**	**20991.**
Stddev	1.1	3602.	85.
%RSD	.04379	.51219	.40285
#1	2457.7	704640.	20908.
#2	2458.0	699130.	20988.
#3	2459.7	705900.	21077.

Sample Name: 6D11107-CRL Acquired: 4/20/2016 10:59:41 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**2.8964**	**215.14**	**4.7911**	**31.903**	**10.296**	**2.0902**	**2.2311**
Stddev	.1804	13.67	.7909	.235	.065	.1237	.0076
%RSD	6.2282	6.3557	16.507	.73738	.63251	5.9187	.33994
#1	2.7934	224.70	5.7032	31.925	10.274	2.0202	2.2225
#2	2.7910	221.24	4.3750	31.658	10.244	2.2331	2.2338
#3	3.1047	199.48	4.2952	32.127	10.369	2.0175	2.2369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**2.2470**	**10.610**	**4.2060**	**10.665**	**117.81**	**3.2615**	**6.4976**
Stddev	.0059	.094	.2430	.090	5.52	.0363	1.0746
%RSD	.26269	.88339	5.7781	.84482	4.6859	1.1121	16.538
#1	2.2536	10.502	4.4476	10.579	119.15	3.2773	5.3034
#2	2.2422	10.675	3.9615	10.759	122.54	3.2872	7.3865
#3	2.2453	10.652	4.2089	10.658	111.74	3.2200	6.8029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**3.2472**	**6.5740**	**10.439**	**3.2874**	**6.0227**	**3.3620**	**10.070**
Stddev	.0041	.0336	.069	.0067	.1440	.1497	.843
%RSD	.12657	.51119	.66003	.20422	2.3904	4.4514	8.3736
#1	3.2490	6.5726	10.447	3.2912	6.1725	3.4015	9.7326
#2	3.2425	6.6083	10.367	3.2914	5.8853	3.4880	11.030
#3	3.2501	6.5412	10.504	3.2797	6.0103	3.1966	9.4477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D11107-CRL Acquired: 4/20/2016 10:59:41 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	F **3.9079**	F **35.68**	**20.393**	**6.409**	**10.990**	**8.2603**	**10.000**
Stddev	1.5009	15.35	.308	.035	1.381	.6848	.366
%RSD	38.406	43.04	1.5098	.5425	12.561	8.2900	3.6650
#1	4.6495	43.92	20.704	6.442	11.156	7.7196	10.198
#2	4.8936	17.96	20.388	6.372	9.5340	8.0309	10.225
#3	2.1806	45.15	20.088	6.413	12.280	9.0303	9.5773
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	5.0000	3.000					
Range	±-1.0000	±.6000					

Elem	Zn2062
Units	ppb
Avg	**11.073**
Stddev	.023
%RSD	.20644
#1	11.046
#2	11.083
#3	11.088
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2496.6	**715920.**	**21321.**
Stddev	3.6	2211.	74.
%RSD	.14488	.30883	.34678
#1	2500.8	717460.	21301.
#2	2494.5	713390.	21259.
#3	2494.5	716910.	21403.

Sample Name: 6D11107-CRL Acquired: 4/20/2016 11:08:06 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**2.7211**	**211.30**	**5.5174**	**33.742**	**10.780**	**2.1702**	**2.3698**
Stddev	.3787	17.43	.9827	.628	.092	.0952	.0070
%RSD	13.919	8.2480	17.810	1.8616	.85652	4.3855	.29517
#1	2.2991	225.29	4.4331	33.175	10.754	2.0797	2.3656
#2	2.8327	191.78	6.3492	34.417	10.704	2.1613	2.3659
#3	3.0315	216.84	5.7698	33.633	10.883	2.2695	2.3779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**2.3588**	**11.154**	**4.2049**	**11.469**	F **126.77**	**3.5799**	F **7.3313**
Stddev	.0966	.021	.0637	.350	3.36	.0104	1.1083
%RSD	4.0968	.18453	1.5143	3.0498	2.6511	.29157	15.117
#1	2.2483	11.157	4.1754	11.081	123.77	3.5788	8.4358
#2	2.4006	11.173	4.2780	11.759	126.13	3.5908	6.2193
#3	2.4275	11.132	4.1614	11.568	130.40	3.5700	7.3389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value					100.00		6.0000
Range					±20.000		±1.2000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**3.4248**	**6.9666**	**10.698**	**3.4078**	**6.4604**	**2.5074**	F **12.853**
Stddev	.0255	.0529	.067	.0081	.1515	.3590	.365
%RSD	.74386	.75991	.62924	.23700	2.3446	14.317	2.8388
#1	3.3979	6.9298	10.732	3.3985	6.3449	2.9132	13.269
#2	3.4278	7.0273	10.740	3.4127	6.4045	2.2310	12.586
#3	3.4486	6.9428	10.620	3.4123	6.6319	2.3781	12.704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							±2.0000

Sample Name: 6D11107-CRL Acquired: 4/20/2016 11:08:06 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: RLSTDA

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**4.8939**	F **15.55**	**21.301**	**6.561**	**10.898**	F **9.9532**	**11.283**
Stddev	1.2193	24.98	.245	.055	.716	1.0439	.497
%RSD	24.915	160.6	1.1517	.8339	6.5677	10.489	4.4021
#1	5.5437	-1.388	21.165	6.504	10.432	10.176	11.581
#2	3.4873	44.24	21.584	6.613	11.722	10.868	10.710
#3	5.6507	3.805	21.153	6.565	10.540	8.8157	11.559
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value		3.000				8.0000	
Range		±.6000				±1.6000	

Elem	Zn2062
Units	ppb
Avg	**11.862**
Stddev	.010
%RSD	.08172
#1	11.851
#2	11.870
#3	11.863
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2507.1**	**713810.**	**21403.**
Stddev	5.9	4240.	31.
%RSD	.23357	.59404	.14287
#1	2502.1	716220.	21438.
#2	2513.6	708920.	21380.
#3	2505.7	716300.	21391.

Sample Name: 6D11107-IFA Acquired: 4/20/2016 11:12:54 Type: Unk
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.67928**	**503340.**	**-3.3864**	**19.202**	**.14241**	**.01700**	**508.22**
Stddev	.16061	3970.	.0856	2.257	.07196	.08062	2.88
%RSD	23.644	.78867	2.5276	11.752	50.527	474.17	.56668
#1	-.85874	499850.	-3.4227	21.764	.06131	.10872	504.97
#2	-.54904	507660.	-3.4479	17.508	.19860	-.04266	510.44
#3	-.63005	502490.	-3.2887	18.335	.16732	-.01505	509.26

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.10571**	**-2.2793**	**-1.5891**	**-.64133**	**198040.**	**-.07801**	**-62.710**
Stddev	.03463	.0935	.2022	.56305	350.	.05336	1.678
%RSD	32.763	4.0999	12.726	87.795	.17666	68.398	2.6757
#1	.08170	-2.2565	-1.3686	-.00260	197700.	-.13960	-61.211
#2	.14541	-2.1993	-1.6326	-1.0658	198020.	-.04586	-64.522
#3	.09002	-2.3820	-1.7660	-.85557	198400.	-.04857	-62.396

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**465.40**	**-1.6487**	**.61131**	**.10464**	**-1.8081**	**2.4828**	**1.8084**
Stddev	.97	.0303	.32883	.01788	.1817	.7289	1.9330
%RSD	.20773	1.8396	53.792	17.085	10.052	29.356	106.89
#1	464.31	-1.6836	.25439	.11392	-2.0180	2.3271	-.10762
#2	466.16	-1.6337	.90197	.08403	-1.6994	3.2769	1.7750
#3	465.73	-1.6288	.67756	.11597	-1.7070	1.8444	3.7579

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**.10361**	**630.2**	**-2.7642**	**-1.730**	**-35.293**	**-.31552**	**.88063**
Stddev	.45588	29.7	.6403	.099	.510	2.0706	.32380
%RSD	440.00	4.708	23.163	5.727	1.4445	656.27	36.769
#1	.29526	637.5	-2.5552	-1.716	-35.576	-1.5870	.54764
#2	.43237	597.6	-3.4829	-1.836	-34.704	2.0738	.89987
#3	-.41681	655.6	-2.2546	-1.640	-35.598	-1.4334	1.1944

Sample Name: 6D11107-IFA Acquired: 4/20/2016 11:12:54 Type: Unk
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Zn2062
Units	ppb
Avg	**-.49372**
Stddev	.07356
%RSD	14.898
#1	-.47767
#2	-.42952
#3	-.57398

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2150.0**	**657240.**	**19869.**
Stddev	**4.8**	**6614.**	**102.**
%RSD	**.22518**	**1.0063**	**.51430**
#1	2153.8	650950.	19918.
#2	2144.5	664130.	19752.
#3	2151.6	656630.	19938.

Sample Name: 6D11107-IFB Acquired: 4/20/2016 11:17:46 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**221.36**	**499320.**	**103.66**	**13.465**	**525.83**	**518.13**	**502.71**
Stddev	1.91	4867.	2.10	.920	1.50	.20	2.84
%RSD	.86304	.97481	2.0235	6.8354	.28472	.03876	.56470
#1	220.42	494050.	104.81	12.475	525.33	517.97	502.33
#2	220.10	500280.	104.92	14.294	524.64	518.36	500.07
#3	223.55	503640.	101.23	13.626	527.51	518.07	505.71
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1049.0**	**486.24**	**484.80**	**551.77**	**196500.**	**-.06231**	**-63.627**
Stddev	3.4	1.49	2.81	5.24	724.	.07601	.914
%RSD	.32437	.30624	.58041	.94997	.36829	121.99	1.4365
#1	1046.8	485.09	484.75	551.92	195960.	-.09764	-64.420
#2	1047.4	485.72	482.00	546.45	196220.	-.11423	-62.628
#3	1052.9	487.92	487.63	556.93	197320.	.02494	-63.835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**466.83**	**455.65**	**.64043**	**.10282**	**946.90**	**50.208**	**650.91**
Stddev	.58	3.87	.32914	.00654	2.25	1.996	4.09
%RSD	.12474	.84912	51.393	6.3620	.23809	3.9744	.62868
#1	466.16	455.87	.53728	.09705	946.33	49.346	646.89
#2	467.15	451.68	1.0088	.10148	944.99	52.490	650.78
#3	467.18	459.41	.37522	.10993	949.39	48.789	655.07
Check ?	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: 6D11107-IFB Acquired: 4/20/2016 11:17:46 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**52.681**	F **488.4**	**-3.9481**	**1056.**	**-36.139**	**102.18**	**513.13**
Stddev	1.648	16.1	.9257	1.	.388	2.80	5.65
%RSD	3.1292	3.301	23.447	.1114	1.0730	2.7451	1.1005
#1	52.023	505.8	-4.9599	1057.	-35.691	104.64	514.09
#2	51.462	474.0	-3.1436	1057.	-36.364	99.126	507.07
#3	54.556	485.5	-3.7409	1055.	-36.362	102.76	518.24
Check ?	Chk Pass	Chk Fail	None	Chk Pass	None	Chk Pass	Chk Pass
Value		200.0					
Range		±40.00					

Elem	Zn2062
Units	ppb
Avg	**1008.3**
Stddev	3.0
%RSD	.29465
#1	1006.1
#2	1007.2
#3	1011.7
Check ?	Chk Pass
Value	
Range	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2141.9**	**656370.**	**19830.**
Stddev	8.7	4134.	**49.**
%RSD	.40604	.62976	.24519
#1	2149.4	657530.	19776.
#2	2144.0	659800.	19847.
#3	2132.3	651780.	19869.

Sample Name: 6D11107-CCV1 Acquired: 4/20/2016 11:26:45 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0423

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**504.05**	**10279.**	**1016.2**	**1050.7**	**964.18**	**1032.9**	**52.297**	**1031.1**
Stddev	2.73	43.	2.1	7.4	2.13	2.7	.130	.8
%RSD	.54212	.41625	.21020	.70418	.22056	.26599	.24819	.07932
#1	505.14	10230.	1017.6	1056.1	966.44	1029.8	52.147	1030.8
#2	506.08	10300.	1013.7	1053.8	962.23	1033.8	52.361	1030.5
#3	500.95	10308.	1017.2	1042.3	963.85	1035.0	52.382	1032.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**961.89**	**967.83**	**1021.3**	**10045.**	**10.934**	**1004.6**	**49.316**	**990.01**
Stddev	1.38	4.54	5.5	42.	.012	7.7	.067	11.25
%RSD	.14366	.46878	.53846	.42308	.10912	.77042	.13650	1.1367
#1	963.00	969.52	1025.4	9996.0	10.943	1007.4	49.244	996.91
#2	960.35	971.28	1023.6	10073.	10.921	1010.6	49.376	996.09
#3	962.34	962.69	1015.1	10066.	10.938	995.88	49.329	977.02
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1002.1**	**48.690**	**960.75**	**952.92**	**1000.1**	**1028.0**	F **3406.**	**985.53**
Stddev	.6	.034	.44	1.03	1.9	1.1	8.	1.02
%RSD	.05878	.07065	.04568	.10760	.19120	.10555	.2315	.10321
#1	1001.6	48.710	961.02	953.42	1002.0	1029.2	3398.	985.53
#2	1001.9	48.650	960.24	951.74	998.15	1027.1	3413.	984.52
#3	1002.7	48.709	960.98	953.59	1000.2	1027.8	3408.	986.55
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

Sample Name: 6D11107-CCV1 Acquired: 4/20/2016 11:26:45 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0423

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**984.5**	**1029.0**	**992.91**	**1057.5**	**999.33**
Stddev	1.7	5.2	1.49	7.7	2.06
%RSD	.1774	.50898	.15009	.72458	.20651
#1	982.5	1023.1	991.67	1064.7	997.00
#2	985.7	1033.0	992.49	1058.5	1000.1
#3	985.2	1031.0	994.56	1049.4	1000.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2453.7**	**707630.**	**20973.**
Stddev	1.6	5522.	44.
%RSD	.06488	.78031	.20999
#1	2452.6	704480.	20945.
#2	2452.9	704400.	20950.
#3	2455.5	714000.	21024.

Sample Name: 6D11107-CCB1 Acquired: 4/20/2016 11:31:11 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.37862**	**3.8109**	**-.16840**	**.99607**	**-.13659**	**.04330**	**-.00038**	**.01838**
Stddev	.29779	5.7530	.90622	.21486	.06373	.03332	.00269	.04952
%RSD	78.651	150.96	538.14	21.570	46.656	76.949	706.36	269.52
#1	-.54658	5.3006	.48366	.78351	-.20760	.01162	-.00050	-.03833
#2	-.55450	8.6725	-1.2032	1.2131	-.11779	.07804	.00237	.04035
#3	-.03480	-2.5404	.21433	.99155	-.08438	.04022	-.00302	.05311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**.01781**	**-.28876**	**.76535**	**7.2592**	**.09183**	**-1.4183**	**-.01240**	**.08019**
Stddev	.05875	.19603	.32204	11.189	.02883	.4081	.02036	.01994
%RSD	329.91	67.886	42.078	154.14	31.401	28.774	164.18	24.862
#1	.08218	-.49240	.84858	18.806	.11476	-.97859	-.03155	.07220
#2	.00418	-.27254	.40986	-3.5339	.10127	-1.7849	.00898	.06549
#3	-.03293	-.10135	1.0376	6.5055	.05946	-1.4914	-.01463	.10288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.17939**	**.01297**	**-.32485**	**-.62074**	**1.7337**	**-.56882**	F **11.75**	**.54523**
Stddev	.04442	.00512	.08859	.89961	1.2375	.73465	28.87	.18204
%RSD	24.763	39.502	27.271	144.92	71.378	129.15	245.7	33.387
#1	.18039	.01373	-.24618	-.07628	2.6399	-.31812	-2.735	.75484
#2	.13448	.00751	-.30757	-.12684	2.2374	-1.3960	45.00	.42682
#3	.22330	.01767	-.42081	-1.6591	.32380	.00766	-7.005	.45404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							1.000	
Low Limit							-1.000	

Sample Name: 6D11107-CCB1 Acquired: 4/20/2016 11:31:11 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**-.1679**	**1.0793**	**.92243**	**-.44621**	**.50398**
Stddev	.1070	.2768	.65986	.08476	.05853
%RSD	63.75	25.642	71.535	18.995	11.613
#1	-.2525	1.0323	.90623	-.54262	.57142
#2	-.2036	1.3766	.27081	-.41254	.46648
#3	-.0476	.82908	1.5902	-.38346	.47405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2481.5	716280.	21291.
Stddev	5.9	9686.	58.
%RSD	.23587	1.3523	.27097
#1	2487.7	713200.	21339.
#2	2476.0	727130.	21306.
#3	2480.8	708510.	21227.

Sample Name: 6D11107-CCV5 Acquired: 4/20/2016 16:03:44 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0423

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**527.89**	**10752.**	**996.93**	**1048.1**	**930.98**	**1023.1**	**52.745**	**1056.0**
Stddev	3.72	56.	3.09	6.8	1.80	3.5	.129	2.6
%RSD	.70432	.52071	.31010	.64798	.19364	.34001	.24447	.24402
#1	527.13	10711.	993.56	1043.8	930.88	1019.2	52.597	1055.7
#2	524.61	10728.	997.58	1044.7	929.23	1024.2	52.805	1053.6
#3	531.93	10815.	999.64	1056.0	932.83	1025.9	52.832	1058.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**950.13**	**1043.7**	**1048.7**	**9723.4**	**10.434**	**995.21**	**50.274**	**981.16**
Stddev	2.44	8.2	4.5	55.3	.045	5.69	.210	10.51
%RSD	.25721	.78838	.42908	.56867	.43495	.57133	.41796	1.0714
#1	949.92	1043.0	1046.5	9662.3	10.444	988.91	50.090	984.09
#2	947.80	1035.8	1045.8	9737.7	10.384	999.97	50.503	969.49
#3	952.67	1052.3	1053.9	9770.0	10.473	996.74	50.227	989.89
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1029.8**	**49.510**	**950.58**	**943.84**	**987.20**	**1038.3**	F **3035.**	**998.72**
Stddev	2.9	.105	1.52	1.20	2.14	2.8	71.	1.68
%RSD	.28542	.21183	.15948	.12687	.21645	.27124	2.330	.16866
#1	1028.1	49.400	949.88	943.93	986.69	1035.4	3101.	997.52
#2	1028.0	49.609	949.54	942.61	985.37	1038.5	3042.	998.01
#3	1033.2	49.520	952.32	945.00	989.55	1041.0	2960.	1000.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

Sample Name: 6D11107-CCV5 Acquired: 4/20/2016 16:03:44 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0423

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**983.9**	**999.21**	**966.42**	**1075.5**	**1034.8**
Stddev	2.4	5.38	3.72	2.0	2.9
%RSD	.2433	.53824	.38456	.18977	.28380
#1	981.2	994.13	962.39	1073.2	1033.4
#2	985.5	998.65	967.17	1076.2	1032.9
#3	985.1	1004.8	969.71	1077.0	1038.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2421**.0	686610.	**20098.**
Stddev	**9**.0	3097.	66.
%RSD	.37304	.45098	.32918
#1	2415.6	686240.	20022.
#2	2431.4	689880.	20141.
#3	2416.0	683720.	20133.

Sample Name: 6D11107-CCB5 Acquired: 4/20/2016 16:08:10 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.15477**	**15.918**	**.02429**	**2.6188**	**.09500**	**.08181**	**.00346**	**.03715**
Stddev	.05159	18.605	1.4000	.7145	.01148	.03984	.00319	.03689
%RSD	33.335	116.88	5764.0	27.284	12.082	48.699	92.293	99.306
#1	-.21348	-.39242	1.3209	3.1603	.10114	.06641	.00037	.06600
#2	-.11662	36.182	.21202	2.8871	.08176	.12705	.00325	.04986
#3	-.13422	11.965	-1.4601	1.8089	.10211	.05196	.00675	-.00442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**.37189**	**-.04517**	**-.29277**	**.95706**	**.00206**	**.13289**	**.00649**	**.41511**
Stddev	.05491	.30466	.37747	4.0764	.01555	1.2645	.02667	.02013
%RSD	14.766	674.50	128.93	425.93	754.26	951.52	410.99	4.8486
#1	.32722	.08671	.10907	2.6755	.02002	1.5614	-.01600	.43178
#2	.35524	.17134	-.34749	-3.6972	-.00670	-.84287	-.00049	.42079
#3	.43319	-.39356	-.63990	3.8929	-.00713	-.31985	.03595	.39275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.11132**	**.17300**	**.79026**	**.18880**	**.99726**	**-1.5615**	**.4062**	**.02488**
Stddev	.10526	.00344	.13224	.86270	.98332	1.6515	16.17	.37521
%RSD	94.555	1.9886	16.733	456.94	98.603	105.77	3981.	1507.9
#1	.23102	.17035	.63842	1.1788	.68176	-3.3162	-12.79	-.37547
#2	.06970	.17689	.85216	-.40163	.21040	-.03732	-4.431	.08163
#3	.03323	.17176	.88019	-.21082	2.0996	-1.3310	18.44	.36849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: 6D11107-CCB5 Acquired: 4/20/2016 16:08:10 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4215	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**-.0216**	**.74534**	**.52086**	**-.42873**	**.18923**
Stddev	.1493	.20073	1.2321	.67123	.07239
%RSD	692.4	26.931	236.56	156.56	38.257
#1	-.1877	.55892	1.2051	-1.1845	.17327
#2	.0218	.71928	1.2590	.09801	.26827
#3	.1013	.95783	-.90154	-.19971	.12615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2381.4	682790.	19948.
Stddev	5.2	2425.	47.
%RSD	.22000	.35518	.23459
#1	2381.2	680430.	19896.
#2	2386.8	685270.	19966.
#3	2376.3	682670.	19984.

Sample Name: 1604060-01RE2@10X Acquired: 4/20/2016 16:57:07 Type: Unk
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: X10 Na Ca

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**-.16974**	**599.11**	**-.72745**	**153.00**	**6.2765**	**-.06222**	**279.05**
Stddev	.26874	5.31	1.9384	1.14	.0610	.10035	3.04
%RSD	158.32	.88645	266.47	.74218	.97135	161.29	1.0901
#1	.10450	604.72	.78868	153.67	6.3405	-.16386	279.48
#2	-.43261	598.45	-2.9116	153.63	6.2700	.03678	281.85
#3	-.18113	594.16	-.05948	151.68	6.2190	-.05957	275.82

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.99046**	**1.7322**	**1.1478**	**1.3078**	**129.64**	**3.4617**	**20.883**
Stddev	.09504	.0790	.1041	.3358	4.72	.0399	3.944
%RSD	9.5956	4.5592	9.0715	25.680	3.6430	1.1516	18.888
#1	-1.0823	1.6416	1.1952	1.5731	133.22	3.4727	25.401
#2	-.99653	1.7864	1.0284	.93020	124.28	3.4950	19.127
#3	-.89253	1.7685	1.2199	1.4201	131.41	3.4175	18.123

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**159.55**	**51.553**	**7.7158**	**488.10**	**96.851**	**-.53182**	**2.0330**
Stddev	.41	.466	.2208	16.13	.656	.54681	.7385
%RSD	.25400	.90479	2.8622	3.3035	.67739	102.82	36.326
#1	159.93	52.004	7.8705	504.17	97.368	-.43616	2.1191
#2	159.60	51.582	7.4629	488.21	96.113	-1.1201	1.2552
#3	159.13	51.073	7.8140	471.92	97.072	-.03915	2.7247

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**3.3467**	F **12490.**	**.23685**	**5971.**	F **-11.891**	**.60797**	**5.4336**
Stddev	1.2374	83.	.12599	14.	1.201	.49751	.1762
%RSD	36.974	.6650	53.193	.2314	10.102	81.831	3.2434
#1	4.5825	12480.	.14165	5973.	-13.219	.05239	5.2791
#2	3.3499	12580.	.18919	5985.	-10.880	.75922	5.3961
#3	2.1077	12410.	.37972	5957.	-11.574	1.0123	5.6255

Sample Name: 1604060-01RE2@10X Acquired: 4/20/2016 16:57:07 Type: Unk
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: X10 Na Ca

Elem	Zn2062
Units	ppb
Avg	**2.2942**
Stddev	.0361
%RSD	1.5722
#1	2.3259
#2	2.3017
#3	2.2550

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2177.0**	**639210.**	**18666.**
Stddev	14.4	5045.	3.
%RSD	.66366	.78925	.01653
#1	2160.3	633410.	18666.
#2	2185.9	641580.	18663.
#3	2184.7	642630.	18670.

Sample Name: 6D11107-CCV6 Acquired: 4/20/2016 17:15:18 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0423

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2144
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**505.66**	**10413.**	**1000.6**	**1029.6**	**943.17**	**1019.0**	**52.250**	**1036.5**
Stddev	2.04	37.	2.3	2.4	3.15	1.8	.110	3.5
%RSD	.40311	.35085	.22608	.23231	.33440	.17601	.21068	.33547
#1	504.08	10373.	1000.5	1029.2	942.74	1020.0	52.132	1034.6
#2	507.96	10446.	1003.0	1032.2	940.25	1020.1	52.350	1034.3
#3	504.94	10418.	998.46	1027.4	946.51	1016.9	52.268	1040.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppb	ppb	ppb	ppb	ppm	ppb	ppm	ppb
Avg	**949.68**	**992.00**	**1001.9**	**9886.8**	**10.696**	**989.13**	**49.511**	**980.18**
Stddev	3.12	3.18	4.4	56.5	.072	5.05	.116	7.96
%RSD	.32854	.32071	.43645	.57150	.67160	.51070	.23420	.81226
#1	948.32	990.45	1002.0	9827.0	10.661	994.93	49.381	988.21
#2	947.47	995.66	1006.2	9939.3	10.779	985.66	49.551	972.29
#3	953.25	989.90	997.46	9894.0	10.649	986.81	49.603	980.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2516	Sn1899
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1010.6**	**48.705**	**952.80**	**942.76**	**987.77**	**1024.6**	F **3128.**	**987.54**
Stddev	3.4	.081	2.65	3.19	2.50	2.7	7.	3.90
%RSD	.33992	.16618	.27812	.33809	.25303	.25918	.2366	.39448
#1	1008.4	48.623	951.28	942.96	987.49	1022.9	3126.	986.67
#2	1008.9	48.706	951.27	939.48	985.43	1023.1	3135.	984.14
#3	1014.6	48.785	955.86	945.85	990.40	1027.6	3121.	991.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							500.0	
Range							±50.00	

Sample Name: 6D11107-CCV6 Acquired: 4/20/2016 17:15:18 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment: 16D0423

Elem	Sr4215	Ti3349	TI1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**977.6**	**1017.7**	**970.83**	**1049.2**	**1010.5**
Stddev	2.4	1.6	4.96	3.9	3.6
%RSD	.2446	.15350	.51116	.37061	.35937
#1	975.1	1016.1	967.24	1049.0	1008.2
#2	979.8	1019.3	968.74	1053.2	1008.7
#3	978.0	1017.7	976.49	1045.5	1014.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	2325.3	**670890.**	**19464.**
Stddev	4.1	1654.	38.
%RSD	.17741	.24659	.19511
#1	2330.1	669540.	19504.
#2	2322.8	670400.	19429.
#3	2323.1	672730.	19459.

Sample Name: 6D11107-CCB6 Acquired: 4/20/2016 17:19:43 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**.10543**	**4.8147**	**-.93301**	**2.1713**	**.22714**	**.12185**	**.00603**
Stddev	.09610	23.485	.66867	.3304	.04582	.06305	.00305
%RSD	91.148	487.78	71.668	15.216	20.173	51.746	50.587
#1	.21615	17.800	-1.6481	1.8939	.25553	.06645	.00264
#2	.05640	-22.295	-.82762	2.0832	.25161	.19046	.00691
#3	.04374	18.939	-.32330	2.5368	.17428	.10863	.00854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2144	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Li6707
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**.09469**	**.39108**	**.12437**	**.42559**	**-.09098**	**-.00022**	**.68524**
Stddev	.04345	.06781	.21914	.34748	6.1918	.01752	1.2223
%RSD	45.881	17.338	176.20	81.647	6805.9	7954.2	178.38
#1	.04464	.33045	.36800	.03570	2.5621	.00413	.85862
#2	.11676	.46430	.06173	.53849	-7.1672	.01472	1.8116
#3	.12268	.37850	-.05663	.70259	4.3321	-.01951	-.61450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068
Units	ppm	ppb	ppb	ppm	ppb	ppb	ppb
Avg	**.00387**	**.56003**	**.16231**	**.21303**	**.51027**	**-.49064**	**1.1378**
Stddev	.01833	.02741	.13847	.00870	.18814	.90907	1.1439
%RSD	474.24	4.8947	85.312	4.0822	36.870	185.28	100.54
#1	.00401	.55207	.25550	.20915	.50464	-.33896	-.13866
#2	.02212	.59055	.00319	.20696	.32502	-1.4660	2.0701
#3	-.01454	.53749	.22825	.22300	.70116	.33305	1.4819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: 6D11107-CCB6 Acquired: 4/20/2016 17:19:43 Type: QC
Method: 6500DUOBB(v971) Mode: CONC Corr. Factor: 1.000000
User: rburr Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2516	Sn1899	Sr4215	Ti3349	Tl1908	V_2924
Units	ppb	ppm	ppb	ppb	ppb	ppb	ppb
Avg	**.07366**	F **-3.375**	**.33719**	**.1008**	**1.3670**	**.39487**	**-.55394**
Stddev	.59674	13.96	.43599	.2097	1.2851	.64595	.18558
%RSD	810.13	413.5	129.30	208.1	94.009	163.59	33.502
#1	-.61496	-10.44	.08159	-.0196	.04613	.35340	-.75271
#2	.39682	12.70	.08937	-.0211	2.6131	-.22935	-.52388
#3	.43912	-12.39	.84060	.3429	1.4418	1.0606	-.38522
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		1.000					
Low Limit		-1.000					

Elem	Zn2062
Units	ppb
Avg	**.28000**
Stddev	.07404
%RSD	26.442
#1	.35806
#2	.27117
#3	.21078
Check ?	Chk Pass
High Limit	
Low Limit	

Int. Std.	Sc1880	Sc3613	Sc3613-2
Units	Cts/S	Cts/S	Cts/S
Avg	**2345.3**	**661640.**	**19441.**
Stddev	5.4	3005.	86.
%RSD	.23032	.45411	.44321
#1	2350.9	664400.	19471.
#2	2340.1	662090.	19509.
#3	2344.9	658440.	19344.

PREPARATION BENCH SHEET

6D09919

Empirical Laboratories, LLC

Printed: 4/22/2016 10:35:06AM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1604034-02	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;;
1604034-02RE1	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Added 4/19/2016 by BLQ;Na OLR.
1604034-04	N	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	MS/MSD;;
1604034-04	N	MET_ICP_LOW6010C_FULL_(	04/13/2016	100	25						NA	MS/MSD;BatchQC;Added for BatchQC in: 6D09919
1604034-04RE1	N	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	MS/MSD;Added 4/19/2016 by BLQ;Na OLR
1604034-06	D	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;;
1604034-06RE1	D	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Added 4/19/2016 by BLQ;Na OLR
1604036-01	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn
1604036-01RE1	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn
1604036-01RE2	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn
1604036-03	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn
1604036-03RE1	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn
1604036-05	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn
1604036-05RE1	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn
1604036-05RE2	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn
1604036-07	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn
1604036-07RE1	E	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Includes Sn;Includes Sn

PREPARATION BENCH SHEET

6D09919

Empirical Laboratories, LLC

Printed: 4/22/2016 10:35:06AM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1604042-02	F	MET_ICP_LOW6010C_FULL_(	04/13/2016	100	25						NA	;QSM5;QSM5
1604043-04	H	MET_ICP_LOW6010C_FULL_(	04/13/2016	100	25						NA	;see versions;see versions
1604044-18	A	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;;
1604056-03	H	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Lab Filter - As, Fe, Mn;Use for all other lists
1604056-03RE1	H	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Use for all other lists;K factors Mn saturated
1604059-06	D	MET_ICP_LOW6010C_FULL_(	04/13/2016	100	25						NA	;QSM5 see versions;QSM5 see versions
1604060-01	A	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;;
1604060-01RE1	A	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Added 4/19/2016 by BLQ;Ca, Na, Mg OLR IEC Al, Cd, Se, Zn, Cr, Cu, Ni
1604060-01RE2	A	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Added 4/20/2016 by BLQ;Ca, Na OLR IEC Al, Cd, Se, Zn
1604061-01	H	MET_ICP_LOW6010C_FULL_(	04/13/2016	100	25						NA	;see versions;see versions
1604063-14	A	MET_ICP_LOW6010C_FULL	04/13/2016	100	25						NA	;Choose version;Choose version
1604066-02	F	MET_ICP_LOW6010C_FULL_(	04/13/2016	100	25						NA	;QSM5;QSM5
1604066-03	F	MET_ICP_LOW6010C_FULL_(	04/13/2016	100	25						NA	;QSM5;QSM5
1604066-04	F	MET_ICP_LOW6010C_FULL_(	04/13/2016	100	25						NA	;QSM5;QSM5
6D09919-BLK1		QC	04/13/2016	100	25						NA	
6D09919-BS1		QC	04/13/2016	100	25	16C0509			5000		NA	
6D09919-DUP1		QC	04/13/2016	100	25		1604034-04				NA	

PREPARATION BENCH SHEET

6D09919

Empirical Laboratories, LLC

Printed: 4/22/2016 10:35:06AM

Instrument:

Matrix: Water **Prepared using: METALS - MET_3005A_LOW** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
6D09919-DUP2		QC	04/13/2016	100	25		1604034-04RE1			NA	
6D09919-MS1		QC	04/13/2016	100	25	16C0510	1604034-04	25		NA	
6D09919-MSD1		QC	04/13/2016	100	25	16C0510	1604034-04	25		NA	
6D09919-PS1		QC	04/13/2016	100	25	16C0510	1604034-04	25		NA	

Reagents Used:

Standard	Description
15I0710	Hydrochloric Acid
16C0246	Nitric acid

PREPARATION BENCH SHEET

6D12009

Empirical Laboratories, LLC

Printed: 4/22/2016 10:35:43AM

Instrument:

Matrix: Water **Prepared using: METALS - pMercury-W SW 7470A** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1604019-02	AE	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	MS/MSD;QSM5;QSM5
1604019-02	AE	MET_7470A_MERCURY	04/12/2016	30	30						NA	MS/MSD;BatchQC;Added for BatchQC in: 6D12009
1604019-03	K	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	;QSM5;QSM5
1604035-03	M	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	MS/MSD, Unpreserved VOC 7 DAY HT;BatchQC;Added for BatchQC in: 6D12009
1604035-03	P	MET_7470A_MERCURY	04/12/2016	30	30						NA	MS/MSD, Unpreserved VOC 7 DAY HT;;
1604035-04	E	MET_7470A_MERCURY	04/12/2016	30	30						NA	Unpreserved VOC 7 DAY HT;;
1604042-02	F	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	;QSM5;QSM5
1604043-04	H	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	;;
1604053-04	F	MET_7470A_MERCURY	04/12/2016	30	30						NA	UNPRES. VOC VIALS 7 DAY HT;;
1604053-05	F	MET_7470A_MERCURY	04/12/2016	30	30						NA	UNPRES. VOC VIALS 7 DAY HT;;
1604059-06	D	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	;QSM5;QSM5
1604060-01	A	MET_7470A_MERCURY	04/12/2016	30	30						NA	;;
1604061-01	H	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	;;
1604064-01	E	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	;QSM5;QSM5
1604065-01	D	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	;QSM5;QSM5
1604066-02	F	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	;QSM5;QSM5
1604066-03	F	MET_7470A_MERCURY_Q5	04/12/2016	30	30						NA	;QSM5;QSM5

PREPARATION BENCH SHEET

6D12009

Empirical Laboratories, LLC

Printed: 4/22/2016 10:35:43AM

Instrument:

Matrix: Water **Prepared using: METALS - pMercury-W SW 7470A** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1604066-04	F	MET_7470A_MERCURY_Q5	04/12/2016	30	30					NA	;QSM5;QSM5
1604073-01	H	MET_7470A_MERCURY_Q5	04/12/2016	30	30					NA	;;
1604074-01	H	MET_7470A_MERCURY_Q5	04/12/2016	30	30					NA	;;
6D12009-BLK1		QC	04/12/2016	30	30					NA	
6D12009-BS1		QC	04/12/2016	30	30	15C0686		300		NA	
6D12009-BSD1		QC	04/12/2016	30	30	15C0686		300		NA	
6D12009-MS1		QC	04/12/2016	30	30	15C0686	1604019-02	300		NA	
6D12009-MS2		QC	04/12/2016	30	30	15C0686	1604035-03	300		NA	
6D12009-MSD1		QC	04/12/2016	30	30	15C0686	1604019-02	300		NA	
6D12009-MSD2		QC	04/12/2016	30	30	15C0686	1604035-03	300		NA	

Reagents Used:

Standard	Description
15L0504	Sulfuric Acid
16C0246	Nitric acid
16C0516	Potassium Permanganate (KMn04)
16C0551	NAC L-Hydroxylamine Hydrochloride (HG Reagent)
16D0174	3% HCl Mercury Carrier
16D0175	Stannous Chloride Mercury Reagent

Data for Wet Chemistry Forms

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604060-01 [OTC538-GW-MW01]	6D08004	5.00/5.00	5.00	5.00	1.00			04/08/16

Sample Extraction Data

Prep Method: WC_PREP_ANIONS_W-E300.0

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604060-01RE1 [OTC538-GW-MW01]	6D11016	5.00/5.00	5.00	5.00	10.00		H	04/11/16

Sample Extraction Data

Prep Method: pNone-SM2540C

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604060-01 [OTC538-GW-MW01]	6D12003	100.00/100.00	100	100	1.00			04/12/16

Sample Extraction Data

Prep Method: pNone-SM2540D

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1604060-01 [OTC538-GW-MW01]	6D12004	250.00/250.00	250	250	1.00			04/12/16

ANALYSIS DATA SHEET

OTC538-GW-MW01

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water	Laboratory ID:	1604060-01
Sampled:	04/07/16 10:05	Received:	04/08/16 09:50

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**11400**	**20.0**	20.0	20.0	1		SM2540C	6D12003	04/12/16 16:55
TSS	Total Suspended Solids	**14.4**	**4.00**	4.00	4.00	1		SM2540D	6D12004	04/13/16 00:00
14797-55-8	Nitrate as N	**38.0**	**0.0330**	0.100	0.250	1	E	E300.0	6D08004	04/08/16 15:06
14797-55-8	Nitrate as N	**45.8**	**0.330**	1.00	2.50	10	H D	E300.0	6D11016	04/11/16 19:52

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D08004-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	U	E300.0	6D08004	04/08/16 14:30

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604060

Project: Holloman AFB

Laboratory ID: 6D08004-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**2.595**	**0.0330**	0.100	0.250	1		E300.0	6D08004	04/08/16 14:48

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D11016-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	ND	0.0330	0.100	0.250	1	U	E300.0	6D11016	04/11/16 18:41

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604060

Project: Holloman AFB

Laboratory ID: 6D11016-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**2.692**	**0.0330**	0.100	0.250	1		E300.0	6D11016	04/11/16 18:59

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604060

Project: Holloman AFB

Laboratory ID: 6D11016-BSD1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
14797-55-8	Nitrate as N	**2.698**	**0.0330**	0.100	0.250	1		E300.0	6D11016	04/11/16 19:17

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D12003-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**33.0**	**20.0**	20.0	20.0	1		SM2540C	6D12003	04/12/16 16:55

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604060

Project: Holloman AFB

Laboratory ID: 6D12003-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TDS	Total Dissolved Solids	**1105**	**20.0**	20.0	20.0	1		SM2540C	6D12003	04/12/16 16:55

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Matrix: Water
Laboratory ID: 6D12004-BLK1
% Solids:

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TSS	Total Suspended Solids	ND	4.00	4.00	4.00	1	U	SM2540D	6D12004	04/13/16 00:00

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC

Client: CB&I

Matrix: Water

% Solids:

SDG: 1604060

Project: Holloman AFB

Laboratory ID: 6D12004-BS1

CAS NO.	Analyte	Conc. (mg/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
TSS	Total Suspended Solids	**239.4**	**4.00**	4.00	4.00	1		SM2540D	6D12004	04/13/16 00:00

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1604060
Project: Holloman AFB
Calibration: 5323007
Sequence: 5K32315

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
5K32315-ICV1	Nitrate as N	3.164	2.881	91.1	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1604060
Project: Holloman AFB
Calibration: 5323007
Sequence: 6D09906

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D09906-CCV1	Nitrate as N	2.500	2.591	104	mg/L	+/- 10.00%
6D09906-CCV2	Nitrate as N	2.500	2.634	105	mg/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

E300.0

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Instrument ID: WC-IC2

SDG: 1604060
Project: Holloman AFB
Calibration: 5323007
Sequence: 6D10208

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
6D10208-CCV1	Nitrate as N	2.500	2.542	102	mg/L	+/- 10.00%
6D10208-CCV2	Nitrate as N	2.500	2.698	108	mg/L	+/- 10.00%

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1604060

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 6D09906

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D09906-CRL3	Nitrate as N	0.2500	0.2479	99.2	mg/L	50 - 150

CRDL STANDARD

E300.0

Laboratory: Empirical Laboratories, LLC

SDG: 1604060

Client: CB&I

Project: Holloman AFB

Instrument ID: WC-IC2

Calibration: 5323007

Sequence: 6D10208

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
6D10208-CRL3	Nitrate as N	0.2500	0.2277	91.1	mg/L	50 - 150

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Batch: 6D08004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D08004-BLK1	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Batch: 6D11016

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D11016-BLK1	Nitrate as N	0.00260	0.0330	0.250	mg/L	U	E300.0

METHOD BLANKS
SM2540C

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Batch: 6D12003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D12003-BLK1	Total Dissolved Solids	33.0	20.0	20.0	mg/L		SM2540C

METHOD BLANKS
SM2540D

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Batch: 6D12004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D12004-BLK1	Total Suspended Solids	0.00	4.00	4.00	mg/L	U	SM2540D

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Sequence: 5K32315
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
5K32315-ICB1	Nitrate as N	0.001700	0.0330	0.250	mg/L	U	E300.0

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Sequence: 6D09906
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D09906-CCB1	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0
6D09906-CCB2	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0

BLANKS
E300.0

Laboratory: Empirical Laboratories, LLC
SDG: 1604060
Client: CB&I
Project: Holloman AFB
Sequence: 6D10208
Calibration: 5323007
Instrument ID: WC-IC2

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
6D10208-CCB1	Nitrate as N	0.00	0.0330	0.250	mg/L	U	E300.0
6D10208-CCB2	Nitrate as N	0.00120	0.0330	0.250	mg/L	U	E300.0

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D08004	Laboratory ID:	6D08004-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.595	104	90 - 110

LCS / LCS DUPLICATE RECOVERY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D11016	Laboratory ID:	6D11016-BS1
Preparation:	WC_PREP_ANIONS_W	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Nitrate as N	2.500	2.692	108	90 - 110

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Nitrate as N	2.500	2.698	108	0.256	200	90 - 110

LCS / LCS DUPLICATE RECOVERY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12003	Laboratory ID:	6D12003-BS1
Preparation:	pNone	Initial/Final:	20 mL / 20 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Dissolved Solids	964.0	1105	115	80 - 120

LCS / LCS DUPLICATE RECOVERY

SM2540D

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Matrix:	Water		
Batch:	6D12004	Laboratory ID:	6D12004-BS1
Preparation:	pNone	Initial/Final:	1000 mL / 1000 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Total Suspended Solids	233.5	239.4	103	80 - 120

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Batch: 6D08004 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW01	1604060-01	04/08/16 12:20	5.00	5.00
Blank	6D08004-BLK1	04/08/16 12:20	5.00	5.00
LCS	6D08004-BS1	04/08/16 12:20	5.00	5.00

PREPARATION BATCH SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Batch: 6D11016 Batch Matrix: Water Preparation: WC_PREP_ANIONS_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW01	1604060-01RE1	04/11/16 16:37	5.00	5.00
Blank	6D11016-BLK1	04/11/16 16:37	5.00	5.00
LCS	6D11016-BS1	04/11/16 16:37	5.00	5.00
LCS Dup	6D11016-BSD1	04/11/16 16:37	5.00	5.00

PREPARATION BATCH SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Batch: 6D12003 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW01	1604060-01	04/12/16 06:35	100.00	100.00
Blank	6D12003-BLK1	04/12/16 06:35	100.00	100.00
LCS	6D12003-BS1	04/12/16 06:35	20.00	20.00

PREPARATION BATCH SUMMARY

SM2540D

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Batch: 6D12004 Batch Matrix: Water Preparation: pNone

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
OTC538-GW-MW01	1604060-01	04/12/16 06:37	250.00	250.00
Blank	6D12004-BLK1	04/12/16 06:37	250.00	250.00
LCS	6D12004-BS1	04/12/16 06:37	1,000.00	1,000.00

ANALYSIS SEQUENCE SUMMARY

SM2540C

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:		Instrument:	
Calibration:			

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	6D12003-BS1	20160412-002	04/12/16 16:55
Blank	6D12003-BLK1	20160412-001	04/12/16 16:55

ANALYSIS SEQUENCE SUMMARY

SM2540D

Laboratory: Empirical Laboratories, LLC

SDG: 1604060

Client: CB&I

Project: Holloman AFB

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS	6D12004-BS1	20160412-002	04/13/16 00:00
Blank	6D12004-BLK1	20160412-001	04/13/16 00:00

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	5K32315	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	5K32315-CAL1	SEQ-CAL1_Integration	11/17/15 07:54
Cal Standard	5K32315-CAL2	SEQ-CAL2_Integration	11/17/15 08:12
Cal Standard	5K32315-CAL3	SEQ-CAL3_Integration	11/17/15 08:30
Cal Standard	5K32315-CAL4	SEQ-CAL4_Integration	11/17/15 08:48
Cal Standard	5K32315-CAL5	SEQ-CAL5_Integration	11/17/15 09:06
Cal Standard	5K32315-CAL6	SEQ-CAL6_Integration	11/17/15 09:24
Cal Standard	5K32315-CAL7	SEQ-CAL7_Integration	11/17/15 09:42
Cal Standard	5K32315-CAL8	SEQ-CAL8_Integration	11/17/15 09:59
Cal Standard	5K32315-CAL9	SEQ-CAL9_Integration	11/17/15 10:17
Initial Cal Check	5K32315-ICV1	SEQ-ICV1_Integration	11/17/15 10:35
Initial Cal Blank	5K32315-ICB1	SEQ-ICB1_Integration	11/17/15 10:53

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D09906	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	6D09906-CCV1	6D09906-CCV1_Integration	04/08/16 13:01
Calibration Blank	6D09906-CCB1	6D09906-CCB1_Integration	04/08/16 13:19
Instrument RL Check	6D09906-CRL3	6D09906-CRL3_Integration	04/08/16 14:12
Blank	6D08004-BLK1	6D08004-BLK1_Integration	04/08/16 14:30
LCS	6D08004-BS1	6D08004-BS1_Integration	04/08/16 14:48
OTC538-GW-MW01	1604060-01	1604060-01_Integration	04/08/16 15:06
Calibration Check	6D09906-CCV2	6D09906-CCV2_Integration	04/08/16 18:58
Calibration Blank	6D09906-CCB2	6D09906-CCB2_Integration	04/08/16 19:15

ANALYSIS SEQUENCE SUMMARY

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060
Client:	CB&I	Project:	Holloman AFB
Sequence:	6D10208	Instrument:	WC-IC2
Calibration:	5323007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	6D10208-CCV1	6D10208-CCV1_Integration	04/11/16 17:12
Calibration Blank	6D10208-CCB1	6D10208-CCB1_Integration	04/11/16 17:30
Instrument RL Check	6D10208-CRL3	6D10208-CRL3_Integration	04/11/16 18:23
Blank	6D11016-BLK1	6D11016-BLK1_Integration	04/11/16 18:41
LCS	6D11016-BS1	6D11016-BS1_Integration	04/11/16 18:59
LCS Dup	6D11016-BSD1	6D11016-BSD1_Integration	04/11/16 19:17
OTC538-GW-MW01	1604060-01RE1	604060-01RE1@10_Integratio	04/11/16 19:52
Calibration Check	6D10208-CCV2	6D10208-CCV2_Integration	04/11/16 20:10
Calibration Blank	6D10208-CCB2	6D10208-CCB2_Integration	04/11/16 20:28

INITIAL CALIBRATION DATA

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	0.05	0.569748	0.1	0.581981	0.25	0.6146368	0.5	0.6600776	2.5	0.7064008	5	0.7285092
Nitrite as N	0.05	0.602076	0.1	0.623479	0.25	0.6386636	0.5	0.6565792	2.5	0.59345	5	0.5618552

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF	mg/L	RF
Nitrate as N	12.5	0.7301614	20	0.7871075	25	0.7759404						
Nitrite as N	12.5	~~0.5171158~~	20	~~0.505727~~	25	~~0.4996596~~						

INITIAL CALIBRATION DATA (Continued)

E300.0

Laboratory:	Empirical Laboratories, LLC	SDG:	1604060	
Client:	CB&I	Project:	Holloman AFB	
Calibration:	5323007	Instrument:	WC-IC2	
Matrix:	Water	Calibration Dates:	11/17/15 7:54	11/17/15 10:17

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Nitrate as N	0.6838403	11.85103	9.544	1.617522	0.9989769		0.995	
Nitrite as N	0.6126838	5.551419	5.867667	5.527411E-02	0.9988418		0.995	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

HOLDING TIME SUMMARY

E300.0

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW01	04/07/16 10:05	04/08/16 09:50	04/08/16 12:20	N/A	2.00	04/08/16 15:06	1.17	2.00	
OTC538-GW-MW01	04/07/16 10:05	04/08/16 09:50	04/11/16 16:37	N/A	2.00	04/11/16 19:52	4.37	2.00	*

HOLDING TIME SUMMARY

SM2540C

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW01	04/07/16 10:05	04/08/16 09:50	04/12/16 06:35	4.81	7.00	04/12/16 16:55	0.43	7.00	

HOLDING TIME SUMMARY

SM2540D

Laboratory: Empirical Laboratories, LLC SDG: 1604060

Client: CB&I Project: Holloman AFB

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
OTC538-GW-MW01	04/07/16 10:05	04/08/16 09:50	04/12/16 06:37	4.81	7.00	04/13/16 00:00	0.72	7.00	

Data for Wet Chemistry
Supporting Raw Data / Logs

Sequence Overview

Sequence Details

Name:	**111715**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2015\Nov2015**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**17/Nov/15 12:51:49**
No. of Injections:	**14**	*Updated By:*	**NSH-IONC2**

Injection Details

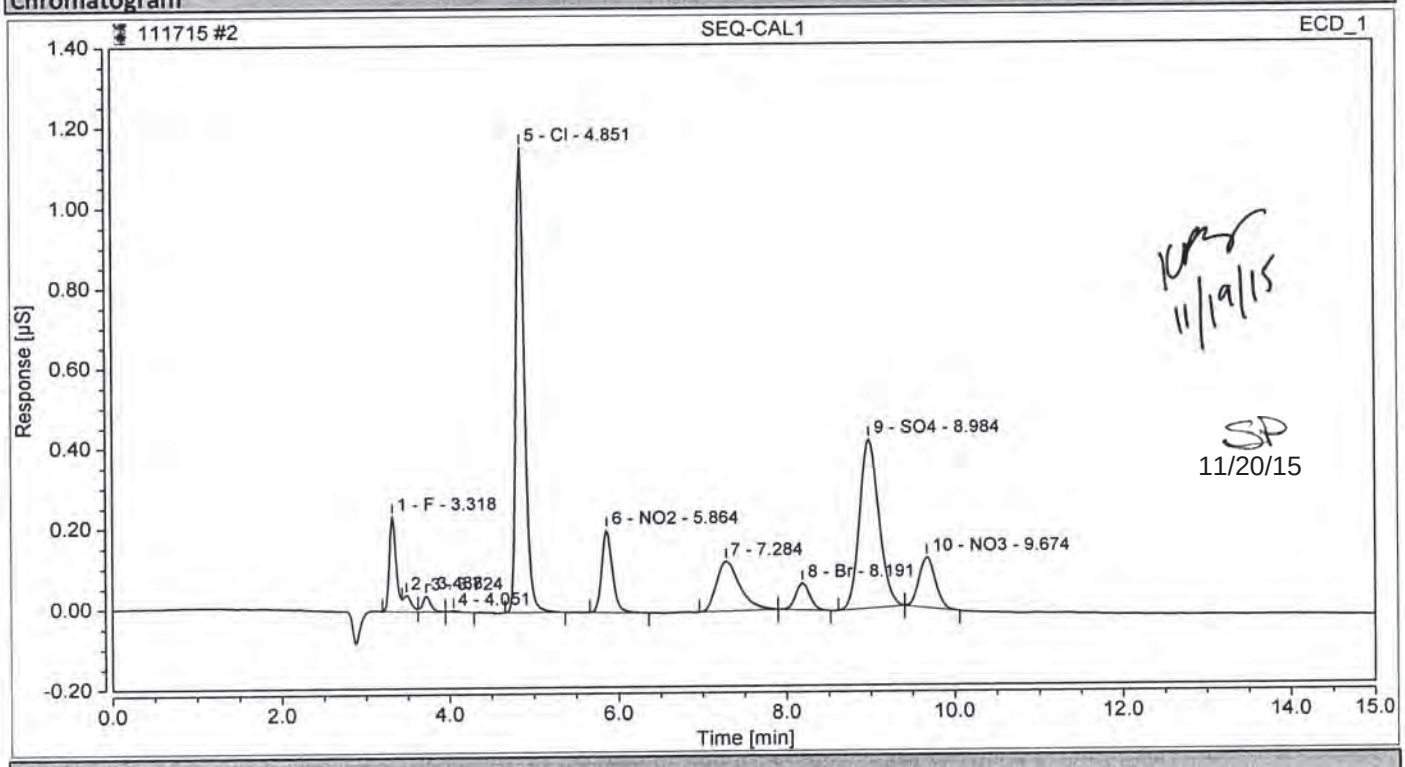
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		17/Nov/15 07:37:12	Finished
2	SEQ-CAL1	2	Calibration Standard	01	17/Nov/15 07:54:59	Finished
3	SEQ-CAL2	3	Calibration Standard	02	17/Nov/15 08:12:50	Finished
4	SEQ-CAL3	4	Calibration Standard	03	17/Nov/15 08:30:40	Finished
5	SEQ-CAL4	5	Calibration Standard	04	17/Nov/15 08:48:31	Finished
6	SEQ-CAL5	6	Calibration Standard	05	17/Nov/15 09:06:21	Finished
7	SEQ-CAL6	7	Calibration Standard	06	17/Nov/15 09:24:11	Finished
8	SEQ-CAL7	8	Calibration Standard	07	17/Nov/15 09:42:01	Finished
9	SEQ-CAL8	9	Calibration Standard	08	17/Nov/15 09:59:51	Finished
10	SEQ-CAL9	10	Calibration Standard	09	17/Nov/15 10:17:41	Finished
11	SEQ-ICV1	11	Unknown		17/Nov/15 10:35:31	Finished
12	SEQ-ICB1	12	Unknown		17/Nov/15 10:53:21	Finished
13	CCV TEST	13	Unknown		17/Nov/15 11:11:11	Finished
14	BLANK	14	Unknown		17/Nov/15 11:29:01	Finished

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**01**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 07:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

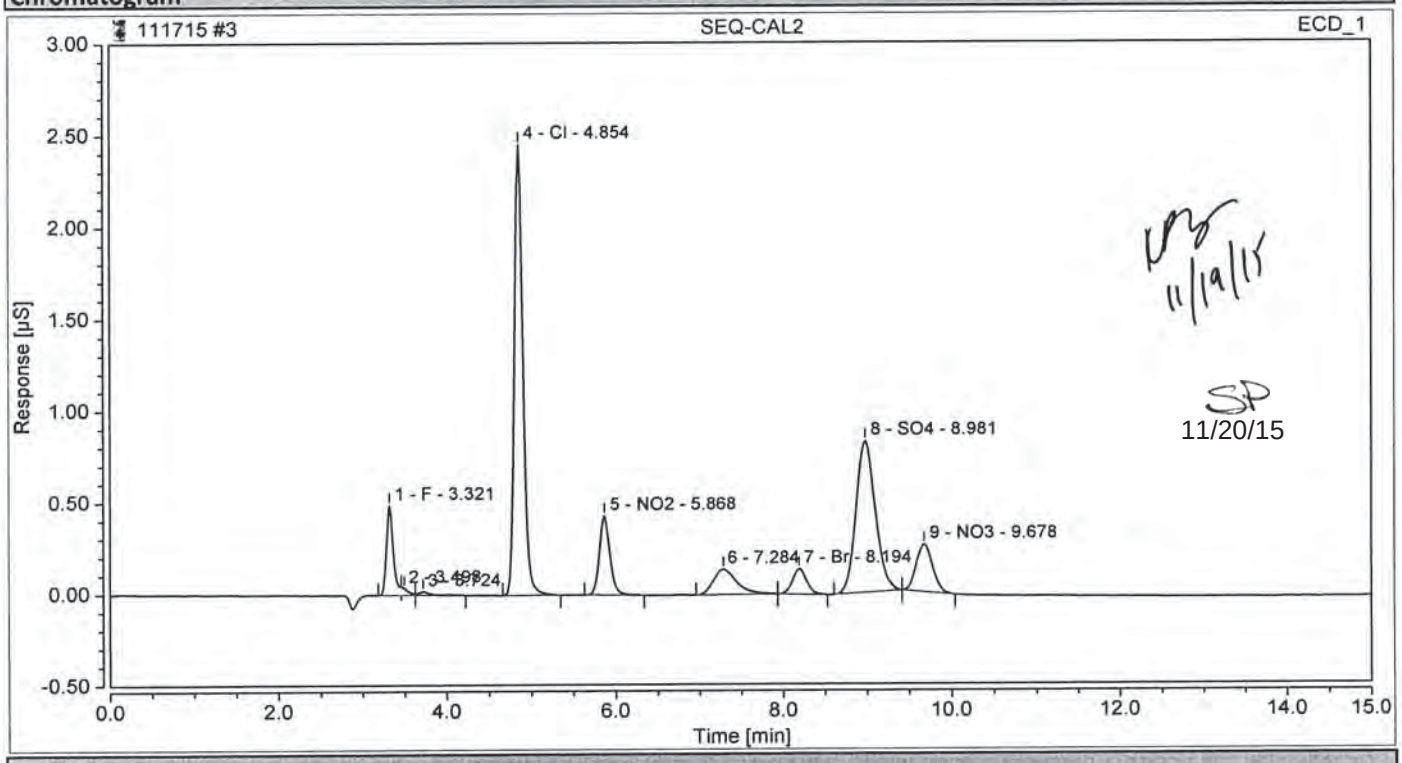
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0220165	0.236	5.61	9.74	0.0444
2		3.488	0.0046279	0.041	1.18	1.69	n.a.
3		3.724	0.0045613	0.040	1.16	1.64	n.a.
4		4.051	0.0004082	0.003	0.10	0.12	n.a.
5	Cl	4.851	0.1360138	1.160	34.67	47.89	0.4469
6	NO2	5.864	0.0301038	0.206	7.67	8.48	0.0529
7		7.284	0.0402353	0.124	10.26	5.12	n.a.
8	Br	8.191	0.0130111	0.067	3.32	2.75	0.1009
9	SO4	8.984	0.1128339	0.421	28.76	17.37	0.5046
10	NO3	9.674	0.0284874	0.126	7.26	5.21	0.0369
Total:			**0.392**	**2.423**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL2**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**02**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

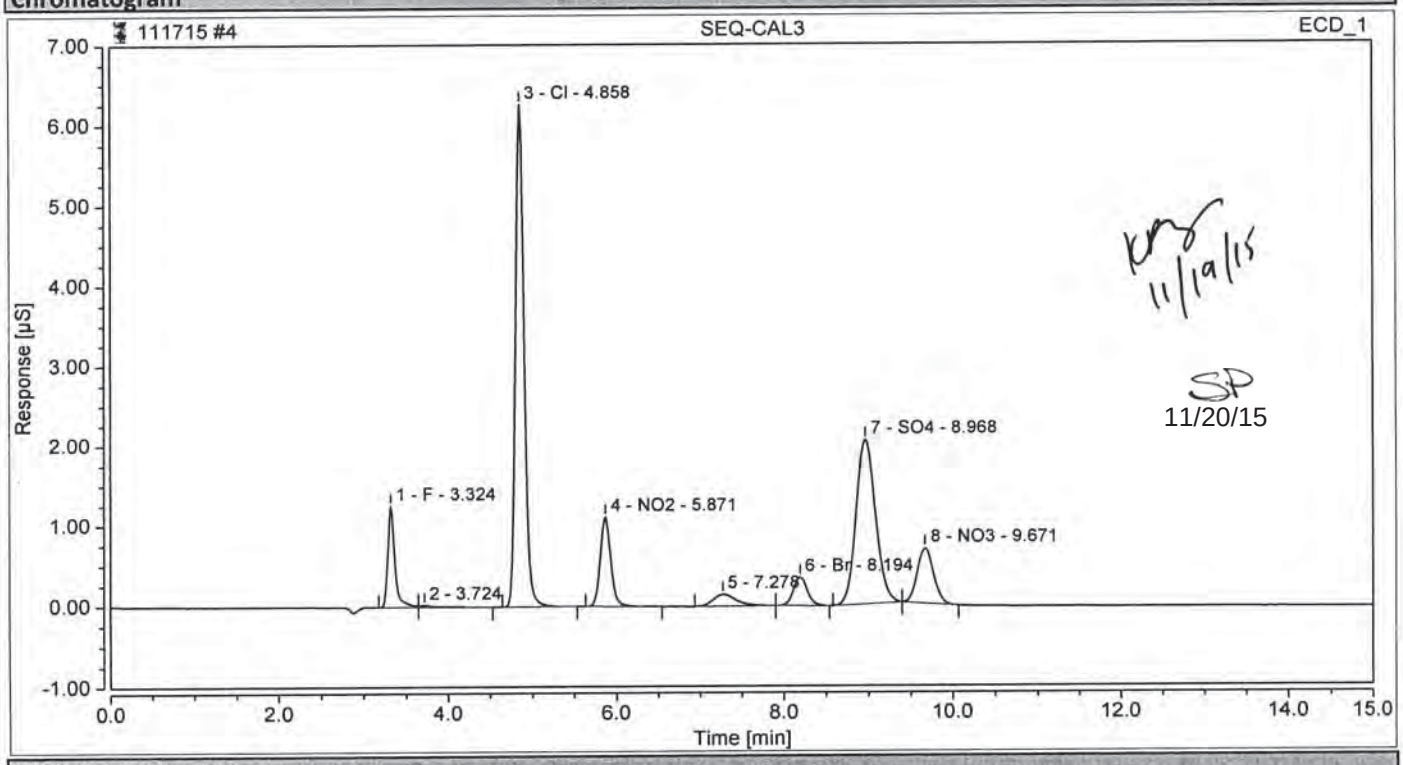
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.321	0.0461829	0.490	6.14	10.21	0.0931
2		3.498	0.0038392	0.037	0.51	0.78	n.a.
3		3.724	0.0031064	0.019	0.41	0.40	n.a.
4	Cl	4.854	0.2871690	2.458	38.17	51.18	0.9436
5	NO2	5.868	0.0623479	0.433	8.29	9.01	0.1096
6		7.284	0.0446872	0.139	5.94	2.89	n.a.
7	Br	8.194	0.0265880	0.137	3.53	2.86	0.2061
8	SO4	8.981	0.2202215	0.829	29.27	17.25	0.9849
9	NO3	9.678	0.0581981	0.260	7.74	5.42	0.0754
Total:			**0.752**	**4.803**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL3**	*Run Time (min):*	**15.00**
Vial Number:	**4**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**03**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

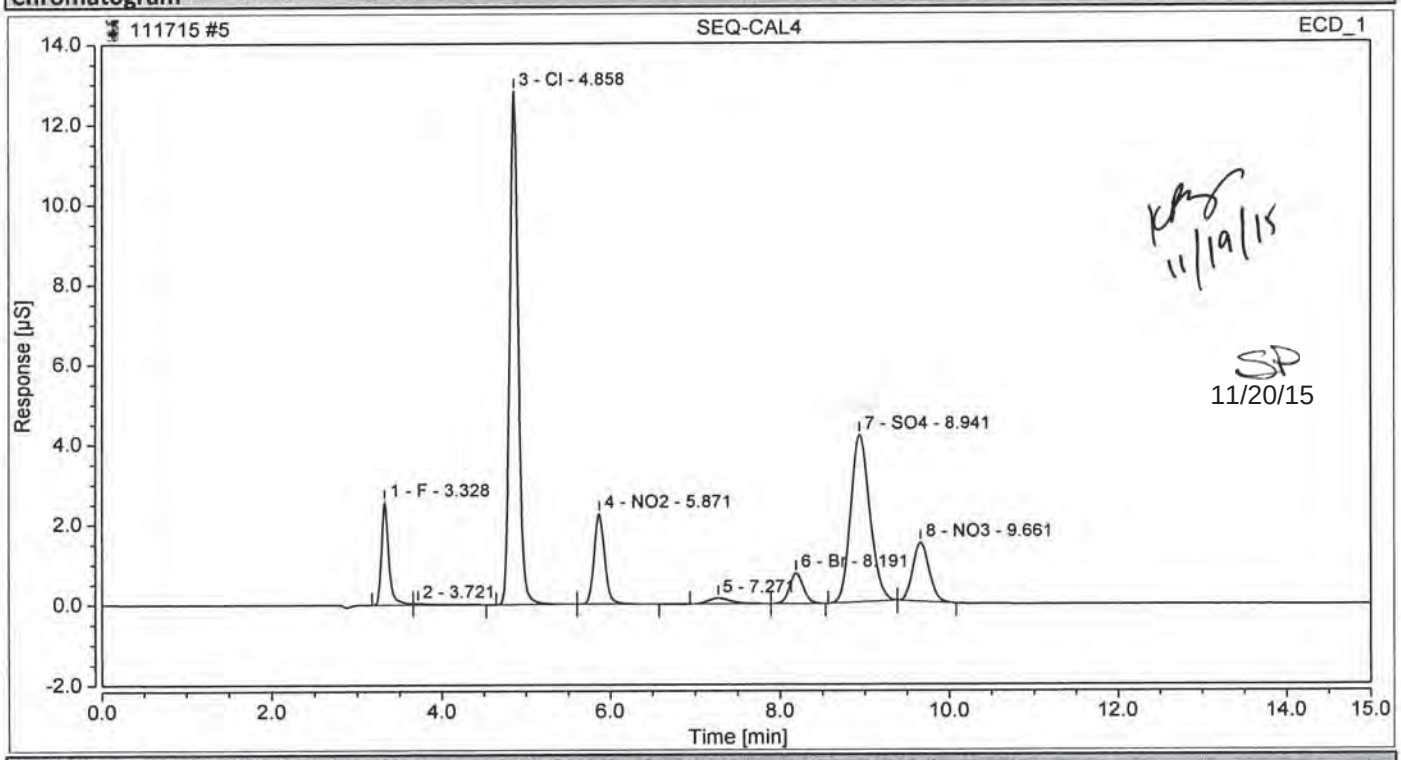
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.1233161	1.257	6.71	10.57	0.2487
2		3.724	0.0046231	0.023	0.25	0.19	n.a.
3	Cl	4.858	0.7358376	6.264	40.05	52.66	2.4178
4	NO2	5.871	0.1596659	1.114	8.69	9.36	0.2806
5		7.278	0.0473937	0.148	2.58	1.25	n.a.
6	Br	8.194	0.0678654	0.355	3.69	2.99	0.5261
7	SO4	8.968	0.5450785	2.048	29.67	17.21	2.4378
8	NO3	9.671	0.1536592	0.687	8.36	5.77	0.1989
Total:			**1.837**	**11.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL4**	*Run Time (min):*	**15.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**04**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

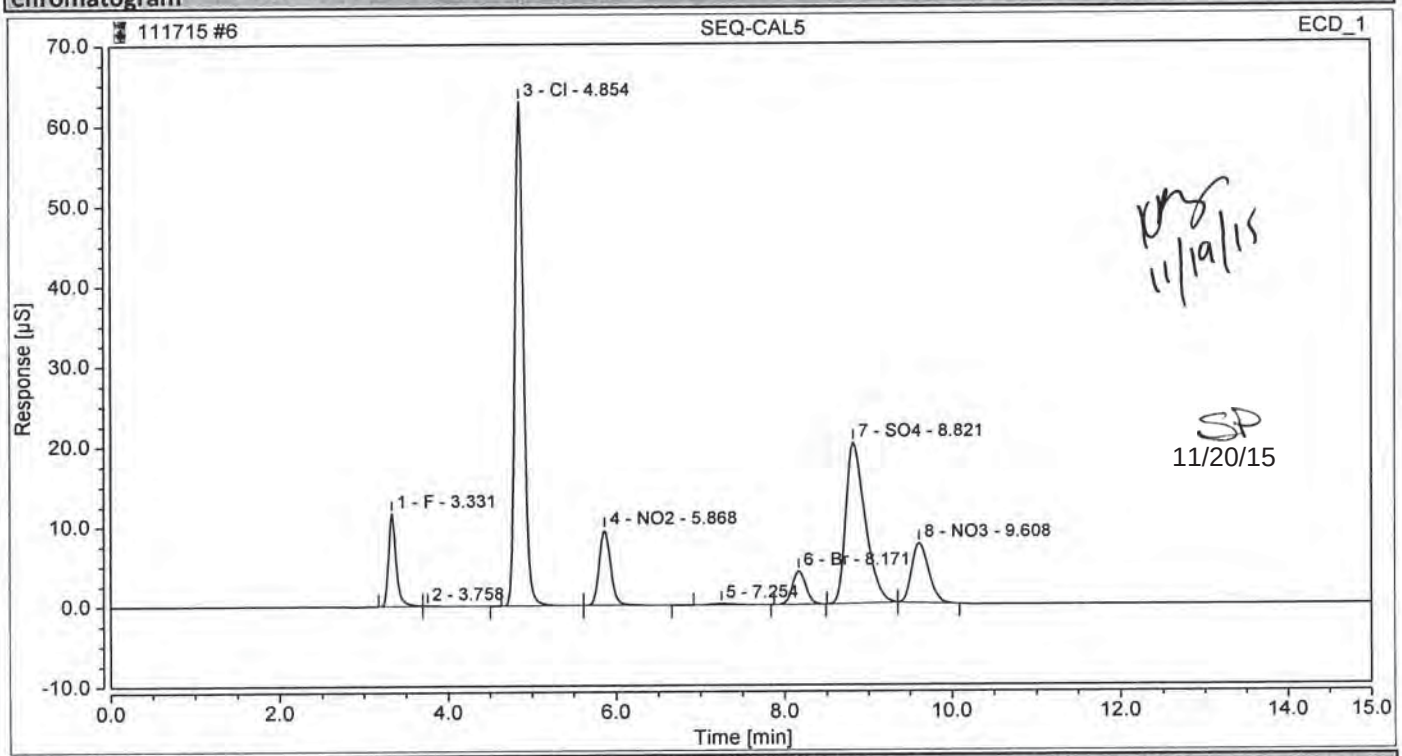
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	0.2535800	2.569	6.80	10.60	0.5114
2		3.721	0.0075683	0.032	0.20	0.13	n.a.
3	Cl	4.858	1.5163418	12.815	40.69	52.90	4.9824
4	NO2	5.871	0.3282896	2.259	8.81	9.33	0.5769
5		7.271	0.0453793	0.144	1.22	0.59	n.a.
6	Br	8.191	0.1440520	0.762	3.87	3.15	1.1168
7	SO4	8.941	1.1013233	4.174	29.55	17.23	4.9255
8	NO3	9.661	0.3300388	1.472	8.86	6.07	0.4273
Total:			**3.727**	**24.227**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL5**	*Run Time (min):*	**15.00**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**05**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

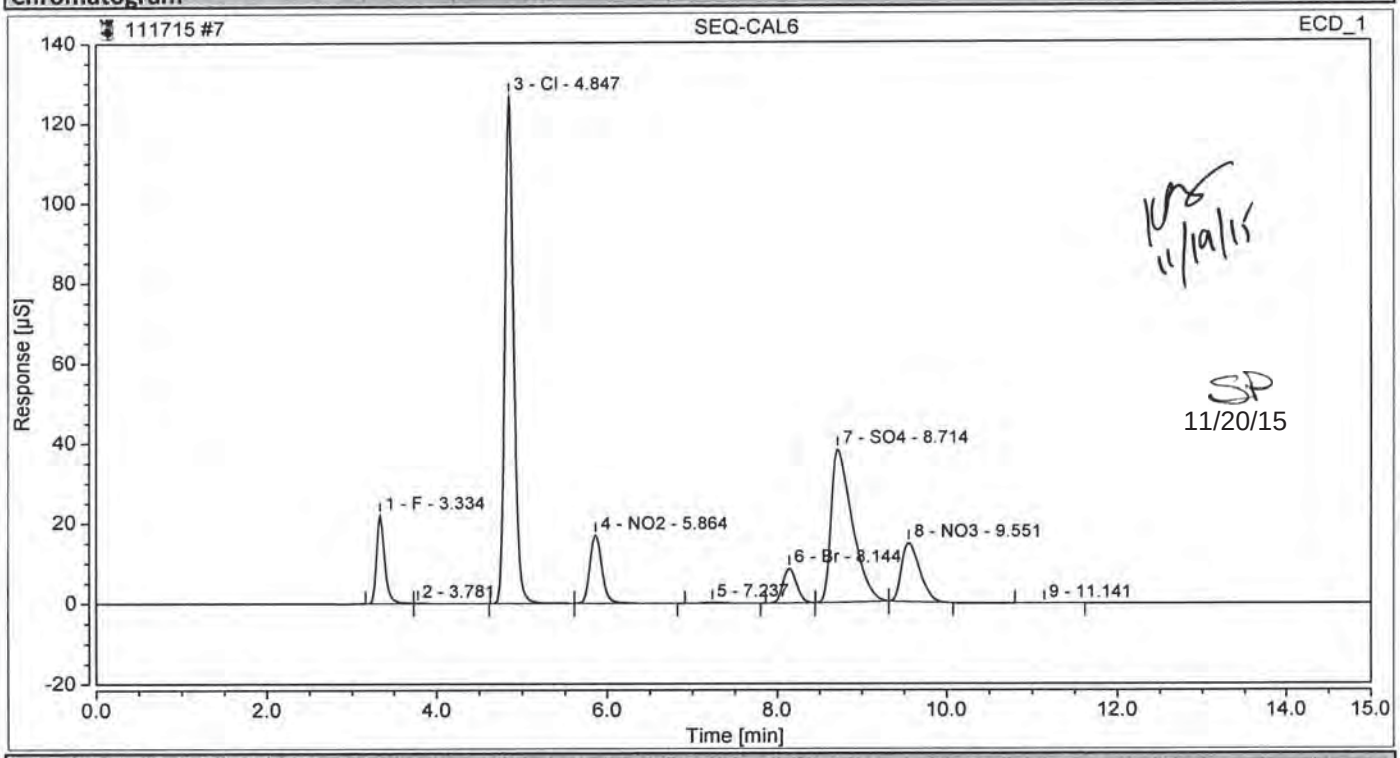
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.2525921	11.699	6.84	10.08	2.5263
2		3.758	0.0190090	0.072	0.10	0.06	n.a.
3	Cl	4.854	7.5363404	62.882	41.14	54.21	24.7631
4	NO2	5.868	1.4836250	9.448	8.10	8.14	2.6073
5		7.254	0.0485316	0.160	0.26	0.14	n.a.
6	Br	8.171	0.7768228	4.164	4.24	3.59	6.0224
7	SO4	8.821	5.4372952	20.102	29.68	17.33	24.3175
8	NO3	9.608	1.7660024	7.478	9.64	6.45	2.2865
Total:			**18.320**	**116.005**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL6**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	% R
1	F	3.334	2.4721069	22.141	6.69	9.72	4.9859	99.718
2		3.781	0.0322715	0.113	0.09	0.05	n.a.	
3	Cl	4.847	15.3044626	126.800	41.40	55.68	50.2878	
4	NO2	5.864	2.8092761	16.969	7.60	7.45	4.9369	98.738
5		7.237	0.0504916	0.173	0.14	0.08	n.a.	
6	Br	8.144	1.6100283	8.683	4.36	3.81	12.4819	
7	SO4	8.714	11.0416639	38.155	29.87	16.76	49.3822	
8	NO3	9.551	3.6425462	14.675	9.85	6.44	4.7162	
9		11.141	0.0027315	0.007	0.01	0.00	n.a.	
Total:			**36.966**	**227.715**	**100.00**	**100.00**		

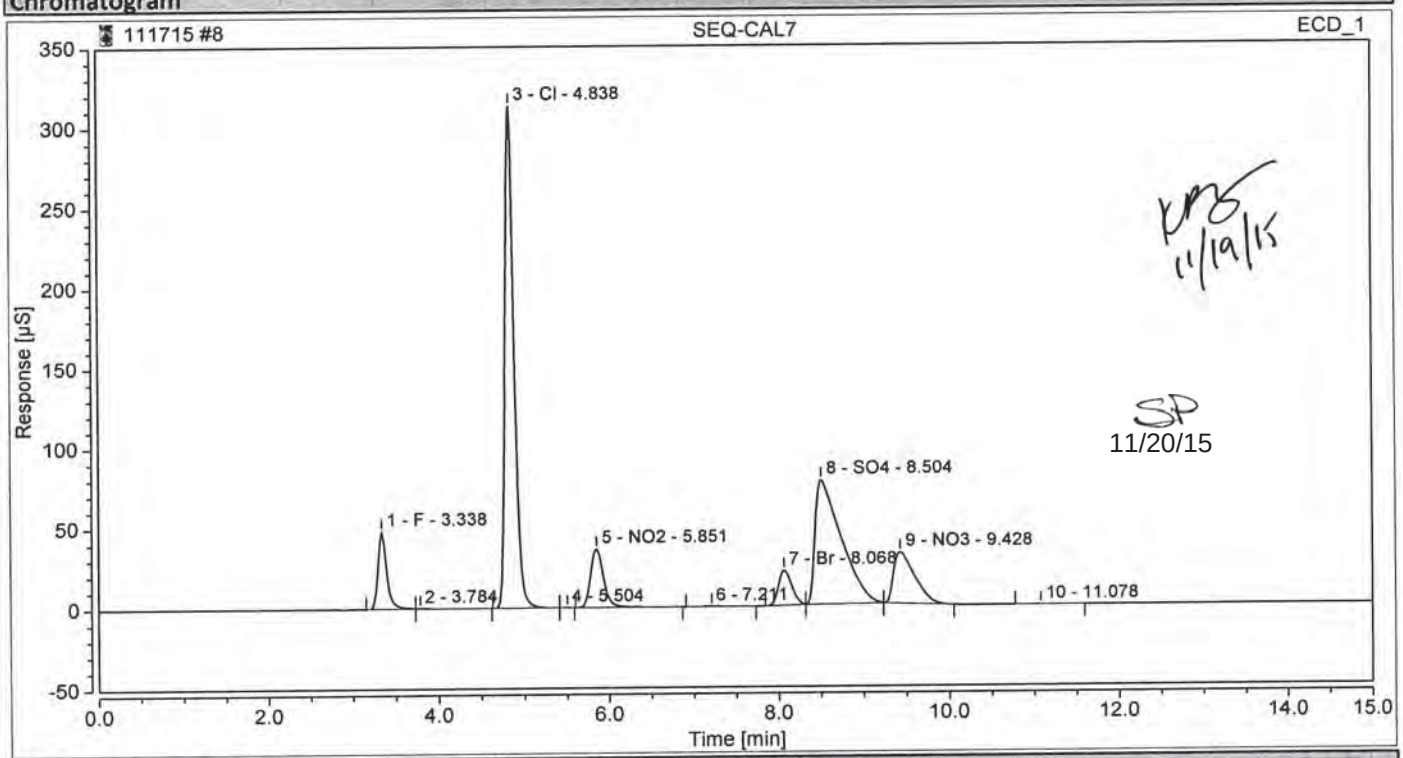
12/8/2015

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL7**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**07**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

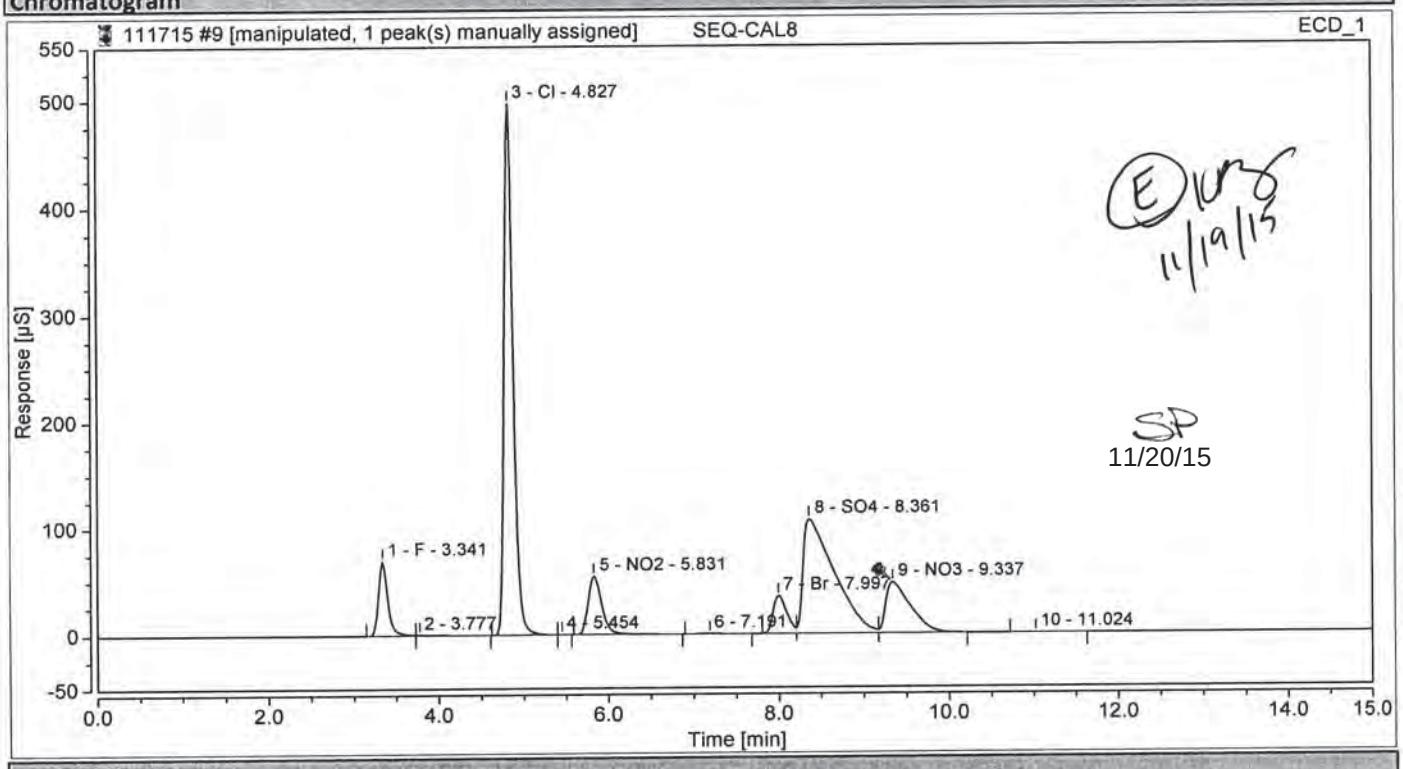
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.338	5.7625559	48.349	6.34	9.12	11.6224
2		3.784	0.0854296	0.296	0.09	0.06	n.a.
3	Cl	4.838	38.2749054	313.315	42.10	59.13	125.7648
4		5.504	0.0002744	0.002	0.00	0.00	n.a.
5	NO2	5.851	6.4639480	36.442	7.11	6.88	11.3595
6		7.211	0.0579694	0.208	0.06	0.04	n.a.
7	Br	8.068	3.9523854	21.796	4.35	4.11	30.6414
8	SO4	8.504	27.1837844	77.489	29.90	14.62	121.5754
9	NO3	9.428	9.1270172	31.979	10.04	6.04	11.8171
10		11.078	0.0042754	0.011	0.00	0.00	n.a.
Total:			**90.913**	**529.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL8**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**08**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

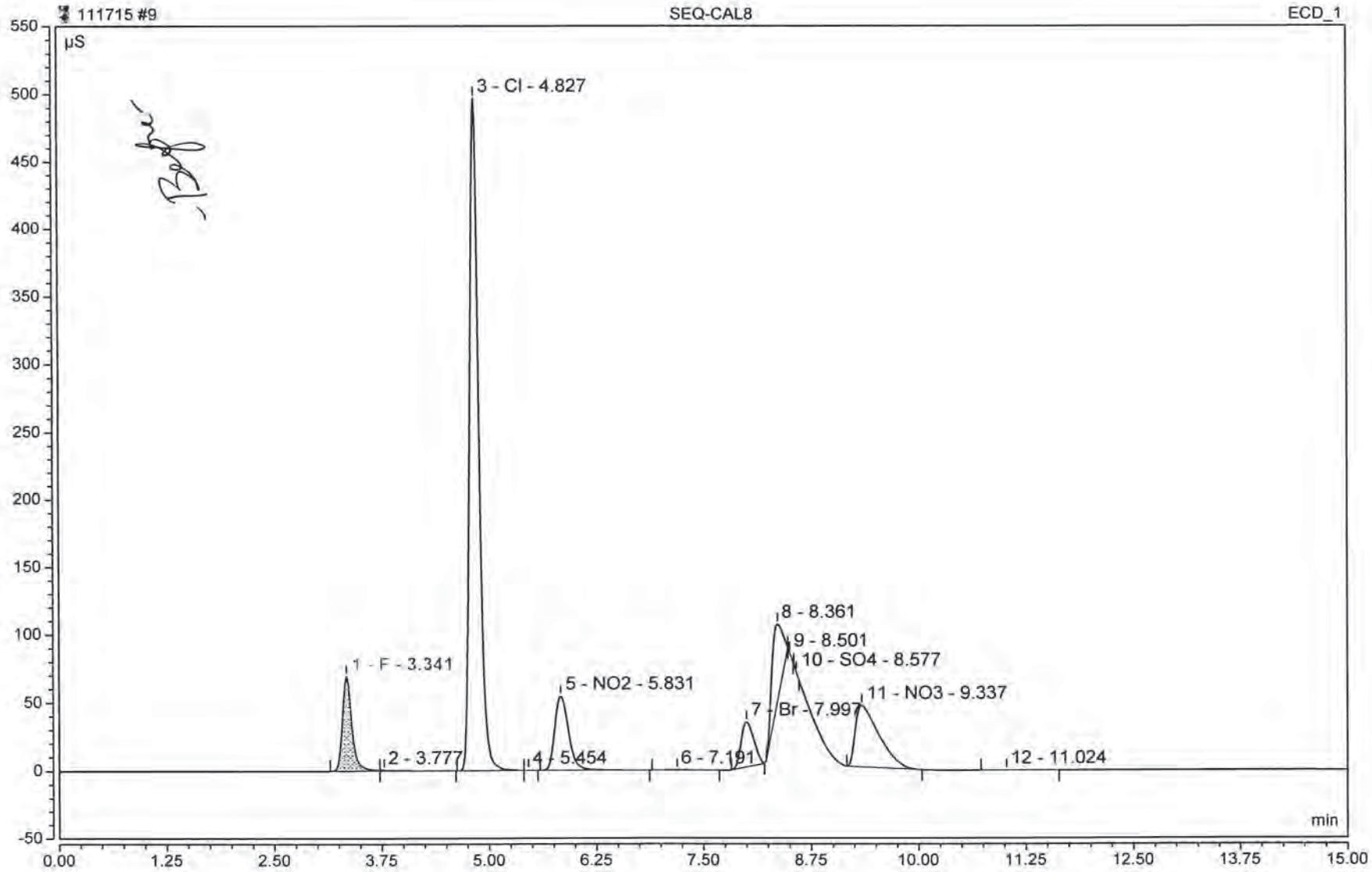
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.341	8.7120474	69.634	5.90	8.58	17.5712
2		3.777	0.1512737	0.528	0.10	0.07	n.a.
3	Cl	4.827	61.1432401	496.862	41.39	61.23	200.9062
4		5.454	0.0003503	0.004	0.00	0.00	n.a.
5	NO2	5.831	10.1145387	54.420	6.85	6.71	17.7749
6		7.191	0.0645880	0.237	0.04	0.03	n.a.
7	Br	7.997	6.5791969	35.218	4.45	4.34	51.0060
8	SO4	8.361	45.1976399	107.066	30.60	13.19	202.1397
9	NO3	9.337	15.7421504	47.503	10.66	5.85	20.3820
10		11.024	0.0056704	0.014	0.00	0.00	n.a.
Total:			**147.711**	**811.485**	**100.00**	**100.00**	

101.202%

12/8/2015

Sequence: 111715
Injection #9: SEQ-CAL8

Chromatogram

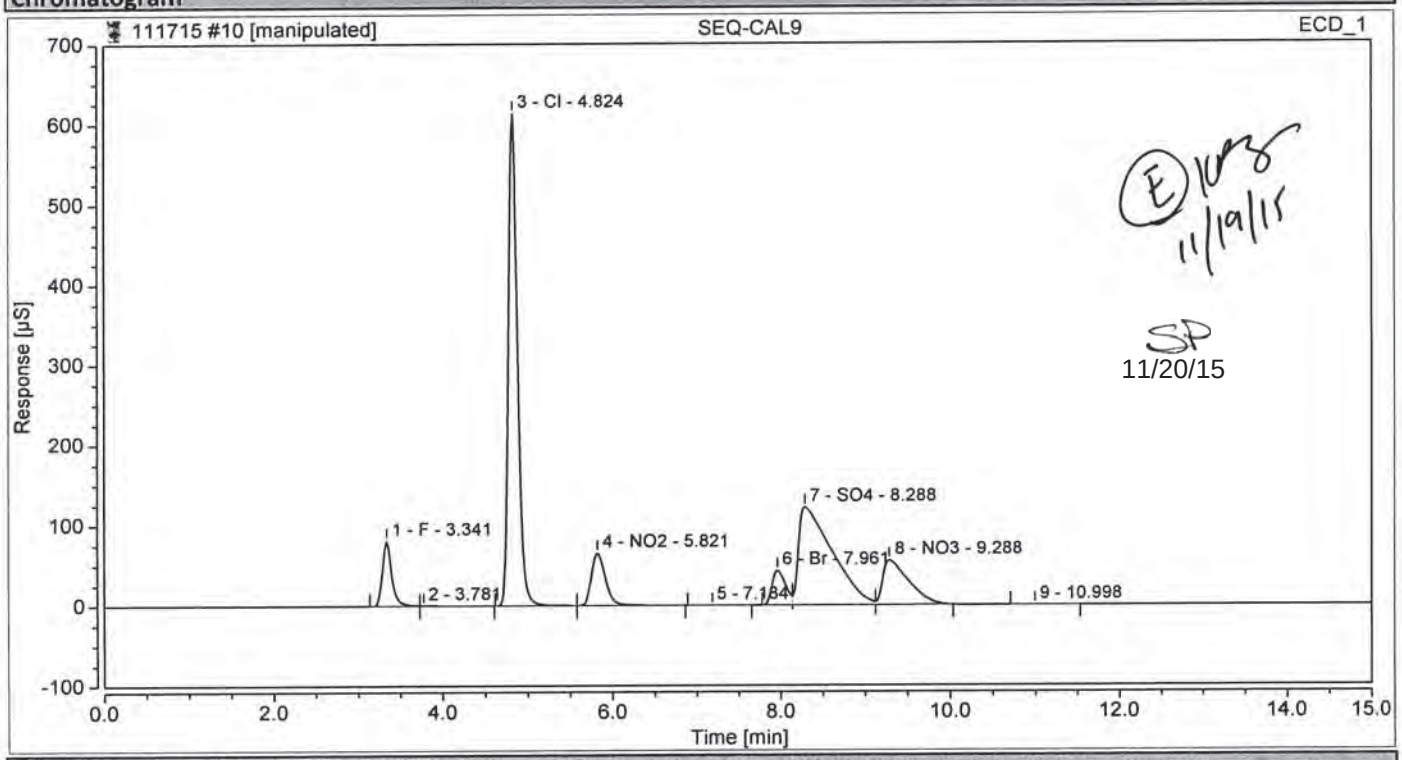


Chromatogram and Results

Injection Details

Injection Name:	**SEQ-CAL9**	*Run Time (min):*	**15.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**09**	*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



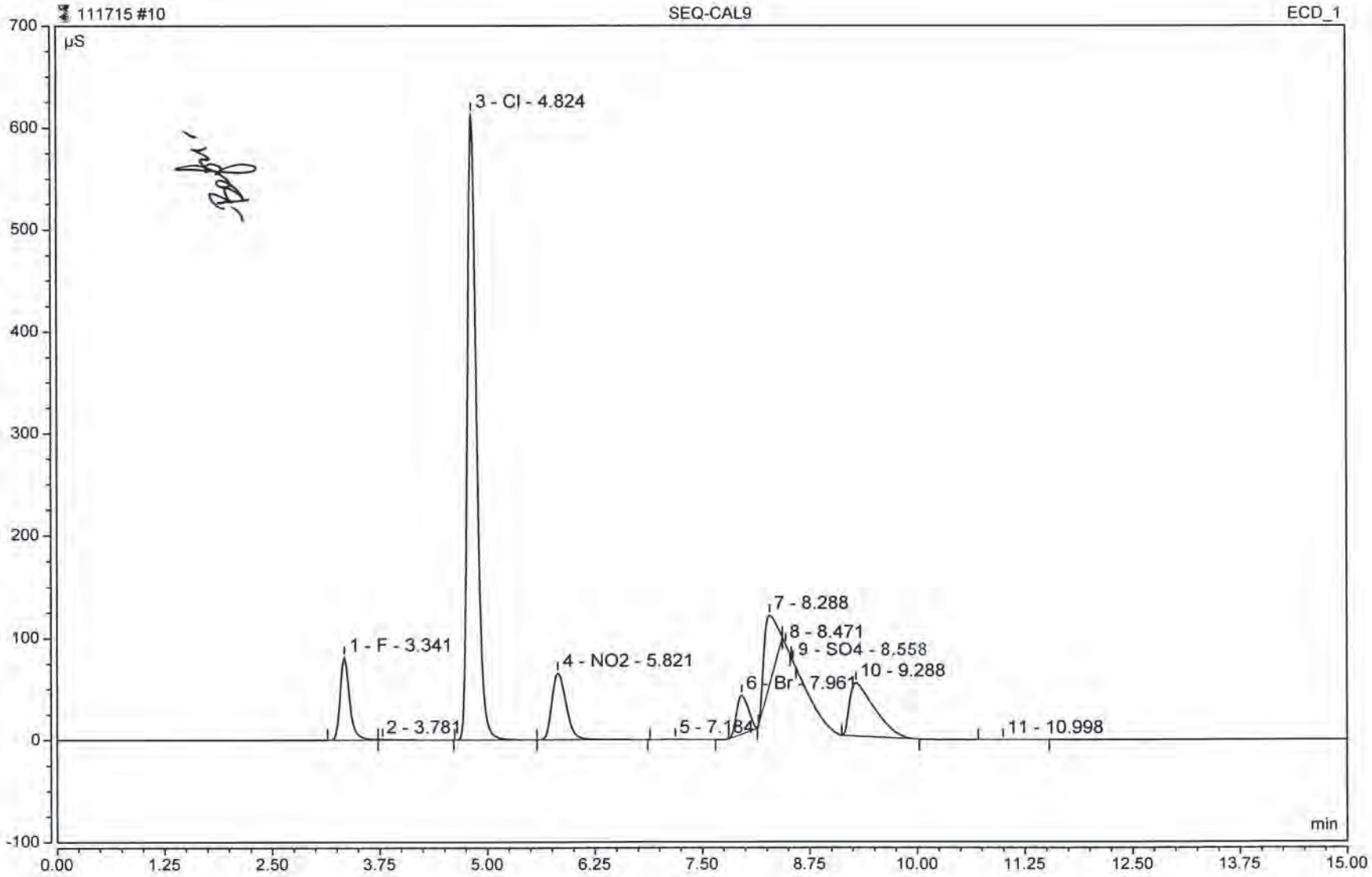
E 11/19/15

SP
11/20/15

Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount	
1	F	3.341	10.4666430	81.281	5.74	8.28	21.1100	
2		3.781	0.1907167	0.659	0.10	0.07	n.a.	
3	Cl	4.824	75.7374228	613.482	41.56	62.51	248.8602	99.54%
4	NO2	5.821	12.4914856	65.434	6.85	6.67	21.9521	
5		7.184	0.0690776	0.255	0.04	0.03	n.a.	
6	Br	7.961	7.9477879	43.168	4.36	4.40	61.6162	
7	SO4	8.288	55.9424901	121.640	30.70	12.39	250.1945	100.08%
8	NO3	9.288	19.3985090	55.441	10.64	5.65	25.1160	100.46%
9		10.998	0.0065839	0.016	0.00	0.00	n.a.	
Total:			**182.251**	**981.376**	**100.00**	**100.00**		

12/8/2015

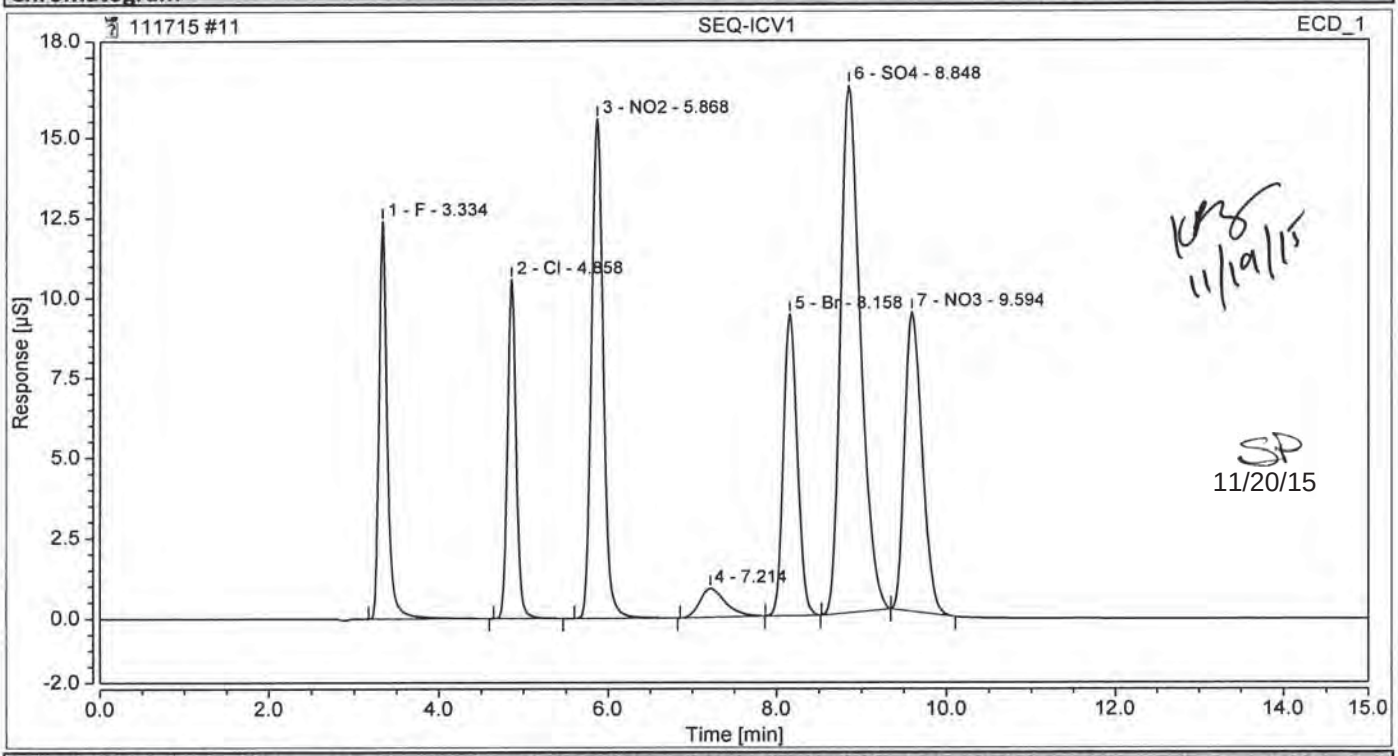

111715 #10
SEQ-CAL9
ECD_1
µS
700
600
500
400
300
200
100
0
-100
1 - F - 3.341
2 - 3.781
3 - Cl - 4.824
4 - NO2 - 5.821
5 - 7.184
6 - Br - 7.961
7 - 8.288
8 - 8.471
9 - SO4 - 8.558
10 - 9.288
11 - 10.998
min
0.00
1.25
2.50
3.75
5.00
6.25
7.50
8.75
10.00
11.25
12.50
13.75
15.00

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICV1**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

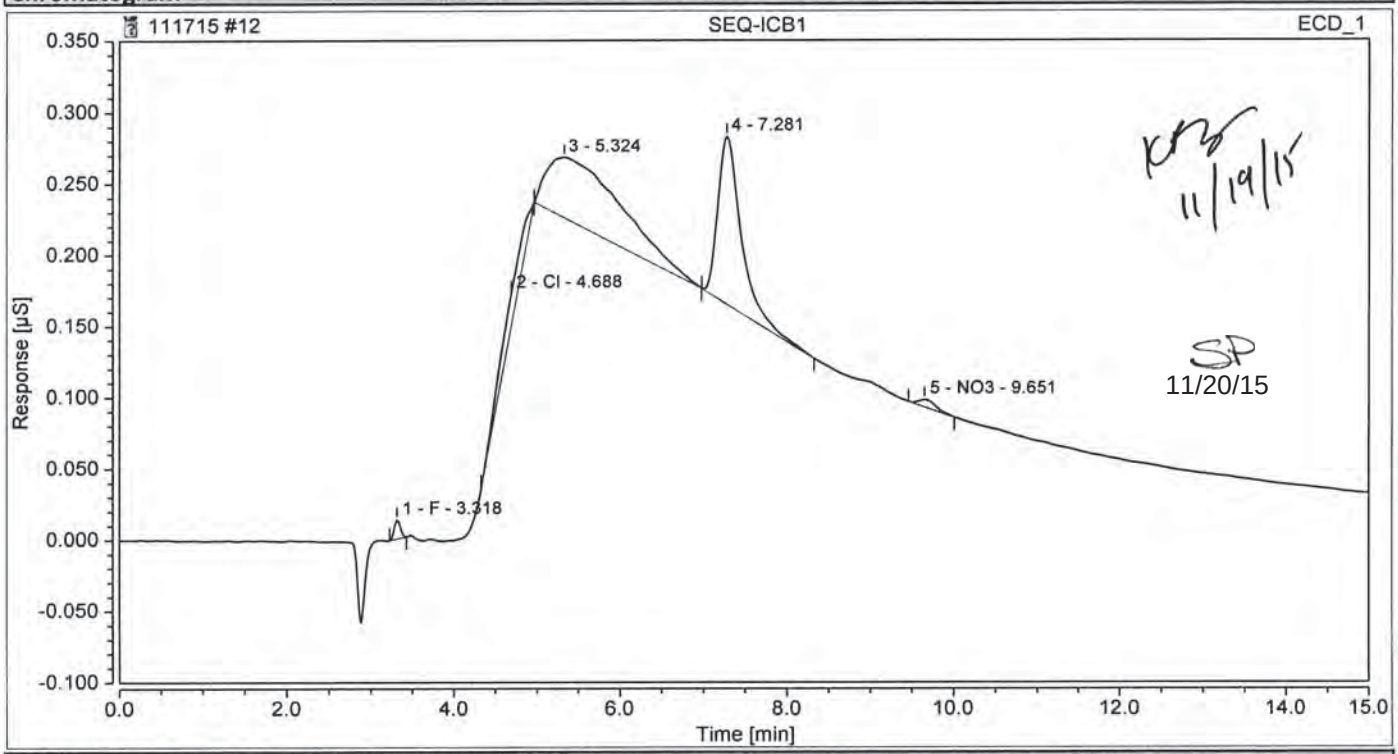
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.334	1.3903067	12.395	9.97	16.62	2.8041
2	Cl	4.858	1.2457670	10.572	8.93	14.18	4.0934
3	NO2	5.868	2.5129040	15.562	18.02	20.87	4.4161
4		7.214	0.3185593	0.899	2.28	1.20	n.a.
5	Br	8.158	1.7875226	9.386	12.82	12.58	13.8580
6	SO4	8.848	4.4654223	16.435	32.02	22.04	19.9709
7	NO3	9.594	2.2250539	9.334	15.96	12.51	2.8809
Total:			**13.946**	**74.583**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**SEQ-ICB1**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Nov/15 10:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.318	0.0011415	0.014	1.17	6.70	0.0023
2	Cl	4.688	0.0091828	0.023	9.40	11.50	0.0302
3		5.324	0.0478564	0.042	49.00	20.91	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4		7.281	0.0381807	0.118	39.09	58.31	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NO3	9.651	0.0013022	0.005	1.33	2.58	0.0017
Total:			**0.098**	**0.202**	**100.00**	**100.00**	

SR 4-14-16

Sequence Overview

Sequence Details

Name:	**20160408**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2016\March201**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/Apr/16 17:27:42**
No. of Injections:	**24**	*Updated By:*	**NSH-IONC2**

Injection Details

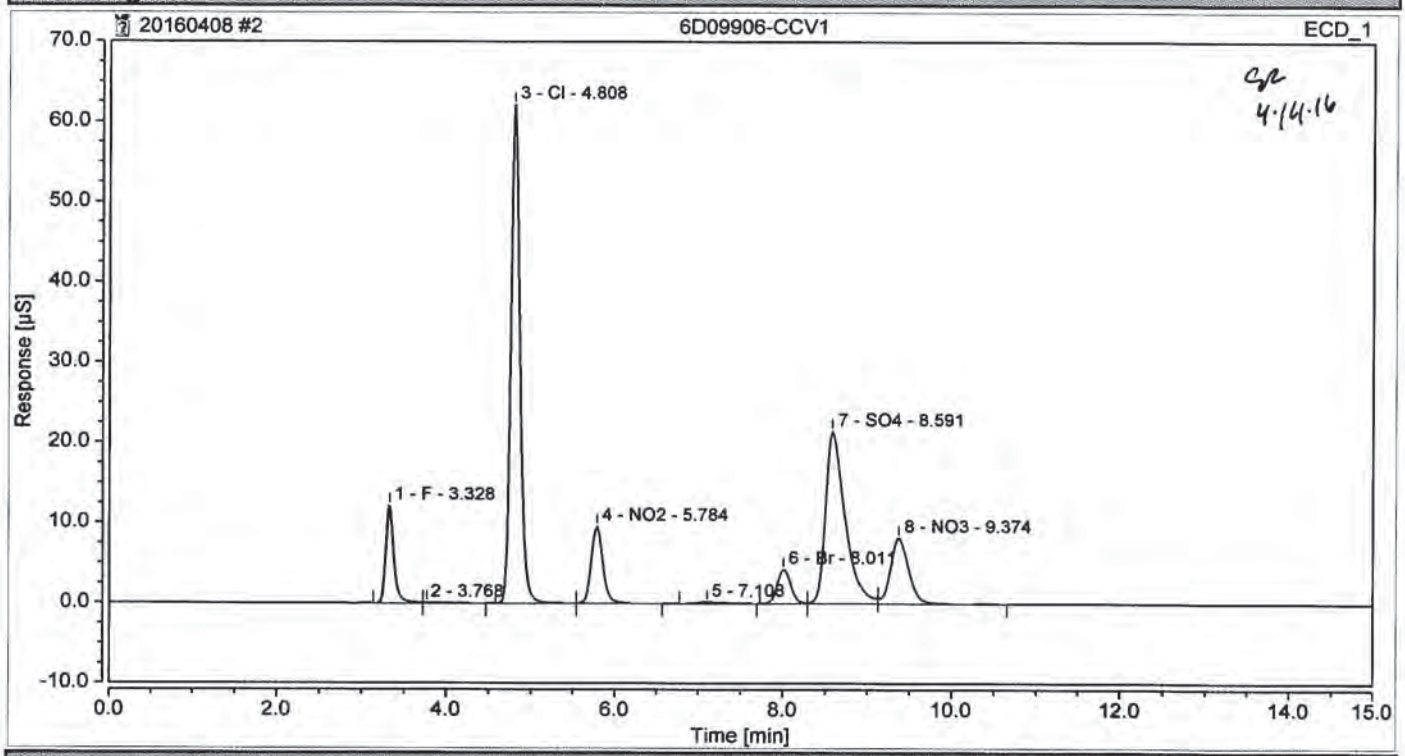
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		08/Apr/16 12:43:30	Finished
2	6D09906-CCV1	2	Unknown		08/Apr/16 13:01:16	Finished
3	6D09906-CCB1	3	Unknown		08/Apr/16 13:19:06	Finished
4	6D09906-CRL1	4	Unknown		08/Apr/16 13:36:56	Finished
5	6D09906-CRL2	5	Unknown		08/Apr/16 13:54:47	Finished
6	6D09906-CRL3	6	Unknown		08/Apr/16 14:12:37	Finished
7	6D08004-BLK1	7	Unknown		08/Apr/16 14:30:27	Finished
8	6D08004-BS1	8	Unknown		08/Apr/16 14:48:18	Finished
9	1604060-01	9	Unknown		08/Apr/16 15:06:09	Finished
10	1604061-01	10	Unknown		08/Apr/16 15:23:59	Finished
11	1604061-02	11	Unknown		08/Apr/16 15:41:49	Finished
12	1604061-03	12	Unknown		08/Apr/16 15:59:40	Finished
13	1604062-01	13	Unknown		08/Apr/16 16:17:30	Finished
14	1604062-02	14	Unknown		08/Apr/16 16:35:20	Finished
15	1604062-03	15	Unknown		08/Apr/16 16:53:11	Finished
16	1604062-04	16	Unknown		08/Apr/16 17:11:01	Finished
17	1604062-05	17	Unknown		08/Apr/16 17:28:51	Finished
18	1604062-06	18	Unknown		08/Apr/16 17:46:42	Finished
19	6D08004-MS1	19	Unknown		08/Apr/16 18:04:32	Finished
20	6D08004-MSD1	20	Unknown		08/Apr/16 18:22:22	Finished
21	6D08004-DUP1	21	Unknown		08/Apr/16 18:40:13	Finished
22	6D09906-CCV2	22	Unknown		08/Apr/16 18:58:03	Finished
23	6D09906-CCB2	23	Unknown		08/Apr/16 19:15:53	Finished
24	BLANK	24	Unknown		08/Apr/16 19:33:43	Finished

Chromatogram and Results

Injection Details

Injection Name:	**6D09906-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Apr/16 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



CR 4.14.16

Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	1.3321065	12.157	6.90	10.31	2.6867
2		3.768	0.0136309	0.054	0.07	0.05	n.a.
3	Cl	4.808	7.8639856	62.159	40.73	52.74	25.8397
4	NO2	5.784	1.5288445	9.562	7.92	8.11	2.6867
5		7.108	0.0493974	0.143	0.26	0.12	n.a.
6	Br	8.011	0.7701567	4.207	3.99	3.57	5.9707
7	SO4	8.591	5.7468151	21.419	29.77	18.17	25.7018
8	NO3	9.374	2.0014640	8.160	10.37	6.92	2.5914
Total:			**19.306**	**117.861**	**100.00**	**100.00**	

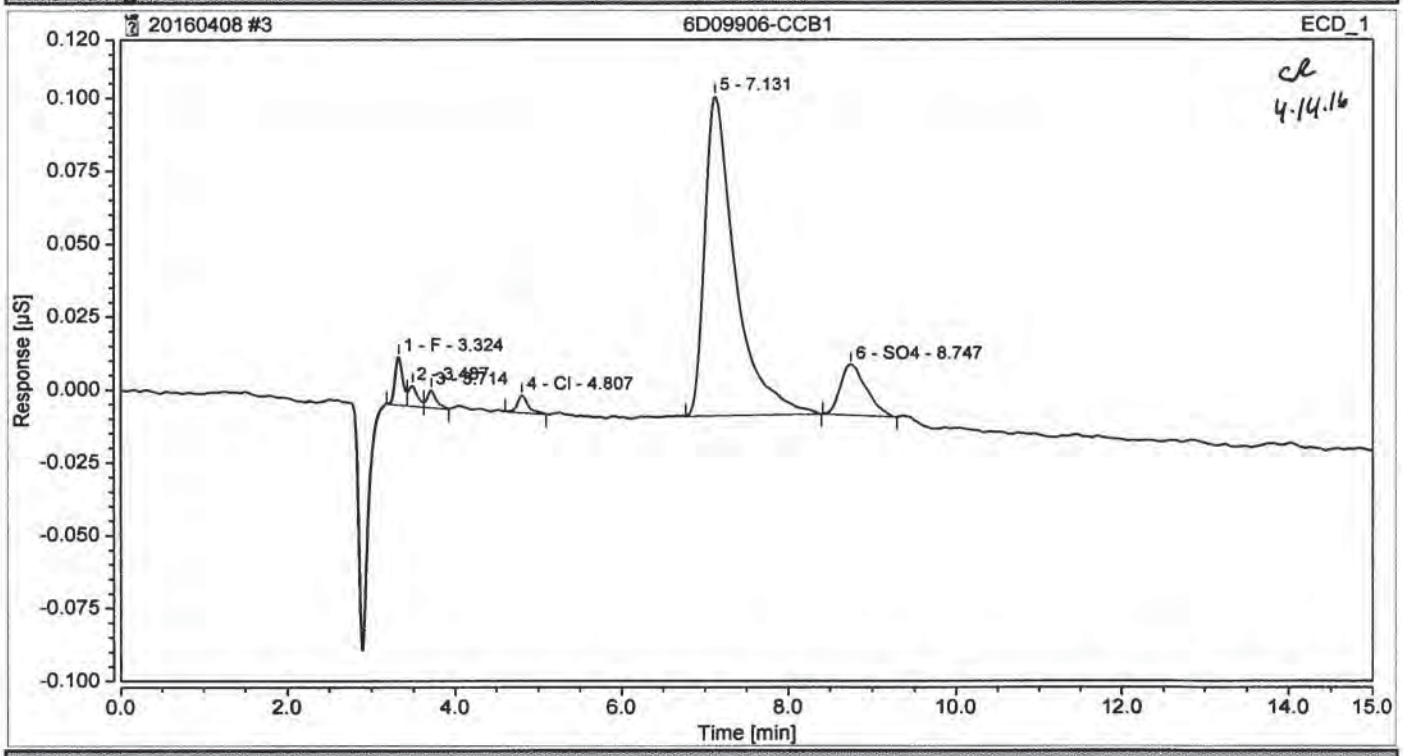
04/15/16

Chromatogram and Results

Injection Details

Injection Name:	**6D09906-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Apr/16 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.0017294	0.017	3.05	10.18	0.0035
2		3.487	0.0008855	0.007	1.56	4.34	n.a.
3		3.714	0.0007506	0.006	1.33	3.67	n.a.
4	Cl	4.807	0.0008837	0.006	1.56	3.65	0.0029
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.131	0.0463251	0.110	81.79	67.56	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	8.747	0.0060681	0.017	10.71	10.60	0.0271
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.057**	**0.162**	**100.00**	**100.00**	

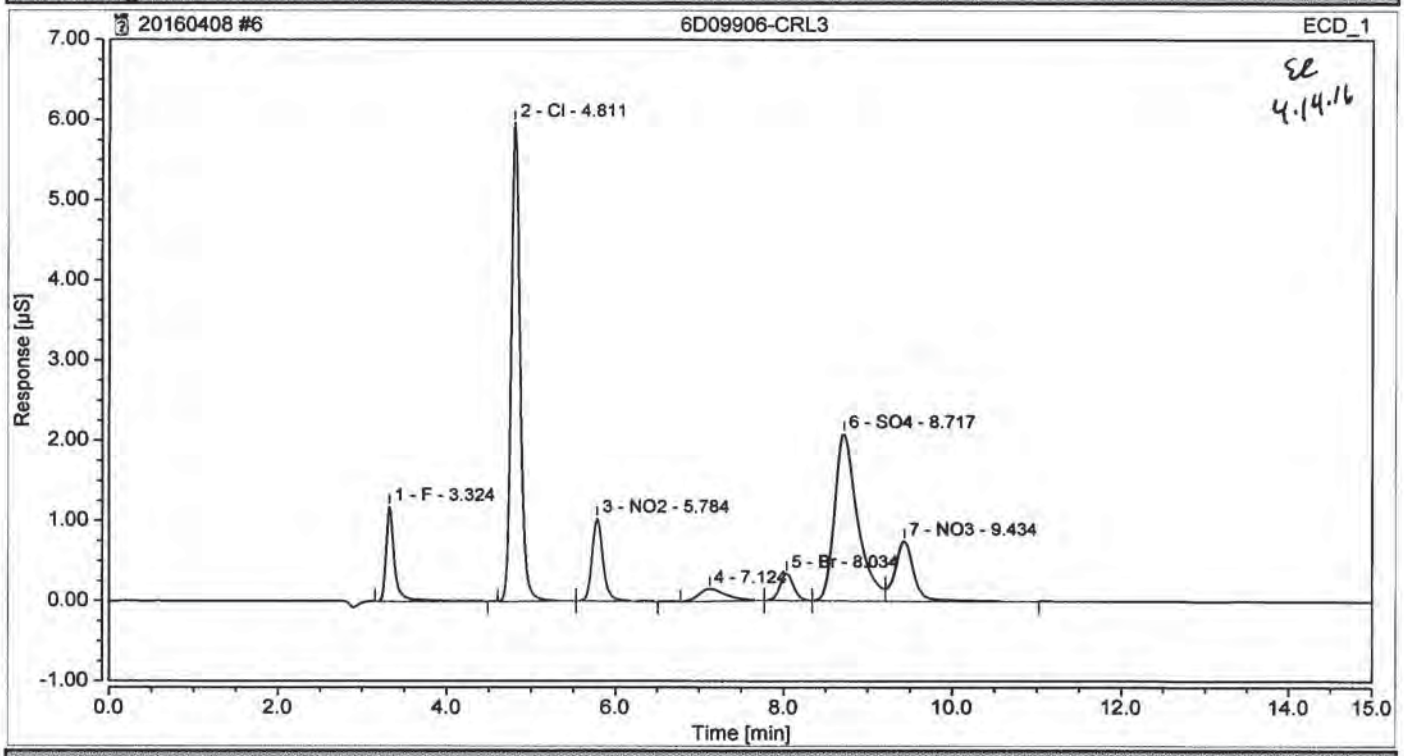
04/15/16

Chromatogram and Results

Injection Details

Injection Name:	**6D09906-CRL3**	*Run Time (min):*	**15.00**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Apr/16 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.1333399	1.179	6.66	10.26	0.2689
2	Cl	4.811	0.7416762	5.969	37.06	51.95	2.4370
3	NO2	5.784	0.1533775	1.030	7.66	8.97	0.2695
4		7.124	0.0541492	0.151	2.71	1.31	n.a.
5	Br	8.034	0.0627049	0.334	3.13	2.90	0.4861
6	SO4	8.717	0.6645297	2.082	33.21	18.12	2.9720
7	NO3	9.434	0.1914813	0.746	9.57	6.49	0.2479
Total:			**2.001**	**11.490**	**100.00**	**100.00**	

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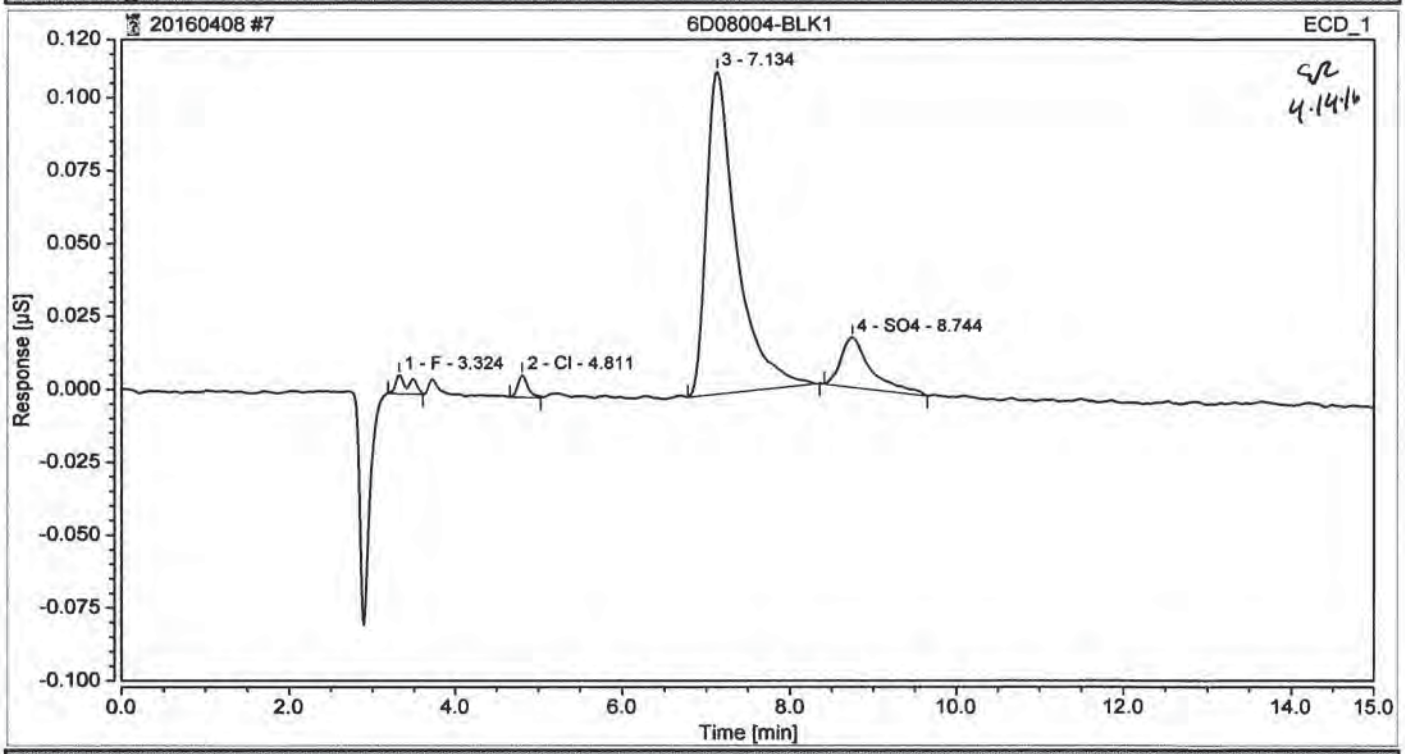
Chromatogram and Results

Injection Details

Injection Name:	**6D08004-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Apr/16 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.0012269	0.006	2.20	4.52	0.0025
2	Cl	4.811	0.0010244	0.008	1.84	5.37	0.0034
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3		7.134	0.0463666	0.111	83.25	78.12	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SO4	8.744	0.0070750	0.017	12.70	11.99	0.0316
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.056**	**0.142**	**100.00**	**100.00**	

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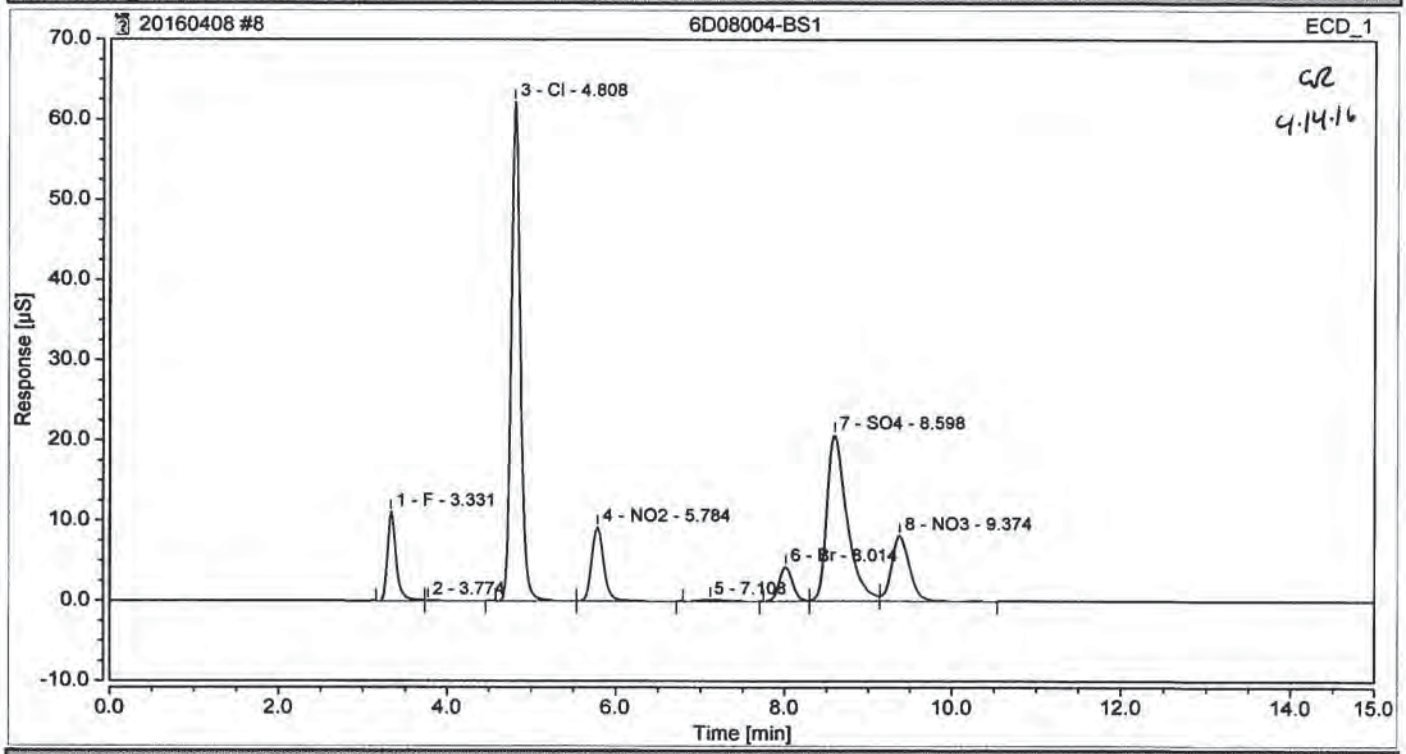
Chromatogram and Results

Injection Details

Injection Name:	**6D08004-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Apr/16 14:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.3242824	11.106	6.84	9.59	2.6709
2		3.774	0.0163338	0.067	0.08	0.06	n.a.
3	Cl	4.808	7.9162029	62.212	40.87	53.74	26.0113
4	NO2	5.784	1.4953261	9.194	7.72	7.94	2.6278
5		7.108	0.0486868	0.142	0.25	0.12	n.a.
6	Br	8.014	0.7697229	4.212	3.97	3.64	5.9674
7	SO4	8.598	5.7926819	20.697	29.91	17.88	25.9069
8	NO3	9.374	2.0045714	8.135	10.35	7.03	2.5954
Total:			**19.368**	**115.765**	**100.00**	**100.00**	

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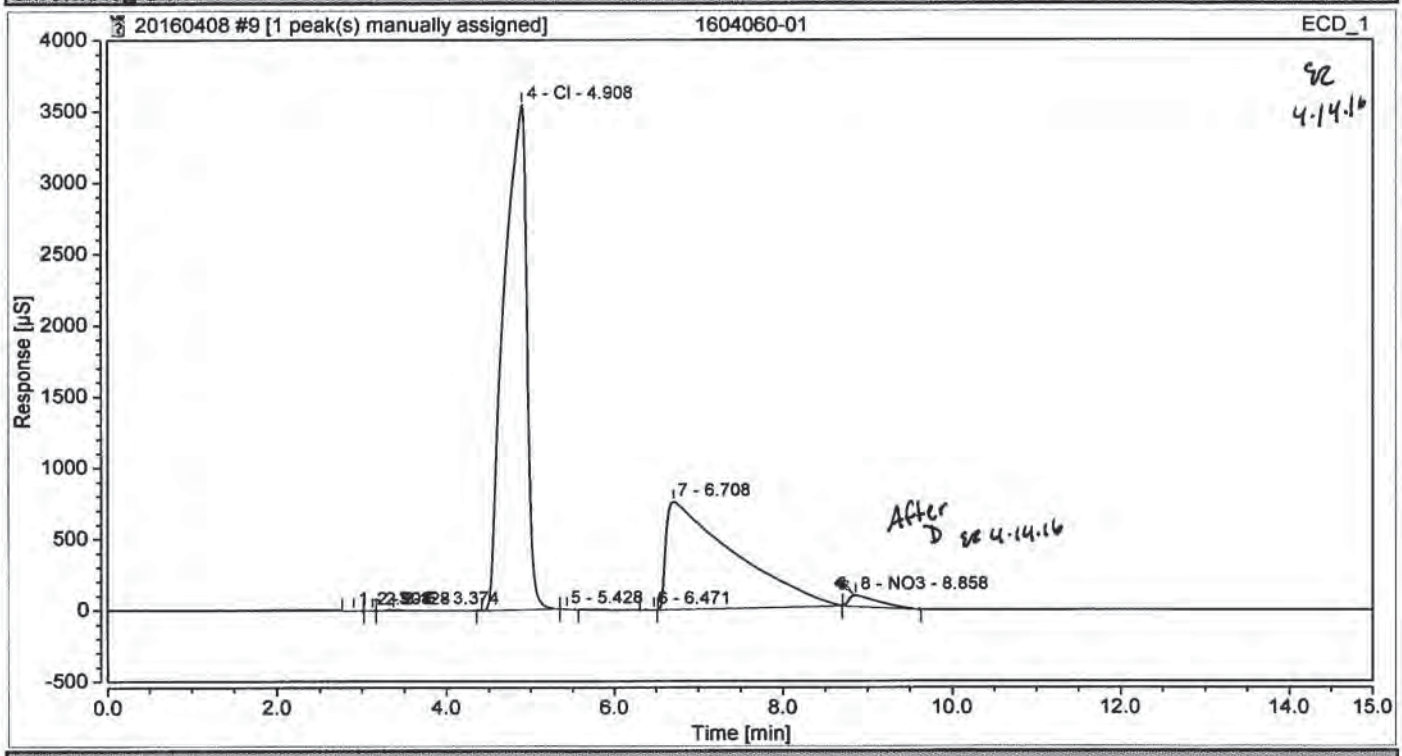
Chromatogram and Results

Injection Details

Injection Name:	**1604060-01**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Apr/16 15:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		2.908	0.0718818	0.475	0.00	0.01	n.a.
2		3.128	0.0793888	0.663	0.00	0.02	n.a.
3	F	3.374	1.0684874	3.948	0.06	0.09	2.1550
4	Cl	4.908	1110.0059870	3541.811	60.49	80.90	3647.2900
5		5.428	0.0240048	0.195	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		6.471	0.0886249	0.430	0.00	0.01	n.a.
7		6.708	694.2293873	754.450	37.83	17.23	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SO4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	8.858	29.3536608	75.878	1.60	1.73	38.0054
Total:			**1834.921**	**4377.850**	**100.00**	**100.00**	

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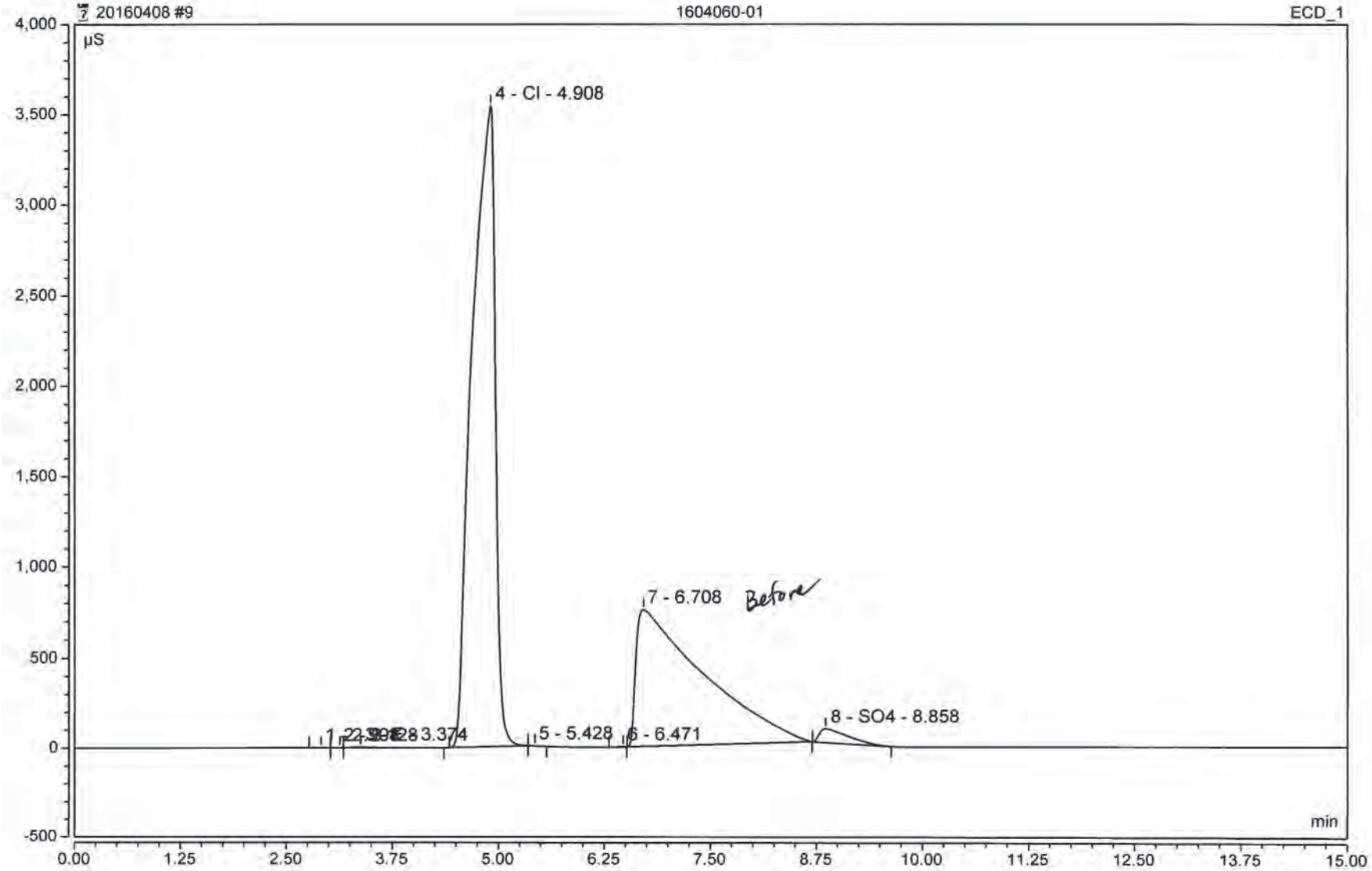
Sequence: 20160408
Injection #9: 1604060-01

Chromatogram



Chromeleon 7,
Version 7.2.0.3765, Thermo Fisher Scientific

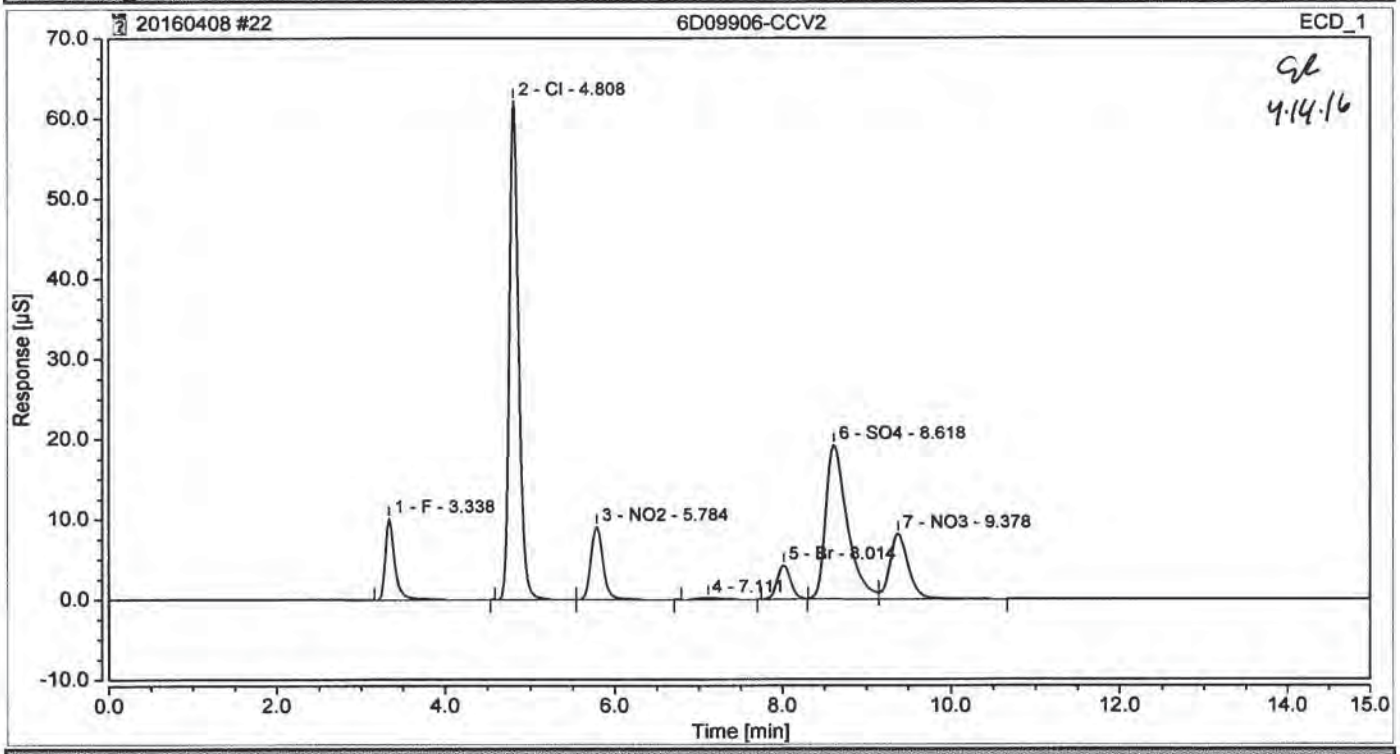
Printed by NSH-IONC2
11/04/16 17:25

Chromatogram and Results

Injection Details

Injection Name:	**6D09906-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**22**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Apr/16 18:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.338	1.3087494	10.132	6.81	8.96	2.6396
2	Cl	4.808	7.9226799	62.178	41.24	55.01	26.0326
3	NO2	5.784	1.4852038	9.087	7.73	8.04	2.6100
4		7.111	0.0504294	0.151	0.26	0.13	n.a.
5	Br	8.014	0.7648447	4.178	3.98	3.70	5.9296
6	SO4	8.618	5.6460925	19.191	29.39	16.98	25.2513
7	NO3	9.378	2.0343071	8.109	10.59	7.17	2.6339
Total:			**19.212**	**113.026**	**100.00**	**100.00**	

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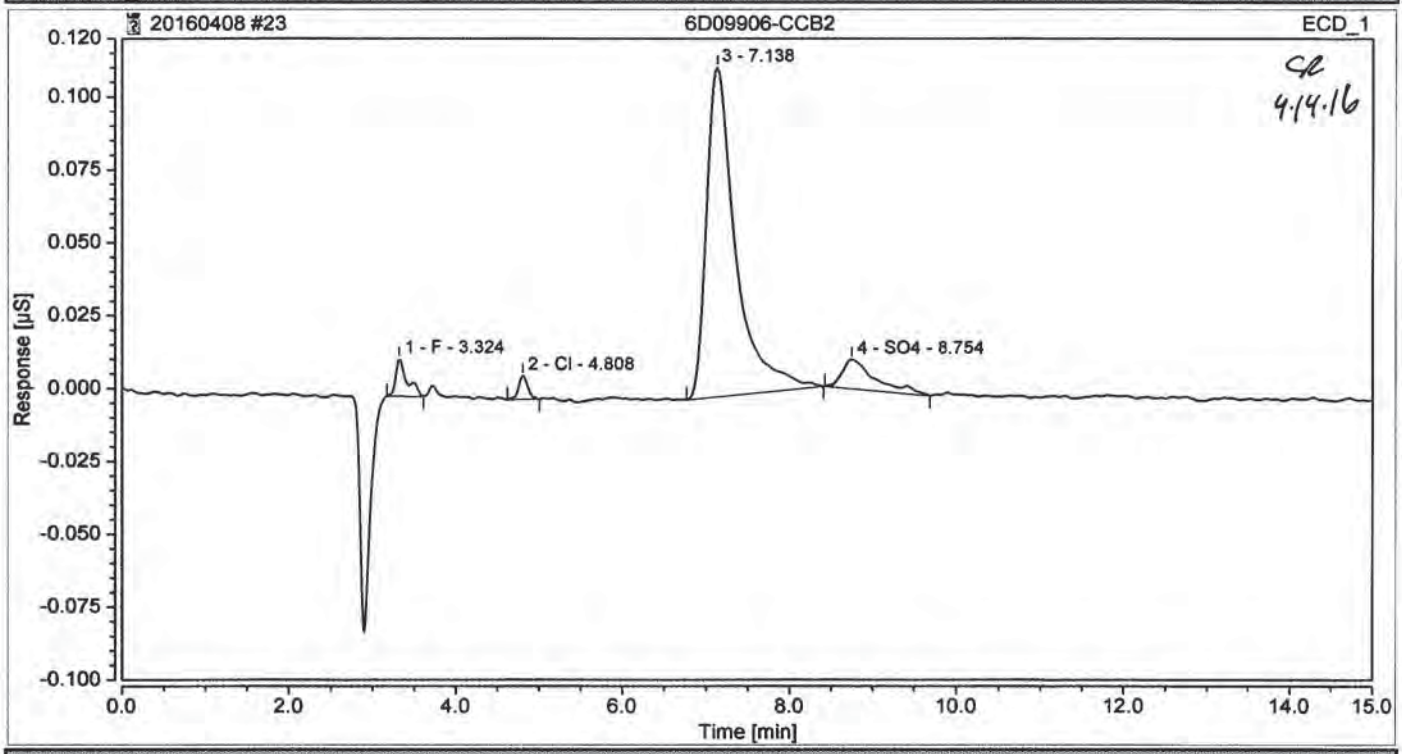
Chromatogram and Results

Injection Details

Injection Name:	**6D09906-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**23**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Apr/16 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.0019233	0.013	3.61	8.88	0.0039
2	Cl	4.808	0.0010037	0.008	1.89	5.62	0.0033
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3		7.138	0.0457976	0.113	86.05	78.59	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SO4	8.754	0.0044991	0.010	8.45	6.91	0.0201
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.053**	**0.144**	**100.00**	**100.00**	

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Sequence Overview

Sequence Details

Name:	**20160411**	*Created On:*	**26/Mar/14 13:54:45**
Directory:	**Instrument Data_ICS-2100\2016\March201**	*Created By:*	**Thermo Elctron NA**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**18/Apr/16 12:09:56**
No. of Injections:	**14**	*Updated By:*	**NSH-IONC2**

Injection Details

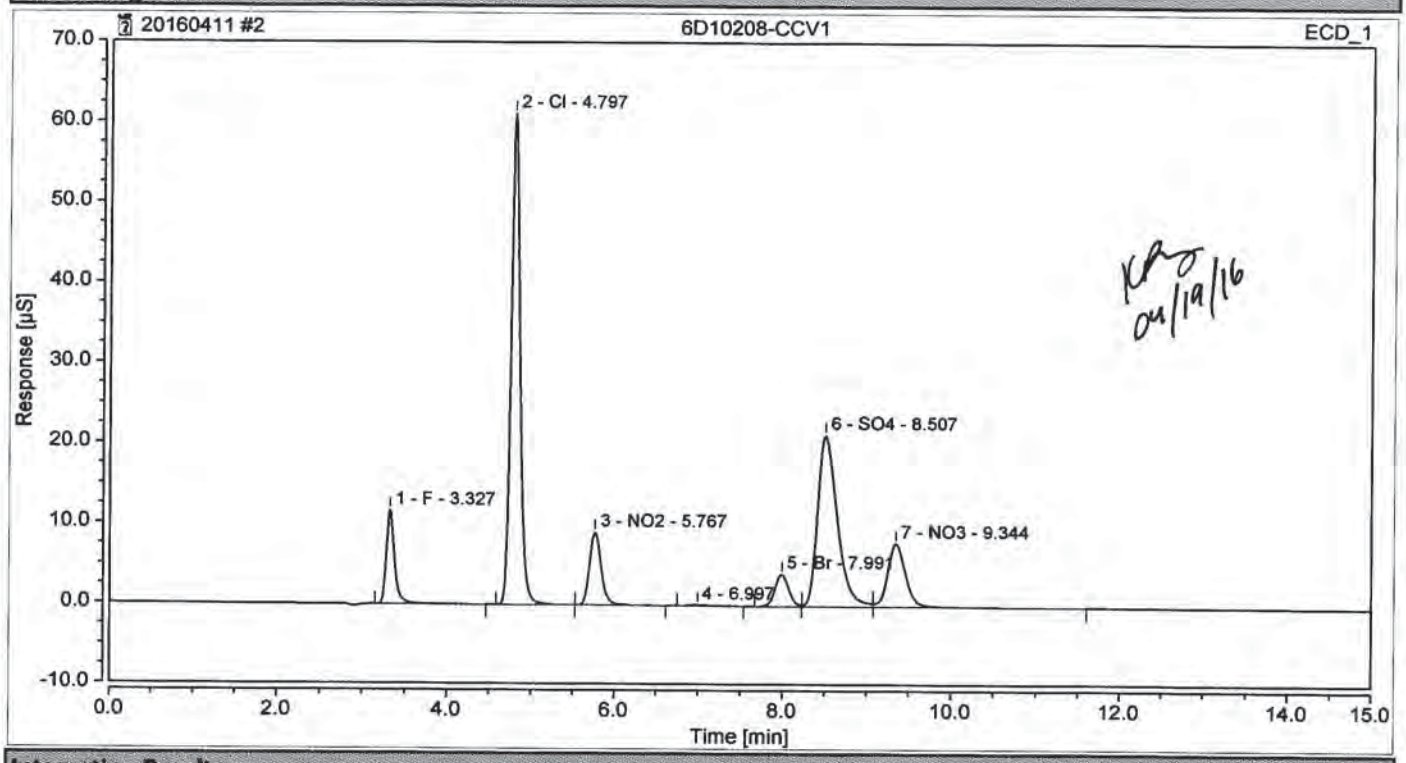
No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		11/Apr/16 16:54:25	Finished
2	6D10208-CCV1	2	Unknown		11/Apr/16 17:12:11	Finished
3	6D10208-CCB1	3	Unknown		11/Apr/16 17:30:02	Finished
4	6D10208-CRL1	4	Unknown		11/Apr/16 17:47:53	Finished
5	6D10208-CRL2	5	Unknown		11/Apr/16 18:05:42	Finished
6	6D10208-CRL3	6	Unknown		11/Apr/16 18:23:32	Finished
7	6D11016-BLK1	7	Unknown		11/Apr/16 18:41:22	Finished
8	6D11016-BS1	8	Unknown		11/Apr/16 18:59:12	Finished
9	6D11016-BSD1	9	Unknown		11/Apr/16 19:17:03	Finished
10	1604034-02RE1@10	10	Unknown		11/Apr/16 19:34:53	Finished
11	1604060-01RE1@10	11	Unknown		11/Apr/16 19:52:43	Finished
12	6D10208-CCV2	12	Unknown		11/Apr/16 20:10:33	Finished
13	6D10208-CCB2	13	Unknown		11/Apr/16 20:28:23	Finished
14	BLANK	14	Unknown		11/Apr/16 20:46:13	Finished

Chromatogram and Results

Injection Details

Injection Name:	**6D10208-CCV1**	*Run Time (min):*	**15.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Apr/16 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	1.2978872	11.677	6.83	10.12	2.6177
2	Cl	4.797	7.8090802	61.264	41.07	53.07	25.6593
3	NO2	5.767	1.4403378	9.051	7.58	7.84	2.5312
4		6.997	0.0305708	0.118	0.16	0.10	n.a.
5	Br	7.991	0.7517153	4.013	3.95	3.48	5.8278
6	SO4	8.507	5.7193097	21.388	30.08	18.53	25.5788
7	NO3	9.344	1.9635222	7.924	10.33	6.86	2.5423
Total:			**19.012**	**115.436**	**100.00**	**100.00**	

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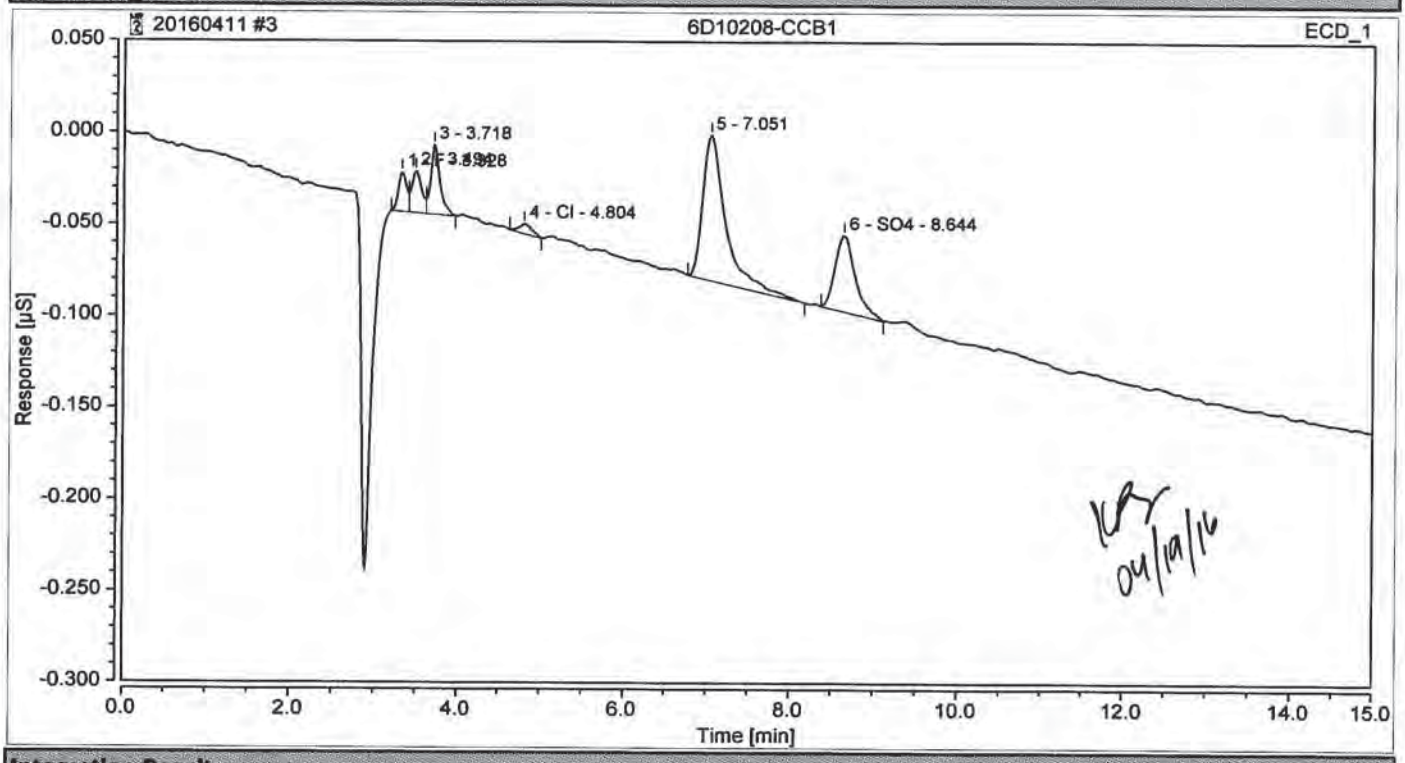
Chromatogram and Results

Injection Details

Injection Name:	**6D10208-CCB1**	*Run Time (min):*	**15.00**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Apr/16 17:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.328	0.0023961	0.022	4.95	10.31	0.0048
2		3.494	0.0031845	0.023	6.58	10.99	n.a.
3		3.718	0.0048325	0.038	9.98	18.17	n.a.
4	Cl	4.804	0.0009551	0.005	1.97	2.56	0.0031
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.051	0.0253900	0.079	52.45	38.02	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	8.644	0.0116529	0.042	24.07	19.95	0.0521
n.a.	NO3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.048**	**0.209**	**100.00**	**100.00**	

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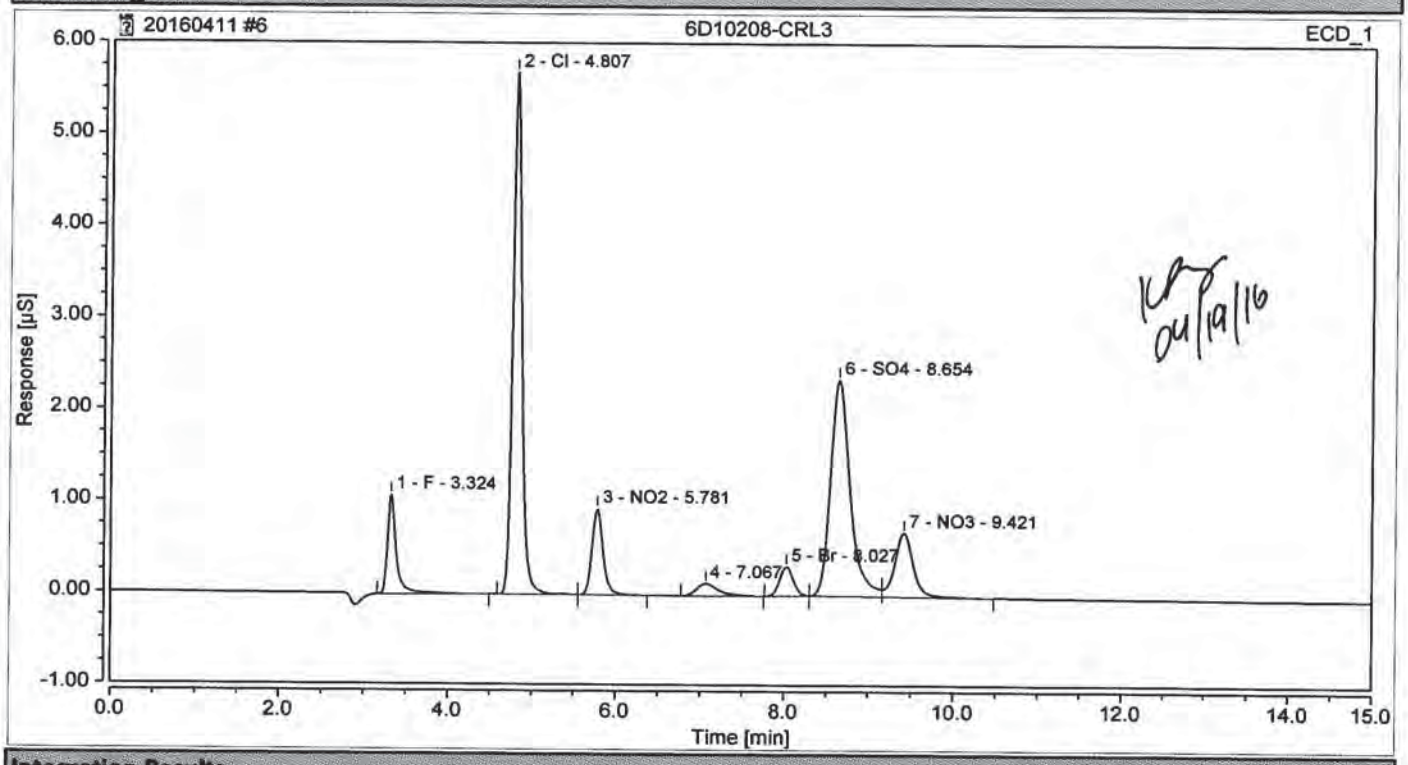
Chromatogram and Results

Injection Details

Injection Name:	**6D10208-CRL3**	*Run Time (min):*	**15.00**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Apr/16 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.324	0.1307915	1.084	6.86	9.65	0.2638
2	Cl	4.807	0.7171390	5.695	37.59	50.70	2.3564
3	NO2	5.781	0.1422434	0.939	7.46	8.36	0.2500
4		7.067	0.0404456	0.134	2.12	1.20	n.a.
5	Br	8.027	0.0605650	0.320	3.17	2.85	0.4695
6	SO4	8.654	0.6405153	2.361	33.58	21.02	2.8646
7	NO3	9.421	0.1758779	0.700	9.22	6.23	0.2277
Total:			**1.908**	**11.234**	**100.00**	**100.00**	

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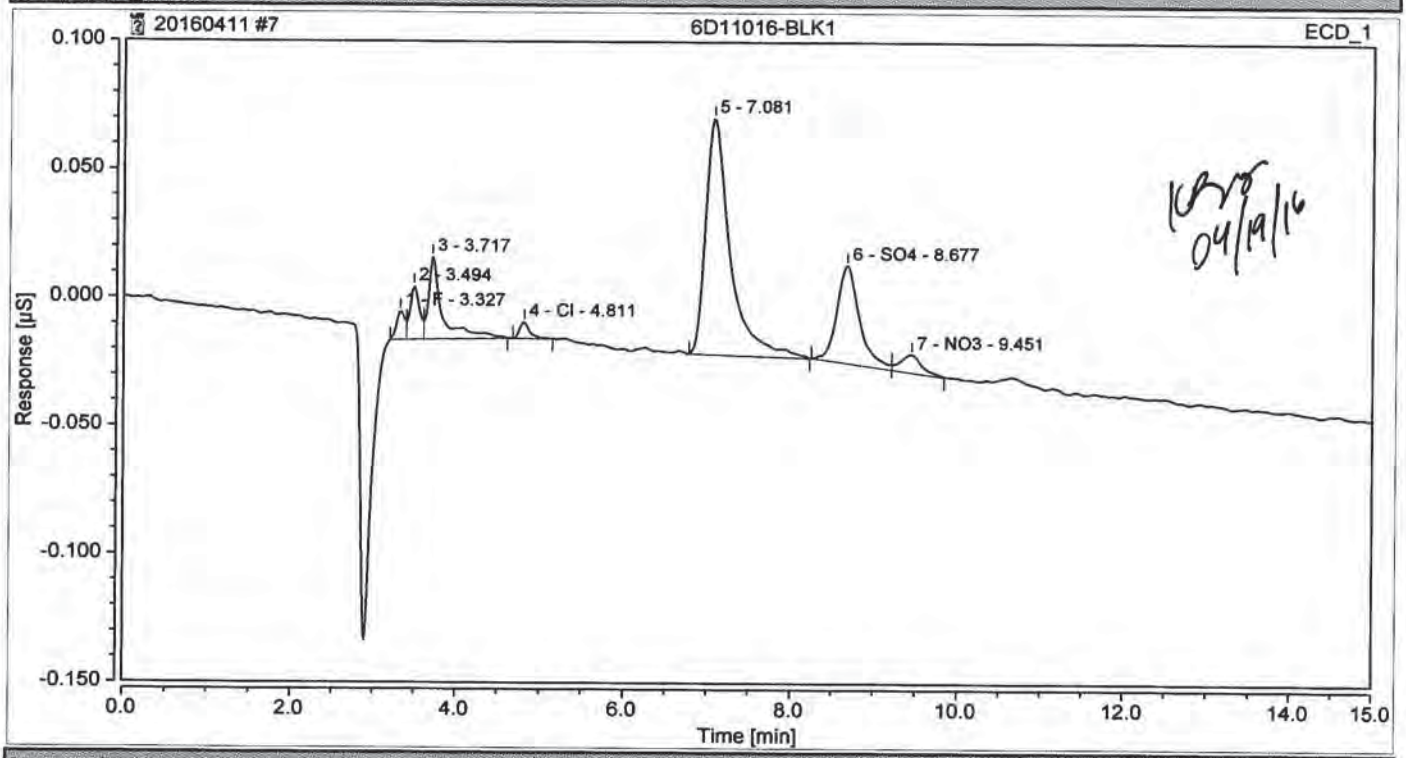
Chromatogram and Results

Injection Details

Injection Name:	**6D11016-BLK1**	*Run Time (min):*	**15.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Apr/16 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.327	0.0013095	0.011	2.32	5.33	0.0026
2		3.494	0.0027624	0.021	4.90	10.01	n.a.
3		3.717	0.0062429	0.032	11.08	15.42	n.a.
4	Cl	4.811	0.0008858	0.006	1.57	3.10	0.0029
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.081	0.0311654	0.092	55.30	44.45	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	8.677	0.0119697	0.038	21.24	18.32	0.0535
7	NO3	9.451	0.0020171	0.007	3.58	3.37	0.0026
Total:			**0.056**	**0.207**	**100.00**	**100.00**	

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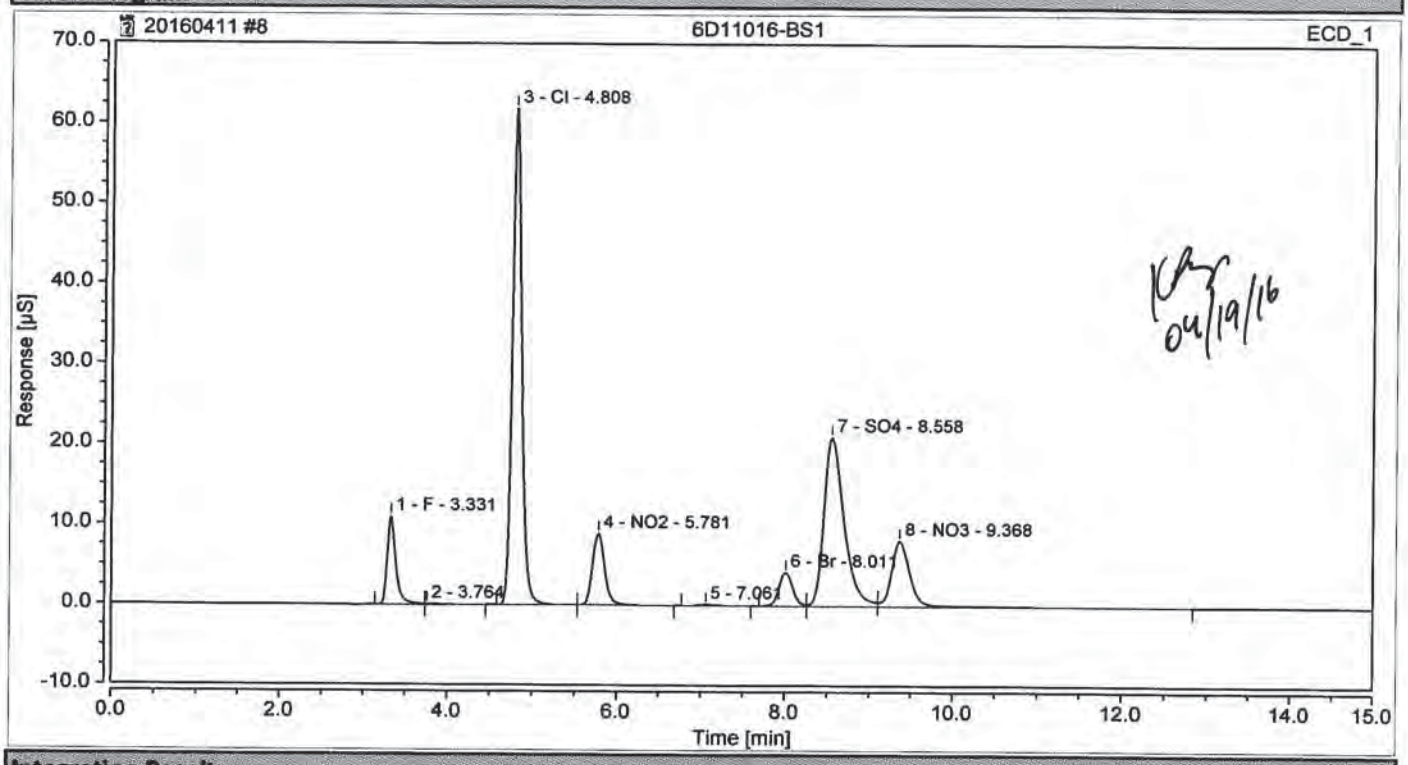
Chromatogram and Results

Injection Details

Injection Name:	**6D11016-BS1**	*Run Time (min):*	**15.00**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Apr/16 18:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.3190616	11.009	6.76	9.54	2.6604
2		3.764	0.0179473	0.076	0.09	0.07	n.a.
3	Cl	4.808	7.9767271	61.895	40.86	53.61	26.2102
4	NO2	5.781	1.4686244	8.941	7.52	7.75	2.5809
5		7.061	0.0374805	0.134	0.19	0.12	n.a.
6	Br	8.011	0.7856792	4.177	4.02	3.62	6.0911
7	SO4	8.558	5.8390094	21.051	29.91	18.23	26.1141
8	NO3	9.368	2.0788092	8.162	10.65	7.07	2.6915
Total:			**19.523**	**115.445**	**100.00**	**100.00**	

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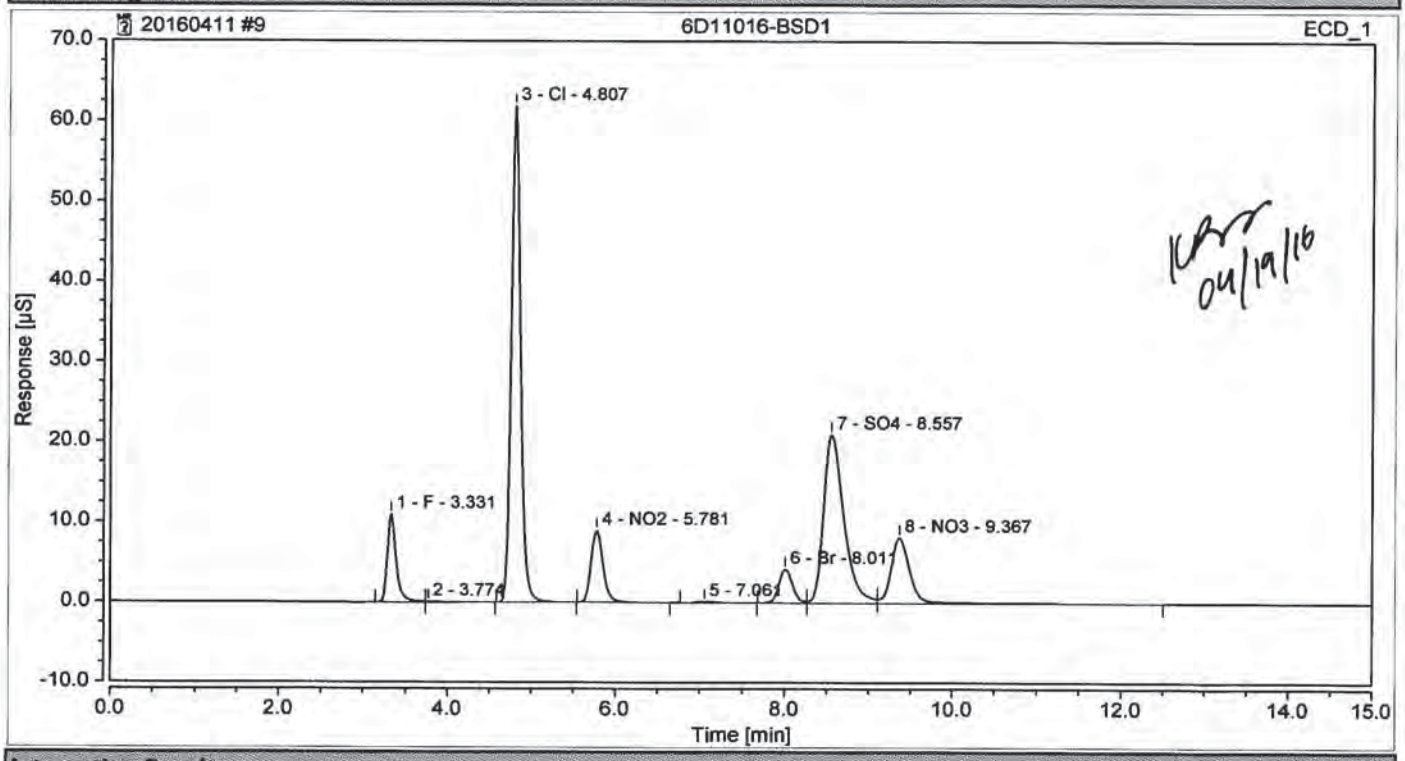
Chromatogram and Results

Injection Details

Injection Name:	**6D11016-BSD1**	*Run Time (min):*	**15.00**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Apr/16 19:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.3203968	10.981	6.76	9.52	2.6631
2		3.774	0.0197324	0.075	0.10	0.07	n.a.
3	Cl	4.807	7.9802421	61.899	40.83	53.64	26.2217
4	NO2	5.781	1.4702526	8.947	7.52	7.75	2.5838
5		7.061	0.0356935	0.124	0.18	0.11	n.a.
6	Br	8.011	0.7898413	4.192	4.04	3.63	6.1233
7	SO4	8.557	5.8437255	21.005	29.90	18.20	26.1352
8	NO3	9.367	2.0841533	8.175	10.66	7.08	2.6984
Total:			**19.544**	**115.398**	**100.00**	**100.00**	

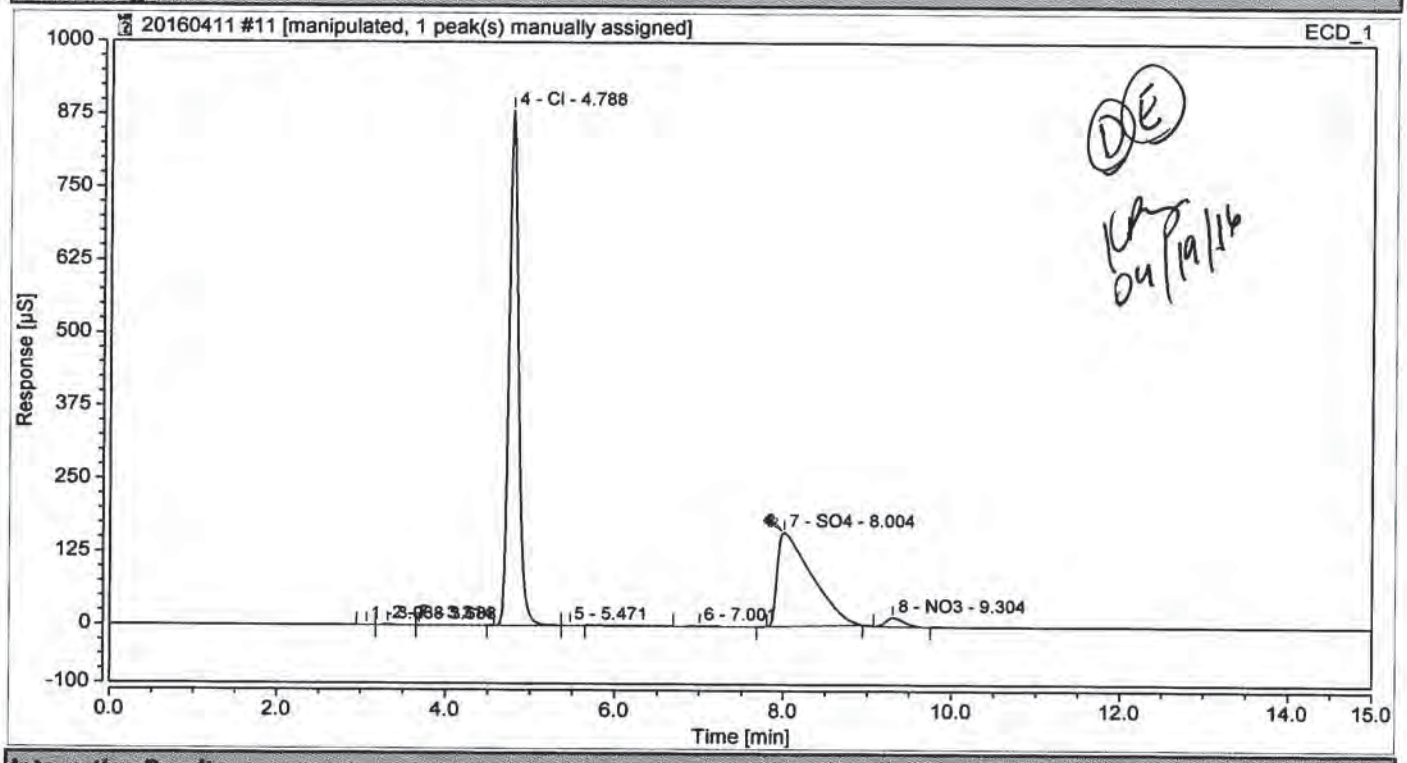
04/19/16

Chromatogram and Results

Injection Details

Injection Name:	**1604060-01RE1@10**	*Run Time (min):*	**15.00**
Vial Number:	**11**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Apr/16 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



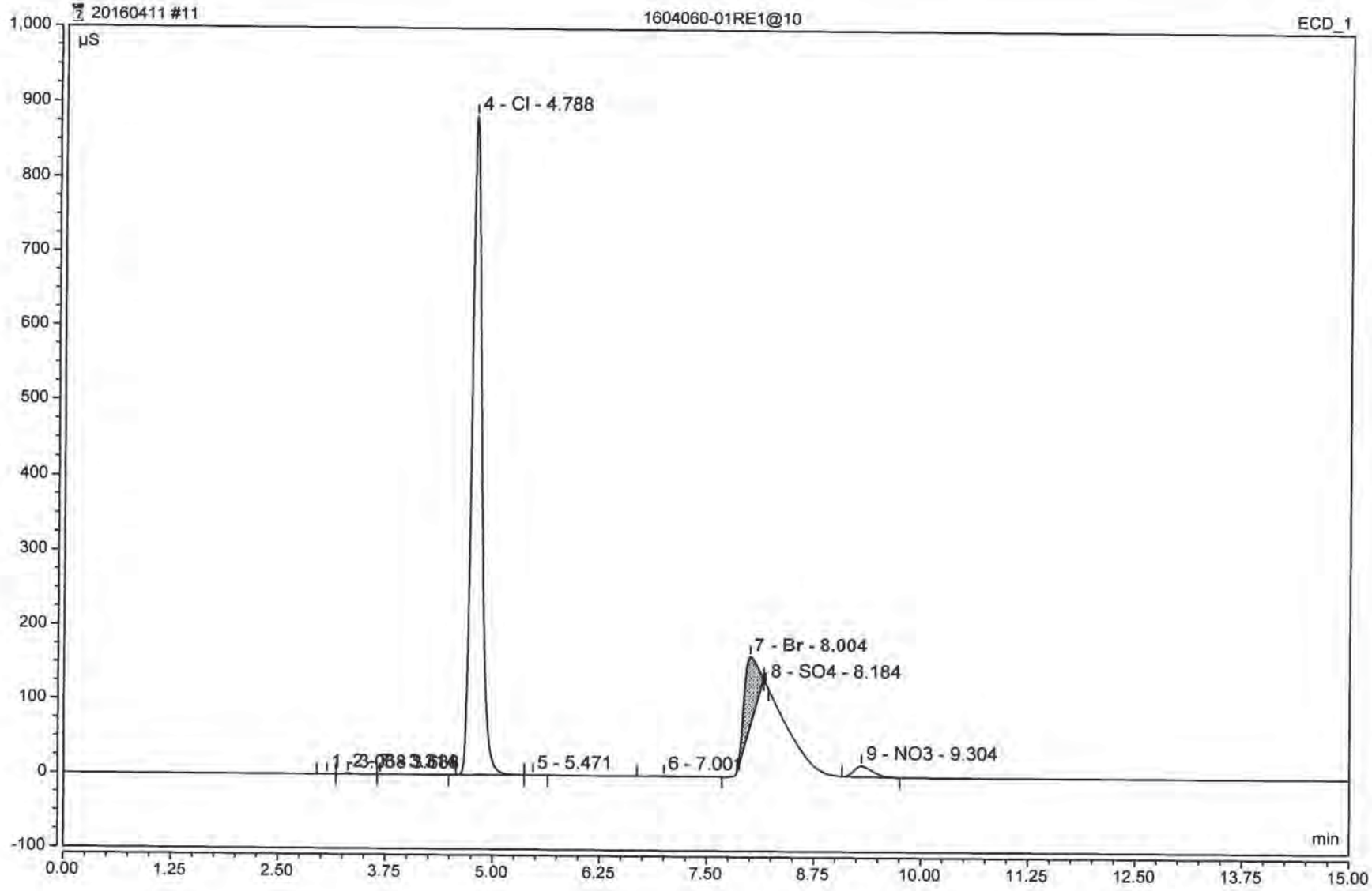
Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		3.068	0.0029867	0.016	0.00	0.00	n.a.
2	F	3.314	0.1359875	1.038	0.07	0.10	0.2743
3		3.688	0.0115446	0.038	0.01	0.00	n.a.
4	Cl	4.788	117.2147426	882.974	59.32	83.30	385.1476
5		5.471	0.0019037	0.013	0.00	0.00	n.a.
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6		7.001	0.2088725	0.668	0.11	0.06	n.a.
7	SO4	8.004	76.4851169	160.698	38.71	15.16	342.0683
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8	NO3	9.304	3.5379911	14.517	1.79	1.37	4.5808
Total:			**197.599**	**1059.963**	**100.00**	**100.00**	

04/19/16

Sequence: 20160411
Injection #11: 1604060-01RE1@10

Chromatogram



Chromeleon 7,
Version 7.2.0.3765, Thermo Fisher Scientific

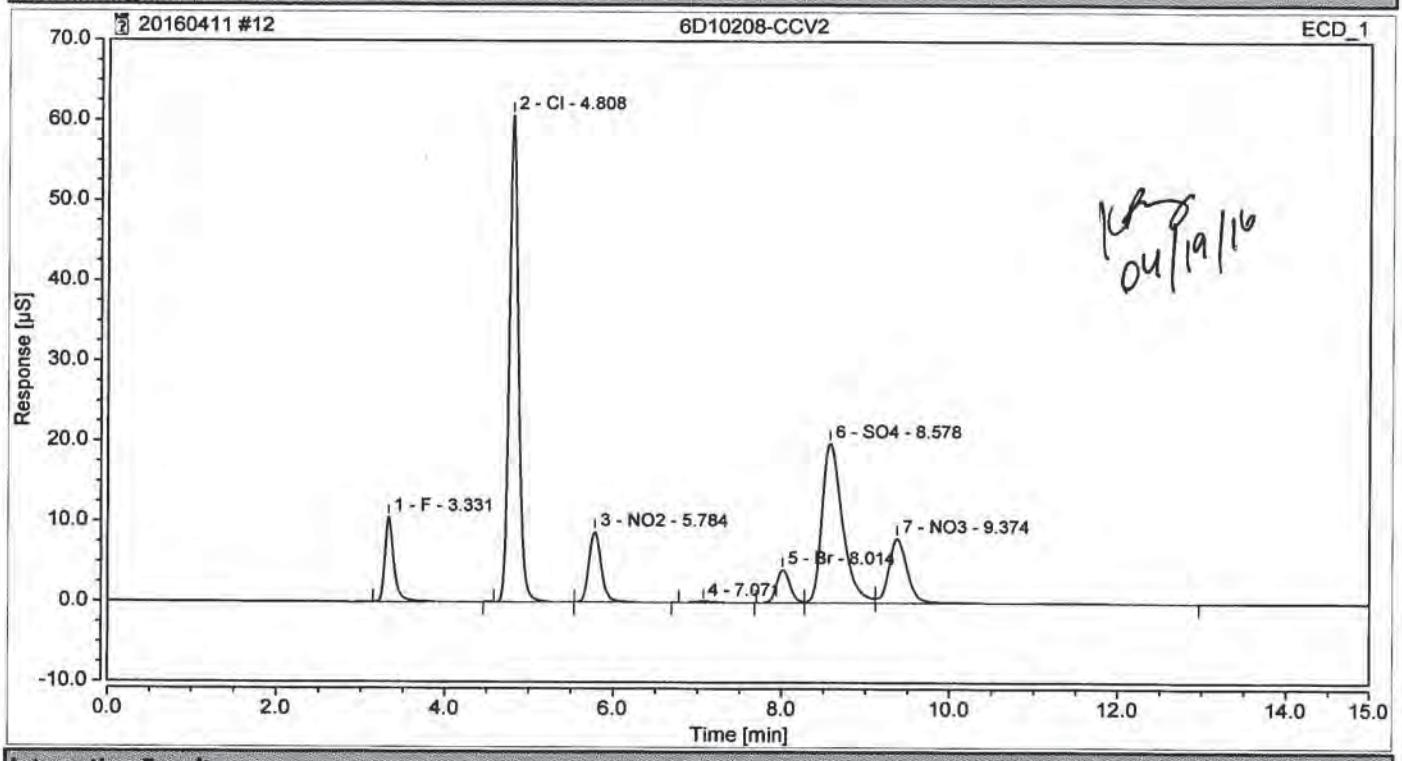
Printed by NSH-IONC2
18/04/16 12:08

Chromatogram and Results

Injection Details

Injection Name:	**6D10208-CCV2**	*Run Time (min):*	**15.00**
Vial Number:	**12**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Apr/16 20:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	1.2977872	10.583	6.79	9.42	2.6175
2	Cl	4.808	7.8562031	60.750	41.09	54.06	25.8141
3	NO2	5.784	1.4496016	8.778	7.58	7.81	2.5475
4		7.071	0.0411622	0.140	0.22	0.12	n.a.
5	Br	8.014	0.7785821	4.124	4.07	3.67	6.0361
6	SO4	8.578	5.6126814	19.923	29.36	17.73	25.1019
7	NO3	9.374	2.0836385	8.067	10.90	7.18	2.6978
Total:			**19.120**	**112.366**	**100.00**	**100.00**	

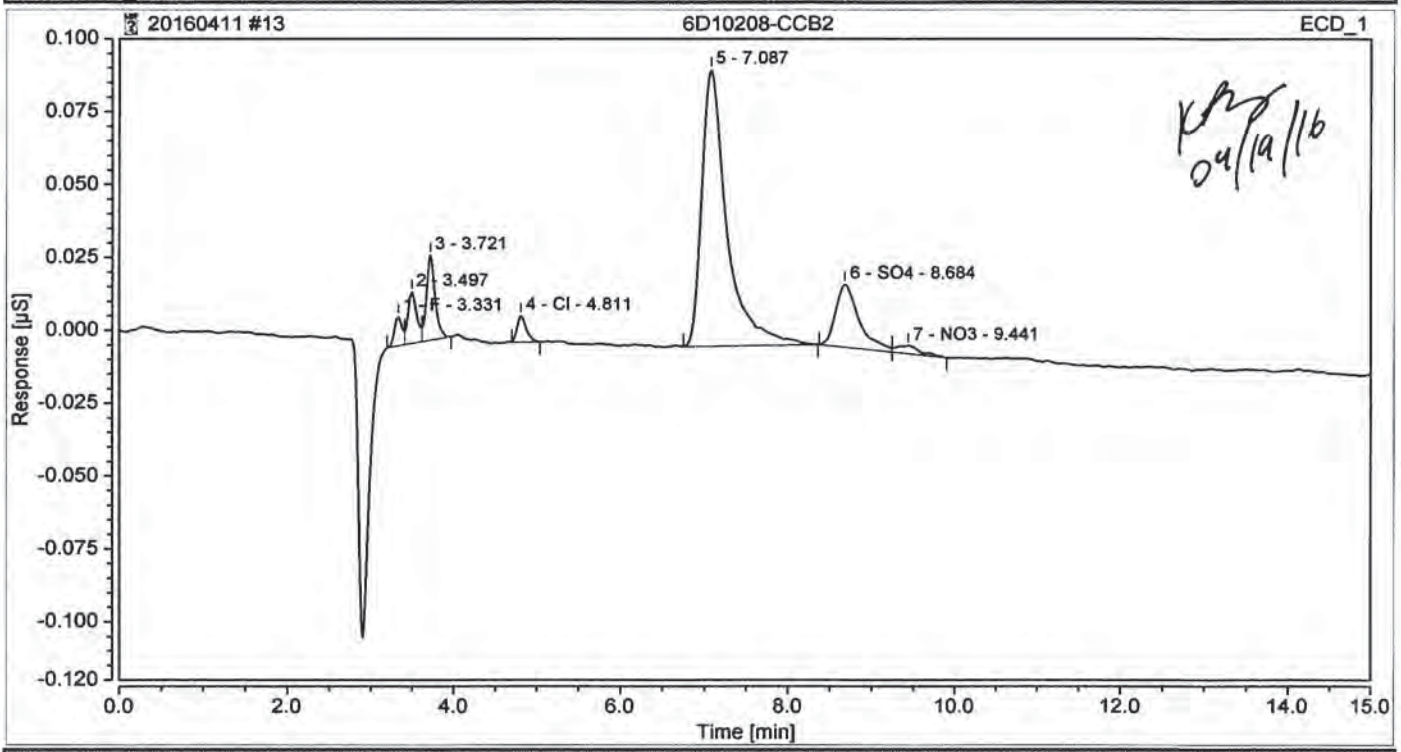
04/19/16

Chromatogram and Results

Injection Details

Injection Name:	**6D10208-CCB2**	*Run Time (min):*	**15.00**
Vial Number:	**13**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**220.0**
Instrument Method:	**AS18 InstMthd**	*Bandwidth:*	**n.a.**
Processing Method:	**IC2 Anion Processing Method**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Apr/16 20:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	F	3.331	0.0010464	0.010	2.14	5.45	0.0021
2		3.497	0.0021797	0.018	4.47	9.55	n.a.
3		3.721	0.0035930	0.029	7.36	15.74	n.a.
4	Cl	4.811	0.0011375	0.009	2.33	4.88	0.0037
n.a.	NO2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5		7.087	0.0329072	0.095	67.45	51.22	n.a.
n.a.	Br	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	SO4	8.684	0.0069904	0.022	14.33	11.66	0.0313
7	NO3	9.441	0.0009352	0.003	1.92	1.51	0.0012
Total:			**0.049**	**0.185**	**100.00**	**100.00**	

04/19/16

Solids, Total Dissolved
TDS

Empirical Laboratories

Client(s):
Arcadis

Date on: 4/12/2016
Time on: 16:55
Temp on: 105

Date off: 4/13/2016
Time off: 8:11
Temp off: 104

MDL = 2 mg/L
MDL of 2 mg/L assumes a volume of 1L. Adjust the MDL to be proportional to the volume used.

QC Criteria
Method Blank < MDL
LCS = ±20% of True Value

Analyst(s): BLQ
Historical Data Checked: Y
Analyst Authorization: BLQ
Method Reference: SM2540C/160.1
Method Type: Gravimetric
Oven Temp. 180 C +/- 2 C?(Y/N): Y
Balance calibration verified?(Y/N): Y
Batch: 6D12003

Crucible ID	Sample Type	Lab ID	Client	Field ID	True Value (mg/L)	Sample Volume (ml)	Crucible Tare Weight (g)	Crucible Dried Weight #1 (g)	Crucible Dried Weight #2 (g)	Crucible Dried Weight #3 (g)	Crucible Dried Weight #4 (g)	Crucible Dried Weight #5 (g)	*TDS (mg/L)*	*Recovery or RPD (%)*	Control Limit, Lower (%)	Control Limit, Upper (%)	Comments
JRF	QC	6D12003-BLK1	QC	DIWater	0	100	77.6586	77.6614	77.6604	77.6619			33		-20 mg/L	+20 mg/L	
Jesus	QC	6D12003-BS1	QC	15L0537	964	20	67.2609	67.2831	67.2830				1105	114.6266	80	120	
No	QC	6D12003-DUP1	1604034-04			100	85.8943	87.0097	87.0068	87.0031	87.0026		11083				
310	Sample	1604034-02				100	76.8646	77.9194	77.9168	77.9135	77.9130		10484				
SOP	Sample	1604034-04				100	76.7800	77.8868	77.8854	77.8859			11059				
Z	Sample	1604034-06				100	78.7636	79.8773	79.8723	79.8699	79.8694		11058				
TOC	Sample	1604060-01				100	78.2808	79.4242	79.4193	79.4158	79.4162		11354				

Comments:

Temp on (°C):	105	179.8	178.8	178.8		
Temp off (°C):	104	178.8	179	178.8		
Date/Time on:	4/12/16 16:55	4/13/16 8:12	4/13/16 13:39	4/13/16 16:27		
Date/Time off :	4/13/16 8:11	4/13/16 11:16	4/13/16 15:05	4/14/16 8:27		

Empirical Laboratories

Solids, Total Suspended
TSS

Client(s):

MDL = 1.0 mg/L
The above MDL assumes a sample volume of 1L. Adjust the MDL so it remains proportional to the sample size.

Batch: 6D12004
Time On: 16:42 Date on: 4/12/2016
Time Off: 8:07 Date off: 4/13/2016
Analyst(s): JDB
Historical Data Checked: Y
Analyst Authorization: BLQ
Method Reference: SM 2540 D/ 160.2
Method Type: Gravimetric
Oven Temp. 104 C +/- 1 C?(Y/N): Y
Balance calibration verified?(Y/N): Y

Crucible ID	Sample Type	Lab ID	Client	Field ID	True Value (mg/L)	Sample Volume (ml)	Crucible Tare Weight (g)	Crucible Tare Weight (g)	Crucible Dried Weight #1 (g)	Crucible Dried Weight #2 (g)	Crucible Dried Weight #3 (g)	Crucible Dried Weight #4 (g)	*TSS (mg/L)*	*Recovery or RPD (%)*	Control Limit, Lower (%)	Control Limit, Upper (%)	Comments
7	QC	6D12004-BLK1	QC	DIWater	0	250	0.1181	0.1186	0.1185	0.1186			0		-1.0 mg/L	+1.0 mg/L	TSS <DL of4
8	QC	6D12004-BS1	QC	16D0171	233.5	1000	0.1173	0.1176	0.3571	0.3570			239.4	102.527	80	120	
9	DUPLICATE	6D12004-DUP1	QC	1604034-04		250	0.1181	0.1182	0.1268	0.1266			33.6				
1	Sample	1604034-02				250	0.1201	0.1204	0.1295	0.1294			36.0				
2	Sample	1604034-04				250	0.1192	0.1195	0.1288	0.1286			36.4				
3	Sample	1604034-06				250	0.1243	0.1246	0.1351	0.1350			41.6				
4	Sample	1604037-01				250	0.1189	0.1192	0.1207	0.1207			6.0				
5	Sample	1604055-01				250	0.12	0.1202	0.1570	0.1569			146.8 ✓				
6	Sample	1604060-01				250	0.124	0.1243	0.1279	0.1279			14.4				

Comments:

Temp on (°C):	107	103				
Temp off (°C):	104	105				
Date/Time on:	4/12/16 16:42	4/13/16 11:14				
Date/Time off :	4/13/16 8:07	4/13/16 13:40				

$$1604055\text{-}01 = \frac{(0.1569 - 0.1202)\,1000}{250/1000} = 146.8\ mg/L$$

SOP174_R12_20151221_TSTVS_Blank

PREPARATION BENCH SHEET

6D08004

Empirical Laboratories, LLC

Printed: 4/22/2016 10:37:42AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1604060-01	B	WC_ANIONS_300.0 (Short Hol	04/08/2016	5	5					NA	;NO3;NO3
1604061-01	F	WC_ANIONS_9056A (Regular)	04/08/2016	5	5					NA	;;
1604061-02	F	WC_ANIONS_9056A (Regular)	04/08/2016	5	5					NA	;;
1604061-03	F	WC_ANIONS_9056A (Regular)	04/08/2016	5	5					NA	;;
1604062-01	F	WC_ANIONS_9056A (Regular)	04/08/2016	5	5					NA	;;
1604062-02	F	WC_ANIONS_9056A (Regular)	04/08/2016	5	5					NA	;;
1604062-03	F	WC_ANIONS_9056A (Regular)	04/08/2016	5	5					NA	;;
1604062-04	F	WC_ANIONS_9056A (Regular)	04/08/2016	5	5					NA	;;
1604062-05	F	WC_ANIONS_9056A (Regular)	04/08/2016	5	5					NA	;;
1604062-06	F	WC_ANIONS_300.0 (Short Hol	04/08/2016	5	5					NA	;BatchQC;Added for BatchQC in: 6D08004
1604062-06	F	WC_ANIONS_9056A (Regular)	04/08/2016	5	5					NA	;;
6D08004-BLK1		QC	04/08/2016	5	5					NA	
6D08004-BS1		QC	04/08/2016	5	5	16D0109		5000		NA	
6D08004-DUP1		QC	04/08/2016	5	5		1604062-06			NA	
6D08004-MS1		QC	04/08/2016	22.5	22.5	16B0200	1604062-06	2500		NA	
6D08004-MSD1		QC	04/08/2016	22.5	22.5	16B0200	1604062-06	2500		NA	

PREPARATION BENCH SHEET

6D11016

Empirical Laboratories, LLC

Printed: 4/22/2016 10:38:09AM

Instrument:

Matrix: Water **Prepared using: GCLC - WC_PREP_ANIONS_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1604034-02RE1	F	WC_ANIONS_300.0 (Short Hol	04/11/2016	5	5						NA	; Nitrate OLR at 1x/rr@ dilution Re-extract added 4/11/2016 by EAR; Nitrate OLR at 1x/rr@ dilution Re-extract added 4/11/2016 by EAR
1604060-01RE1	B	WC_ANIONS_300.0 (Short Hol	04/11/2016	5	5						NA	;NO3;NO3 OLR at 1x, RR OOH/ report both ER 4/12/16
6D11016-BLK1		QC	04/11/2016	5	5						NA	
6D11016-BS1		QC	04/11/2016	5	5	16D0169			5000		NA	
6D11016-BSD1		QC	04/11/2016	5	5	16D0169			5000		NA	

Reagents Used:

Standard	Description

PREPARATION BENCH SHEET

6D12003

Empirical Laboratories, LLC

Printed: 4/22/2016 10:38:34AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1604034-02	F	WC_TDS_TOTAL_DISS_SOLID	04/12/2016	100	100						NA	;;
1604034-04	O	WC_TDS_TOTAL_DISS_SOLID	04/12/2016	100	100						NA	MS/MSD;;
1604034-06	E	WC_TDS_TOTAL_DISS_SOLID	04/12/2016	100	100						NA	;;
1604060-01	B	WC_TDS_TOTAL_DISS_SOLID	04/12/2016	100	100						NA	;;
6D12003-BLK1		QC	04/12/2016	100	100						NA	
6D12003-BS1		QC	04/12/2016	20	20	15L0537			20000		NA	
6D12003-DUP1		QC	04/12/2016	100	100		1604034-04				NA	

Reagents Used:

Standard	Description
15J0478	Syringe Filters - Glass Fiber, 25mm, 1.5um, 200pk

PREPARATION BENCH SHEET

6D12004

Empirical Laboratories, LLC

Printed: 4/22/2016 10:38:58AM

Instrument:

Matrix: Water **Prepared using: WC - pNone** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1604034-02	F	WC_TSS_TOTAL_SUSPENDE	04/12/2016	250	250					NA	;;
1604034-04	O	WC_TSS_TOTAL_SUSPENDE	04/12/2016	250	250					NA	MS/MSD;;
1604034-06	E	WC_TSS_TOTAL_SUSPENDE	04/12/2016	250	250					NA	;;
1604037-01	I	WC_TSS_TOTAL_SUSPENDE	04/12/2016	250	250					NA	;;
1604055-01	A	WC_TSS_TOTAL_SUSPENDE	04/12/2016	250	250					NA	Start Flow 44,071 End Flow 44,085;;
1604060-01	B	WC_TSS_TOTAL_SUSPENDE	04/12/2016	250	250					NA	;;
6D12004-BLK1		QC	04/12/2016	250	250					NA	
6D12004-BS1		QC	04/12/2016	1000	1000	16D0171		1000000		NA	
6D12004-DUP1		QC	04/12/2016	250	250		1604034-04			NA	

Reagents Used:

Standard	Description
16C0250	Proweigh Filters for TSS, 47mm, 100pk

ANALYSIS DATA SHEET

OTC537-GW-MW01

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sampled: 04/06/16 12:46

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 1604034-05
Received: 04/07/16 09:00

ORIGINAL SAMPLE

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum (dissolved)	**1690**	**312**	625	1250	25	N D	SW6010C	6D09920	04/19/16 18:44
7440-36-0	Antimony (dissolved)		1.25	2.00	2.50	1	N U	SW6010C	6D09920	04/11/16 19:42
7440-38-2	Arsenic (dissolved)		0.750	1.50	2.50	1	N U	SW6010C	6D09920	04/11/16 19:42
7440-39-3	Barium (dissolved)	**31.9**	**1.25**	2.50	10.0	1		SW6010C	6D09920	04/11/16 19:42
7440-41-7	Beryllium (dissolved)		0.250	0.500	1.25	1	U	SW6010C	6D09920	04/11/16 19:42
7440-43-9	Cadmium (dissolved)		2.50	5.00	12.5	10	U	SW6010C	6D09920	05/17/16 15:16
7440-70-2	Calcium (dissolved)	**666000**	**6250**	12500	31200	25	N D	SW6010C	6D09920	04/19/16 18:44
7440-47-3	Chromium (dissolved)		2.50	5.00	12.5	5	U	SW6010C	6D09920	04/15/16 12:56
7440-48-4	Cobalt (dissolved)	**1.61**	**1.25**	2.50	3.12	1	J	SW6010C	6D09920	04/11/16 19:42
7440-50-8	Copper (dissolved)		5.00	10.0	12.5	5	U	SW6010C	6D09920	04/15/16 12:56
7439-89-6	Iron (dissolved)	**22.2**	**7.50**	15.0	25.0	1	J	SW6010C	6D09920	04/11/16 19:42
7439-92-1	Lead (dissolved)	**0.378**	**0.375**	0.750	1.25	1	J	SW6010C	6D09920	04/11/16 19:42
7439-95-4	Magnesium (dissolved)	**382000**	**1250**	3750	6250	5	N D	SW6010C	6D09920	04/15/16 12:56
7439-96-5	Manganese (dissolved)	**335**	**0.750**	1.50	3.75	1	N	SW6010C	6D09920	04/11/16 19:42
7440-02-0	Nickel (dissolved)		3.75	7.50	12.5	5	U	SW6010C	6D09920	04/15/16 12:56
7440-09-7	Potassium (dissolved)	**23300**	**250**	750	1250	1	N	SW6010C	6D09920	04/11/16 19:42
7782-49-2	Selenium (dissolved)		18.8	31.2	62.5	25	N U	SW6010C	6D09920	04/19/16 18:44
7440-22-4	Silver (dissolved)		0.250	0.500	2.50	1	U	SW6010C	6D09920	04/11/16 19:42
7440-23-5	Sodium (dissolved)	**1720000**	**6250**	18800	31200	25	E N D	SW6010C	6D09920	04/19/16 18:44
7440-28-0	Thallium (dissolved)		0.750	1.00	2.00	1	U	SW6010C	6D09920	04/11/16 19:42
7440-62-2	Vanadium (dissolved)	**1.51**	**1.25**	2.50	3.12	1	J	SW6010C	6D09920	04/11/16 19:42
7440-66-6	Zinc (dissolved)		31.2	62.5	125	25	U	SW6010C	6D09920	04/19/16 18:44

ANALYSIS DATA SHEET

OTC537-GW-MW01-FD

Laboratory: Empirical Laboratories, LLC
Client: CB&I
Matrix: Water
Sampled: 04/06/16 12:46

SDG: 1604034
Project: Holloman AFB
Laboratory ID: 1604034-07
Received: 04/07/16 09:00

CAS NO.	Analyte	Conc. (ug/L)	DL	LOD	LOQ	D.F.	Q	Method	Batch	Analyzed
7429-90-5	Aluminum (dissolved)	**1870**	**312**	625	1250	25	D	SW6010C	6D09920	04/21/16 13:01
7440-36-0	Antimony (dissolved)		2.50	4.00	5.00	2	U	SW6010C	6D09920	05/17/16 15:10
7440-38-2	Arsenic (dissolved)		1.50	3.00	5.00	2	U	SW6010C	6D09920	05/17/16 15:10
7440-39-3	Barium (dissolved)	**29.9**	**2.50**	5.00	20.0	2	D	SW6010C	6D09920	05/17/16 15:10
7440-41-7	Beryllium (dissolved)		0.500	1.00	2.50	2	U	SW6010C	6D09920	05/17/16 15:10
7440-43-9	Cadmium (dissolved)		2.50	5.00	12.5	10	U	SW6010C	6D09920	05/17/16 15:23
7440-70-2	Calcium (dissolved)	**672000**	**6250**	12500	31200	25	D	SW6010C	6D09920	04/21/16 13:01
7440-47-3	Chromium (dissolved)		2.50	5.00	12.5	5	U	SW6010C	6D09920	05/17/16 15:05
7440-48-4	Cobalt (dissolved)		2.50	5.00	6.25	2	U	SW6010C	6D09920	05/17/16 15:10
7440-50-8	Copper (dissolved)		5.00	10.0	12.5	5	U	SW6010C	6D09920	05/17/16 15:05
7439-89-6	Iron (dissolved)	**21.9**	**15.0**	30.0	50.0	2	J D	SW6010C	6D09920	05/17/16 15:10
7439-92-1	Lead (dissolved)		0.750	1.50	2.50	2	U	SW6010C	6D09920	05/17/16 15:10
7439-95-4	Magnesium (dissolved)	**382000**	**1250**	3750	6250	5	D	SW6010C	6D09920	05/17/16 15:05
7439-96-5	Manganese (dissolved)	**335**	**1.50**	3.00	7.50	2	D	SW6010C	6D09920	05/17/16 15:10
7440-02-0	Nickel (dissolved)		3.75	7.50	12.5	5	U	SW6010C	6D09920	05/17/16 15:05
7440-09-7	Potassium (dissolved)	**22200**	**500**	1500	2500	2	D	SW6010C	6D09920	05/17/16 15:10
7782-49-2	Selenium (dissolved)		18.8	31.2	62.5	25	U	SW6010C	6D09920	04/21/16 13:01
7440-22-4	Silver (dissolved)		0.500	1.00	5.00	2	U	SW6010C	6D09920	05/17/16 15:10
7440-23-5	Sodium (dissolved)	**1790000**	**6250**	18800	31200	25	D	SW6010C	6D09920	04/21/16 13:01
7440-28-0	Thallium (dissolved)		1.50	2.00	4.00	2	U	SW6010C	6D09920	05/17/16 15:10
7440-62-2	Vanadium (dissolved)		2.50	5.00	6.25	2	U	SW6010C	6D09920	05/17/16 15:10
7440-66-6	Zinc (dissolved)		31.2	62.5	125	25	U	SW6010C	6D09920	04/21/16 13:01

No validation qualifier

Validation qualifier will be "J"

Sample Collection Log

144106.JR20001 - HOLLOMAN AFB

Manager CHRISTOPHER LONG

Location Code OTC538-MW02

RFA / COC Number

Sample Number OTC538-GW-MW02-160406

Logging Co

Filtered Sample UNKNOWN

Collection Date 4/6/16

Sampling Method LOW-FLOW (SLOW PURGE)

Collection Time 10:22

Sample Type GRAB

Sample Purpose CONFIRMATION SA

Start Depth 29.04

QC Code NORMAL ENVIRONMENTAL SAMPLE

End Depth 29.04

Sampling Equipment BLADDER PUMP

Sample Matrix WATER

QC Partners:

(TB) _____ *(EB)* _____ *(FB)* _____

SampleTeam P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Container Type			Preservative	Lab
SW8260C : VOCs	A	TOTAL	3	40	ML	40 ML VOA VIALS	HCL	EMPIRICAL LABS, NASI
SW6020A : METALS	B	TOTAL	1	250	ML	250 ML POLY CONTAINE	HNO3	EMPIRICAL LABS, NASI
SW7470A : MERCURY	C	TOTAL	1	250	ML	250 ML POLY CONTAINE	HNO3	EMPIRICAL LABS, NASI
E300 : Nitrate	D	TOTAL	1	250	ML	250 ML POLY CONTAINE	NONE	EMPIRICAL LABS, NASI
SM2540C : TDS	E	TOTAL	1	250	ML	250 ML POLY CONTAINE	NONE	EMPIRICAL LABS, NASI
SM2540D : TSS	F	TOTAL	1	250	ML	250 ML POLY CONTAINE	NONE	EMPIRICAL LABS, NASI

Comments: 1 FILTERED BOTTLE FOR METALS

Sketch Location:

Logged By / Date: 4/6/16

Reviewed By / Date:

GROUND WATER SAMPLE COLLECTION LOG

Project Name: HOLLOMAN AFB
Site Location: OTC537
Project No.: 144106
Well ID: OTC537-MW01
Sample ID OTC537-MW01-160406
Date / Time Collected 4/6/16 @ 12:46

EQUIPMENT / NOTES

Sample Collected by: P. MIDDLETON

Purging Method/Equipment: Micropurge
Sampling Equipment.: ☑ Bladder Pump ☐ Other _____
Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet
Note: Flowrate for VOC sampling should be no greater than 100 ml/min
Daily field instrument calibration verification performed? **Yes** ✓ **No** ___

PURGING INFORMATION

Measuring Point Top of Casing
Drawdown depth limit (DDL) = DTWi + 0.3 (ft)
Casing ID (in.) 2"
Approximate depth of pump inlet (ft): _____
Depth to Water - Initial (DTWi) (ft) 28.60
Depth to Well Bottom (ft) 40.50
Screen Interval (ft): _____

* FIELD DUP & MS/MSD *

FIELD CONDITIONS

Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind
Temperature: 80°F

Time of Reading	Purge Rate (ml/min)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 200	Drawdown limit 0.3 ft	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
12:30	1	28.60	14.61	23.58	7.49	178.0	57.1	6.70
12:35	2	|	13.93	22.14	7.41	94.1	61.2	5.99
12:40	3	|	13.84	22.53	7.41	89.9	65.5	5.83
12:45	4	|	13.88	22.59	7.41	87.6	71.1	5.77
12:46	SAMPLE							

☐ **Duplicate or MS/MSD Collected:**

Container(s) Type and Volume	No. of Containers	Filtered (Y/N)	Preservatives	Parameters
500 ml POLY	4	N	NONE	NITRATE / TDS / TSS
250 ml POLY	8 ~~4~~	Y-4 FILTERED	HNO_3	METALS / MERCURY
40 ml VOA	12	N	HCL	VOCs

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Sample Collection Log

144106.JR20001 - HOLLOMAN AFB

Manager CHRISTOPHER LONG

Location Code OTC537-MW01

RFA / COC Number _____

Sample Number OTC537-GW-MW01-1604

Logging Co _____

Filtered Sample UNKNOWN

Collection Date 4/6/16

Sampling Method LOW-FLOW (SLOW PURGE)

Collection Time 12:46

Sample Type GRAB

Sample Purpose CONFIRMATION SA

Start Depth 28.60

QC Code NORMAL ENVIRONMENTAL SAMPLE

End Depth 28.60

Sampling Equipment _____

Sample Matrix WATER

QC Partners:

(TB) _____ *(EB)* _____ *(FB)* _____

SampleTeam P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Container Type			Preservative	Lab
SW8260C : VOCs	A	TOTAL	3	40	ML	40 ML VOA VIALS	HCL	EMPIRICAL LABS, NASHVILLE, TN
SW6020A : METALS	B	TOTAL	1	250	ML	250 ML POLY CONTAINER	HNO3	EMPIRICAL LABS, NASHVILLE, TN
SW7470A : MERCURY	C	TOTAL	1	250	ML	250 ML POLY CONTAINER	HNO3	EMPIRICAL LABS, NASHVILLE, TN
E300 : Nitrate	D	TOTAL	1	250	ML	250 ML POLY CONTAINER	NONE	EMPIRICAL LABS, NASHVILLE, TN
SM2540C : TDS	E	TOTAL	1	250	ML	250 ML POLY CONTAINER	NONE	EMPIRICAL LABS, NASHVILLE, TN
SM2540D : TSS	F	TOTAL	1	250	ML	250 ML POLY CONTAINER	NONE	EMPIRICAL LABS, NASHVILLE, TN

Comments: FIELD DUP + MS/MSD, 4 FILTERED BOTTLES FOR METALS

Sketch Location:

Logged By / Date: 4/6/16

Reviewed By / Date: _____

Sample Collection Log

144106.JR20001 - HOLLOMAN AFB

Manager CHRISTOPHER LONG

Location Code OTC538-MW01

RFA / COC Number _____

Sample Number OTC538-GW-MW01-1604

Logging Co _____

Filtered Sample UNKNOWN

Collection Date 4/7/16

Sampling Method LOW-FLOW (SLOW PURGE)

Collection Time 10:05

Sample Type GRAB

Sample Purpose CONFIRMATION SA

Start Depth 30.65

QC Code NORMAL ENVIRONMENTAL SAMPLE

End Depth 0.0

Sampling Equipment PERI PUMP

Sample Matrix WATER

QC Partners:

(TB) _____ *(EB)* _____ *(FB)* _____

SampleTeam P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Container Type			Preservative	Lab
E300 : Nitrate	A	TOTAL	1	250	ML	250 ML POLY CONTAINE D	NONE *	EMPIRICAL LABS, NASHVILLE, TN
SM2540C : TDS	B	TOTAL	1	250	ML	250 ML POLY CONTAINE D	NONE *	EMPIRICAL LABS, NASHVILLE, TN
SM2540D : TSS	C	TOTAL	1	250	ML	250 ML POLY CONTAINE D	NONE *	EMPIRICAL LABS, NASHVILLE, TN
SW8015C : DRO/GRO/ORO	D	TOTAL	2	1	L	1 LITER AMBER GLASS	NONE	EMPIRICAL LABS, NASHVILLE, TN
SW8270D : SVOCs	E	TOTAL	2	1	L	1 LITER AMBER GLASS	NONE	EMPIRICAL LABS, NASHVILLE, TN
SW8082A : PCBs	F	TOTAL	2	1	L	1 LITER AMBER GLASS	NONE	EMPIRICAL LABS, NASHVILLE, TN
SW8330A : EXPLOSIVES	G	TOTAL	2	1	L	1 LITER AMBER GLASS	NONE	EMPIRICAL LABS, NASHVILLE, TN
SW9056A : CHLORIDE	H	TOTAL	1	250	ML	250 ML POLY CONTAINE D	NONE *	EMPIRICAL LABS, NASHVILLE, TN
SW8260C : VOCs	I	TOTAL	3	40	ML	40 ML VOA VIALS	HCL *	EMPIRICAL LABS, NASHVILLE, TN
SW6020A : METALS	J	TOTAL	1	250	ML	250 ML POLY CONTAINE D	HNO3 *	EMPIRICAL LABS, NASHVILLE, TN
SW7470A : MERCURY	K	TOTAL	1	250	ML	250 ML POLY CONTAINE D	HNO3 *	EMPIRICAL LABS, NASHVILLE, TN
SW9012B : TOTAL CN-	L	TOTAL	1	500	ML	500 ML POLY CONTAINE D	NAOH	EMPIRICAL LABS, NASHVILLE, TN
E906.0 : TRITIUM	M	TOTAL	2	1	L	1 LITER AMBER GLASS	HNO3	ALS LAB GROUP, FORT COLLINS, CO

Comments: WELL PURGED DRY ON 4/5/16. ALLOWED TO RECHARGE. ON 4/7/16 APPROX 1.0FT OF WATER. WAS ABLE TO COLLECT 1 500ML POLY AND 1 250 ML HNO3 POLY BEFORE WELL PURGED DRY AGAIN.

Sketch Location:

READINGS FROM WELL WHEN PURGED DRY ON 4/5/16

TEMP	COND	pH	DO	ORP	NTU
21.49	15.65	7.19	6.50	84.8	987.5

DTW WAS 28.30, BUT ALL STAGNENT WATER.

Logged By / Date: [signature] 4/7/16

Reviewed By / Date: _____

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

29480

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 877-345-1113 ♦ (fax) 866-417-0548

Send Results to:	Send Invoice to:
Name CHRIS LONG	Name
Company CBEI E.S.	Company
Address 10777 WESTHEIMER	Address
City SUITE 170 HOUSTON	City
State, Zip TX 77042	State, Zip
Phone (713) 243-7090	Phone
Fax	Fax
E-mail	E-mail
Project No./Name: HOLLOMAN AFB 144106.JR2001	**Sampler's (Signature):**

Analysis Requirements: METALS SW6020A/7470A MERCURY; E300: NITRATE; SM2540C/D: TDS/TSS

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	METALS SW6020A/7470A MERCURY	E300: NITRATE	SM2540C/D: TDS/TSS	Comments	No. of Bottles	Lab Use Only Containers/Pres.
	4/7/16 10:05	OTC538-GW-MW01	GW	X	X	X		2	

Sample Kit Prep'd by: (Signature)	Date/Time	Received By: (Signature)
Relinquished by: (Signature)	Date/Time 4/7/16	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time	*Temperature*

REMARKS:

Details:

Page 1 of 1

Cooler No. 1 of 1

Date Shipped 4/7/16

Shipped By

Turnaround

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

27934

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 877-345-1113 ♦ (fax) 866-417-0548

Send Results to:	Send Invoice to:
Name: CHRIS LONG	Name:
Company: CB+I E.S.	Company:
Address: 10777 WESTHEIMER	Address:
City: SUITE 170 HOUSTON	City:
State, Zip: TX 77042	State, Zip:
Phone: (713) 243-7090	Phone:
Fax:	Fax:
E-mail:	E-mail:
Project No./Name: HOLLOMAN AFB 144106.382000	**Sampler's (Signature):**

Analysis Requirements: SW8260C: VOCs; SW6020A/7470A: METALS; E300: NITRATE; SM2540C/D: TDS/TSS

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	SW8260C: VOCs	SW6020A/7470A: METALS	E300: NITRATE	SM2540C/D: TDS/TSS	Comments	No. of Bottles	Lab Use Only Containers/Pres.
	4/6/16 09:00	TB-01	LIQ	X				TRIP BLANK	2	
	4/6/16 10:22	OTC538-GW-MW02	GW	X	X	X	X	FILTERED METALS	~~3~~ 7	
	4/6/16 12:46	OTC537-GW-MW01	GW	X	X	X	X	" "	6	
	4/6/16 12:46	OTC537-GW-MW01-MS/MSD	GW	X	X	X	X	" "	12	
	4/6/16 12:46	OTC537-GW-MW01-FD	GW	X	X	X	X	" "	6	

Sample Kit Prep'd by: (Signature)	Date/Time	Received By: (Signature)
Relinquished by: (Signature)	Date/Time 4/6/16 @ 15:00	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time	*Temperature*

REMARKS:

Details:

Page 1 of 1

Cooler No. 1 of 1

Date Shipped 4/6/16

Shipped By PM

Turnaround

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

GROUND WATER SAMPLE COLLECTION LOG

Project Name: HOLLOMAN AFB
Site Location: OTC537
Project No.: 144106
Well ID: OTC537-MW01
Sample ID OTC537-MW01-160406
Date / Time Collected 4/6/16 @ 12:46
Sample Collected by: P. MIDDLETON

EQUIPMENT / NOTES

Purging Method/Equipment: Micropurge
Sampling Equipment.: ☑ Bladder Pump ☐ Other _____
Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet
Note: Flowrate for VOC sampling should be no greater than 100 ml/min
Daily field instrument calibration verification performed? **Yes** ✓ **No** ___

PURGING INFORMATION

Measuring Point Top of Casing
Drawdown depth limit (DDL) = DTWi + 0.3 (ft)
Casing ID (in.) 2"
Approximate depth of pump inlet (ft): _____
Depth to Water - Initial (DTWi) (ft) 28.60
Depth to Well Bottom (ft) 40.50
Screen Interval (ft): _____

* FIELD DUP & MS/MSD *

FIELD CONDITIONS

Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind Temperature: 80°F

Time of Reading	Purge Rate (ml/min)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	~ 200	Drawdown limit 0.3 ft	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
12:30	1	28.60	14.61	23.58	7.49	178.0	57.1	6.70
12:35	2	|	13.93	22.14	7.41	94.1	61.2	5.99
12:40	3	|	13.84	22.53	7.41	89.9	65.5	5.83
12:45	4	|	13.88	22.59	7.41	87.6	71.1	5.77
12:46	SAMPLE							

☐ **Duplicate or MS/MSD Collected:**

Container(s) Type and Volume	No. of Containers	Filtered (Y/N)	Preservatives	Parameters
500 ml POLY	4	N	NONE	NITRATE / TDS / TSS
250 ml POLY	8+4	Y-4 FILTERED	HNO3	METALS / MERCURY
40 ml VOA	12	N	HCL	VOCs

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

GROUND WATER SAMPLE COLLECTION LOG

Project Name: HOLLOMAN AFB
Site Location: OTC 538
Project No.: 144106
Well ID: OTC 538-MW02
Sample ID OTC538-GW-MW02-160406
Date / Time Collected 4/6/16 @ 10:22
Sample Collected by: P. MIDDLETON

EQUIPMENT / NOTES

Purging Method/Equipment: Micropurge
Sampling Equipment.: ☒ Bladder Pump ☐ Other
Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet
Note: Flowrate for VOC sampling should be no greater than 100 ml/min
Daily field instrument calibration verification performed? **Yes** ✓ **No** ___

PURGING INFORMATION

Measuring Point Top of Casing
Casing ID (in.) 2"
Depth to Water - Initial (DTWi) (ft) 29.04
Depth to Well Bottom (ft) 40.60
Screen Interval (ft): ___

Drawdown depth limit (DDL) = DTWi + 0.3 (ft)
Approximate depth of pump inlet (ft): ___

FIELD CONDITIONS

Weather Conditions: ☒ Sunny ☐ Rain ☐ Wind
Temperature: 80°F

Time of Reading	Purge Rate (ml/min)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 200	Drawdown limit 0.3 ft	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
10:06	1	29.04	13.60	20.53	7.19	17.3	102.6	5.81
10:11	2		13.58	20.54	7.17	13.5	100.4	5.24
10:16	3		13.56	20.56	7.17	15.1	100.3	5.24
10:21	4		13.59	20.60	7.18	13.0	95.4	5.13
10:22	SAMPLE							

☐ **Duplicate or MS/MSD Collected:**

Container(s) Type and Volume	No. of Containers	Filtered (Y/N)	Preservatives	Parameters
500 ml Poly	1	N	NONE	NITRATE / TDS / TSS
250 ml Poly	3	Y (1 of 3)	HNO3	METALS / MERCURY
40 ml VOA HCL	3	N	HCL	VOCs

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Visual Classification of Soils

Shaw Environmental & Infrastructure, Inc.

Project Number:	Project Name: Holloman AFB Building 1200; 1201	
Boring Number: OT-C537	Coordinates: 681644.446574 N 1696023.0332 E	Date: 12-8-15
Elevation:	GWL: Depth 28.5' Date/Time: 12-8-15	Date Started: 12-8-15 (microcore)
Engineer/Geologist: K. Lovely	Depth Date/Time:	Date Completed: 12-9-15 (auger) 12-11-15 (grout and surface)
Drilling Methods: Microcore and auger		Page: 1 of 3

Depth (Feet)	Sample Type & No.	Blows on Sampler per ( )	Recovery ( )	Description	USCS Symbol	Measured Consistency (TSF)	Well Construction	Remarks
0.0				Fine silty sand, 5% gravel, medium brown	SM			Flush mount surface completion
								Grout from surface to 20' bgs
5.0				Medium grained silty sand, light brown, ½" to 1" cemented sand nodules	SM			
7.0				Slight iron staining on sand				
8.5				Medium grained sand, medium brown	SW			
9.0				Coarsed grained sand, medium brown	SW			
10.0				Medium grained silty sand, light brown	SM			
11.0				Medium grained sand, medium brown	SM			
13.0				Medium grained sand, damp, medium brown	SM			
14.0				Medium grained clayey sand, ~~Segregation of~~ 50% white sand partitioned from 50% dark brown clay, hard	CL			

Notes:

Drilling Contractor: Major Drilling Environmental

Drilling Equipment: Geoprobe 7822DT

Driller: Shane Brown

Form Number: 252_3

Rev. 01-21-13

Visual Classification of Soils

Shaw Environmental & Infrastructure, Inc.

Project Number:	Project Name:	
Boring Number: OT-C537	Coordinates:	Date:
Elevation:	GWL: Depth Date/Time:	Date Started:
Engineer/Geologist:	Depth Date/Time:	Date Completed:
Drilling Methods:		Page: 2 of 3

Depth ( )	Sample Type & No.	Blows on Sampler per ( )	Recovery ( )	Description	USCS Symbol	Measured Consistency (TSF)	Well Construction	Remarks
16.0				Medium grained ~~clayey sand~~ sandy clay,	CL			
18.0				Fine grained ~~clayey sand~~ sandy clay, light brown, damp, hard	CL			18' bgs bentonite
20.0				Medium grained sandy clay; 60% clay, 40% sand, hard	CL			20 bgs 20/40 sand
22.5				Medium grained silty sand, light brown	SM			
24.0				Coarse grained sand, white, slight iron coatings	SW			
25.0				2" clay lense Medium to coarse grained sand, white, 5% iron coatings present	SP			Sand packed screening used
28.5				1" clay lense, medium grained sandy clay	CL			▼ Static GW
29.0				1" medium grained sandstone layer; medium grained silty clay, hard	CL			

Notes:

Drilling Contractor: _____

Drilling Equipment: _____

Driller: _____

Form Number: 252_3

Rev. 01-21-13

Visual Classification of Soils

Shaw Environmental & Infrastructure, Inc.

Project Number:	Project Name:	
Boring Number: OT-C537	Coordinates:	Date:
Elevation:	GWL: Depth Date/Time:	Date Started:
Engineer/Geologist:	Depth Date/Time:	Date Completed:
Drilling Methods:		Page: 3 of 3

Depth ( )	Sample Type & No.	Blows on Sampler per ( )	Recovery ( )	Description	USCS Symbol	Measured Consistency (TSF)	Well Construction	Remarks
30.0				~~Fine~~ silty clay, high plasticity, medium brown, damp	CL			Sand packed screening used
31.5				Medium grained sandy clay, light brown, medium plasticity, moist, iron staining present	CL			
32.0				~~Fine~~ silty clay, gray, medium plasticity, moist	CL			
34.0				~~Medium grained~~ silty clay, hard, light grey, moist	CL			
39.0				Clay, medium brown, high plasticity, hard, 10% crystal growths present	CH			
40.0				Bottom				

Notes:

Drilling Contractor: _____

Drilling Equipment: _____

Driller: _____

Form Number: 252_3

Rev. 01-21-13

Visual Classification of Soils

Shaw Environmental & Infrastructure, Inc.

Project Number:	Project Name: Holloman AFB Building 1200 & 1201	
Boring Number: OT-C538	Coordinates: 680919.628897 N 1690624.56014 E	Date: 12-9-15
Elevation:	GWL: Depth 29' Date/Time: 12-9-15	Date Started: 12-9-15 (microcore)
Engineer/Geologist: K. Lovely	Depth 29.5' Date/Time: 12-10-15	Date Completed: 12-10-15 (auger) 12-11-15 (grout & surface)
Drilling Methods: Microcore & auger		Page: 1 of 3

Depth (feet)	Sample Type & No.	Blows on Sampler per ( )	Recovery ( )	Description	USCS Symbol	Measured Consistency (TSF)	Well Construction	Remarks
0.5				Medium grained silty sand, reddish brown, 1/4" to 1/2" subangular gravel	SM			Flush mounted surface completion
3.0				Medium grained silty sand, light brown, 1/4" rounded cemented nodules	SM			Grout from surface to 24' bgs
								5.0'-10.0' interval missing; could not remove ~~fro~~ liner from pipe
11.0				Medium grained sandy silt, light brown, 1/8" to 1/2" rounded cemented nodules	SM			
12.0				Medium grained sandy silt, light brown	SM			
14.75				~~Silt~~ light brown silt mixed with white cemented carbonate, hard	CL			
15.0				Medium grained silty sand, 1/4" to 1/2" white carbonate nodules	SM			
15.75				Fine grained silty sand, light brown	SM			

Notes:

Drilling Contractor: Major Drilling Environmental

Drilling Equipment: Geoprobe 7822DT

Driller: Shane Brown

Form Number: 252_3

Rev. 01-21-13

Visual Classification of Soils

Shaw Environmental & Infrastructure, Inc.

Project Number:	Project Name:	
Boring Number: GT-CS38	Coordinates:	Date:
Elevation:	GWL: Depth Date/Time:	Date Started:
Engineer/Geologist:	Depth Date/Time:	Date Completed:
Drilling Methods:		Page: 2 of 3

Depth ( )	Sample Type & No.	Blows on Sampler per ( )	Recovery ( )	Description	USCS Symbol	Measured Consistency (TSF)	Well Construction	Remarks
16.0				Fine grained silty sand, white cemented carbonates mixed throughout, hard	SM			
18.0				Silt, white, soft	OL			
19.0				Fine grained silty sand, light brown, white cemented carbonate throughout, hard	SM			
20.5				~~Ale~~ Clayey silt, brown with white cemented carbonate throughout, low plasticity	CL			
23.0				Fine grained ~~San~~ silty sand, white, soft	SM			
							—	24' bgs Bentonite
25.0				Silt, cemented carbonate throughout, medium brown, hard	CL			
26.0				Fine grained silty sand, light brown	SM			26' bgs 20/40 sand
27.5				Clay, medium brown, medium plasticity	~~OH~~ CH			

Notes:

Drilling Contractor: _____

Drilling Equipment: _____

Driller: _____

Form Number: 252_3

Rev. 01-21-13

Visual Classification of Soils

Shaw Environmental & Infrastructure, Inc.

Project Number:	Project Name:	
Boring Number: GT-CS38	Coordinates:	Date:
Elevation:	GWL: Depth Date/Time:	Date Started:
Engineer/Geologist:	Depth Date/Time:	Date Completed:
Drilling Methods:		Page: 3 of 3

Depth ( )	Sample Type & No.	Blows on Sampler per ( )	Recovery ( )	Description	USCS Symbol	Measured Consistency (TSF)	Well Construction	Remarks
28.15				Clay, reddish brown, medium to high plasticity, damp	CH			▼ 29' Static GW
								30'
31.0				Medium grained silty sand, light brown, dry	SM			Sand packed screening used
32.0				clay, reddish brown, high plasticity, moist	CH			
34.0				Silty clay, grey, medium plasticity, moist	CL			
35.0				Clay, reddish brown, 30% crystal growths throughout	CH			
35.25				Clay, reddish brown, wet, hard	CH			
36.0				Fine grained sandy silt, light grey, moist	SM			
38.0				Fine grained sandy silt, light brown, moist	SM			
39.0				Clay, greyish brown, medium plasticity, hard	CH			
40.0				Bottom				

Notes:

Drilling Contractor: _____

Drilling Equipment: _____

Driller: _____

Form Number: 252_3

Rev. 01-21-13

Septic Sites

CHAIN OF CUSTODY

Ref. Document # 144106-H2015-151119 1 OF 1

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: Empirical
Lab Contact: Sonya Gordon
Lab Phone #: 615-345-1115

SAMPLER: P. MIDDLETON (210) 428-7274

Lab Sample Number	Sample Identification	Collection Information Date	Time	G/C	Matrix	# of Bottles	PRESERVATION HCL	NaOH	HNO_3	H2SO4	Ice		Requesting Testing Program: Nitrate by 300	Chloride by 9056A	Total Dissolved Soilds by 2540C				Turn Around Time Required
	OTC533-GW-5331-MW01-151119	11/19/15	07:10	G	GW	1					X		X	X	X				ST
	OTC533-GW-5331-MW01-151119-FD	11/19/15	07:10	G	GW	1					X		X	X	X				ST
	OTC536-GW-5361-MW01-151119+MS/MSD	11/19/15	08:00	G	GW	3					X		X	X	X				ST
	OTC542-GW-5421-MW01-151119	11/19/15	09:07	G	GW	1					X		X	X	X				ST
	OTC543-GW-5431-MW01-151119	11/19/15	09:54	G	GW	1					X		X	X	X				ST
	OTC544-GW-5441-MW01-151119	11/19/15	10:38	G	GW	1					X		X	X	X				ST

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s):

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Patrick J. Middleton	11/19/15	13:00			

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific:

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid
SOL = Other Solid GS = Air Sample

Septic Sites

CHAIN OF CUSTODY

Ref. Document # 144106-H2015-151123 1 of 1

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: Empirical
Lab Contact: Sonya Gordon
Lab Phone #: 615-345-1115

SAMPLER = P. MIDDLETON (210)428-7274

Lab Sample Number	Sample Identification	Collection Information Date	Time	G/C	Matrix	# of Bottles	PRESERVATION HCL	NaOH	HNO_3	H2SO4	Ice		Nitrate by 300	Chloride by 9056A	Total Dissolved Soilds by 2540C				Turn Around Time Required
	OTC530-GW-530i-MW01-151123	11/23/15	0641	G	GW	1					X		X	X	X				ST
	OTC531A-GW-531A1-MW01-151123	11/23/15	0740	G	GW	1					X		X	X	X				ST
	OTC531A-GW-531A1-MW01-151123-FD	11/23/15	—	G	GW	1					X		X	X	X				ST
	OTC531B-GW-531B1-MW01-151123	11/23/15	0824	G	GW	1					X		X	X	X				ST
	OTC531C-GW-531C1-MW01-151123	11/23/15	0916	G	GW	1					X		X	X	X				ST

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s): P. MIDDLETON

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Patrick J. Middleton	11/23/15				
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific:

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO =Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid
SOL = Other Solid GS = Air Sample

CB&I

Septic Sites

CHAIN OF CUSTODY

Ref. Document # 144106-H2015-151214

CB&I Federal Services

Company Name: CB&I Federal Services
Address: 2440 Louisiana Blvd NE, Ste 300
City / State / Zip: Albuquerque, NM 87110
Manager: Praveen Srivastav
Phone/Fax Number: 281-584-8216
Send Report To: Chris Long
Phone/Fax Number: 713-243-7099 (work)/281-414-1546 (fax)
Address: 10777 Westheimer Rd, Ste 170
City: Houston, TX 77042

Project Number: 144106
Project Name: Midwest
Project Location: Holloman AFB - Septic Site
Purchase Order #:
Lab Destination: Empirical
Lab Contact: Sonya Gordon
Lab Phone #: 615-345-1115

Lab Sample Number	Sample Identification	Collection Information Date	Time	G/C	Matrix	# of Bottles	PRESERVATION HCL	NaOH	HNO_3	H2SO4	Ice		Requesting Testing Program: Nitrate by 300	Chloride by 9056A	Total Dissolved Soilds by 2540C	VOCs by 8260C	SVOCs by 8270D	Explosives by 8330A	Cyanide by 9012B	Metals by 6010C/7470A	TPH-GRO/DRO/ORO by 8015C	PCBs by 8082A	Turn Around Time Required
	TB-01	12/14/15	05:45	G	LIQ	2	X				X					X							ST
	OTC538-GW-5382-151214	12/14/15	06:46	G	GW	16	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	ST
(MS/MSD)	OTC537-GW-5371-151214	12/14/15	10:01	G	GW	48	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	ST
	OTC537-GW-5371-FD-151214	12/14/15	10:01	G	GW	16	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	ST

Special Instructions: Please also send a copy of the report to Mark Lyon: mark.lyon@cbifederalservices.com

Sampler(s) Name(s):

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/14/15	15:45			

Turnaround Time: Normal Rush

Level Of QC Required: I (II) III Project Specific:

Method Codes

C = Composite G = Grab

Matrix Codes

DW = Drinking Water SO =Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid
SOL = Other Solid GS = Air Sample

Chicago Bridge and Iron
2001 Westar Road
Midland, TX 79706
432.681.2800

Daily Field Report

Project Name: Holloman AFB Building 1200 & 1201
Project Location: HAFB
Project Number: Date: 12-8-15 | CB&I Representative: K. Lovelyl
Prime Contractor/Subcontractor and Areas of Responsibility:

Weather: [X] Clear [ ] Partly Cloudy [ ] Cloudy Temperature: High 60°F Low 30°F
Wind: Calm Precipitation: None
Site Conditions/Comments:

Lost Time Due to Inclement Weather: None

Objective: Soil boring; potential MW installation

Equipment:

TIME	ACTIVITY / WORK PERFORMED
0730	Arrive at AFB; visitor pass; prep; scope of work; wait for drillers
1330	Drillers arrive at AFB
1400	Arrive at site location
1415	Health and safety; going to microcore locations to determine lithology, prevent hitting potential septic tank concrete remnants, and determine water depth.
1430	Setup geoprobe at OT-C537 location
1445	Began coring
1525	Complete to depth of 40' bgs; encountered water. Appeared to be native undisturbed soil even though coordinates and figure location were in septic tank area.
1600	Prepare for 12-9-15; will auger for well installation
1645	Offsite

Daily Field Report Continued

TIME	ACTIVITY / WORK PERFORMED

Remarks:

Verbal Instructions Received or Given:

Inspections (include preparatory/initial and follow-up inspections, and safety (include safety violations and corrective actions taken) :

Chicago Bridge and Iron
2001 Westar Road
Midland, TX 79706
432.681.2800

Daily Field Report

Project Name: Holloman AFB Building 1200 & 1201

Project Location: HAFB

Project Number: Date: 12-9-15 | CB&I Representative: K. Lovely

Prime Contractor/Subcontractor and Areas of Responsibility:

Weather: ☒ Clear ☐ Partly Cloudy ☐ Cloudy Temperature: High 60°F Low 30°F

Wind: None Precipitation: None

Site Conditions/Comments:

Lost Time Due to Inclement Weather: None

Objective: MW installation

Equipment:

TIME	ACTIVITY / WORK PERFORMED
0700	Arrive onsite; H&S
0715	Stage augering supplies at OT-C537
0800	Began augering
1115	Completed depth to 40' bgs
	Screen well from 25'-40' bgs due to numerous clay layer with moisture. Static groundwater at 28' bgs.
	Well casing from 0'-25' bgs
	11 bags of 20/40 sand used to 20' bgs
	1 bag of bentonite chips to 18' bgs
1400	Lunch
1500	Set up at OT-C538
1540	Began microcoring at OT-C538
1630	Complete to depth of 40' bgs; encountered water. Appeared to be 25' to 30' of fill material

Daily Field Report Continued

TIME	ACTIVITY / WORK PERFORMED
1700	Prepare for 12-10-15
1730	Offsite

Remarks:

Verbal Instructions Received or Given:

Inspections (include preparatory/initial and follow-up inspections, and safety (include safety violations and corrective actions taken) :

Chicago Bridge and Iron
2001 Westar Road
Midland, TX 79706
432.681.2800

Daily Field Report

Project Name: Holloman AFB Building 1200: 1201
Project Location: HAFB
Project Number: Date: 12-10-15 | CB&I Representative: K. Lovely
Prime Contractor/Subcontractor and Areas of Responsibility:

Weather: ☒ Clear ☐ Partly Cloudy ☐ Cloudy Temperature: High 60°F Low 30°F
Wind: 5-10 mph SW Precipitation: None
Site Conditions/Comments:

Lost Time Due to Inclement Weather: None

Objective: MW Installation

Equipment:

TIME	ACTIVITY / WORK PERFORMED
0700	Arrive onsite; H&S
0715	Began decontaminating augers
0845	Staged augering supplies at OT-C538
0900	Began augering
1130	May have hit refusal at approx 25' bgs; call Chris Long
	Driller said he will "baby" it and see if we can get past section
1215	Complete depth to 40' bgs
1230	Lunch
1330	Screen well from 30' to 40' bgs; GW at 29.5' bgs
	well casing from 0'- to 30' bgs
	3 bags of 20/40 sand used. Well began collapsing in material as auger was removed. Tagged at 26' bgs
	1 bag of bentonite to 24' bgs
	Staged drill cuttings in steel 55-gal drums by building 1200 (4 drums)

Daily Field Report Continued

TIME	ACTIVITY / WORK PERFORMED
	Prepared for grouting and surface completion
	on 12-11-15.
1600	offsite

Remarks:

Verbal Instructions Received or Given:

Inspections (include preparatory/initial and follow-up inspections, and safety (include safety violations and corrective actions taken) :

FOCUSED "I CARE" OBSERVATION CARD
Sampling Groundwater Wells

OBSERVATION	*# SAFE*	*# AT RISK*	*# IMMINENT HAZARD*
Did workers review well design drawings and history to identify construction details, well use, configuration of well components, and to gain understanding of special health and safety hazards?	1		
Did workers review the appropriate AHA(s), prepare a JSA, and Step Back for Safety as needed?	1		
Did workers verify communications capabilities, review emergency procedures, identify nearest severe weather shelter, and verify location (GPS coordinates) of work area for providing directions to emergency responders?	1		
Did workers check area for vehicle traffic, equipment operations, insects/bee activity, and irritating plants prior to commencing work in the specific well location?	1		
Did workers inspect outside well casing to verify identity of well and to identify any warning labels or other safety hazards associated with well components?	1		
Did workers properly support pump/downpipe prior to touching release cable on wells with a pitless adapter?	N/A		
Did workers use proper lifting techniques when handling sample coolers, ice bags, portable generator, pumps, waste-water containers, and emergency eyewash station?	1		
Did workers determine expected contaminants in well and identify the controls in JSA prior to sampling?	1		
Did workers stand upwind when opening well cap and perform air monitoring using properly calibrated monitoring instruments prior to well sampling?	1		
Did workers wear PPE specified in APP/SSHP including eye, face, hand, and skin protection?	1		

Mark NA if applicable

Location: HOLLOMAN AFB

Task Observed: G.W. SAMPLING

Date: ~~11/15/19~~ pm 11/19/15

Enter the total number of observations for each question.

Record observation comments on back.

ICXXX

FOCUSED "I CARE" OBSERVATION CARD: **Sampling Groundwater Wells (back page)**

OBSERVATION	*# SAFE*	*# AT RISK*	*# IMMINENT HAZARD*
Did workers use qualified electrician to de-energized, lock-out, tag-out, and try-out electrical power prior to sampling production and extraction wells?	N/A		
Did workers position portable generator downwind and away from area to reduce exhaust and noise hazards?	N/A		
Did workers use GFCI, protect extension cords from damage, and follow car safety battery procedures in AHA?	N/A		
Did workers take immediate shelter when lightning was seen or thunder was heard?	1		
Did workers monitor for heat stress or cold stress and protect exposed skin with sunscreen at SPF 30 or higher?	1		
Did workers use insect repellant prior to starting work?	1		
Did workers maintain good housekeeping and perform a 360° walk-around before moving vehicles?	1		
Did workers verify fire extinguisher, eye wash, and first aid kit are available and ready for use?	1		
Did workers use safe cutting tools and techniques?	1		
Did workers read & follow equipment operating manuals?	1		
Did workers use caution when walking on un-even, wet, muddy, frosty, icy, or snow-covered surfaces?	1		
Did workers allow equipment to cool before re-fueling, store fuel in safety cans, and use funnels for fueling?	N/A		
Did workers provide decontamination equipment and supplies and perform personnel and equipment decontamination as specified in the APP/SSHP?	1		

Comments:

_____

_____

_____

_____

FOCUSED "I CARE" OBSERVATION CARD
Sampling Groundwater Wells

OBSERVATION	*# SAFE*	*# AT RISK*	*# IMMINENT HAZARD*
Did workers review well design drawings and history to identify construction details, well use, configuration of well components, and to gain understanding of special health and safety hazards?	1		
Did workers review the appropriate AHA(s), prepare a JSA, and Step Back for Safety as needed?	1		
Did workers verify communications capabilities, review emergency procedures, identify nearest severe weather shelter, and verify location (GPS coordinates) of work area for providing directions to emergency responders?	1		
Did workers check area for vehicle traffic, equipment operations, insects/bee activity, and irritating plants prior to commencing work in the specific well location?	1		
Did workers inspect outside well casing to verify identity of well and to identify any warning labels or other safety hazards associated with well components?	1		
Did workers properly support pump/downpipe prior to touching release cable on wells with a pitless adapter?	N/A		
Did workers use proper lifting techniques when handling sample coolers, ice bags, portable generator, pumps, waste-water containers, and emergency eyewash station?	1		
Did workers determine expected contaminants in well and identify the controls in JSA prior to sampling?	1		
Did workers stand upwind when opening well cap and perform air monitoring using properly calibrated monitoring instruments prior to well sampling?	1		
Did workers wear PPE specified in APP/SSHP including eye, face, hand, and skin protection?	1		

Mark NA if applicable

Location: HOLLOMAN AFB

Task Observed: G.W. SAMPLING

Date: 11/23/15

Enter the total number of observations for each question.

Record observation comments on back.

ICXXX

FOCUSED "I CARE" OBSERVATION CARD: **Sampling Groundwater Wells (back page)**

OBSERVATION	*# SAFE*	*# AT RISK*	*# IMMINENT HAZARD*
Did workers use qualified electrician to de-energized, lock-out, tag-out, and try-out electrical power prior to sampling production and extraction wells?	N/A		
Did workers position portable generator downwind and away from area to reduce exhaust and noise hazards?	N/A		
Did workers use GFCI, protect extension cords from damage, and follow car safety battery procedures in AHA?	N/A		
Did workers take immediate shelter when lightning was seen or thunder was heard?	1		
Did workers monitor for heat stress or cold stress and protect exposed skin with sunscreen at SPF 30 or higher?	1		
Did workers use insect repellant prior to starting work?	1		
Did workers maintain good housekeeping and perform a 360° walk-around before moving vehicles?	1		
Did workers verify fire extinguisher, eye wash, and first aid kit are available and ready for use?	1		
Did workers use safe cutting tools and techniques?	1		
Did workers read & follow equipment operating manuals?	1		
Did workers use caution when walking on un-even, wet, muddy, frosty, icy, or snow-covered surfaces?	1		
Did workers allow equipment to cool before re-fueling, store fuel in safety cans, and use funnels for fueling?	N/A		
Did workers provide decontamination equipment and supplies and perform personnel and equipment decontamination as specified in the APP/SSHP?	1		

Comments:

_____

_____

_____

_____

FOCUSED "I CARE" OBSERVATION CARD
Sampling Groundwater Wells

OBSERVATION	*# SAFE*	*# AT RISK*	*# IMMINENT HAZARD*
Did workers review well design drawings and history to identify construction details, well use, configuration of well components, and to gain understanding of special health and safety hazards?	1		
Did workers review the appropriate AHA(s), prepare a JSA, and Step Back for Safety as needed?	1		
Did workers verify communications capabilities, review emergency procedures, identify nearest severe weather shelter, and verify location (GPS coordinates) of work area for providing directions to emergency responders?	1		
Did workers check area for vehicle traffic, equipment operations, insects/bee activity, and irritating plants prior to commencing work in the specific well location?	1		
Did workers inspect outside well casing to verify identity of well and to identify any warning labels or other safety hazards associated with well components?	1		
Did workers properly support pump/downpipe prior to touching release cable on wells with a pitless adapter?	1		
Did workers use proper lifting techniques when handling sample coolers, ice bags, portable generator, pumps, waste-water containers, and emergency eyewash station?	1		
Did workers determine expected contaminants in well and identify the controls in JSA prior to sampling?	1		
Did workers stand upwind when opening well cap and perform air monitoring using properly calibrated monitoring instruments prior to well sampling?	1		
Did workers wear PPE specified in APP/SSHP including eye, face, hand, and skin protection?	1		

Mark NA if applicable

Location: HOLLOMAN AFB

Task Observed: G.W. SAMPLING

Date: 12/14/15

Enter the total number of observations for each question.

Record observation comments on back.

ICXXX

FOCUSED "I CARE" OBSERVATION CARD: **Sampling Groundwater Wells (back page)**

OBSERVATION	*# SAFE*	*# AT RISK*	*# IMMINENT HAZARD*
Did workers use qualified electrician to de-energized, lock-out, tag-out, and try-out electrical power prior to sampling production and extraction wells?	1		
Did workers position portable generator downwind and away from area to reduce exhaust and noise hazards?	1		
Did workers use GFCI, protect extension cords from damage, and follow car safety battery procedures in AHA?	1		
Did workers take immediate shelter when lightning was seen or thunder was heard?	1		
Did workers monitor for heat stress or cold stress and protect exposed skin with sunscreen at SPF 30 or higher?	1		
Did workers use insect repellant prior to starting work?	1		
Did workers maintain good housekeeping and perform a 360° walk-around before moving vehicles?	1		
Did workers verify fire extinguisher, eye wash, and first aid kit are available and ready for use?	1		
Did workers use safe cutting tools and techniques?	1		
Did workers read & follow equipment operating manuals?	1		
Did workers use caution when walking on un-even, wet, muddy, frosty, icy, or snow-covered surfaces?	1		
Did workers allow equipment to cool before re-fueling, store fuel in safety cans, and use funnels for fueling?	1		
Did workers provide decontamination equipment and supplies and perform personnel and equipment decontamination as specified in the APP/SSHP?	1		

Comments:

_____

_____

_____

_____

GROUND WATER SAMPLE COLLECTION LOG

Project Name: Holloman AFB Winter 2015 GW Sampling

Site Location: BLDG. 308

Project No.: 144106

Well ID: OTC530-MW01

Sample ID OTC530-GW-5301-MW01-151123

Date / Time Collected 11/23/15 @ 0641

EQUIPMENT / NOTES

Sample Collected by: P. MIDDLETON

Purging Method/Equipment: Micropurge

Sampling Equipment.: ☐ Bladder Pump ☑ Other PERISTALTIC

Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet

Note: Flowrate for VOC sampling should be no greater than 100 ml/min

Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point Top of Casing

Casing ID (in.) 2"

Approximate depth of pump inlet (ft): ___

Depth to Water - Initial (DTWi) (ft) 5.98'

Length of Casing (ft): ___

Depth to Well Bottom (ft) 8.65'

Screen Interval (ft): ___

FIELD CONDITIONS

Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind

Temperature: 27°F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 100	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
0615	1.0	6.21	5.350	17.44	7.25	0.3	200.1	3.15
0620	~~2.5~~ 1.5	6.25	5.545	17.88	7.13	0.0	196.4	1.80
0630	2.0	6.25	5.656	17.88	7.04	0.0	193.9	1.45
0635	2.5	6.25	5.668	17.91	7.02	0.0	192.2	1.50
0640	3.0	6.25	5.651	17.99	7.01	0.0	191.7	1.40
0641	SAMPLE							

☐ **Duplicate or MS/MSD Collected:** ___

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: NA

Pump on: 06:10

Discharge: NA

First Water: 06:13

psi (start): NA

QED Controller #: NA

psi (finish): NA

YSI #: 83424

Water level #: FSLVE0219

Pump: FSLVE0159

GROUND WATER SAMPLE COLLECTION LOG

Project Name: Holloman AFB Winter 2015 GW Sampling

Site Location: BLDG. 920 OTC531A

Project No.: 144106

Well ID: OT-C531A-MW01

Sample ID OTC531A-GW-531A1-MW01-151123

Date / Time Collected 11/23/15 @ 07:40

EQUIPMENT / NOTES

Sample Collected by: R. MIDDLETON

Purging Method/Equipment: Micropurge

Sampling Equipment.: ☐ Bladder Pump ☑ Other PERISTALTIC

Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet

Note: Flowrate for VOC sampling should be no greater than 100 ml/min

Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point Top of Casing

Casing ID (in.) 2"

Approximate depth of pump inlet (ft): ___

Depth to Water - Initial (DTWi) (ft) 12.82

Length of Casing (ft): ___

Depth to Well Bottom (ft) ___

Screen Interval (ft): ___

FIELD CONDITIONS

Weather Conditions: ☐ Sunny ☐ Rain ☐ Wind OVERCAST

Temperature: 28°F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 100	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
0724	1.0	13.31	4.797	14.29	7.69	18.5	186.7	2.66
0729	1.5	13.43	4.661	17.09	7.05	6.9	-1.7	2.12
0734	2.0	13.50	4.604	17.08	7.04	5.1	-1.9	2.00
0739	2.5	13.51	4.599	17.01	7.05	4.6	-6.6	1.97
0740	SAMPLE							

☑ **Duplicate or MS/MSD Collected:** OTC531A-GW-531A1-MW01-151123-FD

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: N/A

Pump on: 07:18

Discharge: N/A

First Water: 07:21

psi (start): N/A

QED Controller #: NA

psi (finish): N/A

YSI #: 83424

Water level #: FSLVE0219

PUMP: FSLVE0159

GROUND WATER SAMPLE COLLECTION LOG

Project Name: Holloman AFB Winter 2015 GW Sampling

Site Location: BLDG. 921 OT-C531B

Project No.: 144106

Well ID: OT-C531B-MW01

Sample ID OTC531B-GW-531131-MW01-151123

Date / Time Collected 11/23/15 @ 08:24

EQUIPMENT / NOTES

Sample Collected by: P. MIDDLETON

Purging Method/Equipment: Micropurge

Sampling Equipment.: ☐ Bladder Pump ☑ Other PERISTALTIC

Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet

Note: Flowrate for VOC sampling should be no greater than 100 ml/min

Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point Top of Casing

Casing ID (in.) 2"

Approximate depth of pump inlet*(ft): ___

Depth to Water - Initial (DTWi) (ft) 12.62

Length of Casing (ft): ___

Depth to Well Bottom (ft) 18.70

Screen Interval (ft): ___

FIELD CONDITIONS OVERCAST

Weather Conditions: ☐ Sunny ☐ Rain ☐ Wind

Temperature: 28°F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 200	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
08:08	1.0	12.69	28.39	15.33	7.08	2.6	31.7	4.09
08:13	2.0	12.74	28.44	15.46	7.08	0.0	28.4	2.85
08:18	3.0	12.77	28.59	15.55	7.08	0.0	21.6	2.71
08:23	4.0	12.78	28.55	15.51	7.09	0.0	19.1	2.66
08:24	SAMPLE							

☐ **Duplicate or MS/MSD Collected:** ___

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: N/A

Pump on: 08:00

Discharge: N/A

First Water: 08:02

psi (start): N/A

QED Controller #: ___

psi (finish): N/A

YSI #: ___

Water level #: ___

GROUND WATER SAMPLE COLLECTION LOG

Project Name: Holloman AFB Winter 2015 GW Sampling

Site Location: BLDG. 922 OTC-531C

Project No.: 144106

Well ID: OT-C531C-MW01

Sample ID OTC531C-GW-531C1-MW01-151123

Date / Time Collected 11/23/15 @ 09:16

EQUIPMENT / NOTES

Sample Collected by: P. MIDDLETON

Purging Method/Equipment: Micropurge

Sampling Equipment.: ☐ Bladder Pump ☑ Other PERISTALTIC

Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet

Note: Flowrate for VOC sampling should be no greater than 100 ml/min

Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point Top of Casing

Casing ID (in.) 2"

Approximate depth of pump inlet (ft): _____

Depth to Water - Initial (DTWi) (ft) 12.75

Length of Casing (ft): _____

Depth to Well Bottom (ft) 18.00

Screen Interval (ft): _____

FIELD CONDITIONS

Weather Conditions: ☐ Sunny ☐ Rain ☐ Wind

Temperature: _____

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 100	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
0855	1.0	12.91	17.48	16.56	7.30	0.3	149.3	2.79
0900	1.5	12.99	~~16.77~~ 17.36	~~17~~ 16.79	7.16	0.0	146.9	1.93
0905	2.0	13.02	17.34	16.78	7.11	0.0	142.0	1.26
0910	2.5	13.04	17.22	16.88	7.11	0.0	131.1	1.18
0915	3.0	13.04	17.39	16.90	7.11	0.0	134.4	1.16
0916	SAMPLE							

☐ **Duplicate or MS/MSD Collected:** _____

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: NA

Pump on: 08:42

Discharge: NA

First Water: 08:44

psi (start): NA

QED Controller #: NA

psi (finish): NA

YSI #: 83424

Water level #: FSLVE0219

Pump: FSLVE0159

GROUND WATER SAMPLE COLLECTION LOG

Project Name: Holloman AFB Winter 2015 GW Sampling
Site Location: OTC533
Project No.: 144106
Well ID: OTC533-MW01
Sample ID OTC533-GW-5331-MW01-151119
Date / Time Collected ~~11/15/19~~ 11/19/15 @ 07:10 M

EQUIPMENT / NOTES

Sample Collected by:

Purging Method/Equipment: Micropurge
Sampling Equipment.: ☐ Bladder Pump ☑ Other PERISTALTIC
Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet
Note: Flowrate for VOC sampling should be no greater than 100 ml/min
Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point Top of Casing
Casing ID (in.) 2"
Approximate depth of pump inlet*(ft):
Depth to Water - Initial (DTWi) (ft) 23.34'
Length of Casing (ft):
Depth to Well Bottom (ft) 29.0'
Screen Interval (ft):

FIELD CONDITIONS

Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind
Temperature: 28°F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 100/min	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
06:49	1.0 (L)	23.54	4.226	14.37	6.68	11.5	268.9	2.02
06:54	1.5	23.55	4.208	14.79	6.94	8.9	256.2	1.22
06:59	2.0		4.230	15.00	6.97	7.9	252.3	0.99
07:04	2.5		4.236	15.07	7.00	8.2	245.5	0.92
07:09	3.0		4.237	15.09	7.01	7.8	242.7	0.91
07:10	SAMPLE							

☑ **Duplicate or MS/MSD Collected:** OTC533-GW-5331-MW01-151119-FD

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: N/A
Pump on: 06:38
Discharge: N/A
First Water: 06:42
psi (start): N/A
QED Controller #: N/A
psi (finish): N/A
YSI #: 83424
Water level #: FSLVE0219
Pump: FSLVE0159

GROUND WATER SAMPLE COLLECTION LOG

Project Name: Holloman AFB Winter 2015 GW Sampling
Site Location: OTC-536
Project No.: 144106
Well ID: OTC-536-MW01
Sample ID OTC536-GW-5361-MW01-151119
Date / Time Collected 11/19/15 @ 08:00

EQUIPMENT / NOTES

Sample Collected by: PM

Purging Method/Equipment: Micropurge
Sampling Equipment.: ☐ Bladder Pump ☑ Other PERISTALTIC
Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet
Note: Flowrate for VOC sampling should be no greater than 100 ml/min
Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point Top of Casing
Casing ID (in.) 2"
Approximate depth of pump inlet (ft): 27.0'
Depth to Water - Initial (DTWi) (ft) 23.25'
Length of Casing (ft): ___
Depth to Well Bottom (ft) 31.85'
Screen Interval (ft): ___

FIELD CONDITIONS

Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind
Temperature: 35°F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 200 ml/mn	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
07:44	1.0(L)	23.25	3.447	15.39	7.31	1.2	208.3	4.14
07:49	2.0		3.551	15.55	7.19	0.0	213.5	2.81
07:54	3.0		3.567	15.48	7.14	0.0	217.6	2.98
07:59	4.0		3.568	15.44	7.12	0.0	219.0	2.93
08:00	SAMPLE							

☑ **Duplicate or MS/MSD Collected:** MS / MSD

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: N/A
Pump on: 07:39
Discharge: N/A
First Water: 07:41
psi (start): N/A
QED Controller #: N/A
psi (finish): N/A
YSI #: 83424
Water level #: FSLVE0219
Pump: FSLVE0159

GROUND WATER SAMPLE COLLECTION LOG

Project Name: WSMR 2015 Spring LTM GW Sampling

Site Location: OTC-537

Project No.: 500331

Well ID: OTC-537-GW-5371-151214

Sample ID OTC-537-GW-5371-151214

Date / Time Collected 12/14/15 @ 10:01

EQUIPMENT / NOTES

Sample Collected by: R. MIDDLETON

Purging Method/Equipment: Micropurge

Sampling Equipment.: ☑ Bladder Pump ☐ Other

Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet

Note: Flowrate for VOC sampling should be no greater than 100 ml/min

Daily field instrument calibration verification performed? **Yes** ✓ **No** ___

PURGING INFORMATION

Measuring Point Top of Casing

Casing ID (in.) 2"

Approximate depth of pump inlet (ft): 35'

Depth to Water - Initial (DTWi) (ft) 28.50'

Length of Casing (ft): 40'

Depth to Well Bottom (ft) 40.60'

Screen Interval (ft): 30-40'

FIELD CONDITIONS

Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind

Temperature: 28°F / 56°F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 300	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
09:35	1.0	28.50	10.895	15.6	6.98	81.1	88.1	3.83
09:40	2.5	28.50	10.833	15.8	6.98	~~44.6~~ 57.9	94.6	2.09
09:45	4.0	28.50	10.623	15.8	6.99	34.8	97.9	1.78
09:50	5.5	28.50	10.602	15.7	6.96	31.1	98.0	1.80
09:55	7.0	28.50	10.553	15.7	6.96	25.9	98.2	1.84
10:00	8.5	28.50	10.551	15.7	6.96	22.3	96.6	1.79
10:01	SAMPLE							

☑ **Duplicate or MS/MSD Collected:** MS/MSD + FD

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: 15

Pump on: 09:28

Discharge: 15

First Water: 09:31

psi (start): 30

QED Controller #: MP50-PC25

psi (finish): 30

YSI #:

Water level #: MP30

GROUND WATER SAMPLE COLLECTION LOG

Project Name: WSMR 2015 Spring LTM GW Sampling
Site Location: OTC-538
Project No.: 500331
Well ID: OTC538-GW-5382-151214
Sample ID OTC538-GW-5382-151214
Date / Time Collected 12/14/15 @ 06:46
Sample Collected by: P. MIDDLETON

EQUIPMENT / NOTES

Purging Method/Equipment: Micropurge
Sampling Equipment.: ☑ Bladder Pump ☐ Other
Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet
Note: Flowrate for VOC sampling should be no greater than 100 ml/min
Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point Top of Casing
Casing ID (in.) 2"
Approximate depth of pump inlet (ft): 35'
Depth to Water - Initial (DTWi) (ft) 28.85'
Length of Casing (ft): 40'
Depth to Well Bottom (ft) 40.60'
Screen Interval (ft): 30-40'

FIELD CONDITIONS

Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind
Temperature: 28°F / 56°F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 200 ml/min	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
0605	1.0	28.85	13.323	~~7.27~~ 13.3	7.27	766.7	159.1	5.62
0610	2.0	28.91	12.934	13.5	7.33	841.4	106.8	4.84
0615	3.0	28.99	12.991	13.9	7.41	799.9	111.5	4.03
0620	4.0	29.11	13.040	14.0	7.55	650.1	119.8	3.99
0625	5.0	29.15	13.091	14.1	7.56	559.4	121.4	3.74
0630	6.0	29.20	13.044	14.3	7.64	441.1	108.4	2.99
0635	7.0	29.24	13.039	14.4	7.61	304.4	56.4	1.84
0640	8.0	29.24	13.041	14.2	7.60	311.9	52.1	1.77
0645	9.0	29.24	13.090	14.2	7.62	308.8	50.8	1.63
0646	SAMPLE							

☐ **Duplicate or MS/MSD Collected:**

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: 15
Pump on: 06:00
Discharge: 15
First Water: 06:03
psi (start): 20
QED Controller #: MP50-1025
psi (finish): 35
YSI #:
Water level #: MP30

GROUND WATER SAMPLE COLLECTION LOG

Project Name: Holloman AFB Winter 2015 GW Sampling
Site Location: OTC-542
Project No.: 144106
Well ID: OTC-542-MW01
Sample ID OTC542-GW-5421-MW01-151119
Date / Time Collected 11/19/15 @ 09:07

EQUIPMENT / NOTES

Sample Collected by: P. MIDDLETON

Purging Method/Equipment: Micropurge
Sampling Equipment.: ☐ Bladder Pump ☑ Other PERISTALTIC
Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet
Note: Flowrate for VOC sampling should be no greater than 100 ml/min
Daily field instrument calibration verification performed? **Yes** ✓ **No** ___

PURGING INFORMATION

Measuring Point Top of Casing
Casing ID (in.) 2"
Approximate depth of pump inlet (ft): ___
Depth to Water - Initial (DTWi) (ft) 24.14
Length of Casing (ft): ___
Depth to Well Bottom (ft) 29.00
Screen Interval (ft): ___

FIELD CONDITIONS

Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind
Temperature: 40°

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 200 ml/min	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
08:51	1.0(L)	24.84	10.49	14.90	7.62	3.0	196.3	5.84
08:56	2.0	24.85	10.47	14.34	7.57	3.1	201.7	5.70
09:01	3.0	24.85	10.50	14.28	7.55	2.4	209.5	5.68
09:06	4.0	24.86	10.50	14.19	7.54	1.7	206.1	5.74
09:07	SAMPLE							

☐ **Duplicate or MS/MSD Collected:** ___

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: N/A
Pump on: 08:39
Discharge: N/A
First Water: 08:42
psi (start): N/A
QED Controller #: N/A
psi (finish): N/A
YSI #: 83424
Water level #: FSLVE0219

PUMP: FSLVE0159

GROUND WATER SAMPLE COLLECTION LOG

Project Name: Holloman AFB Winter 2015 GW Sampling

Site Location: OTC - 543

Project No.: 144106

Well ID: OTC - 543 - MW01

Sample ID OTC543-GW-5431-MW01-151119

Date / Time Collected 11/19/15 @ 09:54

EQUIPMENT / NOTES

Sample Collected by: P. MIDDLETON

Purging Method/Equipment: Micropurge

Sampling Equipment.: ☐ Bladder Pump ☑ Other PERISTALTIC

Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet

Note: Flowrate for VOC sampling should be no greater than 100 ml/min

Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point Top of Casing

Casing ID (in.) 2"

Approximate depth of pump inlet*(ft): ___

Depth to Water - Initial (DTWi) (ft) 22.89'

Length of Casing (ft): ___

Depth to Well Bottom (ft) 28.0'

Screen Interval (ft): ___

FIELD CONDITIONS

Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind

Temperature: 49°

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 100 ml/min	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
09:33	1.0 (L)	23.09	3.467	17.66	7.70	4.1	200.0	5.24
09:38	1.5	23.46	3.359	17.88	7.64	1.6	209.4	4.43
09:43	2.0	23.54	3.297	17.33	7.61	0.1	210.9	4.09
09:48	2.5	23.57	3.281	17.37	7.60	0.0	213.1	3.92
09:53	3.0	23.60	3.277	17.43	7.60	0.0	213.9	3.90
09:54	SAMPLE							

☐ **Duplicate or MS/MSD Collected:** ___

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: N/A

Pump on: 09:20

Discharge: N/A

First Water: 09:26

psi (start): N/A

QED Controller #: N/A

psi (finish): N/A

YSI #: ~~FS~~ 83424

Water level #: FSLVE0219

Pump: FSLVE0159

GROUND WATER SAMPLE COLLECTION LOG

Project Name: Holloman AFB Winter 2015 GW Sampling
Site Location: OTC-544
Project No.: 144106
Well ID: OTC-544-MW01
Sample ID OTC544-GW-5441-MW01-151119
Date / Time Collected 11/19/15 @ 10:38

EQUIPMENT / NOTES
Sample Collected by: P. MIDDLETON

Purging Method/Equipment: Micropurge
Sampling Equipment.: ☐ Bladder Pump ☑ Other PERISTALTIC
Flow Rate During Purging : 300 - 500 ml/min with water level drawdown less than 0.3 feet
Note: Flowrate for VOC sampling should be no greater than 100 ml/min
Daily field instrument calibration verification performed? Yes ___ No ___

PURGING INFORMATION
Measuring Point Top of Casing
Casing ID (in.) 2"
Approximate depth of pump inlet (ft): ___
Depth to Water - Initial (DTWi) (ft) 16.28'
Length of Casing (ft): ___
Depth to Well Bottom (ft) 29.10'
Screen Interval (ft): ___

FIELD CONDITIONS
Weather Conditions: ☑ Sunny ☐ Rain ☐ Wind
Temperature: 52°F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (µS/cm)	Temperature (oC / F)	pH	Turbidity (NTU)	ORP	DO (mg/L)
Purge Stabilization Criteria	-- 200ml/min	--	±10%	± 10%	+0.1 units	± 10%	± 10 mV	+ 10%
10:17	1.0(L)	16.40	7.354	19.32	7.33	19.1	186.7	3.10
10:22	2.0	16.44	7.267	19.53	7.23	6.9	196.1	2.12
10:27	3.0	16.55	7.175	19.95	7.21	1.0	203.6	1.79
10:32	4.0	16.55	7.180	20.03	7.20	0.0	210.1	1.57
10:37	5.0	16.55	7.176	20.10	7.20	0.0	210.9	1.58
10:38	SAMPLE							

☐ **Duplicate or MS/MSD Collected:** ___

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: N/A
Pump on: 10:09
Discharge: N/A
First Water: 10:13
psi (start): N/A
QED Controller #: N/A
psi (finish): N/A
YSI #: 83424
Water level #: FSLVE0219
Pump: FSLVE0159

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code BLDG. 308

RFA/COC Number 144106-H2015-151123

Sample Number OTC530-GW-5301-MW01-151123

Collection Date 11/23/15

Sampling Method LOW FLOW

Collection Time 0641

Sample Type GROUND WATER

Start Depth 5.98'

QC Code

End Depth 6.25'

Sampling Equipment PERISTALTIC

Sample Matrix

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Perservative
Ntirate, Chloride, and TDS by 300, 9056A, and 2540C	A	NA	1	250-mL	Poly Bottle	Cool to ≤ 4°C

Comments/Descriptions:

Logged By/Date: P. MIDDLETON 11/23/15 ***Reviewed By/Date:***

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OTC-531A (BLDG 920)

RFA/COC Number 144106-HZ015-151123

Sample Number OTC531A-GW-531A1-MW01-151123

Collection Date 11/23/15

Sampling Method LOW FLOW

Collection Time 07:40

Sample Type GROUND WATER

Start Depth 12.82

QC Code

End Depth 13.51

Sampling Equipment PERISTALTIC

Sample Matrix GW

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Perservative
Ntirate, Chloride, and TDS by 300, 9056A, and 2540C	A	NA	1	250-mL	Poly Bottle	Cool to ≤ 4°C

Comments/Descriptions: FIELD DUP

Logged By/Date: 11/23/15 P. MIDDLETON

Reviewed By/Date:

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OT-C531B (BLDG. 921)

RFA/COC Number 144106-H2015-151123

Sample Number OTC531B-GW-531B1-MW01-151123

Collection Date 11/23/15

Sampling Method LOW FLOW

Collection Time 08:24

Sample Type GROUND WATER

Start Depth 12.62'

QC Code

End Depth 12.78'

Sampling Equipment PERISTALTIC

Sample Matrix GW

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Perservative
Ntirate, Chloride, and TDS by 300, 9056A, and 2540C	A	NA	1	250-mL	Poly Bottle	Cool to ≤ 4°C

Comments/Descriptions:

Logged By/Date: P. MIDDLETON 11/23/15

Reviewed By/Date:

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OT-C531C (BLDG 922)

RFA/COC Number 144106 - HZ015 - 151123

Sample Number OTC531C-GW-531C1-MW01-151123

Collection Date 11/23/15

Sampling Method LOW FLOW

Collection Time 0916

Sample Type GROUNDWATER

Start Depth 12.75

QC Code

End Depth 13.04

Sampling Equipment PERISTALTIC

Sample Matrix GW

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Perservative
Ntirate, Chloride, and TDS by 300, 9056A, and 2540C	A	NA	1	250-mL	Poly Bottle	Cool to ≤ 4°C

Comments/Descriptions:

Logged By/Date: P. MIDDLETON 11/23/15

Reviewed By/Date:

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OTC-533

RFA/COC Number 144106-HZ015-151119

Sample Number OTC533-GW-5331-MW01-151119

Collection Date 11/19/15

Sampling Method LOW FLOW

Collection Time 07:10

Sample Type GROUND WATER

Start Depth 23.34'

QC Code

End Depth 23.55'

Sampling Equipment PERISTALTIC

Sample Matrix

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Perservative
Ntirate, Chloride, and TDS by 300, 9056A, and 2540C	A	NA	1	250-mL	Poly Bottle	Cool to ≤ 4°C

Comments/Descriptions: FIELD DUP

Logged By/Date: PM 11/19/15

Reviewed By/Date:

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OTC-536

RFA/COC Number 144106-H2015-151119

Sample Number OTC-536-GW-5361-MW01-151119

Collection Date 11/19/15

Sampling Method LOW FLOW

Collection Time 08:00

Sample Type GROUND WATER

Start Depth 23.25'

QC Code

End Depth 23.25'

Sampling Equipment PERISTALTIC

Sample Matrix

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Perservative
Ntirate, Chloride, and TDS by 300, 9056A, and 2540C	A	NA	1	250-mL	Poly Bottle	Cool to ≤ 4°C

Comments/Descriptions: MS/MSD

Logged By/Date: PM 11/19/15

Reviewed By/Date:

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OTC-537

RFA/COC Number 144106-H2015-151214

Sample Number OTC537-GW-5371-151214

Collection Date 12/14/15

Sampling Method LOW FLOW

Collection Time 10:01

Sample Type GRAB

Start Depth 28.50

QC Code

End Depth 28.50

Sampling Equipment BLADDER PUMP

Sample Matrix GW

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Preservative
Nitrate, Chloride, TDS by 300, 9056A, and 2540C	A	NA	1	250 mL	Poly Bottle	Cool to ≤ 4°C
VOCs by 8260C	B	NA	3	40 mL	VOA Vials	HCl, Cool to ≤ 4°C
SVOCs by 8270D	C	NA	2	1 Liter	Amber Glass	Cool to ≤ 4°C
Metals by 6010C/7470A	D	NA	1	250 mL	Poly Bottle	HNO3, Cool to ≤ 4°C
TPH-GRO by 8015C	E	NA	2	40 mL	VOA Vials	HCl, Cool to ≤ 4°C
TPH-DRO/ORO by 8015C	F	NA	2	1-Liter	Amber Glass	H2SO4, Cool to ≤ 4°C
PCBs by 8082A	G	NA	2	1-Liter	Amber Glass	Cool to ≤ 4°C
Explosives by 8330A	H	NA	2	1-Liter	Amber Glass	Cool to ≤ 4°C
Cyanide by 9012B	I	NA	1	250 mL	Poly Bottle	NaOH, Cool to ≤ 4°C
Tritium by 906.0	J	NA	1	250 mL	Amber Glass	Cool to ≤ 4°C

Comments/Descriptions: MS / MSD + FIELD DUP

Logged By/Date: 12/14/15

Reviewed By/Date:

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OTC - 538

RFA/COC Number 144106-H2015-151214

Sample Number OTC538-GW-5382-151214

Collection Date 12/14/15

Sampling Method LOW FLOW

Collection Time 06:46

Sample Type GRAB

Start Depth 28.85

QC Code

End Depth 29.24

Sampling Equipment BLADDER PUMP

Sample Matrix GW

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Preservative
Nitrate, Chloride, TDS by 300, 9056A, and 2540C	A	NA	1	250 mL	Poly Bottle	Cool to ≤ 4°C
VOCs by 8260C	B	NA	3	40 mL	VOA Vials	HCl, Cool to ≤ 4°C
SVOCs by 8270D	C	NA	2	1 Liter	Amber Glass	Cool to ≤ 4°C
Metals by 6010C/7470A	D	NA	1	250 mL	Poly Bottle	HNO3, Cool to ≤ 4°C
TPH-GRO by 8015C	E	NA	2	40 mL	VOA Vials	HCl, Cool to ≤ 4°C
TPH-DRO/ORO by 8015C	F	NA	2	1-Liter	Amber Glass	H2SO4, Cool to ≤ 4°C
PCBs by 8082A	G	NA	2	1-Liter	Amber Glass	Cool to ≤ 4°C
Explosives by 8330A	H	NA	2	1-Liter	Amber Glass	Cool to ≤ 4°C
Cyanide by 9012B	I	NA	1	250 mL	Poly Bottle	NaOH, Cool to ≤ 4°C
Tritium by 906.0	J	NA	1	250 mL	Amber Glass	Cool to ≤ 4°C

Comments/Descriptions: EXCEPTIONALLY TURBID WOULD NOT CLEAR AFTER DEVELOPMENT.

Logged By/Date: PM 12/14/15

Reviewed By/Date:

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OTC-542

RFA/COC Number 144106-HZC15-151119

Sample Number OTC542-GW-5421-MW01-151119

Collection Date 11/19/15 @ 09:07

Sampling Method LOW FLOW

Collection Time 09:07

Sample Type GROUNDWATER

Start Depth 24.14

QC Code

End Depth 24.85

Sampling Equipment PERISTALTIC

Sample Matrix

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Perservative
Ntirate, Chloride, and TDS by 300, 9056A, and 2540C	A	NA	1	250-mL	Poly Bottle	Cool to ≤ 4°C

Comments/Descriptions:

Logged By/Date: PM 11/19/15

Reviewed By/Date:

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OTC-543

RFA/COC Number 144106-H2015-151119

Sample Number OTC543-GW-5431-MW01-151119

Collection Date 11/19/15

Sampling Method LOW FLOW

Collection Time 09:54

Sample Type GROUND WATER

Start Depth 22.89'

QC Code

End Depth 23.60'

Sampling Equipment PERISTALTIC

Sample Matrix

QC Partners

Sample Team

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Perservative
Ntirate, Chloride, and TDS by 300, 9056A, and 2540C	A	NA	1	250-mL	Poly Bottle	Cool to ≤ 4°C

Comments/Descriptions:

Logged By/Date: 11/19/15 RM

Reviewed By/Date:

Sample Collection Log

144106 Holloman AFB – Septic Site

Location Code OTC-544

RFA/COC Number 144106-H2015-151119

Sample Number OTC544-GW-5441-MW01-151119

Collection Date 11/19/15

Sampling Method LOW FLOW

Collection Time 10:38

Sample Type GROUND WATER

Start Depth 16.28'

QC Code

End Depth 16.55'

Sampling Equipment PERISTALTIC

Sample Matrix

QC Partners

Sample Team P. MIDDLETON

Containers:

Analytical Suite	Frtn	Filtered	Qty	Size	Container Type	Perservative
Ntirate, Chloride, and TDS by 300, 9056A, and 2540C	A	NA	1	250-mL	Poly Bottle	Cool to ≤ 4°C

Comments/Descriptions:

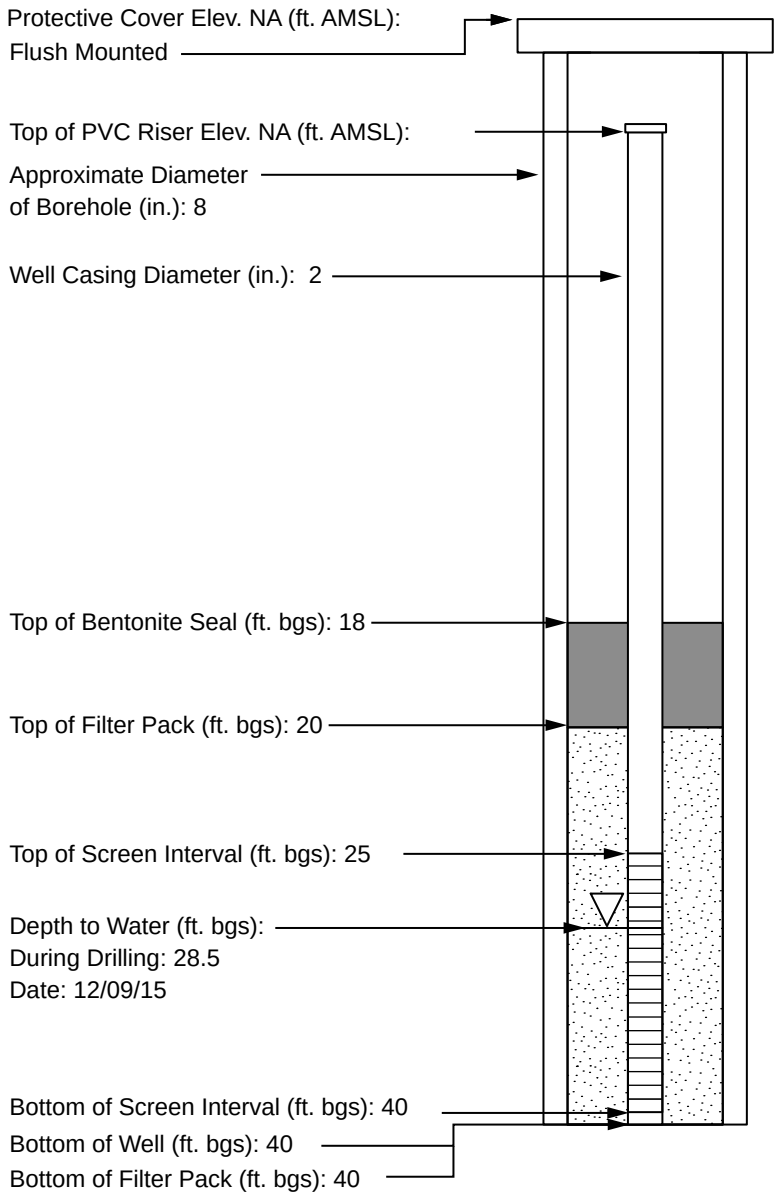
Logged By/Date: 11/19/15 PM

Reviewed By/Date:

Well Construction Diagram

Project: Holloman AFB
Location: TU/US-C514
Client: USAF
Subcontractor: Major Drilling Environmental
Driller: S. Brown
Drilling Method/Rig Type: DPT/Auger: Geoprobe 7822DT
Shaw Field Representative: K. Lovely

Well Number: OT-C537-MW01
Site Location: Building 1200
Installation Date: 12/9/2015
Completion Date: 12/11/2015
Grid Northing: 681044.446574
Grid Easting: 1690023.0332
NAD: 83 SPCS NM Central
NAVD: 88



Not To Scale

Protective Casing: Circular
Type: Flush Mount
Dimensions (in.): 8
Length (in.): 10
Guard Post: NA

Ground Seal (Surface pad):
Dimensions (ft.): 2 x 2
Type: Concrete

Annular Space Seal:
Type: 1-2 Portland with High Yield Powder
Installation: Gravity

Bentonite Seal:
Manufacturer: Enviro Plug
# of Bags: 1 (50 lbs each)
Type: 3/8" Pellets
Installation: One Section
Hydration time (hrs): 24

Filter Pack Material:
Manufacturer: Premier Silica
Product Name: Colorado Silica Sand
Size: 20/40
# of bags: 11 (50 lbs each)
Installation: Gravity

Well Casing Used (ft.):
Manufacturer: Environmental Products
Type: PVC Schedule 40
Diameter (in.): 2

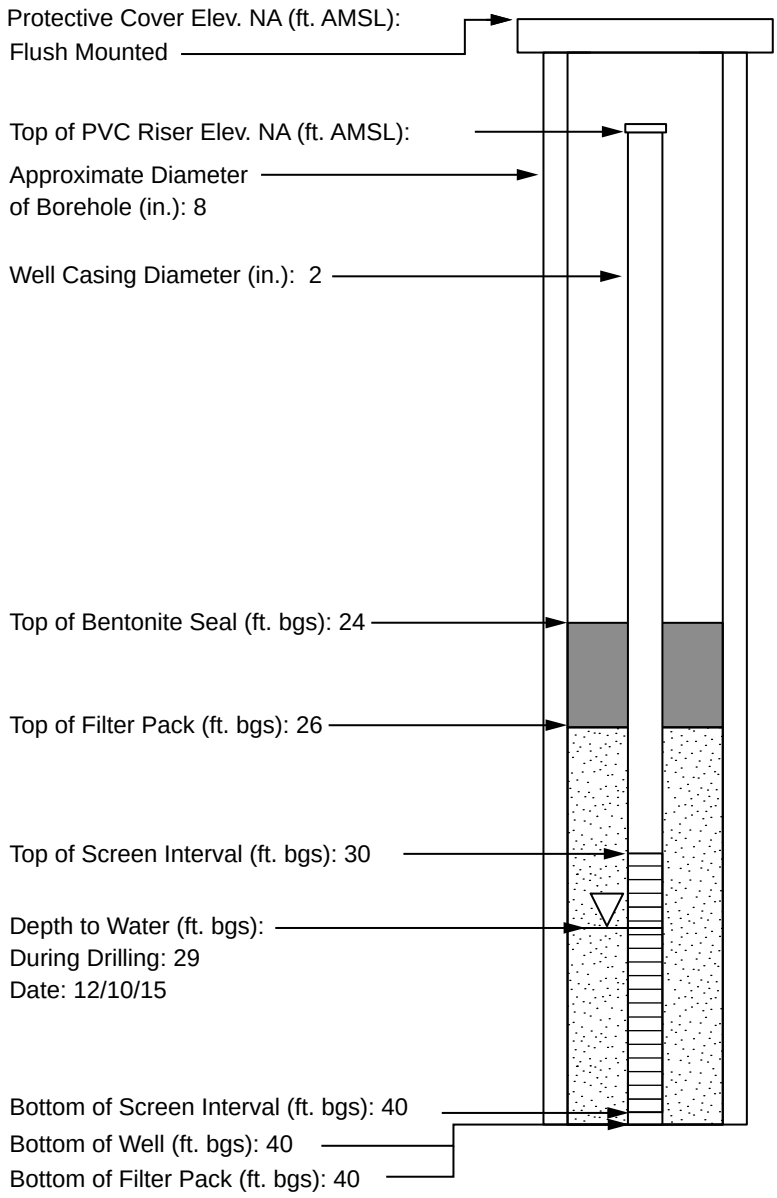
Well Screen Casing:
Manufacturer: Premiere Silica
Type: 2" Pre-pack w/ vf SS Mesh w/ 1A Sand
Slot Size (in.): 0.010
Slot Type: Factory

Sump/End Cap (in.): 4 (PVC)
Backfill Material: NA

Well Construction Diagram

Project: Holloman AFB
Location: TU/US-C514
Client: USAF
Subcontractor: Major Drilling Environmental
Driller: S. Brown
Drilling Method/Rig Type: DPT/Auger: Geoprobe 7822DT
Shaw Field Representative: K. Lovely

Well Number: OT-C538-MW02
Site Location: Building 1201
Installation Date: 12/10/2015
Completion Date: 12/11/2015
Grid Northing: 680979.028897
Grid Easting: 1690024.5604
NAD: 83 SPCS NM Central
NAVD: 88



Not To Scale

Protective Casing: Circular
Type: Flush Mount
Dimensions (in.): 8
Length (in.): 10
Guard Post: NA

Ground Seal (Surface pad):
Dimensions (ft.): 2 x 2
Type: Concrete

Annular Space Seal:
Type: 1-2 Portland with High Yield Powder
Installation: Gravity

Bentonite Seal:
Manufacturer: Enviro Plug
# of Bags: 1 (50 lbs each)
Type: 3/8" Pellets
Installation: One Section
Hydration time (hrs): 20

Filter Pack Material:
Manufacturer: Premier Silica
Product Name: Colorado Silica Sand
Size: 20/40
# of bags: 3 (50 lbs each)
Installation: Gravity

Well Casing Used (ft.):
Manufacturer: Environmental Products
Type: PVC Schedule 40
Diameter (in.): 2

Well Screen Casing:
Manufacturer: Premiere Silica
Type: 2" Pre-pack w/ vf SS Mesh w/ 1A Sand
Slot Size (in.): 0.010
Slot Type: Factory

Sump/End Cap (in.): 4 (PVC)
Backfill Material: NA