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Report of Work Completed – Historical Spill Investigations

COGCC Location Name (ID)	Story Gulch Unit /8505A-36 B36496 (415180)
Client Location Name	B36 496
COGCC Remediation Project #	19864
Legal Description	Lot 2 Sec. 36 T4S-R96W
Coordinates (Lat/Long)	39.664206 / -108.113367
County	Garfield County, Colorado

Mr. Rollins,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil & Gas LLC (Caerus) to document recent investigation and remediation activities associated with historical releases of drilling mud, condensate, and produced water at the B36 496 well pad (Location). The Location is 14.5 miles north of Parachute, Colorado in Garfield County, as illustrated in the attached Topographic Location Map. Additional information on the Location and the associated remediation project is provided in the title block above, the attached Site Diagrams, and the attached Laboratory Results Summary Table. This ROWC provides background on the Location, methods used to complete the investigations, results of the investigations, and recommendations for how to proceed with this information.

Background

Between March 12, 2010, and February 15, 2011, five separate releases occurred on the Location. All Spill/Release Point IDs have been combined onto Colorado Oil and Gas Conservation Commission (COGCC) Remediation Project Number 19864.

On March 12, 2010, 20 barrels (bbls) of drilling mud were released after a plugged transfer line caused the pre-mix tank to overflow. The release was confined to the working surface of the pad. The transfer pumps were shut down, and 15 bbls of drilling mud were recovered using pumps, vacuum trucks, and heavy equipment. The release was reported in COGCC Form 19 Document 2607774.

On November 20, 2010, 55 bbls of drilling mud were released after a valve on the cement bypass vibrated loose, causing the cuttings catch bin to overflow. The release was confined to the working surface of the pad. The valve was closed, and pumps were used to recover 45 bbls of drilling mud. The release was reported in COGCC Form 19 Document 2523034.

On November 29, 2010, 15 bbls of produced water were released after the wells produced more water than the equipment was able to pump off site, causing a frac tank to overflow. The release was confined to the working surface of the pad. The wells and production equipment were shut in, but no fluids were recovered. The release was reported in COGCC Form 19 Document 2523460.

On February 15, 2011, 250 bbls of drilling mud were released after too much air was pushed through the system while the crew was trying to address a loss of drilling mud downhole. The air forced drilling mud back through the return system and out of the flare stack. The release was confined to the working surface of the pad. After the air was shut off, a pump truck recovered 200 bbls of the spilled material along with 300 bbls of snowmelt on the pad surface. The release was reported in COGCC Form 19 Document 2524363.

A second release occurred on February 15, 2011. 3 bbls of condensate and 10 bbls of produced water were released after the inlet valve on a frac tank was left closed, resulting in another frac tank overflowing. The release was confined to the working surface of the pad. After the valve was re-opened, the overflowing immediately ceased, and a pump truck was used to recover 3 bbls of condensate, 10 bbls of produced water, and 35 bbls of snowmelt on the pad surface. The release was reported in COGCC Form 19 Document 2524496.

On September 8, 2021, Confluence coordinated and oversaw investigation activities associated with the multiple historical releases at the Location. Twelve potholes were advanced within the spill investigation area. Field-screening was conducted at each pothole location between 6 and 12 inches below ground surface (bgs) and between 24 and 30 inches bgs, where possible. Due to a shallow shale stone layer, it was not possible to reach a final depth of 24 to 30 inches bgs in every pothole. Soil samples were collected from the terminus of each pothole for laboratory analysis. Analytical results exceeded COGCC Table 910-1 allowable limits for sodium adsorption ratio (SAR), pH, and arsenic in PH05, PH11, and PH12.

On October 7, 2021, Confluence personnel provided onsite support for remedial excavation via a hydrovac to remove soil impacts identified in pothole locations PH05, PH11, and PH12. Soil from each excavation area was characterized and field screened. Soil samples were collected from the base and sidewalls of each excavation for analysis. Additionally, background soil samples were collected from comparable, nearby, non-impacted, native soil to characterize native levels of inorganic constituents of concern. Analytical results exceeded COGCC Table 910-1 allowable limits for SAR in PH12 and COGCC Table 915-1 Residential Soil Screening Levels for arsenic and pH in PH05.

On November 10, 2021, Confluence personnel provided onsite support for additional remedial excavation via mini-excavator to address soil impacts in PH05 and inorganic impacts in PH12. Soil samples were collected from the base and sidewalls of each excavation for analysis. Analytical results exceeded COGCC Table 915-1 Residential Soil Screening Levels for benzo(A)pyrene, pH, arsenic, and chromium (VI) in PH05.

Caerus conducted initial assessment and remediation of all areas associated with the aforementioned releases between September 9, 2021, and November 10, 2021, prior to the institution of COGCC 915-1 standards. Based on the results and analysis from the three sampling events conducted over this period, the releases associated with COGCC Form 19 Documents 2524496, 2523460, 2523034, 2607774, and for areas PH01, PH06, PH07, PH08, and PH12 associated with Document 2524363 demonstrated compliance with COGCC Table 910-1 standards. Caerus requested these areas to be closed under COGCC Rule 915.f and to continue remediation efforts of PH05 under COGCC Table 915-1. This request was approved via COGCC Form 27 supplemental Document 402929590.



Methodology

On October 20, 2022, Confluence coordinated and oversaw additional remedial excavation via mini excavator to address the benzo(A)pyrene and pH exceedances in the east sidewall of the PH05 excavation. Impacted material from the east sidewall was removed via excavation, and one soil sample was collected from the newly exposed east sidewall. The soil sample was characterized using visual and olfactory observations and field screened using a photoionization detector (PID).

The soil sample was collected in laboratory provided jars, immediately placed on ice, and shipped under a completed chain-of-custody form to Pace Analytical Services (Pace) for analysis of COGCC Table 915-1 soil constituents of concern.

Results

These results summarize observations from onsite investigation efforts and associated field screening results. For organizational and presentation purposes the results summary is divided between general observations of lithology and hydrogeology for the entire Location and excavation activities.

Collected spatial data are depicted in the attached Site Diagrams. Laboratory analytical reports are attached and summarized in the Laboratory Results Summary Table.

Lithology and Hydrogeology

Lithology at the Location is characterized by sandy clay underlain by weathered shale. Groundwater is expected to flow southwest toward Davis Gulch and ultimately to the Colorado River, located 15.0 miles south of the Location. Because the Location sits approximately 650 feet higher in elevation than Davis Gulch, depth to groundwater is estimated to measure deeper than 600 feet bgs.

Delineation Results

Field screening did not indicate impacts to soil with no hydrocarbon staining or odor observed and with a PID measurement of 3.5 parts per million (ppm). Analytical results of the PH05 east sidewall soil sample indicate compliance with COGCC Table 915-1 Residential Soil Screening Levels except for arsenic. Arsenic exceeds at 3.02 milligrams per kilogram (mg/kg).

Analysis and Recommendations

Based on these results and analysis, pH, arsenic, and hexavalent chromium values exceeding COGCC Table 915-1 Residential Soil Screening Levels remain within the PH05 release area. Background data collected from nearby, native, non-impacted soil at the Location indicates levels of arsenic elevated above allowable limits with a peak native level of 5.71 mg/kg. Additionally, the hexavalent chromium exceedance was labeled with a “J” qualifier. The “J” qualifier states that the identification of the analyte was made; however, the concentration is only an estimate due to the minimal amount of the analyte exhibited in the sample material. Confluence recommends that Caerus request consideration of COGCC Table 915-1 Footnote 11 to establish an alternative allowable limit for arsenic of 7.14 mg/kg, consideration of the “J” qualifier on the chromium (VI) concentration, and a reduced analyte suite of pH only.



Assuming the proposed alternative allowable limit and analytical considerations are accepted, all constituents of concern are delineated with the exception of pH. Exceedances of pH are undelineated vertically as well as to the north, south, and west. Confluence recommends collecting additional background samples to further characterize native levels of pH at the Location.

Confluence is grateful for the opportunity to support you with this project. If you have any questions about the methods, results, or recommendations presented here, please do not hesitate to contact us.

Regards,



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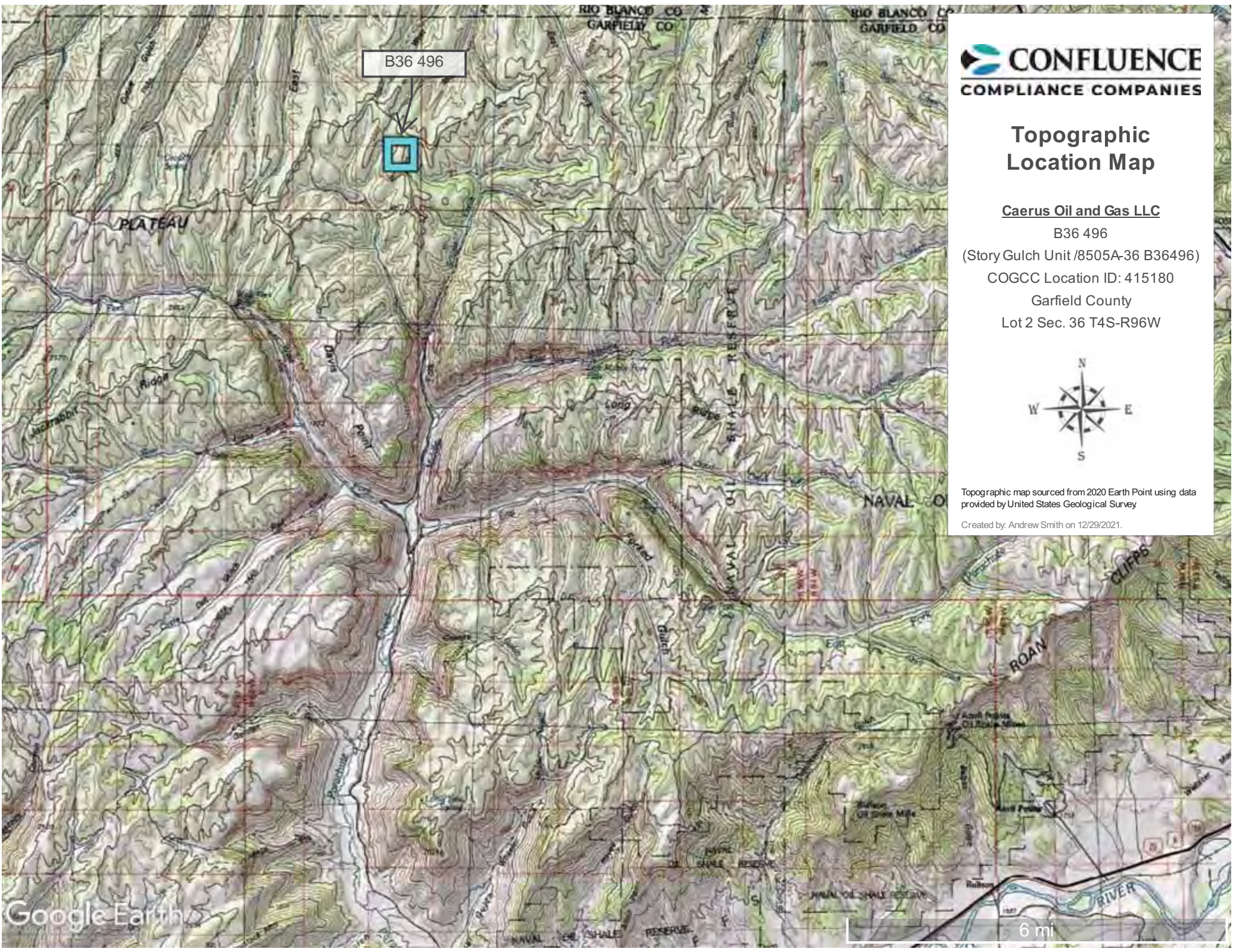


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Attachments

- Topographic Location Map
- Site Diagram – Background Samples
- Site Diagram – Investigation Sample Locations
- Site Diagram – PH05 Excavation
- Laboratory Results Summary Table – PH05
- Laboratory Results Summary Table
- Laboratory Reports





B36 496



Topographic Location Map

Caerus Oil and Gas LLC

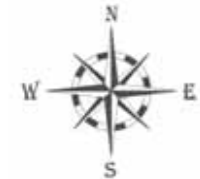
B36 496

(Story Gulch Unit /8505A-36 B36496)

COGCC Location ID: 415180

Garfield County

Lot 2 Sec. 36 T4S-R96W



Topographic map sourced from 2020 Earth Point using data provided by United States Geological Survey

Created by: Andrew Smith on 12/29/2021.

Google Earth

6 mi

Site Diagram Background Samples

Caerus Oil and Gas LLC

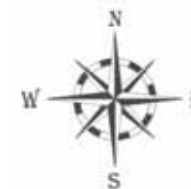
B36 496

(Story Gulch Unit /8505A-36 B36496)




COGCC Location ID: 415180

Garfield County

Lot 2 Sec. 36 T4S-R96W



Legend

-  Background Sample – 10/07/2021
-  Excavation Extent – 11/10/2021
-  Final Excavation Extent

Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

Map created by: Andrew Smith on 12/29/2021.

20211007 - B36 - 496 (BGS_2@2')

20211007 - B36 - 496 (BGSW@3')

20211007 - B36 - 496 (BGS@2')

Site Diagram Investigation Sample Locations

Caerus Oil and Gas LLC

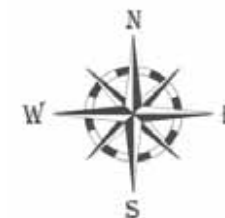
B36 496

(Story Gulch Unit /8505A-36 B36496)


COGCC Location ID: 415180


Garfield County

Lot 2 Sec. 36 T4S-R96W



Legend

 Soil Sample – 09/08/2021

 Spill Investigation Area

Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

Map created by: Andrew Smith on 12/29/2021.

Site Diagram
PH05 Excavation

Caerus Oil and Gas LLC

B36 496

(Story Gulch Unit /8505A-36 B36496)








COGCC Location ID: 415180

Garfield County

Lot 2 Sec. 36 T4S-R96W



Legend

-  Soil Sample – 09/08/2021
-  Soil Sample – 10/07/2021
-  Soil Sample – 11/10/2021
-  Soil Sample – 10/20/2022
-  Excavation Extent – 10/07/2021
-  Excavation Extent – 11/10/2021
-  Excavation Extent – 10/20/2022

Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

Map created by: Andrew Smith on 10/24/2022.

Orange Fill = Exceedance
Dark Gray Italics = Below Reporting Detection Limit (RDL)
"NA" = Not Analyzed
mg/kg = milligrams per kilogram / parts per million

		Soil Screening and Remediation Limits		Soil Suitability for Reclamation				Metals (mg/kg [ppm])									
			COGCC Table 915-1 Residential -->	4	6	6-8.3	2	0.68	15000	71	0.3	3100	400	1500	390	390	23000
Sample Date	Solid/Soil Source (Equipment) (Vault/Sump, Separator, Tank Battery, Storm Line, Pit, Cutoffs, Background, etc.)	Depth - Z (feet) (NEGATIVE VALUE) below ground surface (bgs)	Sample ID	EC (Specific Conductance) (microhmocentimeter) (by saturated paste method)	SAR (Sodium Adsorption Ratio) (calculation) (by saturated paste method)	pH (pH Units) (by saturated paste method)	Boron - Hot Water Soluble (mg/L)	Arsenic	Barium	Cadmium (mg/kg)	Chromium (VI)	Copper	Lead	Nickel	Selenium	Silver	Zinc
10/20/2022	Pipeline	-3	20221020-B36_PH05-ESW@3'	0.241	1.29	8.12	0.555	3.02	3120	<0.500	<1.00	19.2	12.4	18.7	<2.00	<1.00	42.5
11/10/2021	Pipeline	-2	20211110-B36-496-PH05-WC	0.439	2.48	8.70	1.27	3.41	11000	<0.500	<2.0	17.3	9.46	13.4	<2.00	<1.00	36.1
11/10/2021	Pipeline	-2.5	20211110-B36-496-PH05-ESW@2.5	0.274	2.08	8.63	1.39	3.24	4340	<0.500	<2.00	17.6	13.7	20.7	<2.00	<1.00	42.9
11/10/2021	Pipeline	-2.5	20211110-B36-496-PH05-NSW@2.5	0.213	1.58	8.54	1.01	3.09	2830	0.0669	<2.00	17.6	13.3	19.4	<2.00	<1.00	42.5
11/10/2021	Pipeline	-2.5	20211110-B36-496-PH05-SSW@2.5	0.208	1.88	8.70	1.06	4.15	3770	0.0777	0.760	17.4	14.0	20.6	1.74	<1.00	43.1
11/10/2021	Pipeline	-4	20211110-B36-496-PH05-BASE@4'	0.220	1.60	8.81	0.451	2.57	2340	0.132	<2.00	18.8	15.5	20.8	<2.00	<1.00	46.4
11/10/2021	Pipeline	-2.5	20211110-B36-496-PH05-WSW@2.5	0.181	1.17	8.81	0.368	1.96	879	0.288	<2.00	16.9	11.9	20.2	1.09	<1.00	37.0
10/7/2021	Pipeline	-1	20211007-B36-496-PH05(NWWALL@12")	0.334	2.29	8.96	1.03	2.28	4640	<0.500	<1.00	17.1	11.1	19.9	1.36	<1.00	39.8
10/7/2021	Pipeline	-1	20211007-B36-496-PH05(NEWALL@12")	0.284	1.82	8.82	0.785	3.59	6770	<0.500	<1.00	17.2	13.1	17.2	2.23	<1.00	37.8
10/7/2021	Pipeline	-1	20211007-B36-496-PH05(SWALL@12")	0.315	2.26	8.70	1.08	2.70	4520	<0.500	<1.00	15.3	10.0	16.9	1.76	<1.00	34.1
10/7/2021	Pipeline	-2	20211007-B36-496-PH05(BASE@24")	0.266	1.68	8.78	0.803	6.60	4200	<0.500	<1.00	18.7	12.8	18.4	1.41	<1.00	34.6
9/8/2021	Pipeline	-1.8	20210908 - B36 (PH05@22")	0.253	1.71	8.57	N/A	2.74	5790	<0.500	<2.00	14.7	9.28	15.1	1.27	<1.00	34.6
10/7/2021	Background	-1.5	20211007-B36-496(BGS@1.5')	0.148	0.122	8.05	N/A	5.71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/7/2021	Background	-2	20211007-B36-496(BGS_2@2')	0.151	0.201	7.35	N/A	3.68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/7/2021	Background	-3	20211007-B36-496(BGSW@3')	0.192	0.147	7.97	N/A	4.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Yellow Fill = Exceedance
Dark Gray Italics = Below Reporting Detection Limit (RDL)
"NA" = Not Analyzed
mg/kg = milligrams per kilogram / parts per million

Laboratory Results Summary Table - Soil
B36 496

		Soil Screening and Remediation Limits			Soil Suitability for Reclamation					Metals (mg/kg [ppm])											
			COGCC Table 910-1 Allowable Concentration -->	NA	4	12	6-9	2	0.39	15000	70	120000	23	NA	3100	400	23	1600	390	390	23000
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Depth - Z (feet) (NEGATIVE VALUE) below ground surface (bgs)	Sample ID	PID (ppm)	EC (Specific Conductance) (millimhos/centimeter) (by saturated paste method)	SAR (Sodium Adsorption Ratio) (calculation) (by saturated paste method)	pH (pH Units) (by saturated paste method)	Boron - Hot Water Soluble (mg/L)	Arsenic	Barium	Cadmium (mg/kg)	Chromium (III)	Chromium (VI)	Chromium (Total)	Copper	Lead	Mercury (Total Mercury by EPA 7471)	Nickel	Selenium	Silver	Zinc
11/10/2021	Pipeline	-5	20211110-B36-496-PH12-BASE@5'	0	NA	4.96	8.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-ESW@3'	0	NA	21.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-ESW2@3'	0.3	NA	11.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-ESW3@3'	1.1	NA	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-ESW4@3'	0.7	NA	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-NSW@3'	2.5	NA	6.76	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-SSW@3'	1.1	NA	6.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-SSW2@3'	1	NA	8.88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-SSW3@3'	0.5	NA	8.69	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-SSW4@3'	0.2	NA	3.08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-WSW@3'	1.1	NA	5.83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-WSW2@3'	0.7	NA	5.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-WSW3@3'	0.9	NA	7.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-NSW@3'	2.5	0.783	6.76	8.45	0.146	3.53	974	0.309	29.9	<2.00	29.9	40.9	20.5	0.0339	22.5	<2.00	<1.00	42.1
11/10/2021	Pipeline	-5	20211110-B36-496-PH12-BASE@5'	0	0.764	NA	NA	0.407	5.39	345	0.363	33.3	<2.00	33.3	13.7	14.4	0.0309	20.6	<2.00	<1.00	39.1
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-WSW@3'	1.1	0.712	5.83	8.52	0.130	3.57	499	0.378	27.9	<2.00	27.9	15.8	16.6	0.0404	21.8	<2.00	<1.00	35.3
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-ESW2@3'	0.3	1.340	11.2	8.61	0.166	3.05	646	0.317	31.4	<2.00	31.4	15.0	16.5	0.0321	18.5	<2.00	<1.00	35.9
11/10/2021	Pipeline	-3	20211110-B36-496-PH12-SSW@3'	1.1	0.518	6.02	8.61	0.152	3.48	590	0.291	32.2	<2.00	32.2	15.1	16.8	0.0349	19.4	<2.00	<1.00	38.6
10/7/2021	Pipeline	-0.6	20211007-B36-496-PH11(SEWALL@8")	0.9	0.267	1.55	8.63	0.0817	2.60	579	0.374	NA	<1.00	<1.00	16.6	12.8	NA	23.2	1.34	<1.00	43.3
10/7/2021	Pipeline	-0.6	20211007-B36-496-PH11(NWALL@8")	1.1	0.229	1.73	8.63	0.107	2.57	633	0.308	NA	<1.00	<1.00	16.2	12.6	NA	20.6	2.87	<1.00	40.8
10/7/2021	Pipeline	-0.75	20211007-B36-496-PH12(NWALL@9")	0.7	0.818	12.1	8.75	0.139	3.15	927	0.243	NA	<1.00	<1.00	14.8	11.7	NA	26.1	2.1	<1.00	41.7
10/7/2021	Pipeline	-0.75	20211007-B36-496-PH12(SWWALL@9")	1.1	1.190	19.6	8.95	0.215	1.79	303	0.495	NA	<1.00	<1.00	33.1	25.1	NA	41.3	2.34	<1.00	48.6
10/7/2021	Pipeline	-1.6	20211007-B36-496-PH12(BASE@19")	0.8	1.320	18.3	9.04	0.158	2.49	601	0.408	NA	0.390	0.390	18.9	14	NA	24.2	1.85	<1.00	46.0
10/7/2021	Pipeline	-0.75	20211007-B36-496-PH12(SEWALL@9")	0.8	1.270	14.6	8.92	0.149	2.29	340	0.395	NA	0.261	0.261	20.3	15.6	NA	23.9	1.17	<1.00	45.6
10/7/2021	Pipeline	-1.4	20211007-B36-496-PH11(BASE@16")	1	0.189	1.17	8.60	0.0737	2.85	277	0.427	NA	<1.00	<1.00	14.0	13.3	NA	23.7	2.08	<1.00	41.0
10/7/2021	Pipeline	-0.6	20211007-B36-496-PH11(SWWALL@8")	1.3	0.188	1.21	8.52	0.0860	2.14	1510	0.205	NA	<1.00	<1.00	14.5	14.9	NA	23.5	2.39	<1.00	44.9
9/8/2021	Pipeline	-0.9	20210908 - B36 (PH10@10")	0.3	0.550	4.62	8.45	NA	3.47	9570	<0.500	32.8	<2.00	32.8	76.1	13.7	0.0225	21.4	<2.00	<1.00	65.5
9/8/2021	Pipeline	-1.4	20210908 - B36 (PH09@16")	0.4	0.703	3.82	8.04	NA	3.09	1470	0.357	35.4	<2.00	35.4	38.9	18.7	0.0229	21.9	2.04	<1.00	50.7
9/8/2021	Pipeline	-1	20210908 - B36 (PH08@12")	0.9	0.415	2.58	8.34	NA	3.07	1060	0.296	49.3	<2.00	49.3	17.9	13.1	0.0183	26.4	0.791	<1.00	54.8
9/8/2021	Pipeline	-1	20210908 - B36 (PH03@12")	0.1	0.202	1.24	8.19	NA	2.53	3300	0.0720	32.0	<2.00	32.0	18.5	13.4	0.0576	20.4	1.75	<1.00	46.2
9/8/2021	Pipeline	-0.8	20210908 - B36 (PH12@8")	0.6	1.130	13.2	8.75	NA	3.13	1540	0.282	39.9	<2.00	39.9	19.8	14.4	<0.0400	24.9	<2.00	<1.00	47.9
9/8/2021	Pipeline	-2	20210908 - B36 (PH07@24")	0.1	0.371	1.23	8.12	NA	2.43	712	0.316	44.2	<2.00	44.2	15.0	14.1	<0.0400	25.5	1.20	<1.00	46.3
9/8/2021	Pipeline	-0.8	20210908 - B36 (PH11@8")	0.6	0.202	1.88	>13	NA	2.48	852	0.378	38.8	<2.00	38.8	16.5	12.9	0.0543	22.9	<2.00	<1.00	49.4
9/8/2021	Pipeline	-1	20210908 - B36 (PH01@12")	1.6	0.146	0.881	8.45	NA	3.21	816	0.407	33.7	<2.00	33.7	18.5	13.7	0.0600	24.9	1.64	<1.00	47.2
9/8/2021	Pipeline	-0.7	20210908 - B36 (PH04@7")	1.2	0.734	4.32	8.44	NA	3.88	618	0.424	40.0	<2.00	40.0	16.1	15.7	0.0245	33.2	2.04	<1.00	49.8
9/8/2021	Pipeline	-0.9	20210908 - B36 (PH06@9")	0.4	0.256	0.485	7.06	NA	2.91	371	0.248	41.7	<2.00	41.7	13.5	13.6	0.0208	24.3	0.862	<1.00	47.7
9/8/2021	Pipeline	-0.8	20210908 - B36 (PH02@8")	0.7	0.595	7.88	8.82	NA	2.24	1030	0.311	32.9	<2.00	32.9	16.4	13.9	0.0294	19.9	0.874	<1.00	43.8
10/7/2021	Background	-1.5	20211007-B36-496(BGS@1.5')	NA	0.148	0.122	8.05	NA	5.71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/7/2021	Background	-2	20211007-B36-496(BGS_2@2')	NA	0.151	0.201	7.35	NA	3.68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/7/2021	Background	-3	20211007-B36-496(BGSW@3')	NA	0.192	0.147	7.97	NA	4.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Caerus Oil and Gas

Sample Delivery Group: L1549633
Samples Received: 10/22/2022
Project Number:
Description: B36 496 PH05 Historical Release
Site: B36 496
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



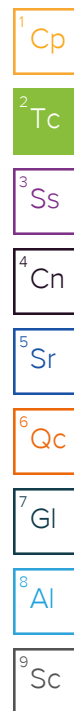
Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

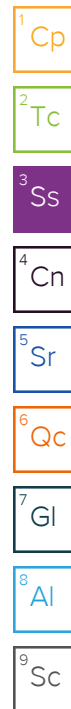
20221020-B36_PH05-ESW@3' L1549633-01 Solid

Collected by
Andrew Smith

Collected date/time
10/20/22 09:00

Received date/time
10/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1953995	1	11/07/22 12:40	11/07/22 12:40	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1949702	1	10/29/22 01:34	11/01/22 02:03	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1951177	1	10/29/22 14:00	10/29/22 16:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1948680	1	10/25/22 12:05	10/26/22 11:30	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1950986	1	11/05/22 17:35	11/07/22 11:15	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1949035	1	10/26/22 11:39	10/31/22 19:52	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1950987	5	11/05/22 17:51	11/06/22 20:37	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1950020	1	10/26/22 17:06	10/30/22 00:46	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1950539	1	10/26/22 17:06	10/28/22 15:33	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1951516	1	10/26/22 17:06	10/30/22 19:16	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1949800	10	10/27/22 23:11	10/28/22 12:05	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1949747	1	10/28/22 04:18	10/28/22 20:34	JNJ	Mt. Juliet, TN



CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.29		1	11/07/2022 12:40	WG1953995

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	11/01/2022 02:03	WG1949702

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.12	T8	1	10/29/2022 16:00	WG1951177

Sample Narrative:

L1549633-01 WG1951177: 8.12 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	241		10.0	1	10/26/2022 11:30	WG1948680

Sample Narrative:

L1549633-01 WG1948680: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	3120		0.500	1	11/07/2022 11:15	WG1950986
Cadmium	ND		0.500	1	11/07/2022 11:15	WG1950986
Copper	19.2		2.00	1	11/07/2022 11:15	WG1950986
Lead	12.4		0.500	1	11/07/2022 11:15	WG1950986
Nickel	18.7		2.00	1	11/07/2022 11:15	WG1950986
Selenium	ND		2.00	1	11/07/2022 11:15	WG1950986
Silver	ND		1.00	1	11/07/2022 11:15	WG1950986
Zinc	42.5		5.00	1	11/07/2022 11:15	WG1950986

Metals (ICP) by Method 6010B-NE493 Ch 2

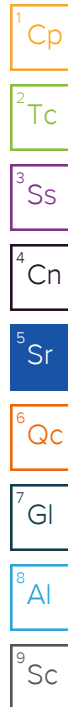
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.555		0.200	1	10/31/2022 19:52	WG1949035

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.02		1.00	5	11/06/2022 20:37	WG1950987

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.340		0.100	1	10/30/2022 00:46	WG1950020
(S) a,a,a-Trifluorotoluene(FID)	95.1		77.0-120		10/30/2022 00:46	WG1950020



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/28/2022 15:33	WG1950539
Toluene	0.0823		0.00500	1	10/30/2022 19:16	WG1951516
Ethylbenzene	0.00958		0.00250	1	10/30/2022 19:16	WG1951516
Xylenes, Total	0.112		0.00650	1	10/30/2022 19:16	WG1951516
1,2,4-Trimethylbenzene	0.0179		0.00500	1	10/30/2022 19:16	WG1951516
1,3,5-Trimethylbenzene	0.0283		0.00500	1	10/30/2022 19:16	WG1951516
(S) Toluene-d8	121		75.0-131		10/28/2022 15:33	WG1950539
(S) Toluene-d8	104		75.0-131		10/30/2022 19:16	WG1951516
(S) 4-Bromofluorobenzene	92.9		67.0-138		10/28/2022 15:33	WG1950539
(S) 4-Bromofluorobenzene	98.4		67.0-138		10/30/2022 19:16	WG1951516
(S) 1,2-Dichloroethane-d4	87.8		70.0-130		10/28/2022 15:33	WG1950539
(S) 1,2-Dichloroethane-d4	93.9		70.0-130		10/30/2022 19:16	WG1951516

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		40.0	10	10/28/2022 12:05	WG1949800
C28-C36 Motor Oil Range	97.1		40.0	10	10/28/2022 12:05	WG1949800
(S) o-Terphenyl	90.4		18.0-148		10/28/2022 12:05	WG1949800

Sample Narrative:

L1549633-01 WG1949800: Cannot run at lower dilution due to viscosity of extract

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	10/28/2022 20:34	WG1949747
Anthracene	ND		0.00600	1	10/28/2022 20:34	WG1949747
Benzo(a)anthracene	0.0323		0.00600	1	10/28/2022 20:34	WG1949747
Benzo(b)fluoranthene	0.156		0.00600	1	10/28/2022 20:34	WG1949747
Benzo(k)fluoranthene	0.0402		0.00600	1	10/28/2022 20:34	WG1949747
Benzo(a)pyrene	0.0699		0.00600	1	10/28/2022 20:34	WG1949747
Chrysene	0.0357		0.00600	1	10/28/2022 20:34	WG1949747
Dibenz(a,h)anthracene	0.0348		0.00600	1	10/28/2022 20:34	WG1949747
Fluoranthene	0.0224		0.00600	1	10/28/2022 20:34	WG1949747
Fluorene	ND		0.00600	1	10/28/2022 20:34	WG1949747
Indeno(1,2,3-cd)pyrene	0.0820		0.00600	1	10/28/2022 20:34	WG1949747
1-Methylnaphthalene	ND		0.0200	1	10/28/2022 20:34	WG1949747
2-Methylnaphthalene	0.0351		0.0200	1	10/28/2022 20:34	WG1949747
Naphthalene	ND		0.0200	1	10/28/2022 20:34	WG1949747
Pyrene	0.0140		0.00600	1	10/28/2022 20:34	WG1949747
(S) p-Terphenyl-d14	81.3		23.0-120		10/28/2022 20:34	WG1949747
(S) Nitrobenzene-d5	100		14.0-149		10/28/2022 20:34	WG1949747
(S) 2-Fluorobiphenyl	82.8		34.0-125		10/28/2022 20:34	WG1949747

Method Blank (MB)

(MB) R3858141-1 10/31/22 23:25

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	0.387	⬇	0.255	1.00

L1549426-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1549426-02 11/01/22 00:30 • (DUP) R3858141-3 11/01/22 00:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

L1549430-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1549430-03 11/01/22 00:56 • (DUP) R3858141-4 11/01/22 01:01

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3858141-2 10/31/22 23:33

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.6	106	80.0-120	

L1549439-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549439-01 11/01/22 01:32 • (MS) R3858141-5 11/01/22 01:37 • (MSD) R3858141-6 11/01/22 01:43

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	ND	18.6	20.0	93.2	100	1	75.0-125			7.26	20

L1549439-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1549439-01 11/01/22 01:32 • (MS) R3858141-8 11/01/22 01:53

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	646	ND	598	92.6	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1549652-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1549652-01 10/29/22 16:00 • (DUP) R3854591-2 10/29/22 16:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.67	7.67	1	0.000		1

Sample Narrative:

OS: 7.67 at 20.6C

DUP: 7.67 at 20.7C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1549685-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1549685-10 10/29/22 16:00 • (DUP) R3854591-3 10/29/22 16:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.58	8.57	1	0.117		1

Sample Narrative:

OS: 8.58 at 20.2C

DUP: 8.57 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3854591-1 10/29/22 16:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.91	99.1	99.0-101	

Sample Narrative:

LCS: 9.91 at 20.1C

Method Blank (MB)

(MB) R3853098-1 10/26/22 11:30

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1549430-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1549430-02 10/26/22 11:30 • (DUP) R3853098-3 10/26/22 11:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	268	268	1	0.149		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1549457-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1549457-02 10/26/22 11:30 • (DUP) R3853098-4 10/26/22 11:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	205	203	1	1.03		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3853098-2 10/26/22 11:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1130	101	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3857786-1 11/07/22 10:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	0.503	U	0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3857786-2 11/07/22 10:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	100	100	80.0-120	
Cadmium	100	99.4	99.4	80.0-120	
Copper	100	105	105	80.0-120	
Lead	100	94.1	94.1	80.0-120	
Nickel	100	93.1	93.1	80.0-120	
Selenium	100	98.3	98.3	80.0-120	
Silver	20.0	18.7	93.5	80.0-120	
Zinc	100	95.2	95.2	80.0-120	

L1549429-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549429-01 11/07/22 10:26 • (MS) R3857786-5 11/07/22 10:34 • (MSD) R3857786-6 11/07/22 10:37

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	1340	1510	1990	172	648	1	75.0-125	U	J3 V	27.2	20
Cadmium	100	ND	103	112	103	112	1	75.0-125			7.91	20
Copper	100	11.6	123	131	111	120	1	75.0-125			6.71	20
Lead	100	10.1	110	115	99.9	105	1	75.0-125			4.21	20
Nickel	100	14.6	111	122	96.0	107	1	75.0-125			9.48	20
Selenium	100	ND	98.0	106	98.0	106	1	75.0-125			7.53	20
Silver	20.0	ND	18.8	20.6	94.0	103	1	75.0-125			9.25	20
Zinc	100	47.1	137	141	89.6	93.7	1	75.0-125			2.99	20

Method Blank (MB)

(MB) R3855267-1 10/31/22 19:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3855267-2 10/31/22 19:44 • (LCSD) R3855267-3 10/31/22 19:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.992	1.01	99.2	101	80.0-120			1.78	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3857571-1 11/06/22 19:29

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3857571-2 11/06/22 19:33

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	96.5	96.5	80.0-120	

L1549429-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549429-01 11/06/22 19:36 • (MS) R3857571-5 11/06/22 19:45 • (MSD) R3857571-6 11/06/22 19:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	100	3.17	98.2	109	95.1	105	5	75.0-125			10.1	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3855164-2 10/29/22 18:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0243	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	99.2			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3855164-1 10/29/22 17:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.44	98.9	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			102	77.0-120	

L1549429-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549429-01 10/29/22 19:29 • (MS) R3855164-3 10/30/22 02:38 • (MSD) R3855164-4 10/30/22 03:01

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	2.99	3.12	53.4	55.7	1	10.0-151			4.26	28
(S) a,a,a-Trifluorotoluene(FID)					97.1	95.4		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3854698-2 10/28/22 11:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
(S) Toluene-d8	115			75.0-131
(S) 4-Bromofluorobenzene	96.4			67.0-138
(S) 1,2-Dichloroethane-d4	97.5			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3854698-1 10/28/22 10:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.102	81.6	70.0-123	
(S) Toluene-d8			110	75.0-131	
(S) 4-Bromofluorobenzene			98.8	67.0-138	
(S) 1,2-Dichloroethane-d4			99.6	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3854965-3 10/30/22 17:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	108			75.0-131
(S) 4-Bromofluorobenzene	107			67.0-138
(S) 1,2-Dichloroethane-d4	92.2			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3854965-1 10/30/22 16:26 • (LCSD) R3854965-2 10/30/22 16:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Toluene	0.125	0.129	0.126	103	101	75.0-121			2.35	20
Ethylbenzene	0.125	0.122	0.118	97.6	94.4	74.0-126			3.33	20
Xylenes, Total	0.375	0.377	0.362	101	96.5	72.0-127			4.06	20
1,2,4-Trimethylbenzene	0.125	0.139	0.139	111	111	70.0-126			0.000	20
1,3,5-Trimethylbenzene	0.125	0.121	0.125	96.8	100	73.0-127			3.25	20
(S) Toluene-d8				102	99.4	75.0-131				
(S) 4-Bromofluorobenzene				108	106	67.0-138				
(S) 1,2-Dichloroethane-d4				96.6	102	70.0-130				

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R3854328-1 10/28/22 08:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	78.8			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3854328-2 10/28/22 08:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	40.4	80.8	50.0-150	
(S) o-Terphenyl			85.1	18.0-148	

L1549633-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549633-01 10/28/22 12:05 • (MS) R3854328-3 10/28/22 12:18 • (MSD) R3854328-4 10/28/22 12:31

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	47.7	ND	67.0	73.0	64.8	77.5	10	50.0-150			8.57	20
(S) o-Terphenyl					88.1	98.4		18.0-148				

Sample Narrative:

OS: Cannot run at lower dilution due to viscosity of extract

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R3854869-2 10/28/22 13:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	83.8			23.0-120
(S) Nitrobenzene-d5	90.2			14.0-149
(S) 2-Fluorobiphenyl	84.9			34.0-125

1
Cp

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Tc

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Ss

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Cn

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Qc

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Gl

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Al

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Sc

Laboratory Control Sample (LCS)

(LCS) R3854869-1 10/28/22 13:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0668	83.5	50.0-120	
Anthracene	0.0800	0.0624	78.0	50.0-126	
Benzo(a)anthracene	0.0800	0.0657	82.1	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0636	79.5	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0614	76.8	49.0-125	
Benzo(a)pyrene	0.0800	0.0571	71.4	42.0-120	
Chrysene	0.0800	0.0687	85.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0623	77.9	47.0-125	
Fluoranthene	0.0800	0.0686	85.8	49.0-129	
Fluorene	0.0800	0.0689	86.1	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0634	79.3	46.0-125	
1-Methylnaphthalene	0.0800	0.0699	87.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0699	87.4	50.0-120	
Naphthalene	0.0800	0.0694	86.8	50.0-120	
Pyrene	0.0800	0.0649	81.1	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3854869-1 10/28/22 13:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			83.5	23.0-120	
(S) Nitrobenzene-d5			94.1	14.0-149	
(S) 2-Fluorobiphenyl			86.5	34.0-125	

L1549555-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1549555-01 10/28/22 18:12 • (MS) R3854869-3 10/28/22 18:30 • (MSD) R3854869-4 10/28/22 18:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Acenaphthene	0.0760	ND	0.0539	0.0551	70.9	72.5	1	14.0-127			2.20	27
Anthracene	0.0760	ND	0.0473	0.0496	62.2	65.3	1	10.0-145			4.75	30
Benzo(a)anthracene	0.0760	ND	0.0482	0.0511	63.4	67.2	1	10.0-139			5.84	30
Benzo(b)fluoranthene	0.0760	ND	0.0495	0.0518	65.1	68.2	1	10.0-140			4.54	36
Benzo(k)fluoranthene	0.0760	ND	0.0497	0.0524	65.4	68.9	1	10.0-137			5.29	31
Benzo(a)pyrene	0.0760	ND	0.0524	0.0546	68.9	71.8	1	10.0-141			4.11	31
Chrysene	0.0760	ND	0.0554	0.0573	72.9	75.4	1	10.0-145			3.37	30
Dibenz(a,h)anthracene	0.0760	ND	0.0486	0.0513	63.9	67.5	1	10.0-132			5.41	31
Fluoranthene	0.0760	ND	0.0530	0.0559	69.7	73.6	1	10.0-153			5.33	33
Fluorene	0.0760	ND	0.0543	0.0557	71.4	73.3	1	11.0-130			2.55	29
Indeno(1,2,3-cd)pyrene	0.0760	ND	0.0491	0.0507	64.6	66.7	1	10.0-137			3.21	32
1-Methylnaphthalene	0.0760	ND	0.0582	0.0605	76.6	79.6	1	10.0-142			3.88	28
2-Methylnaphthalene	0.0760	ND	0.0587	0.0608	77.2	80.0	1	10.0-137			3.51	28
Naphthalene	0.0760	ND	0.0586	0.0612	77.1	80.5	1	10.0-135			4.34	27
Pyrene	0.0760	ND	0.0534	0.0554	70.3	72.9	1	10.0-148			3.68	35
(S) p-Terphenyl-d14					71.6	77.4		23.0-120				
(S) Nitrobenzene-d5					75.9	81.7		14.0-149				
(S) 2-Fluorobiphenyl					75.1	81.6		34.0-125				

Cp

Tc

Ss

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GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

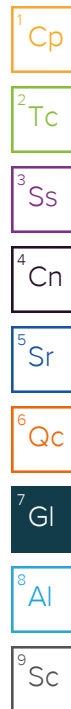
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

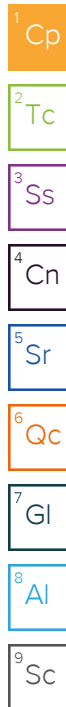
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Non Conformance(s): YES / NO	Page: _____ of: _____
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September 20, 2021



Caerus Oil and Gas

Sample Delivery Group: L1401867
Samples Received: 09/10/2021
Project Number:
Description: B36 Historical
Site: B36
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

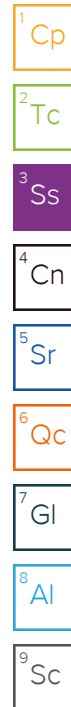
20210908-B36(PH01@12") L1401867-01 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 14:00

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 21:59	09/16/21 21:59	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 20:59	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:13	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1740122	1	09/15/21 13:00	09/15/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1738858	1	09/12/21 12:00	09/12/21 16:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:15	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 20:59	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 21:38	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 02:44	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740113	1	09/14/21 11:02	09/14/21 17:51	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 14:50	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 08:48	AAT	Mt. Juliet, TN



20210908-B36(PH02@8") L1401867-02 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 14:10

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:02	09/16/21 22:02	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 21:02	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:13	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1740122	1	09/15/21 13:00	09/15/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:18	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 21:02	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 21:42	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 03:05	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740113	1	09/14/21 11:02	09/14/21 18:10	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 13:00	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 09:08	AAT	Mt. Juliet, TN

20210908-B36(PH03@12") L1401867-03 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 14:20

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:05	09/16/21 22:05	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 21:04	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:14	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1740122	1	09/15/21 13:00	09/15/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:20	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 21:04	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 21:45	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 03:27	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740113	1	09/14/21 11:02	09/14/21 18:29	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 15:45	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 15:26	AAT	Mt. Juliet, TN

SAMPLE SUMMARY

20210908-B36(PH04@7") L1401867-04 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 14:30

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:07	09/16/21 22:07	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 21:07	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:14	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1740122	1	09/15/21 13:00	09/15/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:23	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 21:07	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 21:48	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 03:48	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740113	1	09/14/21 11:02	09/14/21 18:48	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 13:14	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 09:28	AAT	Mt. Juliet, TN

20210908-B36(PH05@22") L1401867-05 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 14:40

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:10	09/16/21 22:10	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 21:15	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:15	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1740122	1	09/15/21 13:00	09/15/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:25	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 21:15	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	5	09/12/21 17:21	09/17/21 11:20	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 21:52	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 04:10	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740113	1	09/14/21 11:02	09/14/21 19:07	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	20	09/14/21 05:25	09/14/21 16:54	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 15:46	AAT	Mt. Juliet, TN

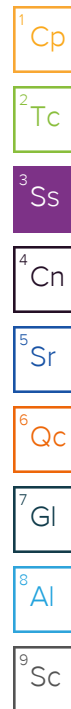
20210908-B36(PH06@9") L1401867-06 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 14:50

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:13	09/16/21 22:13	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 21:18	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:16	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1740122	1	09/15/21 13:00	09/15/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:33	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 21:18	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 21:55	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 04:31	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740113	1	09/14/21 11:02	09/14/21 19:26	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 12:46	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 09:48	AAT	Mt. Juliet, TN



SAMPLE SUMMARY

20210908-B36(PH07@24") L1401867-07 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 15:05

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:15	09/16/21 22:15	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 21:21	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:16	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1740122	1	09/15/21 13:00	09/15/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:35	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 21:21	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 21:58	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 04:53	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740113	1	09/14/21 11:02	09/14/21 19:45	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 18:33	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 10:48	AAT	Mt. Juliet, TN



20210908-B36(PH08@12") L1401867-08 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 15:15

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:18	09/16/21 22:18	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 21:23	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:17	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1740122	1	09/15/21 13:00	09/15/21 15:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:38	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 21:23	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 22:02	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 05:14	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740734	1	09/14/21 11:02	09/15/21 16:08	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 14:36	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 11:08	AAT	Mt. Juliet, TN

20210908-B36(PH09@16") L1401867-09 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 15:25

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:21	09/16/21 22:21	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 21:26	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:22	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1741187	1	09/16/21 07:00	09/16/21 10:00	MRM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:40	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 21:26	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 22:22	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 05:36	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740734	1	09/14/21 11:02	09/15/21 16:27	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 15:59	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 11:27	AAT	Mt. Juliet, TN

SAMPLE SUMMARY

20210908-B36(PH10@10") L1401867-10 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 15:35

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:29	09/16/21 22:29	CCE	Mt. Juliet, TN
Calculated Results	WG1738664	1	09/12/21 17:21	09/16/21 21:29	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:26	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1741187	1	09/16/21 07:00	09/16/21 10:00	MRM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:43	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	1	09/12/21 17:21	09/16/21 21:29	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738664	5	09/12/21 17:21	09/17/21 11:22	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 22:25	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 05:58	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740734	1	09/14/21 11:02	09/15/21 16:46	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 16:40	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 11:47	AAT	Mt. Juliet, TN



20210908-B36(PH11@8") L1401867-11 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 15:45

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:31	09/16/21 22:31	CCE	Mt. Juliet, TN
Calculated Results	WG1738982	1	09/13/21 06:11	09/17/21 02:14	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:27	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1740229	1	09/14/21 22:00	09/14/21 22:45	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:46	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738982	1	09/13/21 06:11	09/17/21 02:14	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 22:29	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 06:19	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740749	1	09/14/21 11:02	09/15/21 16:28	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 15:04	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 12:07	AAT	Mt. Juliet, TN

20210908-B36(PH12@8") L1401867-12 Solid

Collected by
Andrew Smith

Collected date/time
09/08/21 15:55

Received date/time
09/10/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1738914	1	09/16/21 22:34	09/16/21 22:34	CCE	Mt. Juliet, TN
Calculated Results	WG1738982	1	09/13/21 06:11	09/17/21 02:17	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1739468	1	09/13/21 18:00	09/14/21 21:31	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1741187	1	09/16/21 07:00	09/16/21 10:00	MRM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1739083	1	09/14/21 16:00	09/14/21 18:00	BMD	Mt. Juliet, TN
Mercury by Method 7471A	WG1738679	1	09/11/21 12:28	09/13/21 10:48	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1738982	1	09/13/21 06:11	09/17/21 02:17	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1739972	5	09/15/21 06:37	09/15/21 22:32	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1740290	1	09/14/21 11:02	09/16/21 06:41	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1740749	1	09/14/21 11:02	09/15/21 16:47	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1739557	1	09/14/21 05:25	09/14/21 15:17	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1739556	1	09/14/21 22:53	09/15/21 12:27	AAT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	0.881		1	09/16/2021 21:59	WG1738914

Calculated Results

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium,Trivalent	33.7		0.133	1.00	1	09/16/2021 20:59	WG1738664

Wet Chemistry by Method 3060A/7196A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium,Hexavalent	U		0.640	2.00	1	09/14/2021 21:13	WG1739468

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	8.45	T8	1	09/15/2021 15:00	WG1740122

Sample Narrative:

L1401867-01 WG1740122: 8.45 at 20.4C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	146		10.0	1	09/12/2021 16:00	WG1738858

Sample Narrative:

L1401867-01 WG1738858: at 25C

Mercury by Method 7471A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Mercury	0.0600		0.0180	0.0400	1	09/13/2021 10:15	WG1738679

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	816		0.0852	0.500	1	09/16/2021 20:59	WG1738664
Cadmium	0.407	J	0.0471	0.500	1	09/16/2021 20:59	WG1738664
Chromium	33.7		0.133	1.00	1	09/16/2021 20:59	WG1738664
Copper	18.5		0.400	2.00	1	09/16/2021 20:59	WG1738664
Lead	13.7		0.208	0.500	1	09/16/2021 20:59	WG1738664
Nickel	24.9		0.132	2.00	1	09/16/2021 20:59	WG1738664
Selenium	1.64	J	0.764	2.00	1	09/16/2021 20:59	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 20:59	WG1738664
Zinc	47.2		0.832	5.00	1	09/16/2021 20:59	WG1738664

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	3.21		0.100	1.00	5	09/15/2021 21:38	WG1739972

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0251	J	0.0217	0.100	1	09/16/2021 02:44	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			77.0-120		09/16/2021 02:44	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2021 17:51	WG1740113
Toluene	U		0.00130	0.00500	1	09/14/2021 17:51	WG1740113
Ethylbenzene	U		0.000737	0.00250	1	09/14/2021 17:51	WG1740113
Total Xylenes	0.00205	J	0.000880	0.00650	1	09/14/2021 17:51	WG1740113
(S) Toluene-d8	100			75.0-131		09/14/2021 17:51	WG1740113
(S) 4-Bromofluorobenzene	103			67.0-138		09/14/2021 17:51	WG1740113
(S) 1,2-Dichloroethane-d4	114			70.0-130		09/14/2021 17:51	WG1740113

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	4.78		0.769	4.00	1	09/14/2021 14:50	WG1739557
(S) <i>o</i> -Terphenyl	46.4			18.0-148		09/14/2021 14:50	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 08:48	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 08:48	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 08:48	WG1739556
Benzo(a)anthracene	U		0.00173	0.00600	1	09/15/2021 08:48	WG1739556
Benzo(a)pyrene	U		0.00179	0.00600	1	09/15/2021 08:48	WG1739556
Benzo(b)fluoranthene	0.00661		0.00153	0.00600	1	09/15/2021 08:48	WG1739556
Benzo(g,h,i)perylene	0.00335	J	0.00177	0.00600	1	09/15/2021 08:48	WG1739556
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/15/2021 08:48	WG1739556
Chrysene	U		0.00232	0.00600	1	09/15/2021 08:48	WG1739556
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/15/2021 08:48	WG1739556
Fluoranthene	U		0.00227	0.00600	1	09/15/2021 08:48	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 08:48	WG1739556
Indeno(1,2,3-cd)pyrene	0.00300	J	0.00181	0.00600	1	09/15/2021 08:48	WG1739556
Naphthalene	U		0.00408	0.0200	1	09/15/2021 08:48	WG1739556
Phenanthrene	0.00237	J	0.00231	0.00600	1	09/15/2021 08:48	WG1739556
Pyrene	U		0.00200	0.00600	1	09/15/2021 08:48	WG1739556
1-Methylnaphthalene	U		0.00449	0.0200	1	09/15/2021 08:48	WG1739556
2-Methylnaphthalene	U		0.00427	0.0200	1	09/15/2021 08:48	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 08:48	WG1739556
(S) <i>p</i> -Terphenyl-d14	92.6			23.0-120		09/15/2021 08:48	WG1739556
(S) Nitrobenzene-d5	71.5			14.0-149		09/15/2021 08:48	WG1739556
(S) 2-Fluorobiphenyl	77.7			34.0-125		09/15/2021 08:48	WG1739556

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.88		1	09/16/2021 22:02	WG1738914

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	32.9		0.133	1.00	1	09/16/2021 21:02	WG1738664

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	09/14/2021 21:13	WG1739468

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.82	T8	1	09/15/2021 15:00	WG1740122

Sample Narrative:

L1401867-02 WG1740122: 8.82 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	595		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-02 WG1739083: at 25C

Mercury by Method 7471A

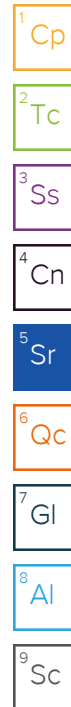
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0294	J	0.0180	0.0400	1	09/13/2021 10:18	WG1738679

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1030		0.0852	0.500	1	09/16/2021 21:02	WG1738664
Cadmium	0.311	J	0.0471	0.500	1	09/16/2021 21:02	WG1738664
Chromium	32.9		0.133	1.00	1	09/16/2021 21:02	WG1738664
Copper	16.4		0.400	2.00	1	09/16/2021 21:02	WG1738664
Lead	13.9		0.208	0.500	1	09/16/2021 21:02	WG1738664
Nickel	19.9		0.132	2.00	1	09/16/2021 21:02	WG1738664
Selenium	0.874	J	0.764	2.00	1	09/16/2021 21:02	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 21:02	WG1738664
Zinc	43.8		0.832	5.00	1	09/16/2021 21:02	WG1738664

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.24		0.100	1.00	5	09/15/2021 21:42	WG1739972



Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/16/2021 03:05	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	108			77.0-120		09/16/2021 03:05	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2021 18:10	WG1740113
Toluene	U		0.00130	0.00500	1	09/14/2021 18:10	WG1740113
Ethylbenzene	U		0.000737	0.00250	1	09/14/2021 18:10	WG1740113
Total Xylenes	0.00147	J	0.000880	0.00650	1	09/14/2021 18:10	WG1740113
(S) Toluene-d8	101			75.0-131		09/14/2021 18:10	WG1740113
(S) 4-Bromofluorobenzene	105			67.0-138		09/14/2021 18:10	WG1740113
(S) 1,2-Dichloroethane-d4	113			70.0-130		09/14/2021 18:10	WG1740113

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	1.76	J	0.769	4.00	1	09/14/2021 13:00	WG1739557
(S) <i>o</i> -Terphenyl	43.7			18.0-148		09/14/2021 13:00	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 09:08	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 09:08	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 09:08	WG1739556
Benzo(a)anthracene	U		0.00173	0.00600	1	09/15/2021 09:08	WG1739556
Benzo(a)pyrene	U		0.00179	0.00600	1	09/15/2021 09:08	WG1739556
Benzo(b)fluoranthene	U		0.00153	0.00600	1	09/15/2021 09:08	WG1739556
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	09/15/2021 09:08	WG1739556
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/15/2021 09:08	WG1739556
Chrysene	U		0.00232	0.00600	1	09/15/2021 09:08	WG1739556
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/15/2021 09:08	WG1739556
Fluoranthene	U		0.00227	0.00600	1	09/15/2021 09:08	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 09:08	WG1739556
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/15/2021 09:08	WG1739556
Naphthalene	U		0.00408	0.0200	1	09/15/2021 09:08	WG1739556
Phenanthrene	U		0.00231	0.00600	1	09/15/2021 09:08	WG1739556
Pyrene	U		0.00200	0.00600	1	09/15/2021 09:08	WG1739556
1-Methylnaphthalene	U		0.00449	0.0200	1	09/15/2021 09:08	WG1739556
2-Methylnaphthalene	U		0.00427	0.0200	1	09/15/2021 09:08	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 09:08	WG1739556
(S) <i>p</i> -Terphenyl-d14	86.4			23.0-120		09/15/2021 09:08	WG1739556
(S) Nitrobenzene-d5	70.2			14.0-149		09/15/2021 09:08	WG1739556
(S) 2-Fluorobiphenyl	74.8			34.0-125		09/15/2021 09:08	WG1739556

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.24		1	09/16/2021 22:05	WG1738914

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	32.0		0.133	1.00	1	09/16/2021 21:04	WG1738664

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	09/14/2021 21:14	WG1739468

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.19	T8	1	09/15/2021 15:00	WG1740122

Sample Narrative:

L1401867-03 WG1740122: 8.19 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	202		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-03 WG1739083: at 25C

Mercury by Method 7471A

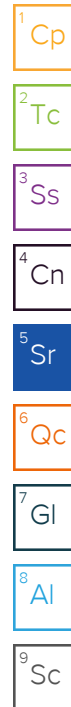
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0576		0.0180	0.0400	1	09/13/2021 10:20	WG1738679

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	3300		0.0852	0.500	1	09/16/2021 21:04	WG1738664
Cadmium	0.0720	J	0.0471	0.500	1	09/16/2021 21:04	WG1738664
Chromium	32.0		0.133	1.00	1	09/16/2021 21:04	WG1738664
Copper	18.5		0.400	2.00	1	09/16/2021 21:04	WG1738664
Lead	13.4		0.208	0.500	1	09/16/2021 21:04	WG1738664
Nickel	20.4		0.132	2.00	1	09/16/2021 21:04	WG1738664
Selenium	1.75	J	0.764	2.00	1	09/16/2021 21:04	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 21:04	WG1738664
Zinc	46.2		0.832	5.00	1	09/16/2021 21:04	WG1738664

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.53		0.100	1.00	5	09/15/2021 21:45	WG1739972



Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0357	J	0.0217	0.100	1	09/16/2021 03:27	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			77.0-120		09/16/2021 03:27	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2021 18:29	WG1740113
Toluene	0.00200	J	0.00130	0.00500	1	09/14/2021 18:29	WG1740113
Ethylbenzene	U		0.000737	0.00250	1	09/14/2021 18:29	WG1740113
Total Xylenes	0.00527	J	0.000880	0.00650	1	09/14/2021 18:29	WG1740113
(S) Toluene-d8	101			75.0-131		09/14/2021 18:29	WG1740113
(S) 4-Bromofluorobenzene	105			67.0-138		09/14/2021 18:29	WG1740113
(S) 1,2-Dichloroethane-d4	116			70.0-130		09/14/2021 18:29	WG1740113

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	11.7		0.769	4.00	1	09/14/2021 15:45	WG1739557
(S) <i>o</i> -Terphenyl	34.3			18.0-148		09/14/2021 15:45	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 15:26	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 15:26	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 15:26	WG1739556
Benzo(a)anthracene	0.0101		0.00173	0.00600	1	09/15/2021 15:26	WG1739556
Benzo(a)pyrene	0.0131		0.00179	0.00600	1	09/15/2021 15:26	WG1739556
Benzo(b)fluoranthene	0.0422		0.00153	0.00600	1	09/15/2021 15:26	WG1739556
Benzo(g,h,i)perylene	0.0232		0.00177	0.00600	1	09/15/2021 15:26	WG1739556
Benzo(k)fluoranthene	0.00903		0.00215	0.00600	1	09/15/2021 15:26	WG1739556
Chrysene	0.0112		0.00232	0.00600	1	09/15/2021 15:26	WG1739556
Dibenz(a,h)anthracene	0.00654		0.00172	0.00600	1	09/15/2021 15:26	WG1739556
Fluoranthene	0.00911		0.00227	0.00600	1	09/15/2021 15:26	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 15:26	WG1739556
Indeno(1,2,3-cd)pyrene	0.0194		0.00181	0.00600	1	09/15/2021 15:26	WG1739556
Naphthalene	0.0198	J	0.00408	0.0200	1	09/15/2021 15:26	WG1739556
Phenanthrene	0.0179		0.00231	0.00600	1	09/15/2021 15:26	WG1739556
Pyrene	0.00485	J	0.00200	0.00600	1	09/15/2021 15:26	WG1739556
1-Methylnaphthalene	0.0277		0.00449	0.0200	1	09/15/2021 15:26	WG1739556
2-Methylnaphthalene	0.0412		0.00427	0.0200	1	09/15/2021 15:26	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 15:26	WG1739556
(S) <i>p</i> -Terphenyl-d14	100			23.0-120		09/15/2021 15:26	WG1739556
(S) Nitrobenzene-d5	81.9			14.0-149		09/15/2021 15:26	WG1739556
(S) 2-Fluorobiphenyl	82.4			34.0-125		09/15/2021 15:26	WG1739556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.32		1	09/16/2021 22:07	WG1738914

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	40.0		0.133	1.00	1	09/16/2021 21:07	WG1738664

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	09/14/2021 21:14	WG1739468

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.44	T8	1	09/15/2021 15:00	WG1740122

Sample Narrative:

L1401867-04 WG1740122: 8.44 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	734		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-04 WG1739083: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0245	J	0.0180	0.0400	1	09/13/2021 10:23	WG1738679

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	618		0.0852	0.500	1	09/16/2021 21:07	WG1738664
Cadmium	0.424	J	0.0471	0.500	1	09/16/2021 21:07	WG1738664
Chromium	40.0		0.133	1.00	1	09/16/2021 21:07	WG1738664
Copper	16.1		0.400	2.00	1	09/16/2021 21:07	WG1738664
Lead	15.7		0.208	0.500	1	09/16/2021 21:07	WG1738664
Nickel	33.2		0.132	2.00	1	09/16/2021 21:07	WG1738664
Selenium	2.04		0.764	2.00	1	09/16/2021 21:07	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 21:07	WG1738664
Zinc	49.8		0.832	5.00	1	09/16/2021 21:07	WG1738664

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.88		0.100	1.00	5	09/15/2021 21:48	WG1739972

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/16/2021 03:48	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	109			77.0-120		09/16/2021 03:48	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2021 18:48	WG1740113
Toluene	U		0.00130	0.00500	1	09/14/2021 18:48	WG1740113
Ethylbenzene	U		0.000737	0.00250	1	09/14/2021 18:48	WG1740113
Total Xylenes	0.00107	J	0.000880	0.00650	1	09/14/2021 18:48	WG1740113
(S) Toluene-d8	100			75.0-131		09/14/2021 18:48	WG1740113
(S) 4-Bromofluorobenzene	104			67.0-138		09/14/2021 18:48	WG1740113
(S) 1,2-Dichloroethane-d4	117			70.0-130		09/14/2021 18:48	WG1740113

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	3.59	J	0.769	4.00	1	09/14/2021 13:14	WG1739557
(S) <i>o</i> -Terphenyl	48.0			18.0-148		09/14/2021 13:14	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 09:28	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 09:28	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 09:28	WG1739556
Benzo(a)anthracene	U		0.00173	0.00600	1	09/15/2021 09:28	WG1739556
Benzo(a)pyrene	U		0.00179	0.00600	1	09/15/2021 09:28	WG1739556
Benzo(b)fluoranthene	U		0.00153	0.00600	1	09/15/2021 09:28	WG1739556
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	09/15/2021 09:28	WG1739556
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/15/2021 09:28	WG1739556
Chrysene	U		0.00232	0.00600	1	09/15/2021 09:28	WG1739556
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/15/2021 09:28	WG1739556
Fluoranthene	U		0.00227	0.00600	1	09/15/2021 09:28	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 09:28	WG1739556
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/15/2021 09:28	WG1739556
Naphthalene	U		0.00408	0.0200	1	09/15/2021 09:28	WG1739556
Phenanthrene	U		0.00231	0.00600	1	09/15/2021 09:28	WG1739556
Pyrene	U		0.00200	0.00600	1	09/15/2021 09:28	WG1739556
1-Methylnaphthalene	U		0.00449	0.0200	1	09/15/2021 09:28	WG1739556
2-Methylnaphthalene	U		0.00427	0.0200	1	09/15/2021 09:28	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 09:28	WG1739556
(S) <i>p</i> -Terphenyl-d14	84.0			23.0-120		09/15/2021 09:28	WG1739556
(S) Nitrobenzene-d5	68.4			14.0-149		09/15/2021 09:28	WG1739556
(S) 2-Fluorobiphenyl	70.7			34.0-125		09/15/2021 09:28	WG1739556

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.71		1	09/16/2021 22:10	WG1738914

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	22.8		0.133	1.00	1	09/16/2021 21:15	WG1738664

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	09/14/2021 21:15	WG1739468

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.57	T8	1	09/15/2021 15:00	WG1740122

Sample Narrative:

L1401867-05 WG1740122: 8.57 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	253		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-05 WG1739083: at 25C

Mercury by Method 7471A

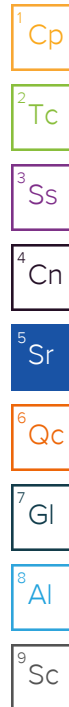
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0221	J	0.0180	0.0400	1	09/13/2021 10:25	WG1738679

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	5790		0.426	2.50	5	09/17/2021 11:20	WG1738664
Cadmium	U		0.0471	0.500	1	09/16/2021 21:15	WG1738664
Chromium	22.8		0.133	1.00	1	09/16/2021 21:15	WG1738664
Copper	14.7		0.400	2.00	1	09/16/2021 21:15	WG1738664
Lead	9.28		0.208	0.500	1	09/16/2021 21:15	WG1738664
Nickel	15.1		0.132	2.00	1	09/16/2021 21:15	WG1738664
Selenium	1.27	J	0.764	2.00	1	09/16/2021 21:15	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 21:15	WG1738664
Zinc	34.6		0.832	5.00	1	09/16/2021 21:15	WG1738664

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.74		0.100	1.00	5	09/15/2021 21:52	WG1739972



Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.109		0.0217	0.100	1	09/16/2021 04:10	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	104			77.0-120		09/16/2021 04:10	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000725	J	0.000467	0.00100	1	09/14/2021 19:07	WG1740113
Toluene	0.0112		0.00130	0.00500	1	09/14/2021 19:07	WG1740113
Ethylbenzene	0.00133	J	0.000737	0.00250	1	09/14/2021 19:07	WG1740113
Total Xylenes	0.0251		0.000880	0.00650	1	09/14/2021 19:07	WG1740113
(S) Toluene-d8	100			75.0-131		09/14/2021 19:07	WG1740113
(S) 4-Bromofluorobenzene	106			67.0-138		09/14/2021 19:07	WG1740113
(S) 1,2-Dichloroethane-d4	117			70.0-130		09/14/2021 19:07	WG1740113

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	53.2	J	15.4	80.0	20	09/14/2021 16:54	WG1739557
(S) <i>o</i> -Terphenyl	45.5	J7		18.0-148		09/14/2021 16:54	WG1739557

Sample Narrative:

L1401867-05 WG1739557: Cannot run at lower dilution due to viscosity of extract

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00549	J	0.00230	0.00600	1	09/15/2021 15:46	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 15:46	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 15:46	WG1739556
Benzo(a)anthracene	0.0449		0.00173	0.00600	1	09/15/2021 15:46	WG1739556
Benzo(a)pyrene	0.0702		0.00179	0.00600	1	09/15/2021 15:46	WG1739556
Benzo(b)fluoranthene	0.190		0.00153	0.00600	1	09/15/2021 15:46	WG1739556
Benzo(g,h,i)perylene	0.0940		0.00177	0.00600	1	09/15/2021 15:46	WG1739556
Benzo(k)fluoranthene	0.0448		0.00215	0.00600	1	09/15/2021 15:46	WG1739556
Chrysene	0.0490		0.00232	0.00600	1	09/15/2021 15:46	WG1739556
Dibenz(a,h)anthracene	0.0298		0.00172	0.00600	1	09/15/2021 15:46	WG1739556
Fluoranthene	0.0426		0.00227	0.00600	1	09/15/2021 15:46	WG1739556
Fluorene	0.00259	J	0.00205	0.00600	1	09/15/2021 15:46	WG1739556
Indeno(1,2,3-cd)pyrene	0.0846		0.00181	0.00600	1	09/15/2021 15:46	WG1739556
Naphthalene	0.0260		0.00408	0.0200	1	09/15/2021 15:46	WG1739556
Phenanthrene	0.0437		0.00231	0.00600	1	09/15/2021 15:46	WG1739556
Pyrene	0.0230		0.00200	0.00600	1	09/15/2021 15:46	WG1739556
1-Methylnaphthalene	0.0390		0.00449	0.0200	1	09/15/2021 15:46	WG1739556
2-Methylnaphthalene	0.0553		0.00427	0.0200	1	09/15/2021 15:46	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 15:46	WG1739556
(S) <i>p</i> -Terphenyl-d14	95.1			23.0-120		09/15/2021 15:46	WG1739556
(S) Nitrobenzene-d5	80.5			14.0-149		09/15/2021 15:46	WG1739556
(S) 2-Fluorobiphenyl	80.3			34.0-125		09/15/2021 15:46	WG1739556

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.485		1	09/16/2021 22:13	WG1738914

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	41.7		0.133	1.00	1	09/16/2021 21:18	WG1738664

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	09/14/2021 21:16	WG1739468

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.06	T8	1	09/15/2021 15:00	WG1740122

Sample Narrative:

L1401867-06 WG1740122: 7.06 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	256		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-06 WG1739083: at 25C

Mercury by Method 7471A

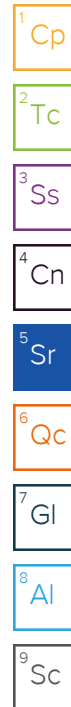
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0208	J	0.0180	0.0400	1	09/13/2021 10:33	WG1738679

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	371		0.0852	0.500	1	09/16/2021 21:18	WG1738664
Cadmium	0.248	J	0.0471	0.500	1	09/16/2021 21:18	WG1738664
Chromium	41.7		0.133	1.00	1	09/16/2021 21:18	WG1738664
Copper	13.5		0.400	2.00	1	09/16/2021 21:18	WG1738664
Lead	13.6		0.208	0.500	1	09/16/2021 21:18	WG1738664
Nickel	24.3		0.132	2.00	1	09/16/2021 21:18	WG1738664
Selenium	0.862	J	0.764	2.00	1	09/16/2021 21:18	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 21:18	WG1738664
Zinc	47.7		0.832	5.00	1	09/16/2021 21:18	WG1738664

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.91		0.100	1.00	5	09/15/2021 21:55	WG1739972



Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/16/2021 04:31	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	108			77.0-120		09/16/2021 04:31	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2021 19:26	WG1740113
Toluene	U		0.00130	0.00500	1	09/14/2021 19:26	WG1740113
Ethylbenzene	U		0.000737	0.00250	1	09/14/2021 19:26	WG1740113
Total Xylenes	0.000925	J	0.000880	0.00650	1	09/14/2021 19:26	WG1740113
(S) Toluene-d8	104			75.0-131		09/14/2021 19:26	WG1740113
(S) 4-Bromofluorobenzene	102			67.0-138		09/14/2021 19:26	WG1740113
(S) 1,2-Dichloroethane-d4	112			70.0-130		09/14/2021 19:26	WG1740113

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	1.85	J	0.769	4.00	1	09/14/2021 12:46	WG1739557
(S) <i>o</i> -Terphenyl	46.5			18.0-148		09/14/2021 12:46	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 09:48	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 09:48	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 09:48	WG1739556
Benzo(a)anthracene	U		0.00173	0.00600	1	09/15/2021 09:48	WG1739556
Benzo(a)pyrene	U		0.00179	0.00600	1	09/15/2021 09:48	WG1739556
Benzo(b)fluoranthene	U		0.00153	0.00600	1	09/15/2021 09:48	WG1739556
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	09/15/2021 09:48	WG1739556
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/15/2021 09:48	WG1739556
Chrysene	U		0.00232	0.00600	1	09/15/2021 09:48	WG1739556
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/15/2021 09:48	WG1739556
Fluoranthene	U		0.00227	0.00600	1	09/15/2021 09:48	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 09:48	WG1739556
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/15/2021 09:48	WG1739556
Naphthalene	U		0.00408	0.0200	1	09/15/2021 09:48	WG1739556
Phenanthrene	U		0.00231	0.00600	1	09/15/2021 09:48	WG1739556
Pyrene	U		0.00200	0.00600	1	09/15/2021 09:48	WG1739556
1-Methylnaphthalene	U		0.00449	0.0200	1	09/15/2021 09:48	WG1739556
2-Methylnaphthalene	U		0.00427	0.0200	1	09/15/2021 09:48	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 09:48	WG1739556
(S) <i>p</i> -Terphenyl-d14	90.4			23.0-120		09/15/2021 09:48	WG1739556
(S) Nitrobenzene-d5	67.4			14.0-149		09/15/2021 09:48	WG1739556
(S) 2-Fluorobiphenyl	75.3			34.0-125		09/15/2021 09:48	WG1739556

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	1.23		1	09/16/2021 22:15	WG1738914

Calculated Results

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium,Trivalent	44.2		0.133	1.00	1	09/16/2021 21:21	WG1738664

Wet Chemistry by Method 3060A/7196A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium,Hexavalent	U		0.640	2.00	1	09/14/2021 21:16	WG1739468

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	8.12	T8	1	09/15/2021 15:00	WG1740122

Sample Narrative:

L1401867-07 WG1740122: 8.12 at 20.4C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	371		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-07 WG1739083: at 25C

Mercury by Method 7471A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Mercury	U		0.0180	0.0400	1	09/13/2021 10:35	WG1738679

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	712		0.0852	0.500	1	09/16/2021 21:21	WG1738664
Cadmium	0.316	J	0.0471	0.500	1	09/16/2021 21:21	WG1738664
Chromium	44.2		0.133	1.00	1	09/16/2021 21:21	WG1738664
Copper	15.0		0.400	2.00	1	09/16/2021 21:21	WG1738664
Lead	14.1		0.208	0.500	1	09/16/2021 21:21	WG1738664
Nickel	25.5		0.132	2.00	1	09/16/2021 21:21	WG1738664
Selenium	1.20	J	0.764	2.00	1	09/16/2021 21:21	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 21:21	WG1738664
Zinc	46.3		0.832	5.00	1	09/16/2021 21:21	WG1738664

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	2.43		0.100	1.00	5	09/15/2021 21:58	WG1739972

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/16/2021 04:53	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	108			77.0-120		09/16/2021 04:53	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2021 19:45	WG1740113
Toluene	U		0.00130	0.00500	1	09/14/2021 19:45	WG1740113
Ethylbenzene	U		0.000737	0.00250	1	09/14/2021 19:45	WG1740113
Total Xylenes	0.00113	J	0.000880	0.00650	1	09/14/2021 19:45	WG1740113
(S) Toluene-d8	100			75.0-131		09/14/2021 19:45	WG1740113
(S) 4-Bromofluorobenzene	105			67.0-138		09/14/2021 19:45	WG1740113
(S) 1,2-Dichloroethane-d4	115			70.0-130		09/14/2021 19:45	WG1740113

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	10.4		0.769	4.00	1	09/14/2021 18:33	WG1739557
(S) <i>o</i> -Terphenyl	54.4			18.0-148		09/14/2021 18:33	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 10:48	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 10:48	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 10:48	WG1739556
Benzo(a)anthracene	U		0.00173	0.00600	1	09/15/2021 10:48	WG1739556
Benzo(a)pyrene	U		0.00179	0.00600	1	09/15/2021 10:48	WG1739556
Benzo(b)fluoranthene	0.00334	J	0.00153	0.00600	1	09/15/2021 10:48	WG1739556
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	09/15/2021 10:48	WG1739556
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/15/2021 10:48	WG1739556
Chrysene	U		0.00232	0.00600	1	09/15/2021 10:48	WG1739556
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/15/2021 10:48	WG1739556
Fluoranthene	U		0.00227	0.00600	1	09/15/2021 10:48	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 10:48	WG1739556
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/15/2021 10:48	WG1739556
Naphthalene	U		0.00408	0.0200	1	09/15/2021 10:48	WG1739556
Phenanthrene	U		0.00231	0.00600	1	09/15/2021 10:48	WG1739556
Pyrene	U		0.00200	0.00600	1	09/15/2021 10:48	WG1739556
1-Methylnaphthalene	U		0.00449	0.0200	1	09/15/2021 10:48	WG1739556
2-Methylnaphthalene	U		0.00427	0.0200	1	09/15/2021 10:48	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 10:48	WG1739556
(S) <i>p</i> -Terphenyl-d14	78.1			23.0-120		09/15/2021 10:48	WG1739556
(S) Nitrobenzene-d5	59.0			14.0-149		09/15/2021 10:48	WG1739556
(S) 2-Fluorobiphenyl	64.3			34.0-125		09/15/2021 10:48	WG1739556

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.58		1	09/16/2021 22:18	WG1738914

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	49.3		0.133	1.00	1	09/16/2021 21:23	WG1738664

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	09/14/2021 21:17	WG1739468

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.34	T8	1	09/15/2021 15:00	WG1740122

Sample Narrative:

L1401867-08 WG1740122: 8.34 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	415		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-08 WG1739083: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0183	J	0.0180	0.0400	1	09/13/2021 10:38	WG1738679

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1060		0.0852	0.500	1	09/16/2021 21:23	WG1738664
Cadmium	0.296	J	0.0471	0.500	1	09/16/2021 21:23	WG1738664
Chromium	49.3		0.133	1.00	1	09/16/2021 21:23	WG1738664
Copper	17.9		0.400	2.00	1	09/16/2021 21:23	WG1738664
Lead	13.1		0.208	0.500	1	09/16/2021 21:23	WG1738664
Nickel	26.4		0.132	2.00	1	09/16/2021 21:23	WG1738664
Selenium	0.791	J	0.764	2.00	1	09/16/2021 21:23	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 21:23	WG1738664
Zinc	54.8		0.832	5.00	1	09/16/2021 21:23	WG1738664

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.07		0.100	1.00	5	09/15/2021 22:02	WG1739972

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/16/2021 05:14	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	108			77.0-120		09/16/2021 05:14	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/15/2021 16:08	WG1740734
Toluene	U		0.00130	0.00500	1	09/15/2021 16:08	WG1740734
Ethylbenzene	U		0.000737	0.00250	1	09/15/2021 16:08	WG1740734
Total Xylenes	0.00203	J	0.000880	0.00650	1	09/15/2021 16:08	WG1740734
(S) Toluene-d8	100			75.0-131		09/15/2021 16:08	WG1740734
(S) 4-Bromofluorobenzene	105			67.0-138		09/15/2021 16:08	WG1740734
(S) 1,2-Dichloroethane-d4	117			70.0-130		09/15/2021 16:08	WG1740734

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	19.1		0.769	4.00	1	09/14/2021 14:36	WG1739557
(S) <i>o</i> -Terphenyl	48.0			18.0-148		09/14/2021 14:36	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 11:08	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 11:08	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 11:08	WG1739556
Benzo(a)anthracene	0.00889		0.00173	0.00600	1	09/15/2021 11:08	WG1739556
Benzo(a)pyrene	0.00662		0.00179	0.00600	1	09/15/2021 11:08	WG1739556
Benzo(b)fluoranthene	0.0260		0.00153	0.00600	1	09/15/2021 11:08	WG1739556
Benzo(g,h,i)perylene	0.00993		0.00177	0.00600	1	09/15/2021 11:08	WG1739556
Benzo(k)fluoranthene	0.00623		0.00215	0.00600	1	09/15/2021 11:08	WG1739556
Chrysene	0.0153		0.00232	0.00600	1	09/15/2021 11:08	WG1739556
Dibenz(a,h)anthracene	0.00307	J	0.00172	0.00600	1	09/15/2021 11:08	WG1739556
Fluoranthene	0.0107		0.00227	0.00600	1	09/15/2021 11:08	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 11:08	WG1739556
Indeno(1,2,3-cd)pyrene	0.00798		0.00181	0.00600	1	09/15/2021 11:08	WG1739556
Naphthalene	U		0.00408	0.0200	1	09/15/2021 11:08	WG1739556
Phenanthrene	0.00634		0.00231	0.00600	1	09/15/2021 11:08	WG1739556
Pyrene	0.00941		0.00200	0.00600	1	09/15/2021 11:08	WG1739556
1-Methylnaphthalene	U		0.00449	0.0200	1	09/15/2021 11:08	WG1739556
2-Methylnaphthalene	0.00569	J	0.00427	0.0200	1	09/15/2021 11:08	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 11:08	WG1739556
(S) <i>p</i> -Terphenyl-d14	90.7			23.0-120		09/15/2021 11:08	WG1739556
(S) Nitrobenzene-d5	72.8			14.0-149		09/15/2021 11:08	WG1739556
(S) 2-Fluorobiphenyl	78.4			34.0-125		09/15/2021 11:08	WG1739556

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	3.82		1	09/16/2021 22:21	WG1738914

Calculated Results

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium,Trivalent	35.4		0.133	1.00	1	09/16/2021 21:26	WG1738664

Wet Chemistry by Method 3060A/7196A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium,Hexavalent	U		0.640	2.00	1	09/14/2021 21:22	WG1739468

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	8.04	T8	1	09/16/2021 10:00	WG1741187

Sample Narrative:

L1401867-09 WG1741187: 8.04 at 21.3C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	703		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-09 WG1739083: at 25C

Mercury by Method 7471A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Mercury	0.0229	J	0.0180	0.0400	1	09/13/2021 10:40	WG1738679

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	1470		0.0852	0.500	1	09/16/2021 21:26	WG1738664
Cadmium	0.357	J	0.0471	0.500	1	09/16/2021 21:26	WG1738664
Chromium	35.4		0.133	1.00	1	09/16/2021 21:26	WG1738664
Copper	38.9		0.400	2.00	1	09/16/2021 21:26	WG1738664
Lead	18.7		0.208	0.500	1	09/16/2021 21:26	WG1738664
Nickel	21.9		0.132	2.00	1	09/16/2021 21:26	WG1738664
Selenium	2.04		0.764	2.00	1	09/16/2021 21:26	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 21:26	WG1738664
Zinc	50.7		0.832	5.00	1	09/16/2021 21:26	WG1738664

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	3.09		0.100	1.00	5	09/15/2021 22:22	WG1739972

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/16/2021 05:36	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			77.0-120		09/16/2021 05:36	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/15/2021 16:27	WG1740734
Toluene	U		0.00130	0.00500	1	09/15/2021 16:27	WG1740734
Ethylbenzene	U		0.000737	0.00250	1	09/15/2021 16:27	WG1740734
Total Xylenes	0.00260	J	0.000880	0.00650	1	09/15/2021 16:27	WG1740734
(S) Toluene-d8	101			75.0-131		09/15/2021 16:27	WG1740734
(S) 4-Bromofluorobenzene	109			67.0-138		09/15/2021 16:27	WG1740734
(S) 1,2-Dichloroethane-d4	117			70.0-130		09/15/2021 16:27	WG1740734

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	68.8	J3 J6	0.769	4.00	1	09/14/2021 15:59	WG1739557
(S) <i>o</i> -Terphenyl	31.3			18.0-148		09/14/2021 15:59	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 11:27	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 11:27	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 11:27	WG1739556
Benzo(a)anthracene	0.00675		0.00173	0.00600	1	09/15/2021 11:27	WG1739556
Benzo(a)pyrene	0.00442	J	0.00179	0.00600	1	09/15/2021 11:27	WG1739556
Benzo(b)fluoranthene	0.0197		0.00153	0.00600	1	09/15/2021 11:27	WG1739556
Benzo(g,h,i)perylene	0.00902		0.00177	0.00600	1	09/15/2021 11:27	WG1739556
Benzo(k)fluoranthene	0.00510	J	0.00215	0.00600	1	09/15/2021 11:27	WG1739556
Chrysene	0.00722		0.00232	0.00600	1	09/15/2021 11:27	WG1739556
Dibenz(a,h)anthracene	0.00211	J	0.00172	0.00600	1	09/15/2021 11:27	WG1739556
Fluoranthene	0.00840		0.00227	0.00600	1	09/15/2021 11:27	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 11:27	WG1739556
Indeno(1,2,3-cd)pyrene	0.00845		0.00181	0.00600	1	09/15/2021 11:27	WG1739556
Naphthalene	U		0.00408	0.0200	1	09/15/2021 11:27	WG1739556
Phenanthrene	0.00808		0.00231	0.00600	1	09/15/2021 11:27	WG1739556
Pyrene	0.00623		0.00200	0.00600	1	09/15/2021 11:27	WG1739556
1-Methylnaphthalene	U		0.00449	0.0200	1	09/15/2021 11:27	WG1739556
2-Methylnaphthalene	0.00427	J	0.00427	0.0200	1	09/15/2021 11:27	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 11:27	WG1739556
(S) <i>p</i> -Terphenyl-d14	90.6			23.0-120		09/15/2021 11:27	WG1739556
(S) Nitrobenzene-d5	75.9			14.0-149		09/15/2021 11:27	WG1739556
(S) 2-Fluorobiphenyl	77.9			34.0-125		09/15/2021 11:27	WG1739556

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.62		1	09/16/2021 22:29	WG1738914

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	32.8		0.133	1.00	1	09/16/2021 21:29	WG1738664

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	09/14/2021 21:26	WG1739468

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.45	T8	1	09/16/2021 10:00	WG1741187

Sample Narrative:

L1401867-10 WG1741187: 8.45 at 21.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	550		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-10 WG1739083: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0225	J	0.0180	0.0400	1	09/13/2021 10:43	WG1738679

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	9570		0.426	2.50	5	09/17/2021 11:22	WG1738664
Cadmium	U		0.0471	0.500	1	09/16/2021 21:29	WG1738664
Chromium	32.8		0.133	1.00	1	09/16/2021 21:29	WG1738664
Copper	76.1		0.400	2.00	1	09/16/2021 21:29	WG1738664
Lead	13.7		0.208	0.500	1	09/16/2021 21:29	WG1738664
Nickel	21.4		0.132	2.00	1	09/16/2021 21:29	WG1738664
Selenium	U		0.764	2.00	1	09/16/2021 21:29	WG1738664
Silver	U		0.127	1.00	1	09/16/2021 21:29	WG1738664
Zinc	65.5		0.832	5.00	1	09/16/2021 21:29	WG1738664

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.47		0.100	1.00	5	09/15/2021 22:25	WG1739972

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0280	J	0.0217	0.100	1	09/16/2021 05:58	WG1740290
(S) a,a,a-Trifluorotoluene(FID)	106			77.0-120		09/16/2021 05:58	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/15/2021 16:46	WG1740734
Toluene	U		0.00130	0.00500	1	09/15/2021 16:46	WG1740734
Ethylbenzene	U		0.000737	0.00250	1	09/15/2021 16:46	WG1740734
Total Xylenes	0.00222	J	0.000880	0.00650	1	09/15/2021 16:46	WG1740734
(S) Toluene-d8	99.8			75.0-131		09/15/2021 16:46	WG1740734
(S) 4-Bromofluorobenzene	106			67.0-138		09/15/2021 16:46	WG1740734
(S) 1,2-Dichloroethane-d4	117			70.0-130		09/15/2021 16:46	WG1740734

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	201		0.769	4.00	1	09/14/2021 16:40	WG1739557
(S) o-Terphenyl	40.2			18.0-148		09/14/2021 16:40	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 11:47	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 11:47	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 11:47	WG1739556
Benzo(a)anthracene	0.0111		0.00173	0.00600	1	09/15/2021 11:47	WG1739556
Benzo(a)pyrene	0.0123		0.00179	0.00600	1	09/15/2021 11:47	WG1739556
Benzo(b)fluoranthene	0.0469		0.00153	0.00600	1	09/15/2021 11:47	WG1739556
Benzo(g,h,i)perylene	0.0252		0.00177	0.00600	1	09/15/2021 11:47	WG1739556
Benzo(k)fluoranthene	0.0112		0.00215	0.00600	1	09/15/2021 11:47	WG1739556
Chrysene	0.0123		0.00232	0.00600	1	09/15/2021 11:47	WG1739556
Dibenz(a,h)anthracene	0.00679		0.00172	0.00600	1	09/15/2021 11:47	WG1739556
Fluoranthene	0.0142		0.00227	0.00600	1	09/15/2021 11:47	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 11:47	WG1739556
Indeno(1,2,3-cd)pyrene	0.0214		0.00181	0.00600	1	09/15/2021 11:47	WG1739556
Naphthalene	0.00565	J	0.00408	0.0200	1	09/15/2021 11:47	WG1739556
Phenanthrene	0.0132		0.00231	0.00600	1	09/15/2021 11:47	WG1739556
Pyrene	0.0110		0.00200	0.00600	1	09/15/2021 11:47	WG1739556
1-Methylnaphthalene	0.00554	J	0.00449	0.0200	1	09/15/2021 11:47	WG1739556
2-Methylnaphthalene	0.00989	J	0.00427	0.0200	1	09/15/2021 11:47	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 11:47	WG1739556
(S) p-Terphenyl-d14	96.3			23.0-120		09/15/2021 11:47	WG1739556
(S) Nitrobenzene-d5	78.2			14.0-149		09/15/2021 11:47	WG1739556
(S) 2-Fluorobiphenyl	82.7			34.0-125		09/15/2021 11:47	WG1739556

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.88		1	09/16/2021 22:31	WG1738914

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	38.8		0.133	1.00	1	09/17/2021 02:14	WG1738982

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U	J6 O1	0.640	2.00	1	09/14/2021 21:27	WG1739468

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	>13	T8	1	09/14/2021 22:45	WG1740229

Sample Narrative:

L1401867-11 WG1740229: 22 at 8.88C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	202		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-11 WG1739083: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0543		0.0180	0.0400	1	09/13/2021 10:46	WG1738679

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	852		0.0852	0.500	1	09/17/2021 02:14	WG1738982
Cadmium	0.378	J	0.0471	0.500	1	09/17/2021 02:14	WG1738982
Chromium	38.8		0.133	1.00	1	09/17/2021 02:14	WG1738982
Copper	16.5		0.400	2.00	1	09/17/2021 02:14	WG1738982
Lead	12.9		0.208	0.500	1	09/17/2021 02:14	WG1738982
Nickel	22.9		0.132	2.00	1	09/17/2021 02:14	WG1738982
Selenium	U		0.764	2.00	1	09/17/2021 02:14	WG1738982
Silver	U		0.127	1.00	1	09/17/2021 02:14	WG1738982
Zinc	49.4		0.832	5.00	1	09/17/2021 02:14	WG1738982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.48		0.100	1.00	5	09/15/2021 22:29	WG1739972

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0328	J	0.0217	0.100	1	09/16/2021 06:19	WG1740290
(S) a,a,a-Trifluorotoluene(FID)	107			77.0-120		09/16/2021 06:19	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000625	J	0.000467	0.00100	1	09/15/2021 16:28	WG1740749
Toluene	0.0117		0.00130	0.00500	1	09/15/2021 16:28	WG1740749
Ethylbenzene	U		0.000737	0.00250	1	09/15/2021 16:28	WG1740749
Total Xylenes	0.00200	J	0.000880	0.00650	1	09/15/2021 16:28	WG1740749
(S) Toluene-d8	96.0			75.0-131		09/15/2021 16:28	WG1740749
(S) 4-Bromofluorobenzene	99.2			67.0-138		09/15/2021 16:28	WG1740749
(S) 1,2-Dichloroethane-d4	93.8			70.0-130		09/15/2021 16:28	WG1740749

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	7.45		0.769	4.00	1	09/14/2021 15:04	WG1739557
(S) o-Terphenyl	50.6			18.0-148		09/14/2021 15:04	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 12:07	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 12:07	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 12:07	WG1739556
Benzo(a)anthracene	U		0.00173	0.00600	1	09/15/2021 12:07	WG1739556
Benzo(a)pyrene	U		0.00179	0.00600	1	09/15/2021 12:07	WG1739556
Benzo(b)fluoranthene	0.00303	J	0.00153	0.00600	1	09/15/2021 12:07	WG1739556
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	09/15/2021 12:07	WG1739556
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/15/2021 12:07	WG1739556
Chrysene	U		0.00232	0.00600	1	09/15/2021 12:07	WG1739556
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/15/2021 12:07	WG1739556
Fluoranthene	U		0.00227	0.00600	1	09/15/2021 12:07	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 12:07	WG1739556
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/15/2021 12:07	WG1739556
Naphthalene	U		0.00408	0.0200	1	09/15/2021 12:07	WG1739556
Phenanthrene	U		0.00231	0.00600	1	09/15/2021 12:07	WG1739556
Pyrene	U		0.00200	0.00600	1	09/15/2021 12:07	WG1739556
1-Methylnaphthalene	U		0.00449	0.0200	1	09/15/2021 12:07	WG1739556
2-Methylnaphthalene	U		0.00427	0.0200	1	09/15/2021 12:07	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 12:07	WG1739556
(S) p-Terphenyl-d14	88.7			23.0-120		09/15/2021 12:07	WG1739556
(S) Nitrobenzene-d5	70.3			14.0-149		09/15/2021 12:07	WG1739556
(S) 2-Fluorobiphenyl	71.9			34.0-125		09/15/2021 12:07	WG1739556

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	13.2		1	09/16/2021 22:34	WG1738914

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	39.9		0.133	1.00	1	09/17/2021 02:17	WG1738982

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	09/14/2021 21:31	WG1739468

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.75	T8	1	09/16/2021 10:00	WG1741187

Sample Narrative:

L1401867-12 WG1741187: 8.75 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1130		10.0	1	09/14/2021 18:00	WG1739083

Sample Narrative:

L1401867-12 WG1739083: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	U		0.0180	0.0400	1	09/13/2021 10:48	WG1738679

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1540		0.0852	0.500	1	09/17/2021 02:17	WG1738982
Cadmium	0.282	J	0.0471	0.500	1	09/17/2021 02:17	WG1738982
Chromium	39.9		0.133	1.00	1	09/17/2021 02:17	WG1738982
Copper	19.8		0.400	2.00	1	09/17/2021 02:17	WG1738982
Lead	14.4		0.208	0.500	1	09/17/2021 02:17	WG1738982
Nickel	24.9		0.132	2.00	1	09/17/2021 02:17	WG1738982
Selenium	U		0.764	2.00	1	09/17/2021 02:17	WG1738982
Silver	U		0.127	1.00	1	09/17/2021 02:17	WG1738982
Zinc	47.9		0.832	5.00	1	09/17/2021 02:17	WG1738982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.13		0.100	1.00	5	09/15/2021 22:32	WG1739972

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/16/2021 06:41	WG1740290
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			77.0-120		09/16/2021 06:41	WG1740290

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/15/2021 16:47	WG1740749
Toluene	0.00155	<u>J</u>	0.00130	0.00500	1	09/15/2021 16:47	WG1740749
Ethylbenzene	U		0.000737	0.00250	1	09/15/2021 16:47	WG1740749
Total Xylenes	U		0.000880	0.00650	1	09/15/2021 16:47	WG1740749
(S) Toluene-d8	102			75.0-131		09/15/2021 16:47	WG1740749
(S) 4-Bromofluorobenzene	87.9			67.0-138		09/15/2021 16:47	WG1740749
(S) 1,2-Dichloroethane-d4	103			70.0-130		09/15/2021 16:47	WG1740749

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	10.8		0.769	4.00	1	09/14/2021 15:17	WG1739557
(S) <i>o</i> -Terphenyl	52.8			18.0-148		09/14/2021 15:17	WG1739557

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	09/15/2021 12:27	WG1739556
Acenaphthene	U		0.00209	0.00600	1	09/15/2021 12:27	WG1739556
Acenaphthylene	U		0.00216	0.00600	1	09/15/2021 12:27	WG1739556
Benzo(a)anthracene	0.00231	<u>J</u>	0.00173	0.00600	1	09/15/2021 12:27	WG1739556
Benzo(a)pyrene	0.00220	<u>J</u>	0.00179	0.00600	1	09/15/2021 12:27	WG1739556
Benzo(b)fluoranthene	0.00869		0.00153	0.00600	1	09/15/2021 12:27	WG1739556
Benzo(g,h,i)perylene	0.00536	<u>J</u>	0.00177	0.00600	1	09/15/2021 12:27	WG1739556
Benzo(k)fluoranthene	0.00253	<u>J</u>	0.00215	0.00600	1	09/15/2021 12:27	WG1739556
Chrysene	0.00292	<u>J</u>	0.00232	0.00600	1	09/15/2021 12:27	WG1739556
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/15/2021 12:27	WG1739556
Fluoranthene	0.00275	<u>J</u>	0.00227	0.00600	1	09/15/2021 12:27	WG1739556
Fluorene	U		0.00205	0.00600	1	09/15/2021 12:27	WG1739556
Indeno(1,2,3-cd)pyrene	0.00400	<u>J</u>	0.00181	0.00600	1	09/15/2021 12:27	WG1739556
Naphthalene	U		0.00408	0.0200	1	09/15/2021 12:27	WG1739556
Phenanthrene	0.00296	<u>J</u>	0.00231	0.00600	1	09/15/2021 12:27	WG1739556
Pyrene	U		0.00200	0.00600	1	09/15/2021 12:27	WG1739556
1-Methylnaphthalene	U		0.00449	0.0200	1	09/15/2021 12:27	WG1739556
2-Methylnaphthalene	U		0.00427	0.0200	1	09/15/2021 12:27	WG1739556
2-Chloronaphthalene	U		0.00466	0.0200	1	09/15/2021 12:27	WG1739556
(S) <i>p</i> -Terphenyl-d14	80.9			23.0-120		09/15/2021 12:27	WG1739556
(S) Nitrobenzene-d5	66.0			14.0-149		09/15/2021 12:27	WG1739556
(S) 2-Fluorobiphenyl	68.8			34.0-125		09/15/2021 12:27	WG1739556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3704319-1 09/14/21 21:02

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1401140-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1401140-01 09/14/21 21:05 • (DUP) R3704319-3 09/14/21 21:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	U	1	0.000		20

L1401867-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1401867-12 09/14/21 21:31 • (DUP) R3704319-8 09/14/21 21:31

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3704319-2 09/14/21 21:02

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	25.4	106	80.0-120	

L1401867-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1401867-11 09/14/21 21:27 • (MS) R3704319-4 09/14/21 21:27 • (MSD) R3704319-5 09/14/21 21:28

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	U	8.72	8.84	43.6	44.2	1	75.0-125	J6	J6	1.37	20

L1401867-11 Original Sample (OS) • Matrix Spike (MS)

(OS) L1401867-11 09/14/21 21:27 • (MS) R3704319-6 09/14/21 21:29

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	708	U	630	89.0	50	75.0-125	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1401537-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1401537-04 09/15/21 15:00 • (DUP) R3704791-2 09/15/21 15:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.33	7.34	1	0.136		1

Sample Narrative:

OS: 7.33 at 20.6C

DUP: 7.34 at 20.8C



L1401867-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1401867-05 09/15/21 15:00 • (DUP) R3704791-3 09/15/21 15:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.57	8.58	1	0.117		1

Sample Narrative:

OS: 8.57 at 20.7C

DUP: 8.58 at 20.7C

Laboratory Control Sample (LCS)

(LCS) R3704791-1 09/15/21 15:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 20.4C

L1401867-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1401867-11 09/14/21 22:45 • (DUP) R3704335-2 09/14/21 22:45

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	>13	>13	1	0.000		1

Sample Narrative:

OS: 22 at 8.88C

DUP: 22 at 8.85C

Laboratory Control Sample (LCS)

(LCS) R3704335-1 09/14/21 22:45

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.03 at 22.6C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1401907-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1401907-06 09/16/21 10:00 • (DUP) R3705136-2 09/16/21 10:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.48	8.46	1	0.236		1

Sample Narrative:

OS: 8.48 at 20.8C

DUP: 8.46 at 20.9C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1401907-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1401907-09 09/16/21 10:00 • (DUP) R3705136-3 09/16/21 10:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.64	7.68	1	0.522		1

Sample Narrative:

OS: 7.64 at 20.9C

DUP: 7.68 at 21C

Laboratory Control Sample (LCS)

(LCS) R3705136-1 09/16/21 10:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 20.7C

Method Blank (MB)

(MB) R3703294-1 09/12/21 16:00

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

Laboratory Control Sample (LCS)

(LCS) R3703294-2 09/12/21 16:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	899	895	99.6	85.0-115	

Sample Narrative:

LCS: at 25C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3704283-1 09/14/21 18:00

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	umhos/cm		umhos/cm	umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1401867-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1401867-10 09/14/21 18:00 • (DUP) R3704283-3 09/14/21 18:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	550	568	1	3.22		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1401870-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1401870-08 09/14/21 18:00 • (DUP) R3704283-4 09/14/21 18:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	723	697	1	3.66		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3704283-2 09/14/21 18:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	umhos/cm	umhos/cm	%	%	
Specific Conductance	899	890	99.0	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3703539-1 09/13/21 09:37

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3703539-2 09/13/21 09:40

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.501	100	80.0-120	

L1401670-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1401670-01 09/13/21 09:42 • (MS) R3703539-3 09/13/21 09:45 • (MSD) R3703539-4 09/13/21 09:47

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	0.0795	0.587	0.608	101	106	1	75.0-125			3.56	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3705460-1 09/16/21 20:11

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3705460-2 09/16/21 20:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	105	105	80.0-120	
Cadmium	100	98.2	98.2	80.0-120	
Chromium	100	101	101	80.0-120	
Copper	100	99.3	99.3	80.0-120	
Lead	100	100	100	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	100	100	80.0-120	
Silver	20.0	17.7	88.7	80.0-120	
Zinc	100	99.3	99.3	80.0-120	

L1401698-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1401698-01 09/16/21 20:16 • (MS) R3705460-5 09/16/21 20:23 • (MSD) R3705460-6 09/16/21 20:25

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	10.0	45.4	54.7	54.2	93.5	88.0	.1	75.0-125			1.01	20
Cadmium	10.0	0.181	9.64	9.54	94.5	93.6	.1	75.0-125			0.965	20
Chromium	10.0	2.22	11.5	11.3	92.7	91.1	.1	75.0-125			1.42	20
Copper	10.0	29.4	39.4	38.7	100	92.7	.1	75.0-125			1.87	20
Lead	10.0	1.98	11.3	11.2	93.4	92.2	.1	75.0-125			1.04	20
Nickel	10.0	2.46	12.3	12.1	98.2	96.8	.1	75.0-125			1.17	20
Selenium	10.0	0.805	11.2	11.0	104	102	.1	75.0-125			1.44	20
Silver	2.00	0.439	2.31	2.27	93.4	91.4	.1	75.0-125			1.74	20
Zinc	10.0	235	242	238	67.1	27.3	.1	75.0-125	E V	E V	1.66	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3705465-1 09/17/21 01:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3705465-2 09/17/21 01:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	97.8	97.8	80.0-120	
Cadmium	100	93.1	93.1	80.0-120	
Chromium	100	95.1	95.1	80.0-120	
Copper	100	96.0	96.0	80.0-120	
Lead	100	94.1	94.1	80.0-120	
Nickel	100	95.9	95.9	80.0-120	
Selenium	100	93.7	93.7	80.0-120	
Silver	20.0	16.8	84.2	80.0-120	
Zinc	100	92.6	92.6	80.0-120	

L1401807-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1401807-05 09/17/21 01:12 • (MS) R3705465-5 09/17/21 01:20 • (MSD) R3705465-6 09/17/21 01:23

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	99.7	101	204	205	103	104	1	75.0-125			0.717	20
Cadmium	99.7	0.318	98.6	105	98.3	104	1	75.0-125			5.86	20
Chromium	99.7	47.8	147	152	99.2	104	1	75.0-125			3.13	20
Copper	99.7	32.9	138	141	105	109	1	75.0-125			2.78	20
Lead	99.7	6.48	106	111	99.2	105	1	75.0-125			5.26	20
Nickel	99.7	47.9	152	156	105	109	1	75.0-125			2.60	20
Selenium	99.7	U	99.6	106	99.6	106	1	75.0-125			5.96	20
Silver	20.0	U	17.8	18.9	88.9	94.4	1	75.0-125			5.94	20
Zinc	99.7	62.2	160	160	97.6	97.4	1	75.0-125			0.106	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3704879-1 09/15/21 20:49

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3704879-2 09/15/21 20:52

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	86.6	86.6	80.0-120	

L1401126-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1401126-01 09/15/21 20:55 • (MS) R3704879-5 09/15/21 21:06 • (MSD) R3704879-6 09/15/21 21:09

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	100	2.63	87.5	92.1	84.8	89.5	5	75.0-125			5.19	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3705254-2 09/16/21 01:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	109			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3705254-1 09/15/21 23:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.35	97.3	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			97.1	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3704687-2 09/14/21 10:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	100			75.0-131
(S) 4-Bromofluorobenzene	110			67.0-138
(S) 1,2-Dichloroethane-d4	118			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3704687-1 09/14/21 09:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.126	101	70.0-123	
Ethylbenzene	0.125	0.121	96.8	74.0-126	
Toluene	0.125	0.121	96.8	75.0-121	
Xylenes, Total	0.375	0.375	100	72.0-127	
(S) Toluene-d8			100	75.0-131	
(S) 4-Bromofluorobenzene			108	67.0-138	
(S) 1,2-Dichloroethane-d4			120	70.0-130	

L1401835-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1401835-01 09/14/21 20:04 • (MS) R3704687-3 09/14/21 20:23 • (MSD) R3704687-4 09/14/21 20:42

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	13.4	0.129	10.8	16.8	79.6	124	107	10.0-149		J3	43.5	37
Ethylbenzene	13.4	0.555	9.76	16.3	68.7	117	107	10.0-160		J3	50.2	38
Toluene	13.4	1.34	9.90	15.7	63.9	107	107	10.0-156		J3	45.3	38
Xylenes, Total	40.2	1.32	30.9	48.9	73.6	118	107	10.0-160		J3	45.1	38
(S) Toluene-d8					97.6	96.5		75.0-131				
(S) 4-Bromofluorobenzene					105	105		67.0-138				
(S) 1,2-Dichloroethane-d4					121	122		70.0-130				

Sample Narrative:

OS: Nontarget compounds are too large to run at a lower dilution.

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3704793-2 09/15/21 11:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	102			75.0-131
(S) 4-Bromofluorobenzene	107			67.0-138
(S) 1,2-Dichloroethane-d4	116			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3704793-1 09/15/21 10:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.120	96.0	70.0-123	
Ethylbenzene	0.125	0.111	88.8	74.0-126	
Toluene	0.125	0.114	91.2	75.0-121	
Xylenes, Total	0.375	0.351	93.6	72.0-127	
(S) Toluene-d8			100	75.0-131	
(S) 4-Bromofluorobenzene			108	67.0-138	
(S) 1,2-Dichloroethane-d4			123	70.0-130	

L1401867-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1401867-08 09/15/21 16:08 • (MS) R3704793-3 09/15/21 18:21 • (MSD) R3704793-4 09/15/21 18:40

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	U	0.0182	0.0248	14.6	19.8	1	10.0-149			30.7	37
Ethylbenzene	0.125	U	0.0148	0.0193	11.8	15.4	1	10.0-160			26.4	38
Toluene	0.125	U	0.0188	0.0232	15.0	18.6	1	10.0-156			21.0	38
Xylenes, Total	0.375	0.00203	0.0558	0.0746	14.3	19.4	1	10.0-160			28.8	38
(S) Toluene-d8					98.9	99.5		75.0-131				
(S) 4-Bromofluorobenzene					105	104		67.0-138				
(S) 1,2-Dichloroethane-d4					117	118		70.0-130				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3705560-3 09/15/21 10:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	103			75.0-131
(S) 4-Bromofluorobenzene	85.1			67.0-138
(S) 1,2-Dichloroethane-d4	96.9			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3705560-1 09/15/21 09:54 • (LCSD) R3705560-2 09/15/21 10:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.119	0.120	95.2	96.0	70.0-123			0.837	20
Ethylbenzene	0.125	0.111	0.108	88.8	86.4	74.0-126			2.74	20
Toluene	0.125	0.113	0.112	90.4	89.6	75.0-121			0.889	20
Xylenes, Total	0.375	0.328	0.328	87.5	87.5	72.0-127			0.000	20
(S) Toluene-d8				95.2	93.2	75.0-131				
(S) 4-Bromofluorobenzene				99.9	100	67.0-138				
(S) 1,2-Dichloroethane-d4				103	101	70.0-130				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3704361-1 09/14/21 11:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	52.6			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3704361-2 09/14/21 11:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	30.4	60.8	50.0-150	
(S) o-Terphenyl			50.6	18.0-148	

L1401867-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1401867-09 09/14/21 15:59 • (MS) R3704361-3 09/14/21 16:12 • (MSD) R3704361-4 09/14/21 16:26

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	47.3	68.8	79.4	109	22.4	84.1	1	50.0-150	J6	J3	31.4	20
(S) o-Terphenyl					34.4	34.0		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3705015-2 09/15/21 08:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	82.6			14.0-149
(S) 2-Fluorobiphenyl	89.3			34.0-125
(S) p-Terphenyl-d14	111			23.0-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3705015-1 09/15/21 08:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0718	89.8	50.0-126	
Acenaphthene	0.0800	0.0680	85.0	50.0-120	
Acenaphthylene	0.0800	0.0753	94.1	50.0-120	
Benzo(a)anthracene	0.0800	0.0708	88.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0616	77.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0614	76.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0626	78.3	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0651	81.4	49.0-125	
Chrysene	0.0800	0.0702	87.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0613	76.6	47.0-125	
Fluoranthene	0.0800	0.0727	90.9	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3705015-1 09/15/21 08:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0697	87.1	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0620	77.5	46.0-125	
Naphthalene	0.0800	0.0675	84.4	50.0-120	
Phenanthrene	0.0800	0.0686	85.8	47.0-120	
Pyrene	0.0800	0.0715	89.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0688	86.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0653	81.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0680	85.0	50.0-120	
(S) Nitrobenzene-d5			84.1	14.0-149	
(S) 2-Fluorobiphenyl			91.6	34.0-125	
(S) p-Terphenyl-d14			108	23.0-120	

L1401867-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1401867-06 09/15/21 09:48 • (MS) R3705015-3 09/15/21 10:08 • (MSD) R3705015-4 09/15/21 10:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	U	0.0541	0.0456	67.6	57.0	1	10.0-145			17.1	30
Acenaphthene	0.0800	U	0.0533	0.0437	66.6	54.6	1	14.0-127			19.8	27
Acenaphthylene	0.0800	U	0.0571	0.0480	71.4	60.0	1	21.0-124			17.3	25
Benzo(a)anthracene	0.0800	U	0.0547	0.0472	68.4	59.0	1	10.0-139			14.7	30
Benzo(a)pyrene	0.0800	U	0.0516	0.0456	64.5	57.0	1	10.0-141			12.3	31
Benzo(b)fluoranthene	0.0800	U	0.0485	0.0418	60.6	52.3	1	10.0-140			14.8	36
Benzo(g,h,i)perylene	0.0800	U	0.0504	0.0454	63.0	56.8	1	10.0-140			10.4	33
Benzo(k)fluoranthene	0.0800	U	0.0516	0.0461	64.5	57.6	1	10.0-137			11.3	31
Chrysene	0.0800	U	0.0564	0.0506	70.5	63.3	1	10.0-145			10.8	30
Dibenz(a,h)anthracene	0.0800	U	0.0483	0.0436	60.4	54.5	1	10.0-132			10.2	31
Fluoranthene	0.0800	U	0.0563	0.0463	70.4	57.9	1	10.0-153			19.5	33
Fluorene	0.0800	U	0.0534	0.0446	66.8	55.8	1	11.0-130			18.0	29
Indeno(1,2,3-cd)pyrene	0.0800	U	0.0485	0.0423	60.6	52.9	1	10.0-137			13.7	32
Naphthalene	0.0800	U	0.0535	0.0455	66.9	56.9	1	10.0-135			16.2	27
Phenanthrene	0.0800	U	0.0544	0.0445	68.0	55.6	1	10.0-144			20.0	31
Pyrene	0.0800	U	0.0569	0.0476	71.1	59.5	1	10.0-148			17.8	35
1-Methylnaphthalene	0.0800	U	0.0544	0.0449	68.0	56.1	1	10.0-142			19.1	28
2-Methylnaphthalene	0.0800	U	0.0517	0.0422	64.6	52.7	1	10.0-137			20.2	28
2-Chloronaphthalene	0.0800	U	0.0542	0.0436	67.8	54.5	1	29.0-120			21.7	24
(S) Nitrobenzene-d5					71.2	73.7		14.0-149				
(S) 2-Fluorobiphenyl					78.1	81.5		34.0-125				
(S) p-Terphenyl-d14					94.1	96.8		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

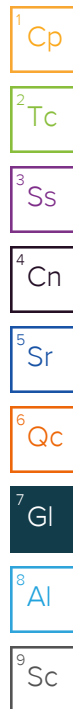
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

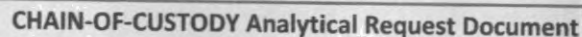
Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used:	Wet	Blue	Dry	None
-------------------	-----	------	-----	------

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or
MTJL Log-in Number Here

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N **NA**
Custody Signatures Present Y N **NA**
Collector Signature Present Y N **NA**
Bottles Intact Y N **NA**
Correct Bottles Y N **NA**
Sufficient Volume Y N **NA**
Samples Received on Ice Y N **NA**
VOA - Headspace Acceptable Y N **NA**
USDA Regulated Soils Y N **NA**
Samples in Holding Time Y N **NA**
Residual Chlorine Present Y N **NA**
Cl Strips: _____
Sample pH Acceptable Y N **NA**
pH Strips: _____
Sulfide Present Y N **NA**
Lead Acetate Strips: _____

LAB USE ONLY:

Lab Sample # _____ Comments: _____

L1401867

-01
-02
-03
-04
-05
-06
-07
-08
-09
-10

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

5016 1232 3087

Samples received via:

FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA
Therm ID#: **A2**
Cooler 1 Temp Upon Receipt: **1.3** °C
Cooler 1 Therm Corr. Factor: **1.1** °C
Cooler 1 Corrected Temp: **1.4** °C
Comments: _____

Date/Time:

9/9

A110

Date/Time:

9/10/24 945

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

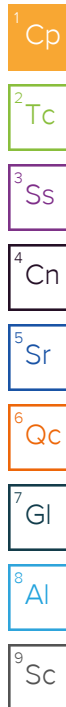
Non Conformance(s):

YES / NO

Page: **1**

of: **2**

October 21, 2021



Caerus Oil and Gas

Sample Delivery Group: L1416107
Samples Received: 10/09/2021
Project Number:
Description: B36 496 Historical; PH 05, 11, & 12
Site: B36 496
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

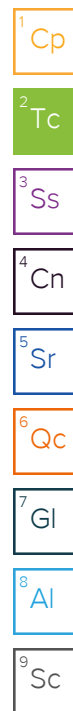
Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

20211007-B36-496-PH12(SEWALL@9") L1416107-01 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:20

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 09:55	10/18/21 09:55	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 12:49	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758016	1	10/15/21 13:00	10/16/21 15:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 14:26	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	1	10/16/21 19:26	10/18/21 13:08	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 15:56	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 18:48	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 05:21	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	1	10/17/21 04:32	10/18/21 14:44	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 16:54	LEA	Mt. Juliet, TN



20211007-B36-496-PH12(SWWALL@9") L1416107-02 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:25

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 09:57	10/18/21 09:57	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 12:54	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1757968	1	10/16/21 10:00	10/16/21 12:01	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 14:29	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	5	10/16/21 19:26	10/18/21 13:11	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:00	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 19:12	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 05:40	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	1	10/17/21 04:32	10/18/21 16:33	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 17:11	LEA	Mt. Juliet, TN

20211007-B36-496-PH12(NWALL@9") L1416107-03 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:30

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:00	10/18/21 10:00	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 12:59	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758016	1	10/15/21 13:00	10/16/21 15:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 14:38	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	1	10/16/21 19:26	10/18/21 13:13	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:10	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 19:35	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 05:59	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	1	10/17/21 04:32	10/18/21 14:58	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 17:29	LEA	Mt. Juliet, TN

20211007-B36-496-PH12(BASE@19") L1416107-04 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:35

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:03	10/18/21 10:03	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 13:04	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758065	1	10/16/21 08:00	10/16/21 09:54	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 14:42	EL	Mt. Juliet, TN

SAMPLE SUMMARY

20211007-B36-496-PH12(BASE@19") L1416107-04 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:35

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	5	10/16/21 19:26	10/18/21 13:16	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 19:59	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 06:18	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	1	10/17/21 04:32	10/18/21 15:25	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 17:47	LEA	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

20211007-B36-496-PH11(SEWALL@8") L1416107-05 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:40

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:05	10/18/21 10:05	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 13:10	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758016	1	10/15/21 13:00	10/16/21 15:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 14:45	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	1	10/16/21 19:26	10/18/21 13:19	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:17	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 20:23	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 06:37	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	1	10/17/21 04:32	10/18/21 17:41	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 18:05	LEA	Mt. Juliet, TN

20211007-B36-496-PH11(SWWALL@8") L1416107-06 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:45

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:13	10/18/21 10:13	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 13:25	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758016	1	10/15/21 13:00	10/16/21 15:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 14:48	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	1	10/16/21 19:26	10/18/21 13:21	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:20	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 20:46	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 06:56	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	1	10/17/21 04:32	10/18/21 14:17	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 18:23	LEA	Mt. Juliet, TN

20211007-B36-496-PH11(NWALL@8") L1416107-07 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:50

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:16	10/18/21 10:16	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 13:30	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758016	1	10/15/21 13:00	10/16/21 15:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 14:51	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	1	10/16/21 19:26	10/18/21 13:29	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 21:10	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 07:15	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	1	10/17/21 04:32	10/18/21 15:11	TJD	Mt. Juliet, TN

SAMPLE SUMMARY

20211007-B36-496-PH11(NWALL@8") L1416107-07 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:50

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 18:40	LEA	Mt. Juliet, TN

20211007-B36-496-PH11(BASE@16") L1416107-08 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 11:55

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:19	10/18/21 10:19	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 13:36	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758065	1	10/16/21 08:00	10/16/21 09:54	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 14:55	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	1	10/16/21 19:26	10/18/21 13:32	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:27	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 21:34	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 07:34	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	1	10/17/21 04:32	10/18/21 14:31	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 18:58	LEA	Mt. Juliet, TN

20211007-B36-496-PH05(NWWALL@12") L1416107-09 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 12:00

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:22	10/18/21 10:22	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 13:46	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758016	1	10/15/21 13:00	10/16/21 15:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 14:58	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	5	10/15/21 13:39	10/18/21 12:23	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	5	10/16/21 19:26	10/18/21 13:35	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:30	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 21:57	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 07:53	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	20	10/17/21 04:32	10/18/21 17:54	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 20:26	LEA	Mt. Juliet, TN

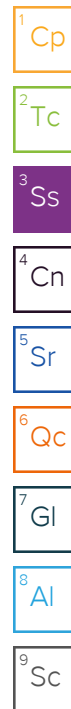
20211007-B36-496-PH05(NEWALL@12") L1416107-10 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 12:05

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:24	10/18/21 10:24	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 13:51	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758016	1	10/15/21 13:00	10/16/21 15:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 15:01	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	5	10/15/21 13:39	10/18/21 12:26	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	5	10/16/21 19:26	10/18/21 13:38	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:34	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 22:21	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 08:12	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	20	10/17/21 04:32	10/18/21 18:08	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 21:01	LEA	Mt. Juliet, TN



SAMPLE SUMMARY

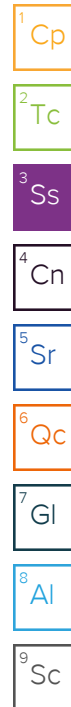
20211007-B36-496-PH05(SWALL@12") L1416107-11 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 12:10

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:27	10/18/21 10:27	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1757947	1	10/15/21 18:38	10/18/21 13:56	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758016	1	10/15/21 13:00	10/16/21 15:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757487	1	10/17/21 04:30	10/17/21 17:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 15:04	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	5	10/15/21 13:39	10/18/21 12:29	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	5	10/16/21 19:26	10/18/21 13:40	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:37	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 22:45	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 08:31	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	20	10/17/21 04:32	10/18/21 18:21	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 20:44	LEA	Mt. Juliet, TN



20211007-B36-496-PH05(BASE@24") L1416107-12 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 12:15

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757937	1	10/18/21 10:30	10/18/21 10:30	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1758621	1	10/17/21 18:00	10/18/21 14:12	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758016	1	10/15/21 13:00	10/16/21 15:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757497	1	10/17/21 15:32	10/17/21 18:36	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	1	10/15/21 13:39	10/16/21 15:07	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1757831	5	10/15/21 13:39	10/18/21 12:31	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1757950	5	10/16/21 19:26	10/18/21 13:43	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757828	5	10/15/21 13:43	10/16/21 16:41	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1758220	1	10/14/21 16:24	10/17/21 23:09	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1758061	1	10/14/21 16:24	10/16/21 08:51	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1758457	20	10/17/21 04:32	10/18/21 18:35	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1758738	1	10/18/21 09:09	10/18/21 21:19	LEA	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	14.6		1	10/18/2021 09:55	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.261	J	0.255	1.00	1	10/18/2021 12:49	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.92	T8	1	10/16/2021 15:00	WG1758016

Sample Narrative:

L1416107-01 WG1758016: 8.92 at 20.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1270		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-01 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	340		0.0852	0.500	1	10/16/2021 14:26	WG1757831
Cadmium	0.395	J	0.0471	0.500	1	10/16/2021 14:26	WG1757831
Copper	20.3		0.400	2.00	1	10/16/2021 14:26	WG1757831
Lead	15.6		0.208	0.500	1	10/16/2021 14:26	WG1757831
Nickel	23.9		0.132	2.00	1	10/16/2021 14:26	WG1757831
Selenium	1.17	J	0.764	2.00	1	10/16/2021 14:26	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 14:26	WG1757831
Zinc	45.6		0.832	5.00	1	10/16/2021 14:26	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.149	J	0.0167	0.200	1	10/18/2021 13:08	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.29		0.100	1.00	5	10/16/2021 15:56	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0224	J	0.0217	0.100	1	10/17/2021 18:48	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.8			77.0-120		10/17/2021 18:48	WG1758220

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/16/2021 05:21	WG1758061
Toluene	U		0.00130	0.00500	1	10/16/2021 05:21	WG1758061
Ethylbenzene	U		0.000737	0.00250	1	10/16/2021 05:21	WG1758061
Xylenes, Total	U		0.000880	0.00650	1	10/16/2021 05:21	WG1758061
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/16/2021 05:21	WG1758061
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/16/2021 05:21	WG1758061
(S) Toluene-d8	104			75.0-131		10/16/2021 05:21	WG1758061
(S) 4-Bromofluorobenzene	92.4			67.0-138		10/16/2021 05:21	WG1758061
(S) 1,2-Dichloroethane-d4	106			70.0-130		10/16/2021 05:21	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.45	J	1.61	4.00	1	10/18/2021 14:44	WG1758457
C28-C36 Motor Oil Range	4.45	B	0.274	4.00	1	10/18/2021 14:44	WG1758457
(S) o-Terphenyl	41.7			18.0-148		10/18/2021 14:44	WG1758457

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 16:54	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 16:54	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 16:54	WG1758738
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2021 16:54	WG1758738
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2021 16:54	WG1758738
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2021 16:54	WG1758738
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/18/2021 16:54	WG1758738
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2021 16:54	WG1758738
Chrysene	U		0.00232	0.00600	1	10/18/2021 16:54	WG1758738
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2021 16:54	WG1758738
Fluoranthene	U		0.00227	0.00600	1	10/18/2021 16:54	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 16:54	WG1758738
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2021 16:54	WG1758738
Naphthalene	U		0.00408	0.0200	1	10/18/2021 16:54	WG1758738
Phenanthrene	U		0.00231	0.00600	1	10/18/2021 16:54	WG1758738
Pyrene	U		0.00200	0.00600	1	10/18/2021 16:54	WG1758738
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2021 16:54	WG1758738
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2021 16:54	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 16:54	WG1758738
(S) p-Terphenyl-d14	90.7			23.0-120		10/18/2021 16:54	WG1758738
(S) Nitrobenzene-d5	53.4			14.0-149		10/18/2021 16:54	WG1758738
(S) 2-Fluorobiphenyl	75.3			34.0-125		10/18/2021 16:54	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	19.6		1	10/18/2021 09:57	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 12:54	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.95	T8	1	10/16/2021 12:01	WG1757968

Sample Narrative:

L1416107-02 WG1757968: 8.95 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1190		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-02 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	303		0.0852	0.500	1	10/16/2021 14:29	WG1757831
Cadmium	0.495	J	0.0471	0.500	1	10/16/2021 14:29	WG1757831
Copper	33.1		0.400	2.00	1	10/16/2021 14:29	WG1757831
Lead	25.1		0.208	0.500	1	10/16/2021 14:29	WG1757831
Nickel	41.3		0.132	2.00	1	10/16/2021 14:29	WG1757831
Selenium	2.34		0.764	2.00	1	10/16/2021 14:29	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 14:29	WG1757831
Zinc	48.6		0.832	5.00	1	10/16/2021 14:29	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

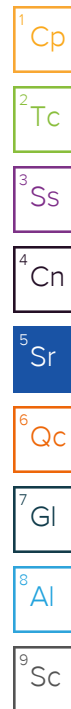
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.215	J	0.0835	1.00	5	10/18/2021 13:11	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	1.79		0.100	1.00	5	10/16/2021 16:00	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0233	J	0.0217	0.100	1	10/17/2021 19:12	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.9			77.0-120		10/17/2021 19:12	WG1758220



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/16/2021 05:40	WG1758061
Toluene	U		0.00130	0.00500	1	10/16/2021 05:40	WG1758061
Ethylbenzene	U		0.000737	0.00250	1	10/16/2021 05:40	WG1758061
Xylenes, Total	U		0.000880	0.00650	1	10/16/2021 05:40	WG1758061
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/16/2021 05:40	WG1758061
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/16/2021 05:40	WG1758061
(S) Toluene-d8	103			75.0-131		10/16/2021 05:40	WG1758061
(S) 4-Bromofluorobenzene	94.8			67.0-138		10/16/2021 05:40	WG1758061
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/16/2021 05:40	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	6.00		1.61	4.00	1	10/18/2021 16:33	WG1758457
C28-C36 Motor Oil Range	13.4		0.274	4.00	1	10/18/2021 16:33	WG1758457
(S) o-Terphenyl	47.8			18.0-148		10/18/2021 16:33	WG1758457

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 17:11	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 17:11	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 17:11	WG1758738
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2021 17:11	WG1758738
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2021 17:11	WG1758738
Benzo(b)fluoranthene	0.00230	U	0.00153	0.00600	1	10/18/2021 17:11	WG1758738
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/18/2021 17:11	WG1758738
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2021 17:11	WG1758738
Chrysene	U		0.00232	0.00600	1	10/18/2021 17:11	WG1758738
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2021 17:11	WG1758738
Fluoranthene	U		0.00227	0.00600	1	10/18/2021 17:11	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 17:11	WG1758738
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2021 17:11	WG1758738
Naphthalene	U		0.00408	0.0200	1	10/18/2021 17:11	WG1758738
Phenanthrene	U		0.00231	0.00600	1	10/18/2021 17:11	WG1758738
Pyrene	U		0.00200	0.00600	1	10/18/2021 17:11	WG1758738
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2021 17:11	WG1758738
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2021 17:11	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 17:11	WG1758738
(S) p-Terphenyl-d14	93.6			23.0-120		10/18/2021 17:11	WG1758738
(S) Nitrobenzene-d5	57.5			14.0-149		10/18/2021 17:11	WG1758738
(S) 2-Fluorobiphenyl	77.0			34.0-125		10/18/2021 17:11	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	12.1		1	10/18/2021 10:00	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 12:59	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.75	T8	1	10/16/2021 15:00	WG1758016

Sample Narrative:

L1416107-03 WG1758016: 8.75 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	818		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-03 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	927		0.0852	0.500	1	10/16/2021 14:38	WG1757831
Cadmium	0.243	J	0.0471	0.500	1	10/16/2021 14:38	WG1757831
Copper	14.8		0.400	2.00	1	10/16/2021 14:38	WG1757831
Lead	11.7		0.208	0.500	1	10/16/2021 14:38	WG1757831
Nickel	26.1		0.132	2.00	1	10/16/2021 14:38	WG1757831
Selenium	2.10		0.764	2.00	1	10/16/2021 14:38	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 14:38	WG1757831
Zinc	41.7		0.832	5.00	1	10/16/2021 14:38	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.139	J	0.0167	0.200	1	10/18/2021 13:13	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.15		0.100	1.00	5	10/16/2021 16:10	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	10/17/2021 19:35	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.7			77.0-120		10/17/2021 19:35	WG1758220

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/16/2021 05:59	WG1758061
Toluene	U		0.00130	0.00500	1	10/16/2021 05:59	WG1758061
Ethylbenzene	U		0.000737	0.00250	1	10/16/2021 05:59	WG1758061
Xylenes, Total	U		0.000880	0.00650	1	10/16/2021 05:59	WG1758061
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/16/2021 05:59	WG1758061
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/16/2021 05:59	WG1758061
(S) Toluene-d8	104			75.0-131		10/16/2021 05:59	WG1758061
(S) 4-Bromofluorobenzene	94.6			67.0-138		10/16/2021 05:59	WG1758061
(S) 1,2-Dichloroethane-d4	112			70.0-130		10/16/2021 05:59	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	6.47		1.61	4.00	1	10/18/2021 14:58	WG1758457
C28-C36 Motor Oil Range	14.2		0.274	4.00	1	10/18/2021 14:58	WG1758457
(S) o-Terphenyl	39.9			18.0-148		10/18/2021 14:58	WG1758457

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 17:29	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 17:29	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 17:29	WG1758738
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2021 17:29	WG1758738
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2021 17:29	WG1758738
Benzo(b)fluoranthene	0.00429	U	0.00153	0.00600	1	10/18/2021 17:29	WG1758738
Benzo(g,h,i)perylene	0.00311	U	0.00177	0.00600	1	10/18/2021 17:29	WG1758738
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2021 17:29	WG1758738
Chrysene	U		0.00232	0.00600	1	10/18/2021 17:29	WG1758738
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2021 17:29	WG1758738
Fluoranthene	U		0.00227	0.00600	1	10/18/2021 17:29	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 17:29	WG1758738
Indeno(1,2,3-cd)pyrene	0.00192	U	0.00181	0.00600	1	10/18/2021 17:29	WG1758738
Naphthalene	U		0.00408	0.0200	1	10/18/2021 17:29	WG1758738
Phenanthrene	U		0.00231	0.00600	1	10/18/2021 17:29	WG1758738
Pyrene	U		0.00200	0.00600	1	10/18/2021 17:29	WG1758738
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2021 17:29	WG1758738
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2021 17:29	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 17:29	WG1758738
(S) p-Terphenyl-d14	92.4			23.0-120		10/18/2021 17:29	WG1758738
(S) Nitrobenzene-d5	57.6			14.0-149		10/18/2021 17:29	WG1758738
(S) 2-Fluorobiphenyl	75.7			34.0-125		10/18/2021 17:29	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	18.3		1	10/18/2021 10:03	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.390	J	0.255	1.00	1	10/18/2021 13:04	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.04	T8	1	10/16/2021 09:54	WG1758065

Sample Narrative:

L1416107-04 WG1758065: 9.04 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1320		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-04 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	601		0.0852	0.500	1	10/16/2021 14:42	WG1757831
Cadmium	0.408	J	0.0471	0.500	1	10/16/2021 14:42	WG1757831
Copper	18.9		0.400	2.00	1	10/16/2021 14:42	WG1757831
Lead	14.0		0.208	0.500	1	10/16/2021 14:42	WG1757831
Nickel	24.2		0.132	2.00	1	10/16/2021 14:42	WG1757831
Selenium	1.85	J	0.764	2.00	1	10/16/2021 14:42	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 14:42	WG1757831
Zinc	46.0		0.832	5.00	1	10/16/2021 14:42	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.158	J	0.0835	1.00	5	10/18/2021 13:16	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.49		0.100	1.00	5	10/16/2021 16:13	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0282	J	0.0217	0.100	1	10/17/2021 19:59	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.6			77.0-120		10/17/2021 19:59	WG1758220



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/16/2021 06:18	WG1758061
Toluene	U		0.00130	0.00500	1	10/16/2021 06:18	WG1758061
Ethylbenzene	U		0.000737	0.00250	1	10/16/2021 06:18	WG1758061
Xylenes, Total	U		0.000880	0.00650	1	10/16/2021 06:18	WG1758061
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/16/2021 06:18	WG1758061
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/16/2021 06:18	WG1758061
(S) Toluene-d8	104			75.0-131		10/16/2021 06:18	WG1758061
(S) 4-Bromofluorobenzene	93.6			67.0-138		10/16/2021 06:18	WG1758061
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/16/2021 06:18	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.10		1.61	4.00	1	10/18/2021 15:25	WG1758457
C28-C36 Motor Oil Range	10.6		0.274	4.00	1	10/18/2021 15:25	WG1758457
(S) o-Terphenyl	45.0			18.0-148		10/18/2021 15:25	WG1758457

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 17:47	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 17:47	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 17:47	WG1758738
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2021 17:47	WG1758738
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2021 17:47	WG1758738
Benzo(b)fluoranthene	0.00222	U	0.00153	0.00600	1	10/18/2021 17:47	WG1758738
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/18/2021 17:47	WG1758738
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2021 17:47	WG1758738
Chrysene	U		0.00232	0.00600	1	10/18/2021 17:47	WG1758738
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2021 17:47	WG1758738
Fluoranthene	U		0.00227	0.00600	1	10/18/2021 17:47	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 17:47	WG1758738
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2021 17:47	WG1758738
Naphthalene	U		0.00408	0.0200	1	10/18/2021 17:47	WG1758738
Phenanthrene	U		0.00231	0.00600	1	10/18/2021 17:47	WG1758738
Pyrene	U		0.00200	0.00600	1	10/18/2021 17:47	WG1758738
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2021 17:47	WG1758738
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2021 17:47	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 17:47	WG1758738
(S) p-Terphenyl-d14	96.4			23.0-120		10/18/2021 17:47	WG1758738
(S) Nitrobenzene-d5	60.5			14.0-149		10/18/2021 17:47	WG1758738
(S) 2-Fluorobiphenyl	79.8			34.0-125		10/18/2021 17:47	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.55		1	10/18/2021 10:05	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 13:10	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.63	T8	1	10/16/2021 15:00	WG1758016

Sample Narrative:

L1416107-05 WG1758016: 8.63 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	267		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-05 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	579		0.0852	0.500	1	10/16/2021 14:45	WG1757831
Cadmium	0.374	J	0.0471	0.500	1	10/16/2021 14:45	WG1757831
Copper	16.6		0.400	2.00	1	10/16/2021 14:45	WG1757831
Lead	12.8		0.208	0.500	1	10/16/2021 14:45	WG1757831
Nickel	23.2		0.132	2.00	1	10/16/2021 14:45	WG1757831
Selenium	1.34	J	0.764	2.00	1	10/16/2021 14:45	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 14:45	WG1757831
Zinc	43.3		0.832	5.00	1	10/16/2021 14:45	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

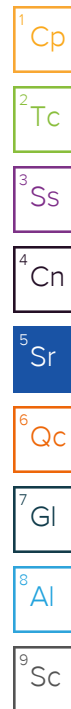
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.0817	J	0.0167	0.200	1	10/18/2021 13:19	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.60		0.100	1.00	5	10/16/2021 16:17	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0322	J	0.0217	0.100	1	10/17/2021 20:23	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.3			77.0-120		10/17/2021 20:23	WG1758220



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/16/2021 06:37	WG1758061
Toluene	U		0.00130	0.00500	1	10/16/2021 06:37	WG1758061
Ethylbenzene	U		0.000737	0.00250	1	10/16/2021 06:37	WG1758061
Xylenes, Total	U		0.000880	0.00650	1	10/16/2021 06:37	WG1758061
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/16/2021 06:37	WG1758061
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/16/2021 06:37	WG1758061
(S) Toluene-d8	103			75.0-131		10/16/2021 06:37	WG1758061
(S) 4-Bromofluorobenzene	91.5			67.0-138		10/16/2021 06:37	WG1758061
(S) 1,2-Dichloroethane-d4	111			70.0-130		10/16/2021 06:37	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	25.0		1.61	4.00	1	10/18/2021 17:41	WG1758457
C28-C36 Motor Oil Range	34.0		0.274	4.00	1	10/18/2021 17:41	WG1758457
(S) o-Terphenyl	49.2			18.0-148		10/18/2021 17:41	WG1758457

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 18:05	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 18:05	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 18:05	WG1758738
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2021 18:05	WG1758738
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2021 18:05	WG1758738
Benzo(b)fluoranthene	0.00215	U	0.00153	0.00600	1	10/18/2021 18:05	WG1758738
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/18/2021 18:05	WG1758738
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2021 18:05	WG1758738
Chrysene	U		0.00232	0.00600	1	10/18/2021 18:05	WG1758738
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2021 18:05	WG1758738
Fluoranthene	U		0.00227	0.00600	1	10/18/2021 18:05	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 18:05	WG1758738
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2021 18:05	WG1758738
Naphthalene	U		0.00408	0.0200	1	10/18/2021 18:05	WG1758738
Phenanthrene	U		0.00231	0.00600	1	10/18/2021 18:05	WG1758738
Pyrene	U		0.00200	0.00600	1	10/18/2021 18:05	WG1758738
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2021 18:05	WG1758738
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2021 18:05	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 18:05	WG1758738
(S) p-Terphenyl-d14	86.7			23.0-120		10/18/2021 18:05	WG1758738
(S) Nitrobenzene-d5	55.0			14.0-149		10/18/2021 18:05	WG1758738
(S) 2-Fluorobiphenyl	76.1			34.0-125		10/18/2021 18:05	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.21		1	10/18/2021 10:13	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 13:25	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.52	T8	1	10/16/2021 15:00	WG1758016

Sample Narrative:

L1416107-06 WG1758016: 8.52 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	188		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-06 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1510		0.0852	0.500	1	10/16/2021 14:48	WG1757831
Cadmium	0.205	J	0.0471	0.500	1	10/16/2021 14:48	WG1757831
Copper	14.5		0.400	2.00	1	10/16/2021 14:48	WG1757831
Lead	14.9		0.208	0.500	1	10/16/2021 14:48	WG1757831
Nickel	23.5		0.132	2.00	1	10/16/2021 14:48	WG1757831
Selenium	2.39		0.764	2.00	1	10/16/2021 14:48	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 14:48	WG1757831
Zinc	44.9		0.832	5.00	1	10/16/2021 14:48	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.0860	J	0.0167	0.200	1	10/18/2021 13:21	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.14		0.100	1.00	5	10/16/2021 16:20	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0279	J	0.0217	0.100	1	10/17/2021 20:46	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.8			77.0-120		10/17/2021 20:46	WG1758220

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/16/2021 06:56	WG1758061
Toluene	U		0.00130	0.00500	1	10/16/2021 06:56	WG1758061
Ethylbenzene	U		0.000737	0.00250	1	10/16/2021 06:56	WG1758061
Xylenes, Total	U		0.000880	0.00650	1	10/16/2021 06:56	WG1758061
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/16/2021 06:56	WG1758061
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/16/2021 06:56	WG1758061
(S) Toluene-d8	103			75.0-131		10/16/2021 06:56	WG1758061
(S) 4-Bromofluorobenzene	92.1			67.0-138		10/16/2021 06:56	WG1758061
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/16/2021 06:56	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.21	J	1.61	4.00	1	10/18/2021 14:17	WG1758457
C28-C36 Motor Oil Range	1.77	B J	0.274	4.00	1	10/18/2021 14:17	WG1758457
(S) o-Terphenyl	42.1			18.0-148		10/18/2021 14:17	WG1758457

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 18:23	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 18:23	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 18:23	WG1758738
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2021 18:23	WG1758738
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2021 18:23	WG1758738
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2021 18:23	WG1758738
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/18/2021 18:23	WG1758738
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2021 18:23	WG1758738
Chrysene	U		0.00232	0.00600	1	10/18/2021 18:23	WG1758738
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2021 18:23	WG1758738
Fluoranthene	U		0.00227	0.00600	1	10/18/2021 18:23	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 18:23	WG1758738
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2021 18:23	WG1758738
Naphthalene	0.00484	J	0.00408	0.0200	1	10/18/2021 18:23	WG1758738
Phenanthrene	U		0.00231	0.00600	1	10/18/2021 18:23	WG1758738
Pyrene	U		0.00200	0.00600	1	10/18/2021 18:23	WG1758738
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2021 18:23	WG1758738
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2021 18:23	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 18:23	WG1758738
(S) p-Terphenyl-d14	94.3			23.0-120		10/18/2021 18:23	WG1758738
(S) Nitrobenzene-d5	57.4			14.0-149		10/18/2021 18:23	WG1758738
(S) 2-Fluorobiphenyl	77.6			34.0-125		10/18/2021 18:23	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.73		1	10/18/2021 10:16	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 13:30	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.63	T8	1	10/16/2021 15:00	WG1758016

Sample Narrative:

L1416107-07 WG1758016: 8.63 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	229		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-07 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	633		0.0852	0.500	1	10/16/2021 14:51	WG1757831
Cadmium	0.308	J	0.0471	0.500	1	10/16/2021 14:51	WG1757831
Copper	16.2		0.400	2.00	1	10/16/2021 14:51	WG1757831
Lead	12.6		0.208	0.500	1	10/16/2021 14:51	WG1757831
Nickel	20.6		0.132	2.00	1	10/16/2021 14:51	WG1757831
Selenium	2.87		0.764	2.00	1	10/16/2021 14:51	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 14:51	WG1757831
Zinc	40.8		0.832	5.00	1	10/16/2021 14:51	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.107	J	0.0167	0.200	1	10/18/2021 13:29	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.57		0.100	1.00	5	10/16/2021 16:24	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0323	J	0.0217	0.100	1	10/17/2021 21:10	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.2			77.0-120		10/17/2021 21:10	WG1758220

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/16/2021 07:15	WG1758061
Toluene	U		0.00130	0.00500	1	10/16/2021 07:15	WG1758061
Ethylbenzene	U		0.000737	0.00250	1	10/16/2021 07:15	WG1758061
Xylenes, Total	U		0.000880	0.00650	1	10/16/2021 07:15	WG1758061
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/16/2021 07:15	WG1758061
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/16/2021 07:15	WG1758061
(S) Toluene-d8	104			75.0-131		10/16/2021 07:15	WG1758061
(S) 4-Bromofluorobenzene	93.2			67.0-138		10/16/2021 07:15	WG1758061
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/16/2021 07:15	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	23.5		1.61	4.00	1	10/18/2021 15:11	WG1758457
C28-C36 Motor Oil Range	26.0		0.274	4.00	1	10/18/2021 15:11	WG1758457
(S) o-Terphenyl	39.8			18.0-148		10/18/2021 15:11	WG1758457

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 18:40	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 18:40	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 18:40	WG1758738
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2021 18:40	WG1758738
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2021 18:40	WG1758738
Benzo(b)fluoranthene	0.00344	U	0.00153	0.00600	1	10/18/2021 18:40	WG1758738
Benzo(g,h,i)perylene	0.00239	U	0.00177	0.00600	1	10/18/2021 18:40	WG1758738
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2021 18:40	WG1758738
Chrysene	U		0.00232	0.00600	1	10/18/2021 18:40	WG1758738
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2021 18:40	WG1758738
Fluoranthene	U		0.00227	0.00600	1	10/18/2021 18:40	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 18:40	WG1758738
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2021 18:40	WG1758738
Naphthalene	U		0.00408	0.0200	1	10/18/2021 18:40	WG1758738
Phenanthrene	U		0.00231	0.00600	1	10/18/2021 18:40	WG1758738
Pyrene	U		0.00200	0.00600	1	10/18/2021 18:40	WG1758738
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2021 18:40	WG1758738
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2021 18:40	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 18:40	WG1758738
(S) p-Terphenyl-d14	104			23.0-120		10/18/2021 18:40	WG1758738
(S) Nitrobenzene-d5	56.6			14.0-149		10/18/2021 18:40	WG1758738
(S) 2-Fluorobiphenyl	80.6			34.0-125		10/18/2021 18:40	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.17		1	10/18/2021 10:19	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 13:36	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.60	T8	1	10/16/2021 09:54	WG1758065

Sample Narrative:

L1416107-08 WG1758065: 8.6 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	189		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-08 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	277		0.0852	0.500	1	10/16/2021 14:55	WG1757831
Cadmium	0.427	J	0.0471	0.500	1	10/16/2021 14:55	WG1757831
Copper	14.0		0.400	2.00	1	10/16/2021 14:55	WG1757831
Lead	13.3		0.208	0.500	1	10/16/2021 14:55	WG1757831
Nickel	23.7		0.132	2.00	1	10/16/2021 14:55	WG1757831
Selenium	2.08		0.764	2.00	1	10/16/2021 14:55	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 14:55	WG1757831
Zinc	41.0		0.832	5.00	1	10/16/2021 14:55	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.0737	J	0.0167	0.200	1	10/18/2021 13:32	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.85		0.100	1.00	5	10/16/2021 16:27	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0326	J	0.0217	0.100	1	10/17/2021 21:34	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.7			77.0-120		10/17/2021 21:34	WG1758220

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/16/2021 07:34	WG1758061
Toluene	U		0.00130	0.00500	1	10/16/2021 07:34	WG1758061
Ethylbenzene	U		0.000737	0.00250	1	10/16/2021 07:34	WG1758061
Xylenes, Total	U		0.000880	0.00650	1	10/16/2021 07:34	WG1758061
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/16/2021 07:34	WG1758061
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/16/2021 07:34	WG1758061
(S) Toluene-d8	104			75.0-131		10/16/2021 07:34	WG1758061
(S) 4-Bromofluorobenzene	96.3			67.0-138		10/16/2021 07:34	WG1758061
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/16/2021 07:34	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.86	J	1.61	4.00	1	10/18/2021 14:31	WG1758457
C28-C36 Motor Oil Range	3.72	B J	0.274	4.00	1	10/18/2021 14:31	WG1758457
(S) o-Terphenyl	40.3			18.0-148		10/18/2021 14:31	WG1758457

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 18:58	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 18:58	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 18:58	WG1758738
Benzo(a)anthracene	U		0.00173	0.00600	1	10/18/2021 18:58	WG1758738
Benzo(a)pyrene	U		0.00179	0.00600	1	10/18/2021 18:58	WG1758738
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/18/2021 18:58	WG1758738
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/18/2021 18:58	WG1758738
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/18/2021 18:58	WG1758738
Chrysene	U		0.00232	0.00600	1	10/18/2021 18:58	WG1758738
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/18/2021 18:58	WG1758738
Fluoranthene	U		0.00227	0.00600	1	10/18/2021 18:58	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 18:58	WG1758738
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/18/2021 18:58	WG1758738
Naphthalene	U		0.00408	0.0200	1	10/18/2021 18:58	WG1758738
Phenanthrene	U		0.00231	0.00600	1	10/18/2021 18:58	WG1758738
Pyrene	U		0.00200	0.00600	1	10/18/2021 18:58	WG1758738
1-Methylnaphthalene	U		0.00449	0.0200	1	10/18/2021 18:58	WG1758738
2-Methylnaphthalene	U		0.00427	0.0200	1	10/18/2021 18:58	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 18:58	WG1758738
(S) p-Terphenyl-d14	88.4			23.0-120		10/18/2021 18:58	WG1758738
(S) Nitrobenzene-d5	54.3			14.0-149		10/18/2021 18:58	WG1758738
(S) 2-Fluorobiphenyl	73.0			34.0-125		10/18/2021 18:58	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.29		1	10/18/2021 10:22	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 13:46	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.96	T8	1	10/16/2021 15:00	WG1758016

Sample Narrative:

L1416107-09 WG1758016: 8.96 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	334		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-09 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	4640		0.426	2.50	5	10/18/2021 12:23	WG1757831
Cadmium	U		0.0471	0.500	1	10/16/2021 14:58	WG1757831
Copper	17.1		0.400	2.00	1	10/16/2021 14:58	WG1757831
Lead	11.1		0.208	0.500	1	10/16/2021 14:58	WG1757831
Nickel	19.9		0.132	2.00	1	10/16/2021 14:58	WG1757831
Selenium	1.36	J	0.764	2.00	1	10/16/2021 14:58	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 14:58	WG1757831
Zinc	39.8		0.832	5.00	1	10/16/2021 14:58	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

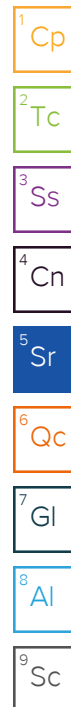
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.03		0.0835	1.00	5	10/18/2021 13:35	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.28		0.100	1.00	5	10/16/2021 16:30	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.117		0.0217	0.100	1	10/17/2021 21:57	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.6			77.0-120		10/17/2021 21:57	WG1758220



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00103		0.000467	0.00100	1	10/16/2021 07:53	WG1758061
Toluene	0.0113		0.00130	0.00500	1	10/16/2021 07:53	WG1758061
Ethylbenzene	0.00225	U	0.000737	0.00250	1	10/16/2021 07:53	WG1758061
Xylenes, Total	0.0316		0.000880	0.00650	1	10/16/2021 07:53	WG1758061
1,2,4-Trimethylbenzene	0.00220	U	0.00158	0.00500	1	10/16/2021 07:53	WG1758061
1,3,5-Trimethylbenzene	0.00463	U	0.00200	0.00500	1	10/16/2021 07:53	WG1758061
(S) Toluene-d8	105			75.0-131		10/16/2021 07:53	WG1758061
(S) 4-Bromofluorobenzene	95.2			67.0-138		10/16/2021 07:53	WG1758061
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/16/2021 07:53	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	67.2	U	32.2	80.0	20	10/18/2021 17:54	WG1758457
C28-C36 Motor Oil Range	172		5.48	80.0	20	10/18/2021 17:54	WG1758457
(S) o-Terphenyl	0.000	J7		18.0-148		10/18/2021 17:54	WG1758457

Sample Narrative:

L1416107-09 WG1758457: Cannot run at lower dilution due to viscosity of extract

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 20:26	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 20:26	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 20:26	WG1758738
Benzo(a)anthracene	0.0243		0.00173	0.00600	1	10/18/2021 20:26	WG1758738
Benzo(a)pyrene	0.0406		0.00179	0.00600	1	10/18/2021 20:26	WG1758738
Benzo(b)fluoranthene	0.112		0.00153	0.00600	1	10/18/2021 20:26	WG1758738
Benzo(g,h,i)perylene	0.0582		0.00177	0.00600	1	10/18/2021 20:26	WG1758738
Benzo(k)fluoranthene	0.0250		0.00215	0.00600	1	10/18/2021 20:26	WG1758738
Chrysene	0.0268		0.00232	0.00600	1	10/18/2021 20:26	WG1758738
Dibenz(a,h)anthracene	0.0209		0.00172	0.00600	1	10/18/2021 20:26	WG1758738
Fluoranthene	0.0222		0.00227	0.00600	1	10/18/2021 20:26	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 20:26	WG1758738
Indeno(1,2,3-cd)pyrene	0.0446		0.00181	0.00600	1	10/18/2021 20:26	WG1758738
Naphthalene	0.0203		0.00408	0.0200	1	10/18/2021 20:26	WG1758738
Phenanthrene	0.0258		0.00231	0.00600	1	10/18/2021 20:26	WG1758738
Pyrene	0.0123		0.00200	0.00600	1	10/18/2021 20:26	WG1758738
1-Methylnaphthalene	0.0305		0.00449	0.0200	1	10/18/2021 20:26	WG1758738
2-Methylnaphthalene	0.0424		0.00427	0.0200	1	10/18/2021 20:26	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 20:26	WG1758738
(S) p-Terphenyl-d14	83.2			23.0-120		10/18/2021 20:26	WG1758738
(S) Nitrobenzene-d5	51.6			14.0-149		10/18/2021 20:26	WG1758738
(S) 2-Fluorobiphenyl	70.3			34.0-125		10/18/2021 20:26	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.82		1	10/18/2021 10:24	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 13:51	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.82	T8	1	10/16/2021 15:00	WG1758016

Sample Narrative:

L1416107-10 WG1758016: 8.82 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	284		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-10 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	6770		0.426	2.50	5	10/18/2021 12:26	WG1757831
Cadmium	U		0.0471	0.500	1	10/16/2021 15:01	WG1757831
Copper	17.2		0.400	2.00	1	10/16/2021 15:01	WG1757831
Lead	13.1		0.208	0.500	1	10/16/2021 15:01	WG1757831
Nickel	17.2		0.132	2.00	1	10/16/2021 15:01	WG1757831
Selenium	2.23		0.764	2.00	1	10/16/2021 15:01	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 15:01	WG1757831
Zinc	37.8		0.832	5.00	1	10/16/2021 15:01	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.785	J	0.0835	1.00	5	10/18/2021 13:38	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.59		0.100	1.00	5	10/16/2021 16:34	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0990	J	0.0217	0.100	1	10/17/2021 22:21	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	98.2			77.0-120		10/17/2021 22:21	WG1758220

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000775	U	0.000467	0.00100	1	10/16/2021 08:12	WG1758061
Toluene	0.0128		0.00130	0.00500	1	10/16/2021 08:12	WG1758061
Ethylbenzene	0.00183	U	0.000737	0.00250	1	10/16/2021 08:12	WG1758061
Xylenes, Total	0.0267		0.000880	0.00650	1	10/16/2021 08:12	WG1758061
1,2,4-Trimethylbenzene	0.00188	U	0.00158	0.00500	1	10/16/2021 08:12	WG1758061
1,3,5-Trimethylbenzene	0.00290	U	0.00200	0.00500	1	10/16/2021 08:12	WG1758061
(S) Toluene-d8	103			75.0-131		10/16/2021 08:12	WG1758061
(S) 4-Bromofluorobenzene	91.3			67.0-138		10/16/2021 08:12	WG1758061
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/16/2021 08:12	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	53.1	U	32.2	80.0	20	10/18/2021 18:08	WG1758457
C28-C36 Motor Oil Range	153	B	5.48	80.0	20	10/18/2021 18:08	WG1758457
(S) o-Terphenyl	0.000	J7		18.0-148		10/18/2021 18:08	WG1758457

Sample Narrative:

L1416107-10 WG1758457: Cannot run at lower dilution due to viscosity of extract

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00378	U	0.00230	0.00600	1	10/18/2021 21:01	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 21:01	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 21:01	WG1758738
Benzo(a)anthracene	0.0407		0.00173	0.00600	1	10/18/2021 21:01	WG1758738
Benzo(a)pyrene	0.0647		0.00179	0.00600	1	10/18/2021 21:01	WG1758738
Benzo(b)fluoranthene	0.174		0.00153	0.00600	1	10/18/2021 21:01	WG1758738
Benzo(g,h,i)perylene	0.0942		0.00177	0.00600	1	10/18/2021 21:01	WG1758738
Benzo(k)fluoranthene	0.0337		0.00215	0.00600	1	10/18/2021 21:01	WG1758738
Chrysene	0.0430		0.00232	0.00600	1	10/18/2021 21:01	WG1758738
Dibenz(a,h)anthracene	0.0342		0.00172	0.00600	1	10/18/2021 21:01	WG1758738
Fluoranthene	0.0398		0.00227	0.00600	1	10/18/2021 21:01	WG1758738
Fluorene	0.00311	U	0.00205	0.00600	1	10/18/2021 21:01	WG1758738
Indeno(1,2,3-cd)pyrene	0.0696		0.00181	0.00600	1	10/18/2021 21:01	WG1758738
Naphthalene	0.0225		0.00408	0.0200	1	10/18/2021 21:01	WG1758738
Phenanthrene	0.0386		0.00231	0.00600	1	10/18/2021 21:01	WG1758738
Pyrene	0.0235		0.00200	0.00600	1	10/18/2021 21:01	WG1758738
1-Methylnaphthalene	0.0327		0.00449	0.0200	1	10/18/2021 21:01	WG1758738
2-Methylnaphthalene	0.0481		0.00427	0.0200	1	10/18/2021 21:01	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 21:01	WG1758738
(S) p-Terphenyl-d14	86.2			23.0-120		10/18/2021 21:01	WG1758738
(S) Nitrobenzene-d5	54.0			14.0-149		10/18/2021 21:01	WG1758738
(S) 2-Fluorobiphenyl	71.6			34.0-125		10/18/2021 21:01	WG1758738

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.26		1	10/18/2021 10:27	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 13:56	WG1757947

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.70	T8	1	10/16/2021 15:00	WG1758016

Sample Narrative:

L1416107-11 WG1758016: 8.7 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	315		10.0	1	10/17/2021 17:12	WG1757487

Sample Narrative:

L1416107-11 WG1757487: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	4520		0.426	2.50	5	10/18/2021 12:29	WG1757831
Cadmium	U		0.0471	0.500	1	10/16/2021 15:04	WG1757831
Copper	15.3		0.400	2.00	1	10/16/2021 15:04	WG1757831
Lead	10.0		0.208	0.500	1	10/16/2021 15:04	WG1757831
Nickel	16.9		0.132	2.00	1	10/16/2021 15:04	WG1757831
Selenium	1.76	J	0.764	2.00	1	10/16/2021 15:04	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 15:04	WG1757831
Zinc	34.1		0.832	5.00	1	10/16/2021 15:04	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

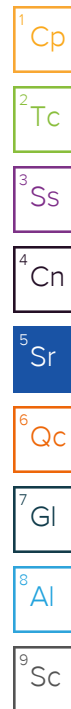
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.08		0.0835	1.00	5	10/18/2021 13:40	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.70		0.100	1.00	5	10/16/2021 16:37	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0997	J	0.0217	0.100	1	10/17/2021 22:45	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.8			77.0-120		10/17/2021 22:45	WG1758220



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000842	U	0.000467	0.00100	1	10/16/2021 08:31	WG1758061
Toluene	0.00780		0.00130	0.00500	1	10/16/2021 08:31	WG1758061
Ethylbenzene	0.00200	U	0.000737	0.00250	1	10/16/2021 08:31	WG1758061
Xylenes, Total	0.0200		0.000880	0.00650	1	10/16/2021 08:31	WG1758061
1,2,4-Trimethylbenzene	0.00171	U	0.00158	0.00500	1	10/16/2021 08:31	WG1758061
1,3,5-Trimethylbenzene	0.00406	U	0.00200	0.00500	1	10/16/2021 08:31	WG1758061
(S) Toluene-d8	103			75.0-131		10/16/2021 08:31	WG1758061
(S) 4-Bromofluorobenzene	94.1			67.0-138		10/16/2021 08:31	WG1758061
(S) 1,2-Dichloroethane-d4	103			70.0-130		10/16/2021 08:31	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	51.1	U	32.2	80.0	20	10/18/2021 18:21	WG1758457
C28-C36 Motor Oil Range	148	B	5.48	80.0	20	10/18/2021 18:21	WG1758457
(S) o-Terphenyl	0.000	J7		18.0-148		10/18/2021 18:21	WG1758457

Sample Narrative:

L1416107-11 WG1758457: Cannot run at lower dilution due to viscosity of extract

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/18/2021 20:44	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 20:44	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 20:44	WG1758738
Benzo(a)anthracene	0.0209		0.00173	0.00600	1	10/18/2021 20:44	WG1758738
Benzo(a)pyrene	0.0314		0.00179	0.00600	1	10/18/2021 20:44	WG1758738
Benzo(b)fluoranthene	0.0970		0.00153	0.00600	1	10/18/2021 20:44	WG1758738
Benzo(g,h,i)perylene	0.0507		0.00177	0.00600	1	10/18/2021 20:44	WG1758738
Benzo(k)fluoranthene	0.0190		0.00215	0.00600	1	10/18/2021 20:44	WG1758738
Chrysene	0.0227		0.00232	0.00600	1	10/18/2021 20:44	WG1758738
Dibenz(a,h)anthracene	0.0185		0.00172	0.00600	1	10/18/2021 20:44	WG1758738
Fluoranthene	0.0193		0.00227	0.00600	1	10/18/2021 20:44	WG1758738
Fluorene	U		0.00205	0.00600	1	10/18/2021 20:44	WG1758738
Indeno(1,2,3-cd)pyrene	0.0393		0.00181	0.00600	1	10/18/2021 20:44	WG1758738
Naphthalene	0.0140	U	0.00408	0.0200	1	10/18/2021 20:44	WG1758738
Phenanthrene	0.0195		0.00231	0.00600	1	10/18/2021 20:44	WG1758738
Pyrene	0.0112		0.00200	0.00600	1	10/18/2021 20:44	WG1758738
1-Methylnaphthalene	0.0219		0.00449	0.0200	1	10/18/2021 20:44	WG1758738
2-Methylnaphthalene	0.0303		0.00427	0.0200	1	10/18/2021 20:44	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 20:44	WG1758738
(S) p-Terphenyl-d14	74.0			23.0-120		10/18/2021 20:44	WG1758738
(S) Nitrobenzene-d5	48.1			14.0-149		10/18/2021 20:44	WG1758738
(S) 2-Fluorobiphenyl	62.6			34.0-125		10/18/2021 20:44	WG1758738

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.68		1	10/18/2021 10:30	WG1757937

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/18/2021 14:12	WG1758621

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.78	T8	1	10/16/2021 15:00	WG1758016

Sample Narrative:

L1416107-12 WG1758016: 8.78 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	266		10.0	1	10/17/2021 18:36	WG1757497

Sample Narrative:

L1416107-12 WG1757497: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	4200		0.426	2.50	5	10/18/2021 12:31	WG1757831
Cadmium	U		0.0471	0.500	1	10/16/2021 15:07	WG1757831
Copper	18.7		0.400	2.00	1	10/16/2021 15:07	WG1757831
Lead	12.8		0.208	0.500	1	10/16/2021 15:07	WG1757831
Nickel	18.4		0.132	2.00	1	10/16/2021 15:07	WG1757831
Selenium	1.41	J	0.764	2.00	1	10/16/2021 15:07	WG1757831
Silver	U		0.127	1.00	1	10/16/2021 15:07	WG1757831
Zinc	34.6		0.832	5.00	1	10/16/2021 15:07	WG1757831

Metals (ICP) by Method 6010B-NE493 Ch 2

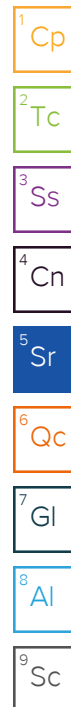
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.803	J	0.0835	1.00	5	10/18/2021 13:43	WG1757950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.60		0.100	1.00	5	10/16/2021 16:41	WG1757828

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.111		0.0217	0.100	1	10/17/2021 23:09	WG1758220
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.5			77.0-120		10/17/2021 23:09	WG1758220



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00138		0.000467	0.00100	1	10/16/2021 08:51	WG1758061
Toluene	0.0132		0.00130	0.00500	1	10/16/2021 08:51	WG1758061
Ethylbenzene	0.00200	U	0.000737	0.00250	1	10/16/2021 08:51	WG1758061
Xylenes, Total	0.0245		0.000880	0.00650	1	10/16/2021 08:51	WG1758061
1,2,4-Trimethylbenzene	0.00185	U	0.00158	0.00500	1	10/16/2021 08:51	WG1758061
1,3,5-Trimethylbenzene	0.00235	U	0.00200	0.00500	1	10/16/2021 08:51	WG1758061
(S) Toluene-d8	104			75.0-131		10/16/2021 08:51	WG1758061
(S) 4-Bromofluorobenzene	93.3			67.0-138		10/16/2021 08:51	WG1758061
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/16/2021 08:51	WG1758061

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	32.8	U	32.2	80.0	20	10/18/2021 18:35	WG1758457
C28-C36 Motor Oil Range	98.5	B	5.48	80.0	20	10/18/2021 18:35	WG1758457
(S) o-Terphenyl	0.000	J7		18.0-148		10/18/2021 18:35	WG1758457

Sample Narrative:

L1416107-12 WG1758457: Cannot run at lower dilution due to viscosity of extract

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00331	U	0.00230	0.00600	1	10/18/2021 21:19	WG1758738
Acenaphthene	U		0.00209	0.00600	1	10/18/2021 21:19	WG1758738
Acenaphthylene	U		0.00216	0.00600	1	10/18/2021 21:19	WG1758738
Benzo(a)anthracene	0.0317		0.00173	0.00600	1	10/18/2021 21:19	WG1758738
Benzo(a)pyrene	0.0514		0.00179	0.00600	1	10/18/2021 21:19	WG1758738
Benzo(b)fluoranthene	0.131		0.00153	0.00600	1	10/18/2021 21:19	WG1758738
Benzo(g,h,i)perylene	0.0716		0.00177	0.00600	1	10/18/2021 21:19	WG1758738
Benzo(k)fluoranthene	0.0276		0.00215	0.00600	1	10/18/2021 21:19	WG1758738
Chrysene	0.0396		0.00232	0.00600	1	10/18/2021 21:19	WG1758738
Dibenz(a,h)anthracene	0.0266		0.00172	0.00600	1	10/18/2021 21:19	WG1758738
Fluoranthene	0.0350		0.00227	0.00600	1	10/18/2021 21:19	WG1758738
Fluorene	0.00446	U	0.00205	0.00600	1	10/18/2021 21:19	WG1758738
Indeno(1,2,3-cd)pyrene	0.0560		0.00181	0.00600	1	10/18/2021 21:19	WG1758738
Naphthalene	0.0643		0.00408	0.0200	1	10/18/2021 21:19	WG1758738
Phenanthrene	0.0538		0.00231	0.00600	1	10/18/2021 21:19	WG1758738
Pyrene	0.0217		0.00200	0.00600	1	10/18/2021 21:19	WG1758738
1-Methylnaphthalene	0.109		0.00449	0.0200	1	10/18/2021 21:19	WG1758738
2-Methylnaphthalene	0.145		0.00427	0.0200	1	10/18/2021 21:19	WG1758738
2-Chloronaphthalene	U		0.00466	0.0200	1	10/18/2021 21:19	WG1758738
(S) p-Terphenyl-d14	76.8			23.0-120		10/18/2021 21:19	WG1758738
(S) Nitrobenzene-d5	49.5			14.0-149		10/18/2021 21:19	WG1758738
(S) 2-Fluorobiphenyl	65.4			34.0-125		10/18/2021 21:19	WG1758738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3718019-1 10/18/21 11:40

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1416107-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1416107-08 10/18/21 13:36 • (DUP) R3718019-7 10/18/21 13:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

L1416010-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1416010-01 10/18/21 18:41 • (DUP) R3718019-8 10/18/21 18:47

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	0.305	0.384	1	22.7	J P1	20

Laboratory Control Sample (LCS)

(LCS) R3718019-2 10/18/21 11:46

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.68	96.8	80.0-120	

L1416095-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1416095-01 10/18/21 12:17 • (MS) R3718019-3 10/18/21 12:26 • (MSD) R3718019-4 10/18/21 12:33

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	15.8	15.4	78.9	77.0	1	75.0-125			2.47	20

L1416095-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1416095-01 10/18/21 12:17 • (MS) R3718019-5 10/18/21 12:38

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	648	U	590	91.0	50	75.0-125	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3718020-1 10/18/21 14:01

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1416123-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1416123-02 10/18/21 14:33 • (DUP) R3718020-3 10/18/21 14:38

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

L1416125-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1416125-03 10/18/21 15:39 • (DUP) R3718020-4 10/18/21 15:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3718020-2 10/18/21 14:07

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.3	103	80.0-120	

L1416125-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1416125-04 10/18/21 16:05 • (MS) R3718020-5 10/18/21 16:10 • (MSD) R3718020-6 10/18/21 16:16

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	11.8	15.2	59.1	76.1	1	75.0-125	J6	J3	25.1	20

L1416125-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1416125-04 10/18/21 16:05 • (MS) R3718020-7 10/18/21 16:21

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	665	U	1570	237	50	75.0-125	J5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1415463-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1415463-03 10/16/21 12:01 • (DUP) R3717315-2 10/16/21 12:01

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	12.8	12.8	1	0.156		1

Sample Narrative:

OS: 12.79 at 25C

DUP: 12.77 at 25C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1415853-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1415853-04 10/16/21 12:01 • (DUP) R3717315-3 10/16/21 12:01

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	6.65	6.67	1	0.300		1

Sample Narrative:

OS: 6.65 at 21.7C

DUP: 6.67 at 21.1C

Laboratory Control Sample (LCS)

(LCS) R3717315-1 10/16/21 12:01

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.03 at 19.9C

L1416945-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1416945-01 10/16/21 15:00 • (DUP) R3717343-2 10/16/21 15:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.53	8.54	1	0.117		1

Sample Narrative:

OS: 8.53 at 19.6C

DUP: 8.54 at 20.5C

L1416961-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1416961-02 10/16/21 15:00 • (DUP) R3717343-3 10/16/21 15:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.04	8.01	1	0.374		1

Sample Narrative:

OS: 8.04 at 19.7C

DUP: 8.01 at 19.9C

Laboratory Control Sample (LCS)

(LCS) R3717343-1 10/16/21 15:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 20.2C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1415618-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1415618-04 10/16/21 09:54 • (DUP) R3717299-2 10/16/21 09:54

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.65	8.65	1	0.000		1

Sample Narrative:

OS: 8.65 at 20C

DUP: 8.65 at 20.1C

L1416500-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1416500-02 10/16/21 09:54 • (DUP) R3717299-3 10/16/21 09:54

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.74	8.71	1	0.344		1

Sample Narrative:

OS: 8.74 at 19.5C

DUP: 8.71 at 19.8C

Laboratory Control Sample (LCS)

(LCS) R3717299-1 10/16/21 09:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.05 at 20.4C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3717554-1 10/17/21 17:12

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1416107-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1416107-01 10/17/21 17:12 • (DUP) R3717554-3 10/17/21 17:12

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1270	1270	1	0.394		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1416107-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1416107-10 10/17/21 17:12 • (DUP) R3717554-4 10/17/21 17:12

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	284	286	1	0.737		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3717554-2 10/17/21 17:12

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	270	101	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3717562-1 10/17/21 18:36

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1416123-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1416123-03 10/17/21 18:36 • (DUP) R3717562-3 10/17/21 18:36

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	313	315	1	0.637		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1416125-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1416125-02 10/17/21 18:36 • (DUP) R3717562-4 10/17/21 18:36

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2090	1920	1	8.41		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3717562-2 10/17/21 18:36

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	276	103	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3717617-1 10/16/21 14:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	0.610		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	0.252	U	0.208	0.500
Nickel	0.159	U	0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Laboratory Control Sample (LCS)

(LCS) R3717617-2 10/16/21 14:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	104	104	80.0-120	
Cadmium	100	100	100	80.0-120	
Copper	100	103	103	80.0-120	
Lead	100	97.2	97.2	80.0-120	
Nickel	100	100	100	80.0-120	
Selenium	100	102	102	80.0-120	
Silver	20.0	18.0	89.8	80.0-120	
Zinc	100	94.8	94.8	80.0-120	

L1416074-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1416074-01 10/16/21 14:08 • (MS) R3717617-5 10/16/21 14:17 • (MSD) R3717617-6 10/16/21 14:20

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	603	545	753	0.000	150	1	75.0-125	U	J3 U	32.0	20
Cadmium	100	0.150	101	101	101	101	1	75.0-125			0.245	20
Copper	100	12.6	118	118	105	106	1	75.0-125			0.461	20
Lead	100	10.6	109	110	98.8	99.7	1	75.0-125			0.794	20
Nickel	100	12.4	117	118	105	106	1	75.0-125			1.05	20
Selenium	100	1.40	99.8	101	98.4	99.8	1	75.0-125			1.35	20
Silver	20.0	U	18.5	18.5	92.3	92.7	1	75.0-125			0.477	20
Zinc	100	37.7	130	131	92.8	93.3	1	75.0-125			0.407	20

Method Blank (MB)

(MB) R3717951-1 10/18/21 12:57

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3717951-2 10/18/21 13:00 • (LCSD) R3717951-3 10/18/21 13:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.996	1.01	99.6	101	80.0-120			0.891	20

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R3717358-1 10/16/21 15:29

Analyte	MB Result mg/kg	<u>MB Qualifier</u>	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3717358-2 10/16/21 15:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Arsenic	100	97.8	97.8	80.0-120	

L1416074-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1416074-01 10/16/21 15:36 • (MS) R3717358-5 10/16/21 15:46 • (MSD) R3717358-6 10/16/21 15:49

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Arsenic	100	3.83	105	99.5	101	95.7	5	75.0-125			5.49	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3719586-2 10/17/21 16:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	100			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3719586-1 10/17/21 15:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.20	94.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			100	77.0-120	

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Cp

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Qc

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Gl

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Sc

Method Blank (MB)

(MB) R3719530-2 10/16/21 02:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	103			75.0-131
(S) 4-Bromofluorobenzene	92.1			67.0-138
(S) 1,2-Dichloroethane-d4	100			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3719530-1 10/16/21 01:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.120	96.0	70.0-123	
Ethylbenzene	0.125	0.114	91.2	74.0-126	
Toluene	0.125	0.116	92.8	75.0-121	
1,2,4-Trimethylbenzene	0.125	0.116	92.8	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.120	96.0	73.0-127	
Xylenes, Total	0.375	0.345	92.0	72.0-127	
(S) Toluene-d8			101	75.0-131	
(S) 4-Bromofluorobenzene			98.5	67.0-138	
(S) 1,2-Dichloroethane-d4			113	70.0-130	

L1416107-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1416107-12 10/16/21 08:51 • (MS) R3719530-3 10/16/21 09:10 • (MSD) R3719530-4 10/16/21 09:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.00138	0.0952	0.0781	75.1	61.4	1	10.0-149			19.7	37
Ethylbenzene	0.125	0.00200	0.0988	0.0760	77.4	59.2	1	10.0-160			26.1	38
Toluene	0.125	0.0132	0.192	0.173	143	128	1	10.0-156			10.4	38
1,2,4-Trimethylbenzene	0.125	0.00185	0.0971	0.0759	76.2	59.2	1	10.0-160			24.5	36
1,3,5-Trimethylbenzene	0.125	0.00235	0.0990	0.0743	77.3	57.6	1	10.0-160			28.5	38
Xylenes, Total	0.375	0.0245	0.401	0.344	100	85.2	1	10.0-160			15.3	38
(S) Toluene-d8					105	101		75.0-131				
(S) 4-Bromofluorobenzene					97.4	95.1		67.0-138				
(S) 1,2-Dichloroethane-d4					105	107		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3718051-1 10/18/21 13:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.825	J	0.274	4.00
(S) o-Terphenyl	49.7			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3718051-2 10/18/21 13:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	37.2	74.4	50.0-150	
(S) o-Terphenyl			58.3	18.0-148	

L1416123-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1416123-04 10/18/21 17:00 • (MS) R3718051-3 10/18/21 17:14 • (MSD) R3718051-4 10/18/21 17:27

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.5	14.0	58.8	46.5	92.4	67.0	1	50.0-150		J3	23.4	20
(S) o-Terphenyl					33.1	31.7		18.0-148				

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R3718052-2 10/18/21 14:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	60.9			14.0-149
(S) 2-Fluorobiphenyl	84.7			34.0-125
(S) p-Terphenyl-d14	109			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3718052-1 10/18/21 14:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0733	91.6	50.0-126	
Acenaphthene	0.0800	0.0681	85.1	50.0-120	
Acenaphthylene	0.0800	0.0736	92.0	50.0-120	
Benzo(a)anthracene	0.0800	0.0746	93.3	45.0-120	
Benzo(a)pyrene	0.0800	0.0700	87.5	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0702	87.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0687	85.9	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0692	86.5	49.0-125	
Chrysene	0.0800	0.0738	92.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0716	89.5	47.0-125	
Fluoranthene	0.0800	0.0781	97.6	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3718052-1 10/18/21 14:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0730	91.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0718	89.8	46.0-125	
Naphthalene	0.0800	0.0683	85.4	50.0-120	
Phenanthrene	0.0800	0.0723	90.4	47.0-120	
Pyrene	0.0800	0.0667	83.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0746	93.3	51.0-121	
2-Methylnaphthalene	0.0800	0.0710	88.8	50.0-120	
2-Chloronaphthalene	0.0800	0.0672	84.0	50.0-120	
(S) Nitrobenzene-d5			64.4	14.0-149	
(S) 2-Fluorobiphenyl			91.4	34.0-125	
(S) p-Terphenyl-d14			112	23.0-120	

L1416095-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1416095-04 10/18/21 16:00 • (MS) R3718052-3 10/18/21 16:18 • (MSD) R3718052-4 10/18/21 16:36

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0792	U	0.0604	0.0615	76.3	77.7	1	10.0-145			1.80	30
Acenaphthene	0.0792	U	0.0569	0.0595	71.8	75.1	1	14.0-127			4.47	27
Acenaphthylene	0.0792	U	0.0607	0.0639	76.6	80.7	1	21.0-124			5.14	25
Benzo(a)anthracene	0.0792	U	0.0599	0.0639	75.6	80.7	1	10.0-139			6.46	30
Benzo(a)pyrene	0.0792	U	0.0588	0.0620	74.2	78.3	1	10.0-141			5.30	31
Benzo(b)fluoranthene	0.0792	U	0.0566	0.0594	71.5	75.0	1	10.0-140			4.83	36
Benzo(g,h,i)perylene	0.0792	U	0.0571	0.0597	72.1	75.4	1	10.0-140			4.45	33
Benzo(k)fluoranthene	0.0792	U	0.0565	0.0590	71.3	74.5	1	10.0-137			4.33	31
Chrysene	0.0792	U	0.0595	0.0622	75.1	78.5	1	10.0-145			4.44	30
Dibenz(a,h)anthracene	0.0792	U	0.0608	0.0629	76.8	79.4	1	10.0-132			3.40	31
Fluoranthene	0.0792	U	0.0635	0.0667	80.2	84.2	1	10.0-153			4.92	33
Fluorene	0.0792	U	0.0624	0.0633	78.8	79.9	1	11.0-130			1.43	29
Indeno(1,2,3-cd)pyrene	0.0792	U	0.0601	0.0628	75.9	79.3	1	10.0-137			4.39	32
Naphthalene	0.0792	0.0149	0.0928	0.0998	98.4	107	1	10.0-135			7.27	27
Phenanthrene	0.0792	U	0.0587	0.0612	74.1	77.3	1	10.0-144			4.17	31
Pyrene	0.0792	U	0.0552	0.0576	69.7	72.7	1	10.0-148			4.26	35
1-Methylnaphthalene	0.0792	U	0.0659	0.0693	83.2	87.5	1	10.0-142			5.03	28
2-Methylnaphthalene	0.0792	0.00499	0.0690	0.0723	80.8	85.0	1	10.0-137			4.67	28
2-Chloronaphthalene	0.0792	U	0.0559	0.0591	70.6	74.6	1	29.0-120			5.57	24
(S) Nitrobenzene-d5					73.2	61.6		14.0-149				
(S) 2-Fluorobiphenyl					83.5	85.1		34.0-125				
(S) p-Terphenyl-d14					101	100		23.0-120				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

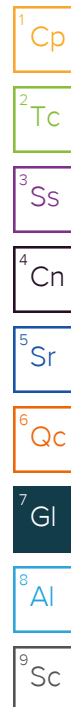
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

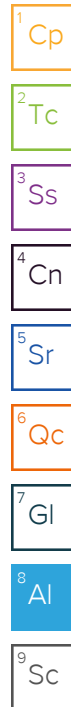
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: Caerus Oil and Gas LLC		Billing Information:	
Address: Info on file		Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins		Email To: Info on file	
Copy To: Chris McKisson, remediation@confluence-cc.com		Site Collection Info/Address:	
Customer Project Name/Number: B36 496 Historical; PH 05, 11, & 12		State: County/City: Time Zone Collected: CO / Garfield [] PT [X] MT [] CT [] ET	
Phone:	Site/Facility ID #: B36 496	Compliance Monitoring?	
Email:		[] Yes [X] No	
Collected By (print): Andrew Smith	Purchase Order #: Quote #:	DW PWS ID #:	
Collected By (signature):	Turnaround Date Required: Standard 5-Day	DW Location Code:	
Sample Disposal:	Rush: (Expedite Charges Apply)	Immediately Packed on Ice:	
[] Dispose as appropriate	[] Same Day [] Next Day	[X] Yes [] No	
[] Return	[] 2 Day [] 3 Day	Field Filtered (if applicable):	
[] Archive:	[] 4 Day [] 5 Day	[] Yes [] No	
[] Hold:		Analysis:	

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)
			Date	Time	Date	Time			
PH12 (SEWALL@9")	SL	G	10/7/2021	1120				2	G
PH12 (SWWALL@9")	SL	G	10/7/2021	1125				2	G
PH12 (NWALL@9")	SL	G	10/7/2021	1130				2	G
PH12 (BASE@19")	SL	G	10/7/2021	1135				2	G
PH11 (SEWALL@8")	SL	G	10/7/2021	1140				2	G
PH11 (SWWALL@8")	SL	G	10/7/2021	1145				2	G
PH11 (NWALL@8")	SL	G	10/7/2021	1150				2	G
PH11 (BASE@16")	SL	G	10/7/2021	1155				2	G
PH05 (NWALL@12")	SL	G	10/7/2021	1200				2	G
PH05 (NEWALL@12")	SL	G	10/7/2021	1205				2	G

Customer Remarks / Special Conditions / Possible Hazards:
Please use prefix
"20211007 - B36 - 496_SAMPLE ID"
in front of all sample IDs, please.

Type of Ice Used:	Wet	Blue	Dry	None
Packing Material Used:				
Radchem sample(s) screened (<500 cpm):	Y	N	NA	

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y 1 NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: _____
Sample pH Acceptable Y N NA
pH Strips: _____
Sulfide Present Y N NA
Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:

L1416107
-01
-02
-03
-04
-05
-06
-07
-08
-09
-10

SHORT HOLDS PRESENT (<72 hours):	Y	N	N/A
Lab Tracking #:			
Samples received via:	FEDEX	UPS	Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: A60T
Cooler 1 Temp Upon Receipt: 3°C
Cooler 1 Therm Corr. Factor: 0.0°C
Cooler 1 Corrected Temp: -7.0°C
Comments:

Relinquished by/Company: (Signature)	Date/Time: 10-8-21/1200	Received by/Company: (Signature)	Date/Time: 10/8/21 1430
Relinquished by/Company: (Signature)	Date/Time: 10/8/21 1700	Received by/Company: (Signature)	Date/Time: 10/9/21 930
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

B103

Account:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): Page: 1
YES / NO of: 2

Caerus Oil and Gas

Sample Delivery Group: L1416129
Samples Received: 10/09/2021
Project Number:
Description: B36 496 Historical
Site: B36 496
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

20211007-B36-496(BGS@1.5') L1416129-01 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 09:45

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757943	1	10/18/21 11:32	10/18/21 11:32	EL	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1757689	1	10/15/21 15:00	10/16/21 17:08	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757499	1	10/17/21 13:59	10/17/21 17:58	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757857	5	10/16/21 00:26	10/16/21 18:37	JPD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

20211007-B36-496(BGS_2@2') L1416129-02 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 10:00

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757943	1	10/18/21 11:34	10/18/21 11:34	EL	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758065	1	10/16/21 08:00	10/16/21 09:54	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757499	1	10/17/21 13:59	10/17/21 17:58	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757857	5	10/16/21 00:26	10/16/21 18:43	JPD	Mt. Juliet, TN

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

20211007-B36-496(BGSW@3') L1416129-03 Solid

Collected by
Andrew Smith

Collected date/time
10/07/21 13:25

Received date/time
10/09/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1757943	1	10/18/21 11:42	10/18/21 11:42	EL	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1758065	1	10/16/21 08:00	10/16/21 09:54	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1757499	1	10/17/21 13:59	10/17/21 17:58	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1757857	5	10/16/21 00:26	10/16/21 18:47	JPD	Mt. Juliet, TN

⁹ Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.122		1	10/18/2021 11:32	WG1757943

¹ Cp

² Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.05	T8	1	10/16/2021 17:08	WG1757689

³ Ss

⁴ Cn

Sample Narrative:
L1416129-01 WG1757689: 8.05 at 19.5C

⁵ Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	148		10.0	1	10/17/2021 17:58	WG1757499

⁶ Qc

⁷ Gl

Sample Narrative:
L1416129-01 WG1757499: at 25C

⁸ Al

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Arsenic	5.71		0.100	1.00	5	10/16/2021 18:37	WG1757857

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.201		1	10/18/2021 11:34	WG1757943

¹Cp

²Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.35	T8	1	10/16/2021 09:54	WG1758065

³Ss

⁴Cn

Sample Narrative:

L1416129-02 WG1758065: 7.35 at 19.6C

⁵Sr

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	151		10.0	1	10/17/2021 17:58	WG1757499

⁶Qc

⁷Gl

Sample Narrative:

L1416129-02 WG1757499: at 25C

⁸Al

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.68		0.100	1.00	5	10/16/2021 18:43	WG1757857

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.147		1	10/18/2021 11:42	WG1757943

¹Cp

²Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.97	T8	1	10/16/2021 09:54	WG1758065

³Ss

⁴Cn

Sample Narrative:

L1416129-03 WG1758065: 7.97 at 19.7C

⁵Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	192		10.0	1	10/17/2021 17:58	WG1757499

⁶Qc

⁷Gl

Sample Narrative:

L1416129-03 WG1757499: at 25C

⁸Al

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Arsenic	4.52		0.100	1.00	5	10/16/2021 18:47	WG1757857

⁹Sc

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3717381-2 10/16/21 17:08

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su			%		%
pH	6.46		1	0.309		1

Sample Narrative:

DUP: 6.46 at 20.4C

Laboratory Control Sample (LCS)

(LCS) R3717381-1 10/16/21 17:08

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.02 at 19.8C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1415618-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1415618-04 10/16/21 09:54 • (DUP) R3717299-2 10/16/21 09:54

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.65	8.65	1	0.000		1

Sample Narrative:

OS: 8.65 at 20C

DUP: 8.65 at 20.1C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1416500-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1416500-02 10/16/21 09:54 • (DUP) R3717299-3 10/16/21 09:54

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.74	8.71	1	0.344		1

Sample Narrative:

OS: 8.74 at 19.5C

DUP: 8.71 at 19.8C

Laboratory Control Sample (LCS)

(LCS) R3717299-1 10/16/21 09:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.05 at 20.4C

Method Blank (MB)

(MB) R3717557-1 10/17/21 17:58

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1416938-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1416938-03 10/17/21 17:58 • (DUP) R3717557-3 10/17/21 17:58

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1170	1180	1	0.595		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1416956-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1416956-02 10/17/21 17:58 • (DUP) R3717557-4 10/17/21 17:58

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3140	3210	1	2.20		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3717557-2 10/17/21 17:58

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	273	102	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3717385-1 10/16/21 16:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3717385-2 10/16/21 16:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	87.8	87.8	80.0-120	

L1416099-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1416099-03 10/16/21 16:58 • (MS) R3717385-5 10/16/21 17:08 • (MSD) R3717385-6 10/16/21 17:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	5.16	84.2	88.7	79.0	83.5	5	75.0-125			5.21	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

T8	Sample(s) received past/too close to holding time expiration.
----	---

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCREDITATIONS & LOCATIONS

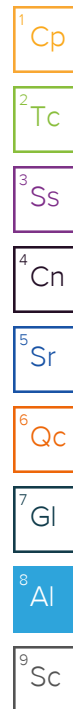
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Caerus Oil and Gas

Sample Delivery Group: L1430873
Samples Received: 11/12/2021
Project Number: B36-496 HISTORICAL
Description: PH05 & PH12
Site: B36-496
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



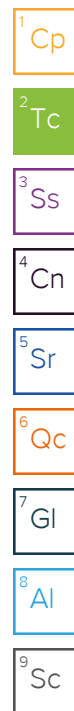
Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

20211110-B36-496-PH12-BASE@5' L1430873-01 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 09:30

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 12:51	11/19/21 12:51	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1774909	1	11/16/21 12:00	11/16/21 12:00	PSN	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

20211110-B36-496-PH12-NWS@3' L1430873-02 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 09:45

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 12:54	11/19/21 12:54	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-WSW@3' L1430873-03 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 09:50

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 12:56	11/19/21 12:56	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-WSW2@3' L1430873-04 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 09:55

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 12:59	11/19/21 12:59	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-WSW3@3' L1430873-05 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 10:00

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 13:02	11/19/21 13:02	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-ESW@3' L1430873-06 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 10:10

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 13:04	11/19/21 13:04	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-ESW2@3' L1430873-07 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 10:15

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 13:07	11/19/21 13:07	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-ESW3@3' L1430873-08 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 10:20

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 13:10	11/19/21 13:10	KMG	Mt. Juliet, TN

SAMPLE SUMMARY

20211110-B36-496-PH12-ESW4@3' L1430873-09 Solid

				Collected by Andrew Smith	Collected date/time 11/10/21 10:25	Received date/time 11/12/21 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 13:12	11/19/21 13:12	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-SSW@3' L1430873-10 Solid

				Collected by Andrew Smith	Collected date/time 11/10/21 10:30	Received date/time 11/12/21 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 13:20	11/19/21 13:20	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-SSW2@3' L1430873-11 Solid

				Collected by Andrew Smith	Collected date/time 11/10/21 10:35	Received date/time 11/12/21 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 13:23	11/19/21 13:23	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-SSW3@3' L1430873-12 Solid

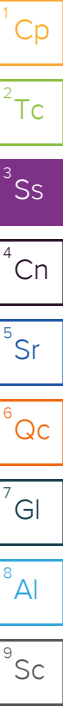
				Collected by Andrew Smith	Collected date/time 11/10/21 10:40	Received date/time 11/12/21 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 13:26	11/19/21 13:26	KMG	Mt. Juliet, TN

20211110-B36-496-PH12-SSW4@3' L1430873-13 Solid

				Collected by Andrew Smith	Collected date/time 11/10/21 10:45	Received date/time 11/12/21 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776052	1	11/19/21 13:28	11/19/21 13:28	KMG	Mt. Juliet, TN

20211110-B36-496-PH05-BASE@4' L1430873-14 Solid

				Collected by Andrew Smith	Collected date/time 11/10/21 11:00	Received date/time 11/12/21 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776014	1	11/19/21 15:16	11/19/21 15:16	KMG	Mt. Juliet, TN
Calculated Results	WG1775193	1	11/17/21 05:53	11/22/21 15:23	ARM	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1776932	1	11/20/21 14:30	11/22/21 15:23	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1774909	1	11/16/21 12:00	11/16/21 12:00	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1774823	1	11/17/21 05:18	11/17/21 10:59	PSN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776020	1	11/18/21 12:32	11/19/21 09:16	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	1	11/17/21 05:53	11/18/21 16:45	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	5	11/17/21 05:53	11/19/21 11:58	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1776006	1	11/18/21 10:31	11/19/21 16:10	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1775181	5	11/17/21 05:51	11/17/21 22:50	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1777387	1	11/16/21 21:05	11/19/21 18:43	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1776129	1	11/16/21 21:05	11/17/21 23:51	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1775945	1	11/18/21 06:33	11/18/21 14:57	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1777082	1	11/19/21 10:05	11/19/21 21:33	AMG	Mt. Juliet, TN



SAMPLE SUMMARY

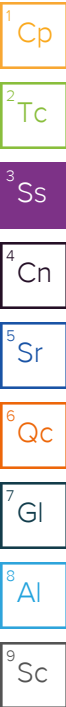
20211110-B36-496-PH05-SSW@2.5 L1430873-15 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 11:10

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776014	1	11/19/21 15:18	11/19/21 15:18	KMG	Mt. Juliet, TN
Calculated Results	WG1775193	1	11/17/21 05:53	11/19/21 00:31	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1775639	1	11/17/21 09:00	11/19/21 00:31	CRB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1774909	1	11/16/21 12:00	11/16/21 12:00	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1774823	1	11/17/21 05:18	11/17/21 10:59	PSN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776020	1	11/18/21 12:32	11/19/21 09:18	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	1	11/17/21 05:53	11/18/21 16:48	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	5	11/17/21 05:53	11/19/21 12:01	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1776006	1	11/18/21 10:31	11/19/21 16:12	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1775181	5	11/17/21 05:51	11/17/21 22:53	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1777387	1	11/16/21 21:05	11/19/21 19:05	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1776129	1	11/16/21 21:05	11/18/21 00:10	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1775945	5	11/18/21 06:33	11/18/21 15:24	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1777082	1	11/19/21 10:05	11/19/21 20:58	AMG	Mt. Juliet, TN



20211110-B36-496-PH05-WSW@2.5 L1430873-16 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 11:20

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776014	1	11/19/21 15:21	11/19/21 15:21	KMG	Mt. Juliet, TN
Calculated Results	WG1775193	1	11/17/21 05:53	11/22/21 15:24	ARM	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1776932	1	11/20/21 14:30	11/22/21 15:24	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1774909	1	11/16/21 12:00	11/16/21 12:00	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1774823	1	11/17/21 05:18	11/17/21 10:59	PSN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776020	1	11/18/21 12:32	11/19/21 09:21	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	1	11/17/21 05:53	11/18/21 16:51	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1776006	1	11/18/21 10:31	11/19/21 16:15	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1775181	5	11/17/21 05:51	11/17/21 23:06	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1777387	1	11/16/21 21:05	11/19/21 19:26	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1776129	1	11/16/21 21:05	11/18/21 00:30	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1775945	1	11/18/21 06:33	11/18/21 14:30	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1777082	1	11/19/21 10:05	11/19/21 18:53	AMG	Mt. Juliet, TN

20211110-B36-496-PH05-ESW@2.5 L1430873-17 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 11:30

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776014	1	11/19/21 15:24	11/19/21 15:24	KMG	Mt. Juliet, TN
Calculated Results	WG1775193	1	11/17/21 05:53	11/22/21 15:24	ARM	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1776932	1	11/20/21 14:30	11/22/21 15:24	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1774909	1	11/16/21 12:00	11/16/21 12:00	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1774823	1	11/17/21 05:18	11/17/21 10:59	PSN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776020	1	11/18/21 12:32	11/19/21 09:23	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	1	11/17/21 05:53	11/18/21 16:54	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	5	11/17/21 05:53	11/19/21 12:03	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1776006	1	11/18/21 10:31	11/19/21 16:18	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1775181	5	11/17/21 05:51	11/17/21 23:09	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1776315	1	11/16/21 21:05	11/18/21 06:59	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1776129	1	11/16/21 21:05	11/18/21 00:49	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1775945	5	11/18/21 06:33	11/18/21 15:10	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1777082	1	11/19/21 10:05	11/19/21 22:44	AMG	Mt. Juliet, TN

SAMPLE SUMMARY

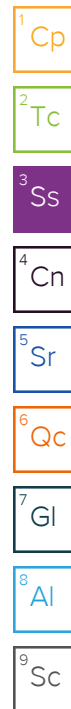
20211110-B36-496-PH05-NSW@2.5 L1430873-18 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 11:45

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776014	1	11/19/21 15:27	11/19/21 15:27	KMG	Mt. Juliet, TN
Calculated Results	WG1775193	1	11/17/21 05:53	11/22/21 15:24	ARM	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1776932	1	11/20/21 14:30	11/22/21 15:24	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1774909	1	11/16/21 12:00	11/16/21 12:00	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1774823	1	11/17/21 05:18	11/17/21 10:59	PSN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776020	1	11/18/21 12:32	11/19/21 09:26	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	1	11/17/21 05:53	11/18/21 16:57	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	5	11/17/21 05:53	11/19/21 12:06	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1776006	1	11/18/21 10:31	11/19/21 16:20	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1775181	5	11/17/21 05:51	11/17/21 23:12	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1776315	1	11/16/21 21:05	11/18/21 07:21	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1776129	1	11/16/21 21:05	11/18/21 01:08	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1775945	1	11/18/21 06:33	11/18/21 14:43	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1777082	1	11/19/21 10:05	11/19/21 21:15	AMG	Mt. Juliet, TN



CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.96		1	11/19/2021 12:51	WG1776052

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.13	T8	1	11/16/2021 12:00	WG1774909

Sample Narrative:
L1430873-01 WG1774909: 8.13 at 20C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.76		1	11/19/2021 12:54	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.83		1	11/19/2021 12:56	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.15		1	11/19/2021 12:59	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.52		1	11/19/2021 13:02	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	21.9		1	11/19/2021 13:04	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	11.2		1	11/19/2021 13:07	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	10.0		1	11/19/2021 13:10	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	8.00		1	11/19/2021 13:12	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.02		1	11/19/2021 13:20	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	8.88		1	11/19/2021 13:23	WG1776052

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	8.69		1	11/19/2021 13:26	WG1776052

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.08		1	11/19/2021 13:28	WG1776052

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.60		1	11/19/2021 15:16	WG1776014

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	36.0		0.133	1.00	1	11/22/2021 15:23	WG1775193

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	11/22/2021 15:23	WG1776932

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.81	T8	1	11/16/2021 12:00	WG1774909

Sample Narrative:

L1430873-14 WG1774909: 8.81 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	220		10.0	1	11/17/2021 10:59	WG1774823

Sample Narrative:

L1430873-14 WG1774823: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0263	J	0.0180	0.0400	1	11/19/2021 09:16	WG1776020

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2340		0.426	2.50	5	11/19/2021 11:58	WG1775193
Cadmium	0.132	J	0.0471	0.500	1	11/18/2021 16:45	WG1775193
Chromium	36.0		0.133	1.00	1	11/18/2021 16:45	WG1775193
Copper	18.8		0.400	2.00	1	11/18/2021 16:45	WG1775193
Lead	15.5		0.208	0.500	1	11/18/2021 16:45	WG1775193
Nickel	20.8		0.132	2.00	1	11/18/2021 16:45	WG1775193
Selenium	U		0.764	2.00	1	11/18/2021 16:45	WG1775193
Silver	U		0.127	1.00	1	11/18/2021 16:45	WG1775193
Zinc	46.4		0.832	5.00	1	11/18/2021 16:45	WG1775193

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.451		0.0167	0.200	1	11/19/2021 16:10	WG1776006



Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.57		0.100	1.00	5	11/17/2021 22:50	WG1775181

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0466	J	0.0217	0.100	1	11/19/2021 18:43	WG1777387
(S) a,a,a-Trifluorotoluene(FID)	108			77.0-120		11/19/2021 18:43	WG1777387

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	11/17/2021 23:51	WG1776129
Toluene	0.00210	J	0.00130	0.00500	1	11/17/2021 23:51	WG1776129
Ethylbenzene	U		0.000737	0.00250	1	11/17/2021 23:51	WG1776129
Total Xylenes	0.00247	J	0.000880	0.00650	1	11/17/2021 23:51	WG1776129
(S) Toluene-d8	111			75.0-131		11/17/2021 23:51	WG1776129
(S) 4-Bromofluorobenzene	95.4			67.0-138		11/17/2021 23:51	WG1776129
(S) 1,2-Dichloroethane-d4	99.2			70.0-130		11/17/2021 23:51	WG1776129

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	20.3		0.769	4.00	1	11/18/2021 14:57	WG1775945
(S) o-Terphenyl	63.2			18.0-148		11/18/2021 14:57	WG1775945

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	11/19/2021 21:33	WG1777082
Acenaphthene	U		0.00209	0.00600	1	11/19/2021 21:33	WG1777082
Acenaphthylene	U		0.00216	0.00600	1	11/19/2021 21:33	WG1777082
Benzo(a)anthracene	0.00663		0.00173	0.00600	1	11/19/2021 21:33	WG1777082
Benzo(a)pyrene	0.00874		0.00179	0.00600	1	11/19/2021 21:33	WG1777082
Benzo(b)fluoranthene	0.0302		0.00153	0.00600	1	11/19/2021 21:33	WG1777082
Benzo(g,h,i)perylene	0.0181		0.00177	0.00600	1	11/19/2021 21:33	WG1777082
Benzo(k)fluoranthene	0.00773		0.00215	0.00600	1	11/19/2021 21:33	WG1777082
Chrysene	0.00913		0.00232	0.00600	1	11/19/2021 21:33	WG1777082
Dibenz(a,h)anthracene	0.00613		0.00172	0.00600	1	11/19/2021 21:33	WG1777082
Fluoranthene	0.00673		0.00227	0.00600	1	11/19/2021 21:33	WG1777082
Fluorene	U		0.00205	0.00600	1	11/19/2021 21:33	WG1777082
Indeno(1,2,3-cd)pyrene	0.0130		0.00181	0.00600	1	11/19/2021 21:33	WG1777082
Naphthalene	0.00696	J	0.00408	0.0200	1	11/19/2021 21:33	WG1777082
Phenanthrene	0.00976		0.00231	0.00600	1	11/19/2021 21:33	WG1777082
Pyrene	0.00364	J	0.00200	0.00600	1	11/19/2021 21:33	WG1777082
1-Methylnaphthalene	0.00821	J	0.00449	0.0200	1	11/19/2021 21:33	WG1777082
2-Methylnaphthalene	0.0140	J	0.00427	0.0200	1	11/19/2021 21:33	WG1777082
2-Chloronaphthalene	U		0.00466	0.0200	1	11/19/2021 21:33	WG1777082
(S) p-Terphenyl-d14	81.6			23.0-120		11/19/2021 21:33	WG1777082
(S) Nitrobenzene-d5	61.7			14.0-149		11/19/2021 21:33	WG1777082
(S) 2-Fluorobiphenyl	62.7			34.0-125		11/19/2021 21:33	WG1777082

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.88		1	11/19/2021 15:18	WG1776014

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	32.8		0.133	1.00	1	11/19/2021 00:31	WG1775193

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	0.760	J	0.640	2.00	1	11/19/2021 00:31	WG1775639

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.70	T8	1	11/16/2021 12:00	WG1774909

Sample Narrative:

L1430873-15 WG1774909: 8.7 at 19.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	208		10.0	1	11/17/2021 10:59	WG1774823

Sample Narrative:

L1430873-15 WG1774823: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0271	J	0.0180	0.0400	1	11/19/2021 09:18	WG1776020

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	3770		0.426	2.50	5	11/19/2021 12:01	WG1775193
Cadmium	0.0777	J	0.0471	0.500	1	11/18/2021 16:48	WG1775193
Chromium	33.6		0.133	1.00	1	11/18/2021 16:48	WG1775193
Copper	17.4		0.400	2.00	1	11/18/2021 16:48	WG1775193
Lead	14.0		0.208	0.500	1	11/18/2021 16:48	WG1775193
Nickel	20.6		0.132	2.00	1	11/18/2021 16:48	WG1775193
Selenium	1.74	J	0.764	2.00	1	11/18/2021 16:48	WG1775193
Silver	U		0.127	1.00	1	11/18/2021 16:48	WG1775193
Zinc	43.1		0.832	5.00	1	11/18/2021 16:48	WG1775193

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.06		0.0167	0.200	1	11/19/2021 16:12	WG1776006

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.15		0.100	1.00	5	11/17/2021 22:53	WG1775181

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0868	J	0.0217	0.100	1	11/19/2021 19:05	WG1777387
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			77.0-120		11/19/2021 19:05	WG1777387

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	11/18/2021 00:10	WG1776129
Toluene	0.00318	J	0.00130	0.00500	1	11/18/2021 00:10	WG1776129
Ethylbenzene	U		0.000737	0.00250	1	11/18/2021 00:10	WG1776129
Total Xylenes	0.00523	J	0.000880	0.00650	1	11/18/2021 00:10	WG1776129
(S) Toluene-d8	110			75.0-131		11/18/2021 00:10	WG1776129
(S) 4-Bromofluorobenzene	95.0			67.0-138		11/18/2021 00:10	WG1776129
(S) 1,2-Dichloroethane-d4	95.4			70.0-130		11/18/2021 00:10	WG1776129

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	22.0		3.85	20.0	5	11/18/2021 15:24	WG1775945
(S) <i>o</i> -Terphenyl	70.5			18.0-148		11/18/2021 15:24	WG1775945

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	11/19/2021 20:58	WG1777082
Acenaphthene	0.00358	J	0.00209	0.00600	1	11/19/2021 20:58	WG1777082
Acenaphthylene	U		0.00216	0.00600	1	11/19/2021 20:58	WG1777082
Benzo(a)anthracene	0.0166		0.00173	0.00600	1	11/19/2021 20:58	WG1777082
Benzo(a)pyrene	0.0254		0.00179	0.00600	1	11/19/2021 20:58	WG1777082
Benzo(b)fluoranthene	0.0755		0.00153	0.00600	1	11/19/2021 20:58	WG1777082
Benzo(g,h,i)perylene	0.0423		0.00177	0.00600	1	11/19/2021 20:58	WG1777082
Benzo(k)fluoranthene	0.0160		0.00215	0.00600	1	11/19/2021 20:58	WG1777082
Chrysene	0.0190		0.00232	0.00600	1	11/19/2021 20:58	WG1777082
Dibenz(a,h)anthracene	0.0147		0.00172	0.00600	1	11/19/2021 20:58	WG1777082
Fluoranthene	0.0147		0.00227	0.00600	1	11/19/2021 20:58	WG1777082
Fluorene	0.00378	J	0.00205	0.00600	1	11/19/2021 20:58	WG1777082
Indeno(1,2,3-cd)pyrene	0.0337		0.00181	0.00600	1	11/19/2021 20:58	WG1777082
Naphthalene	0.0988		0.00408	0.0200	1	11/19/2021 20:58	WG1777082
Phenanthrene	0.0588		0.00231	0.00600	1	11/19/2021 20:58	WG1777082
Pyrene	0.0103		0.00200	0.00600	1	11/19/2021 20:58	WG1777082
1-Methylnaphthalene	0.176		0.00449	0.0200	1	11/19/2021 20:58	WG1777082
2-Methylnaphthalene	0.221		0.00427	0.0200	1	11/19/2021 20:58	WG1777082
2-Chloronaphthalene	U		0.00466	0.0200	1	11/19/2021 20:58	WG1777082
(S) <i>p</i> -Terphenyl-d14	76.6			23.0-120		11/19/2021 20:58	WG1777082
(S) Nitrobenzene-d5	63.4			14.0-149		11/19/2021 20:58	WG1777082
(S) 2-Fluorobiphenyl	60.8			34.0-125		11/19/2021 20:58	WG1777082

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.17		1	11/19/2021 15:21	WG1776014

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	27.6		0.133	1.00	1	11/22/2021 15:24	WG1775193

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	11/22/2021 15:24	WG1776932

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.81	T8	1	11/16/2021 12:00	WG1774909

Sample Narrative:

L1430873-16 WG1774909: 8.81 at 19.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	181		10.0	1	11/17/2021 10:59	WG1774823

Sample Narrative:

L1430873-16 WG1774823: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0294	J	0.0180	0.0400	1	11/19/2021 09:21	WG1776020

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	879		0.0852	0.500	1	11/18/2021 16:51	WG1775193
Cadmium	0.288	J	0.0471	0.500	1	11/18/2021 16:51	WG1775193
Chromium	27.6		0.133	1.00	1	11/18/2021 16:51	WG1775193
Copper	16.9		0.400	2.00	1	11/18/2021 16:51	WG1775193
Lead	11.9		0.208	0.500	1	11/18/2021 16:51	WG1775193
Nickel	20.2		0.132	2.00	1	11/18/2021 16:51	WG1775193
Selenium	1.09	J	0.764	2.00	1	11/18/2021 16:51	WG1775193
Silver	U		0.127	1.00	1	11/18/2021 16:51	WG1775193
Zinc	37.0		0.832	5.00	1	11/18/2021 16:51	WG1775193

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.368		0.0167	0.200	1	11/19/2021 16:15	WG1776006

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	1.96		0.100	1.00	5	11/17/2021 23:06	WG1775181

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0287	J	0.0217	0.100	1	11/19/2021 19:26	WG1777387
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	107			77.0-120		11/19/2021 19:26	WG1777387

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	11/18/2021 00:30	WG1776129
Toluene	U		0.00130	0.00500	1	11/18/2021 00:30	WG1776129
Ethylbenzene	U		0.000737	0.00250	1	11/18/2021 00:30	WG1776129
Total Xylenes	U		0.000880	0.00650	1	11/18/2021 00:30	WG1776129
(S) Toluene-d8	108			75.0-131		11/18/2021 00:30	WG1776129
(S) 4-Bromofluorobenzene	92.4			67.0-138		11/18/2021 00:30	WG1776129
(S) 1,2-Dichloroethane-d4	97.4			70.0-130		11/18/2021 00:30	WG1776129

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	6.03		0.769	4.00	1	11/18/2021 14:30	WG1775945
(S) <i>o</i> -Terphenyl	63.5			18.0-148		11/18/2021 14:30	WG1775945

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	11/19/2021 18:53	WG1777082
Acenaphthene	U		0.00209	0.00600	1	11/19/2021 18:53	WG1777082
Acenaphthylene	U		0.00216	0.00600	1	11/19/2021 18:53	WG1777082
Benzo(a)anthracene	0.00295	J	0.00173	0.00600	1	11/19/2021 18:53	WG1777082
Benzo(a)pyrene	0.00432	J	0.00179	0.00600	1	11/19/2021 18:53	WG1777082
Benzo(b)fluoranthene	0.0139		0.00153	0.00600	1	11/19/2021 18:53	WG1777082
Benzo(g,h,i)perylene	0.00967		0.00177	0.00600	1	11/19/2021 18:53	WG1777082
Benzo(k)fluoranthene	0.00370	J	0.00215	0.00600	1	11/19/2021 18:53	WG1777082
Chrysene	0.00375	J	0.00232	0.00600	1	11/19/2021 18:53	WG1777082
Dibenz(a,h)anthracene	0.00285	J	0.00172	0.00600	1	11/19/2021 18:53	WG1777082
Fluoranthene	0.00361	J	0.00227	0.00600	1	11/19/2021 18:53	WG1777082
Fluorene	U		0.00205	0.00600	1	11/19/2021 18:53	WG1777082
Indeno(1,2,3-cd)pyrene	0.00670		0.00181	0.00600	1	11/19/2021 18:53	WG1777082
Naphthalene	U		0.00408	0.0200	1	11/19/2021 18:53	WG1777082
Phenanthrene	0.00382	J	0.00231	0.00600	1	11/19/2021 18:53	WG1777082
Pyrene	0.00223	J	0.00200	0.00600	1	11/19/2021 18:53	WG1777082
1-Methylnaphthalene	U		0.00449	0.0200	1	11/19/2021 18:53	WG1777082
2-Methylnaphthalene	0.00461	J	0.00427	0.0200	1	11/19/2021 18:53	WG1777082
2-Chloronaphthalene	U		0.00466	0.0200	1	11/19/2021 18:53	WG1777082
(S) <i>p</i> -Terphenyl-d14	101			23.0-120		11/19/2021 18:53	WG1777082
(S) Nitrobenzene-d5	78.6			14.0-149		11/19/2021 18:53	WG1777082
(S) 2-Fluorobiphenyl	77.9			34.0-125		11/19/2021 18:53	WG1777082

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	2.08		1	11/19/2021 15:24	WG1776014

Calculated Results

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium,Trivalent	29.3		0.133	1.00	1	11/22/2021 15:24	WG1775193

Wet Chemistry by Method 3060A/7196A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium,Hexavalent	U		0.640	2.00	1	11/22/2021 15:24	WG1776932

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	8.63	T8	1	11/16/2021 12:00	WG1774909

Sample Narrative:

L1430873-17 WG1774909: 8.63 at 19.1C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	274		10.0	1	11/17/2021 10:59	WG1774823

Sample Narrative:

L1430873-17 WG1774823: at 25C

Mercury by Method 7471A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Mercury	0.0250	J	0.0180	0.0400	1	11/19/2021 09:23	WG1776020

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	4340		0.426	2.50	5	11/19/2021 12:03	WG1775193
Cadmium	U		0.0471	0.500	1	11/18/2021 16:54	WG1775193
Chromium	29.3		0.133	1.00	1	11/18/2021 16:54	WG1775193
Copper	17.6		0.400	2.00	1	11/18/2021 16:54	WG1775193
Lead	13.7		0.208	0.500	1	11/18/2021 16:54	WG1775193
Nickel	20.7		0.132	2.00	1	11/18/2021 16:54	WG1775193
Selenium	U		0.764	2.00	1	11/18/2021 16:54	WG1775193
Silver	U		0.127	1.00	1	11/18/2021 16:54	WG1775193
Zinc	42.9		0.832	5.00	1	11/18/2021 16:54	WG1775193

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Hot Water Sol. Boron	1.39		0.0167	0.200	1	11/19/2021 16:18	WG1776006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.24		0.100	1.00	5	11/17/2021 23:09	WG1775181

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0462	B J	0.0217	0.100	1	11/18/2021 06:59	WG1776315
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	85.4			77.0-120		11/18/2021 06:59	WG1776315

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	11/18/2021 00:49	WG1776129
Toluene	0.00340	J	0.00130	0.00500	1	11/18/2021 00:49	WG1776129
Ethylbenzene	U		0.000737	0.00250	1	11/18/2021 00:49	WG1776129
Total Xylenes	0.0104		0.000880	0.00650	1	11/18/2021 00:49	WG1776129
(S) Toluene-d8	107			75.0-131		11/18/2021 00:49	WG1776129
(S) 4-Bromofluorobenzene	94.3			67.0-138		11/18/2021 00:49	WG1776129
(S) 1,2-Dichloroethane-d4	101			70.0-130		11/18/2021 00:49	WG1776129

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	31.8		3.85	20.0	5	11/18/2021 15:10	WG1775945
(S) <i>o</i> -Terphenyl	67.9			18.0-148		11/18/2021 15:10	WG1775945

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00561	J	0.00230	0.00600	1	11/19/2021 22:44	WG1777082
Acenaphthene	U		0.00209	0.00600	1	11/19/2021 22:44	WG1777082
Acenaphthylene	U		0.00216	0.00600	1	11/19/2021 22:44	WG1777082
Benzo(a)anthracene	0.0588		0.00173	0.00600	1	11/19/2021 22:44	WG1777082
Benzo(a)pyrene	0.129		0.00179	0.00600	1	11/19/2021 22:44	WG1777082
Benzo(b)fluoranthene	0.319		0.00153	0.00600	1	11/19/2021 22:44	WG1777082
Benzo(g,h,i)perylene	0.178		0.00177	0.00600	1	11/19/2021 22:44	WG1777082
Benzo(k)fluoranthene	0.0751		0.00215	0.00600	1	11/19/2021 22:44	WG1777082
Chrysene	0.0679		0.00232	0.00600	1	11/19/2021 22:44	WG1777082
Dibenz(a,h)anthracene	0.0650		0.00172	0.00600	1	11/19/2021 22:44	WG1777082
Fluoranthene	0.0390		0.00227	0.00600	1	11/19/2021 22:44	WG1777082
Fluorene	0.00228	J	0.00205	0.00600	1	11/19/2021 22:44	WG1777082
Indeno(1,2,3-cd)pyrene	0.167		0.00181	0.00600	1	11/19/2021 22:44	WG1777082
Naphthalene	0.0172	J	0.00408	0.0200	1	11/19/2021 22:44	WG1777082
Phenanthrene	0.0366		0.00231	0.00600	1	11/19/2021 22:44	WG1777082
Pyrene	0.0210		0.00200	0.00600	1	11/19/2021 22:44	WG1777082
1-Methylnaphthalene	0.0261		0.00449	0.0200	1	11/19/2021 22:44	WG1777082
2-Methylnaphthalene	0.0357		0.00427	0.0200	1	11/19/2021 22:44	WG1777082
2-Chloronaphthalene	U		0.00466	0.0200	1	11/19/2021 22:44	WG1777082
(S) <i>p</i> -Terphenyl-d14	82.5			23.0-120		11/19/2021 22:44	WG1777082
(S) Nitrobenzene-d5	63.2			14.0-149		11/19/2021 22:44	WG1777082
(S) 2-Fluorobiphenyl	65.2			34.0-125		11/19/2021 22:44	WG1777082

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.58		1	11/19/2021 15:27	WG1776014

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	29.8		0.133	1.00	1	11/22/2021 15:24	WG1775193

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	11/22/2021 15:24	WG1776932

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.54	T8	1	11/16/2021 12:00	WG1774909

Sample Narrative:

L1430873-18 WG1774909: 8.54 at 19C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	213		10.0	1	11/17/2021 10:59	WG1774823

Sample Narrative:

L1430873-18 WG1774823: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0335	J	0.0180	0.0400	1	11/19/2021 09:26	WG1776020

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2830		0.426	2.50	5	11/19/2021 12:06	WG1775193
Cadmium	0.0669	J	0.0471	0.500	1	11/18/2021 16:57	WG1775193
Chromium	29.8		0.133	1.00	1	11/18/2021 16:57	WG1775193
Copper	17.6		0.400	2.00	1	11/18/2021 16:57	WG1775193
Lead	13.3		0.208	0.500	1	11/18/2021 16:57	WG1775193
Nickel	19.4		0.132	2.00	1	11/18/2021 16:57	WG1775193
Selenium	U		0.764	2.00	1	11/18/2021 16:57	WG1775193
Silver	U		0.127	1.00	1	11/18/2021 16:57	WG1775193
Zinc	42.5		0.832	5.00	1	11/18/2021 16:57	WG1775193

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.01		0.0167	0.200	1	11/19/2021 16:20	WG1776006



Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.09		0.100	1.00	5	11/17/2021 23:12	WG1775181

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0511	B J	0.0217	0.100	1	11/18/2021 07:21	WG1776315
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	83.3			77.0-120		11/18/2021 07:21	WG1776315

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	11/18/2021 01:08	WG1776129
Toluene	0.00158	J	0.00130	0.00500	1	11/18/2021 01:08	WG1776129
Ethylbenzene	U		0.000737	0.00250	1	11/18/2021 01:08	WG1776129
Total Xylenes	0.00235	J	0.000880	0.00650	1	11/18/2021 01:08	WG1776129
(S) <i>Toluene-d8</i>	109			75.0-131		11/18/2021 01:08	WG1776129
(S) <i>4</i> -Bromofluorobenzene	95.6			67.0-138		11/18/2021 01:08	WG1776129
(S) <i>1,2</i> -Dichloroethane- <i>d4</i>	96.5			70.0-130		11/18/2021 01:08	WG1776129

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	30.6		0.769	4.00	1	11/18/2021 14:43	WG1775945
(S) <i>o</i> -Terphenyl	63.6			18.0-148		11/18/2021 14:43	WG1775945

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00281	J	0.00230	0.00600	1	11/19/2021 21:15	WG1777082
Acenaphthene	0.00371	J	0.00209	0.00600	1	11/19/2021 21:15	WG1777082
Acenaphthylene	U		0.00216	0.00600	1	11/19/2021 21:15	WG1777082
Benzo(a)anthracene	0.0165		0.00173	0.00600	1	11/19/2021 21:15	WG1777082
Benzo(a)pyrene	0.0201		0.00179	0.00600	1	11/19/2021 21:15	WG1777082
Benzo(b)fluoranthene	0.0705		0.00153	0.00600	1	11/19/2021 21:15	WG1777082
Benzo(g,h,i)perylene	0.0337		0.00177	0.00600	1	11/19/2021 21:15	WG1777082
Benzo(k)fluoranthene	0.0138		0.00215	0.00600	1	11/19/2021 21:15	WG1777082
Chrysene	0.0229		0.00232	0.00600	1	11/19/2021 21:15	WG1777082
Dibenz(a,h)anthracene	0.0118		0.00172	0.00600	1	11/19/2021 21:15	WG1777082
Fluoranthene	0.0207		0.00227	0.00600	1	11/19/2021 21:15	WG1777082
Fluorene	0.00357	J	0.00205	0.00600	1	11/19/2021 21:15	WG1777082
Indeno(1,2,3-cd)pyrene	0.0258		0.00181	0.00600	1	11/19/2021 21:15	WG1777082
Naphthalene	0.0149	J	0.00408	0.0200	1	11/19/2021 21:15	WG1777082
Phenanthrene	0.0257		0.00231	0.00600	1	11/19/2021 21:15	WG1777082
Pyrene	0.0112		0.00200	0.00600	1	11/19/2021 21:15	WG1777082
1-Methylnaphthalene	0.0206		0.00449	0.0200	1	11/19/2021 21:15	WG1777082
2-Methylnaphthalene	0.0306		0.00427	0.0200	1	11/19/2021 21:15	WG1777082
2-Chloronaphthalene	U		0.00466	0.0200	1	11/19/2021 21:15	WG1777082
(S) <i>p</i> -Terphenyl- <i>d14</i>	93.5			23.0-120		11/19/2021 21:15	WG1777082
(S) Nitrobenzene- <i>d5</i>	78.3			14.0-149		11/19/2021 21:15	WG1777082
(S) 2-Fluorobiphenyl	73.3			34.0-125		11/19/2021 21:15	WG1777082

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3731395-1 11/19/21 00:11

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1430396-21 Original Sample (OS) • Duplicate (DUP)

(OS) L1430396-21 11/19/21 00:15 • (DUP) R3731395-3 11/19/21 00:16

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	0.833	0.882	1	5.68	J	20

L1430396-30 Original Sample (OS) • Duplicate (DUP)

(OS) L1430396-30 11/19/21 00:23 • (DUP) R3731395-4 11/19/21 00:23

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3731395-2 11/19/21 00:11

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	22.6	94.2	80.0-120	

L1430396-37 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1430396-37 11/19/21 00:28 • (MS) R3731395-5 11/19/21 00:29 • (MSD) R3731395-6 11/19/21 00:30

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	U	2.73	3.23	13.6	16.1	1	75.0-125	J6	J6	16.8	20

L1430396-37 Original Sample (OS) • Matrix Spike (MS)

(OS) L1430396-37 11/19/21 00:28 • (MS) R3731395-7 11/19/21 00:30

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	651	U	460	70.7	50	75.0-125	J6

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3732475-1 11/22/21 15:21

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1430873-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1430873-14 11/22/21 15:23 • (DUP) R3732475-7 11/22/21 15:23

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	U	1	0.000		20

L1431798-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1431798-03 11/22/21 15:26 • (DUP) R3732475-8 11/22/21 15:26

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3732475-2 11/22/21 15:21

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	23.0	95.9	80.0-120	

L1423071-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423071-02 11/22/21 15:21 • (MS) R3732475-3 11/22/21 15:21 • (MSD) R3732475-4 11/22/21 15:21

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	U	13.1	16.3	65.3	81.5	1	75.0-125	J6	J3	22.1	20

L1423071-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1423071-02 11/22/21 15:21 • (MS) R3732475-5 11/22/21 15:22

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	646	U	756	117	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1430873-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1430873-01 11/16/21 12:00 • (DUP) R3730036-2 11/16/21 12:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.13	8.11	1	0.246		1

Sample Narrative:

OS: 8.13 at 20C

DUP: 8.11 at 19.2C

L1431021-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1431021-02 11/16/21 12:00 • (DUP) R3730036-3 11/16/21 12:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.66	7.67	1	0.130		1

Sample Narrative:

OS: 7.66 at 19.3C

DUP: 7.67 at 19.2C

Laboratory Control Sample (LCS)

(LCS) R3730036-1 11/16/21 12:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.01 at 19.7C



Method Blank (MB)

(MB) R3730514-1 11/17/21 10:59

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1429487-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1429487-06 11/17/21 10:59 • (DUP) R3730514-3 11/17/21 10:59

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	134	157	1	15.5		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1430873-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1430873-16 11/17/21 10:59 • (DUP) R3730514-4 11/17/21 10:59

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	181	181	1	0.221		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3730514-2 11/17/21 10:59

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	268	100	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3731675-1 11/19/21 08:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

Laboratory Control Sample (LCS)

(LCS) R3731675-2 11/19/21 08:38

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.473	94.7	80.0-120	

7Gl

8Al

9Sc

L1430610-87 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1430610-87 11/19/21 08:40 • (MS) R3731675-3 11/19/21 08:43 • (MSD) R3731675-4 11/19/21 08:45

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	U	0.451	0.458	90.2	91.6	1	75.0-125			1.58	20

Method Blank (MB)

(MB) R3731480-1 11/18/21 16:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3731480-2 11/18/21 16:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	96.7	96.7	80.0-120	
Cadmium	100	103	103	80.0-120	
Chromium	100	102	102	80.0-120	
Copper	100	105	105	80.0-120	
Lead	100	101	101	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	95.6	95.6	80.0-120	
Silver	20.0	19.4	97.2	80.0-120	
Zinc	100	97.6	97.6	80.0-120	

L1429487-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1429487-01 11/18/21 16:09 • (MS) R3731480-5 11/18/21 16:17 • (MSD) R3731480-6 11/18/21 16:20

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	10400	10600	10700	214	345	1	75.0-125	EV	EV	1.23	20
Cadmium	100	U	107	106	107	106	1	75.0-125			0.877	20
Chromium	100	14.6	116	115	102	101	1	75.0-125			1.02	20
Copper	100	214	296	296	81.6	82.2	1	75.0-125			0.209	20
Lead	100	3.99	110	109	106	105	1	75.0-125			1.15	20
Nickel	100	7.96	118	118	110	110	1	75.0-125			0.0653	20
Selenium	100	U	104	103	104	103	1	75.0-125			1.31	20
Silver	20.0	U	20.5	20.3	103	101	1	75.0-125			1.19	20
Zinc	100	49.0	148	144	99.3	95.3	1	75.0-125			2.71	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3731849-1 11/19/21 16:02

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3731849-2 11/19/21 16:05 • (LCSD) R3731849-3 11/19/21 16:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.978	0.967	97.8	96.7	80.0-120			1.11	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3730853-1 11/17/21 21:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3730853-2 11/17/21 21:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.6	96.6	80.0-120	

L1429487-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1429487-01 11/17/21 21:52 • (MS) R3730853-4 11/17/21 22:01 • (MSD) R3730853-5 11/17/21 22:04

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	2.48	99.8	101	97.3	99.0	5	75.0-125			1.63	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3731673-2 11/18/21 05:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0273	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	87.6			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3731673-1 11/18/21 04:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.43	80.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			98.1	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3731882-3 11/19/21 18:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	111			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3731882-2 11/19/21 17:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.09	92.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			99.0	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3731645-3 11/17/21 22:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	107			75.0-131
(S) 4-Bromofluorobenzene	95.4			67.0-138
(S) 1,2-Dichloroethane-d4	98.4			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3731645-1 11/17/21 21:12 • (LCSD) R3731645-2 11/17/21 21:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.124	0.127	99.2	102	70.0-123			2.39	20
Ethylbenzene	0.125	0.106	0.113	84.8	90.4	74.0-126			6.39	20
Toluene	0.125	0.119	0.124	95.2	99.2	75.0-121			4.12	20
Xylenes, Total	0.375	0.329	0.341	87.7	90.9	72.0-127			3.58	20
(S) Toluene-d8				103	107	75.0-131				
(S) 4-Bromofluorobenzene				91.9	89.6	67.0-138				
(S) 1,2-Dichloroethane-d4				105	106	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3731122-1 11/18/21 09:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	78.4			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3731122-2 11/18/21 09:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	37.1	74.2	50.0-150	
(S) o-Terphenyl			92.0	18.0-148	

L1428812-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1428812-01 11/18/21 15:37 • (MS) R3731122-3 11/18/21 15:51 • (MSD) R3731122-4 11/18/21 16:04

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	49.2	158	188	183	61.0	50.6	10	50.0-150			2.70	20
(S) o-Terphenyl					114	109		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3732215-2 11/19/21 17:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	79.7			14.0-149
(S) 2-Fluorobiphenyl	80.7			34.0-125
(S) p-Terphenyl-d14	107			23.0-120

Laboratory Control Sample (LCS)

(LCS) R3732215-1 11/19/21 16:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0690	86.3	50.0-126	
Acenaphthene	0.0800	0.0704	88.0	50.0-120	
Acenaphthylene	0.0800	0.0734	91.8	50.0-120	
Benzo(a)anthracene	0.0800	0.0651	81.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0512	64.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0631	78.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0614	76.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0627	78.4	49.0-125	
Chrysene	0.0800	0.0653	81.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0659	82.4	47.0-125	
Fluoranthene	0.0800	0.0674	84.3	49.0-129	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3732215-1 11/19/21 16:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0652	81.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0665	83.1	46.0-125	
Naphthalene	0.0800	0.0627	78.4	50.0-120	
Phenanthrene	0.0800	0.0656	82.0	47.0-120	
Pyrene	0.0800	0.0655	81.9	43.0-123	
1-Methylnaphthalene	0.0800	0.0672	84.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0637	79.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0633	79.1	50.0-120	
(S) Nitrobenzene-d5			90.8	14.0-149	
(S) 2-Fluorobiphenyl			89.9	34.0-125	
(S) p-Terphenyl-d14			115	23.0-120	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3732215-3 11/19/21 22:09 • (MSD) R3732215-4 11/19/21 22:26

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0776		0.0603	0.0564	77.7	72.7	1	10.0-145			6.68	30
Acenaphthene	0.0776		0.0626	0.0621	80.7	80.0	1	14.0-127			0.802	27
Acenaphthylene	0.0776		0.0624	0.0663	80.4	85.4	1	21.0-124			6.06	25
Benzo(a)anthracene	0.0776		0.135	0.129	38.7	30.9	1	10.0-139			4.55	30
Benzo(a)pyrene	0.0776		0.158	0.144	0.000	0.000	1	10.0-141	J6	J6	9.27	31
Benzo(b)fluoranthene	0.0776		0.0998	0.0917	38.4	28.0	1	10.0-140			8.46	36
Benzo(g,h,i)perylene	0.0776		0.129	0.113	20.6	0.000	1	10.0-140		J6	13.2	33
Benzo(k)fluoranthene	0.0776		0.0634	0.0599	63.3	58.8	1	10.0-137			5.68	31
Chrysene	0.0776		0.117	0.125	0.000	0.000	1	10.0-145	J6	J6	6.61	30
Dibenz(a,h)anthracene	0.0776		0.0784	0.0730	55.7	48.7	1	10.0-132			7.13	31
Fluoranthene	0.0776		0.0852	0.0851	52.4	52.3	1	10.0-153			0.117	33
Fluorene	0.0776		0.0668	0.0647	86.1	83.4	1	11.0-130			3.19	29
Indeno(1,2,3-cd)pyrene	0.0776		0.0747	0.0693	67.1	60.2	1	10.0-137			7.50	32
Naphthalene	0.0776		0.110	0.0929	123	101	1	10.0-135			16.9	27
Phenanthrene	0.0776		0.110	0.0916	69.1	45.4	1	10.0-144			18.3	31
Pyrene	0.0776		0.262	0.277	0.000	0.000	1	10.0-148	V	V	5.57	35
1-Methylnaphthalene	0.0776		0.0778	0.0717	50.9	43.0	1	10.0-142			8.16	28
2-Methylnaphthalene	0.0776		0.0577	0.0568	74.4	73.2	1	10.0-137			1.57	28
2-Chloronaphthalene	0.0776		0.0531	0.0532	68.4	68.6	1	29.0-120			0.188	24
(S) Nitrobenzene-d5					148	125		14.0-149				
(S) 2-Fluorobiphenyl					72.7	70.8		34.0-125				
(S) p-Terphenyl-d14					100	99.3		23.0-120				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

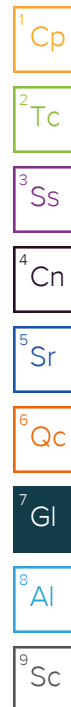
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

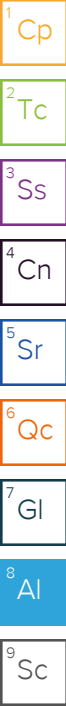
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: Caerus Oil and Gas LLC		Billing Information:	
Address: Info on file		Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins		Email To: Info on file	
Copy To: Chris McKisson, remediation@confluence-cc.com		Site Collection Info/Address:	
Customer Project Name/Number: B36-496 Historical; PH05 & PH12		State: County/City: Time Zone Collected:	
		CO / Garfield [] PT [X] MT [] CT [] ET	
Phone:	Site/Facility ID #: B36-496	Compliance Monitoring?	
Email:		[] Yes [X] No	
Collected By (print):	Purchase Order #:	DW PWS ID #:	
Andrew Smith	Quote #:	DW Location Code:	
Collected By (signature):	Turnaround Date Required: Standard 5-Day	Immediately Packed on Ice:	
		[X] Yes [] No	
Sample Disposal:	Rush: (Expedite Charges Apply)	Field Filtered (if applicable):	
[] Dispose as appropriate	[] Same Day [] Next Day	[] Yes [] No	
[] Return	[] 2 Day [] 3 Day	Analysis:	
[] Archive:	[] 4 Day [] 5 Day		
[] Hold:			

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)
			Date	Time	Date	Time			
20211110-B36-496-PH12-BASE@5'	SL	G	11/10/2021	0930				2	G
20211110-B36-496-PH12-NSW@3'	SL	G	11/10/2021	0945				2	G
20211110-B36-496-PH12-WSW@3'	SL	G	11/10/2021	0950				2	G
20211110-B36-496-PH12-WSW2@3'	SL	G	11/10/2021	0955				2	G
20211110-B36-496-PH12-WSW3@3'	SL	G	11/10/2021	1000				2	G
20211110-B36-496-PH12-ESW@3'	SL	G	11/10/2021	1010				2	G
20211110-B36-496-PH12-ESW2@3'	SL	G	11/10/2021	1015				2	G
20211110-B36-496-PH12-ESW3@3'	SL	G	11/10/2021	1020				2	G
20211110-B36-496-PH12-ESW4@3'	SL	G	11/10/2021	1025				2	G
20211110-B36-496-PH12-SSW@3'	SL	G	11/10/2021	1030				2	G

Customer Remarks / Special Conditions / Possible Hazards:

Please hold all extra material for additional 910-1 analysis.

Type of Ice Used:	Wet	Blue	Dry	None
Packing Material Used:				
Radchem sample(s) screened (<500 cpm):	Y	N	NA	

SHORT HOLDS PRESENT (<72 hours):	Y	N	N/A
Lab Tracking #:			
Samples received via:	FEDEX	UPS	Client Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: °C
Cooler 1 Therm Corr. Factor: °C
Cooler 1 Corrected Temp: °C
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	11-11-21 1100		11/11 1200
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	11/12/21 1500		11/12/21 0800
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Acctnum:	K085
Template:	
Prelogin:	
PM:	
PB:	

Trip Blank Received: Y N NA	HCL	MeOH	TSP	Other
Non Conformance(s):	YES / NO	Page: 1 of 2		

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Container Preservative Type **										Lab Project Manager:									
** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other																			
Analyses										Lab Profile/Line:									
BTEX TPH (GRO, DRO) Table 910-1 Metal's Table 910-1 PAH's EC, SAR, pH, Arsenic pH Only SAR Only										Lab Sample Receipt Checklist:									
										Custody Seals Present/Intact: Y N NA									
										Custody Signatures Present: Y N NA									
										Collector Signature Present: Y N NA									
										Bottles Intact: Y N NA									
										Correct Bottles: Y N NA									
										Sufficient Volume: Y N NA									
										Samples Received on Ice: Y N NA									
										VOA - Headspace Acceptable: Y N NA									
										USDA Regulated Soils: Y N NA									
Samples in Holding Time: Y N NA																			
Residual Chlorine Present: Y N NA																			
Cl Strips: Y N NA																			
Sample pH Acceptable: Y N NA																			
pH Strips: Y N NA																			
Sulfide Present: Y N NA																			
Lead Acetate Strips: Y N NA																			
LAB USE ONLY:																			
Lab Sample # / Comments:																			
11430873																			
-01																			
-02																			
-03																			
-04																			
-05																			
-06																			
-07																			
-08																			
-09																			
-10																			

CHAIN-OF-CUSTODY Analytical Request Document

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Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: Caerus Oil and Gas LLC		Billing Information:	
Address: Info on file		Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins		Email To: Info on file	
Copy To: Chris McKisson, remediation@confluence-cc.com		Site Collection Info/Address:	
Customer Project Name/Number: B36-496 Historical; PH05 & PH12		State: County/City: Time Zone Collected:	
		CO / Garfield [] PT [X] MT [] CT [] ET	
Phone:	Site/Facility ID #: B36-496	Compliance Monitoring?	
Email:		[] Yes [X] No	
Collected By (print):	Purchase Order #:	DW PWS ID #:	
Andrew Smith	Quote #:	DW Location Code:	
Collected By (signature):	Turnaround Date Required: Standard 5-Day	Immediately Packed on Ice:	
		[X] Yes [] No	
Sample Disposal:	Rush: (Expedite Charges Apply)	Field Filtered (if applicable):	
[] Dispose as appropriate	[] Same Day [] Next Day	[] Yes [] No	
[] Return	[] 2 Day [] 3 Day		
[] Archive:	[] 4 Day [] 5 Day	Analysis:	
[] Hold:			

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)
			Date	Time	Date	Time			
20211110-B36-496-PH12-SSW2@3'	SL	G	11/10/2021	1035				2	G
20211110-B36-496-PH12-SSW3@3'	SL	G	11/10/2021	1040				2	G
20211110-B36-496-PH12-SSW4@3'	SL	G	11/10/2021	1045				2	G
20211110-B36-496-PH05-BASE@4'	SL	G	11/10/2021	1100				2	G
20211110-B36-496-PH05-SSW@2.5	SL	G	11/10/2021	1110				2	G
20211110-B36-496-PH05-WSW@2.5	SL	G	11/10/2021	1120				2	G
20211110-B36-496-PH05-ESW@2.5	SL	G	11/10/2021	1130				2	G
20211110-B36-496-PH05-NSW@2.5	SL	G	11/10/2021	1145				2	G

Customer Remarks / Special Conditions / Possible Hazards:

Please hold all extra material for additional 910-1 analysis.

Type of Ice Used:	Wet	Blue	Dry	None
Packing Material Used:				
Radchem sample(s) screened (<500 cpm):	Y	N	NA	

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Lab Profile/Line:

BTEX	TPH (GRO, DRO)	Table 910-1 Metals	Table 910-1 PAH's	EC, SAR, pH, Arsenic	pH Only	SAR Only	Lab Sample Receipt Checklist
							Custody Seals Present/Intact
							Custody Signatures Present
							Collector Signature Present
							Bottles Intact
							Correct Bottles
							Sufficient Volume
							Samples Received on Ice
							VOA - Headspace Acceptable
							USDA Regulated Soils
							Samples in Holding Time
							Residual Chlorine Present
							Cl Strips:
							Sample pH Acceptable
							pH Strips:
							Sulfide Present
							Lead Acetate Strips:

LAB USE ONLY:

Lab Sample # / Comments:

L1430873
-11
-12
-13
-14
-15
-16
-17
-18

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	11-11-21/1100		11/11 1200
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	11/11/21/1500		11/12/21 0845
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY	
Table #:	
Acctnum:	
Template:	
Prelogin:	
PM:	
PB:	

LAB Sample Temperature Info:	
Temp Blank Received:	Y N NA
Therm ID#:	
Cooler 1 Temp Upon Receipt:	oC
Cooler 1 Therm Corr. Factor:	oC
Cooler 1 Corrected Temp:	oC
Comments:	
277052.7 A7BA	
Trip Blank Received: Y N NA	
HCL MeOH TSP Other	
Non Conformance(s):	Page: 2
YES / NO	of: 2

November 23, 2021

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Caerus Oil and Gas

Sample Delivery Group: L1430890
Samples Received: 11/12/2021
Project Number: B36-496 HISTORICAL
Description: PH05
Site: B36-496
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

20211110-B36-496-PH05-WC L1430890-01 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 12:00

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1776046	1	11/19/21 12:43	11/19/21 12:43	CCE	Mt. Juliet, TN
Calculated Results	WG1775193	1	11/17/21 05:53	11/22/21 15:24	ARM	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1776932	1	11/20/21 14:30	11/22/21 15:24	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1775260	1	11/16/21 15:00	11/16/21 15:00	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1775517	1	11/17/21 12:17	11/18/21 04:28	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1776395	1	11/18/21 12:39	11/19/21 11:18	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	1	11/17/21 05:53	11/18/21 17:00	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1775193	10	11/17/21 05:53	11/19/21 12:14	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1776043	1	11/18/21 13:41	11/19/21 13:40	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1775181	5	11/17/21 05:51	11/17/21 23:16	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1777721	1	11/20/21 09:30	11/20/21 12:33	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1776129	1	11/16/21 21:05	11/18/21 01:27	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1777341	10	11/18/21 23:02	11/19/21 20:38	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1777082	1	11/19/21 10:05	11/19/21 23:02	AMG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.48		1	11/19/2021 12:43	WG1776046

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	19.9		0.133	1.00	1	11/22/2021 15:24	WG1775193

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	11/22/2021 15:24	WG1776932

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.70	T8	1	11/16/2021 15:00	WG1775260

Sample Narrative:

L1430890-01 WG1775260: 8.7 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	439		10.0	1	11/18/2021 04:28	WG1775517

Sample Narrative:

L1430890-01 WG1775517: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0198	J	0.0180	0.0400	1	11/19/2021 11:18	WG1776395

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	11000		0.852	5.00	10	11/19/2021 12:14	WG1775193
Cadmium	U		0.0471	0.500	1	11/18/2021 17:00	WG1775193
Chromium	19.9		0.133	1.00	1	11/18/2021 17:00	WG1775193
Copper	17.3		0.400	2.00	1	11/18/2021 17:00	WG1775193
Lead	9.46		0.208	0.500	1	11/18/2021 17:00	WG1775193
Nickel	13.4		0.132	2.00	1	11/18/2021 17:00	WG1775193
Selenium	U		0.764	2.00	1	11/18/2021 17:00	WG1775193
Silver	U		0.127	1.00	1	11/18/2021 17:00	WG1775193
Zinc	36.1		0.832	5.00	1	11/18/2021 17:00	WG1775193

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.27		0.0167	0.200	1	11/19/2021 13:40	WG1776043

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.41		0.100	1.00	5	11/17/2021 23:16	WG1775181

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.132		0.0217	0.100	1	11/20/2021 12:33	WG1777721
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	94.1			77.0-120		11/20/2021 12:33	WG1777721

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000675	J	0.000467	0.00100	1	11/18/2021 01:27	WG1776129
Toluene	0.00428	J	0.00130	0.00500	1	11/18/2021 01:27	WG1776129
Ethylbenzene	0.000975	J	0.000737	0.00250	1	11/18/2021 01:27	WG1776129
Total Xylenes	0.00420	J	0.000880	0.00650	1	11/18/2021 01:27	WG1776129
(S) <i>Toluene-d8</i>	109			75.0-131		11/18/2021 01:27	WG1776129
(S) <i>4</i> -Bromofluorobenzene	95.8			67.0-138		11/18/2021 01:27	WG1776129
(S) <i>1,2</i> -Dichloroethane- <i>d4</i>	99.8			70.0-130		11/18/2021 01:27	WG1776129

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	81.6		7.69	40.0	10	11/19/2021 20:38	WG1777341
(S) <i>o</i> -Terphenyl	61.6			18.0-148		11/19/2021 20:38	WG1777341

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00683		0.00230	0.00600	1	11/19/2021 23:02	WG1777082
Acenaphthene	U		0.00209	0.00600	1	11/19/2021 23:02	WG1777082
Acenaphthylene	U		0.00216	0.00600	1	11/19/2021 23:02	WG1777082
Benzo(a)anthracene	0.0545		0.00173	0.00600	1	11/19/2021 23:02	WG1777082
Benzo(a)pyrene	0.0696		0.00179	0.00600	1	11/19/2021 23:02	WG1777082
Benzo(b)fluoranthene	0.245		0.00153	0.00600	1	11/19/2021 23:02	WG1777082
Benzo(g,h,i)perylene	0.0914		0.00177	0.00600	1	11/19/2021 23:02	WG1777082
Benzo(k)fluoranthene	0.0493		0.00215	0.00600	1	11/19/2021 23:02	WG1777082
Chrysene	0.0776		0.00232	0.00600	1	11/19/2021 23:02	WG1777082
Dibenz(a,h)anthracene	0.0362		0.00172	0.00600	1	11/19/2021 23:02	WG1777082
Fluoranthene	0.0723		0.00227	0.00600	1	11/19/2021 23:02	WG1777082
Fluorene	0.00658		0.00205	0.00600	1	11/19/2021 23:02	WG1777082
Indeno(1,2,3-cd)pyrene	0.0846		0.00181	0.00600	1	11/19/2021 23:02	WG1777082
Naphthalene	0.0547		0.00408	0.0200	1	11/19/2021 23:02	WG1777082
Phenanthrene	0.0742		0.00231	0.00600	1	11/19/2021 23:02	WG1777082
Pyrene	0.0504		0.00200	0.00600	1	11/19/2021 23:02	WG1777082
1-Methylnaphthalene	0.0805		0.00449	0.0200	1	11/19/2021 23:02	WG1777082
2-Methylnaphthalene	0.116		0.00427	0.0200	1	11/19/2021 23:02	WG1777082
2-Chloronaphthalene	U		0.00466	0.0200	1	11/19/2021 23:02	WG1777082
(S) <i>p</i> -Terphenyl- <i>d14</i>	89.9			23.0-120		11/19/2021 23:02	WG1777082
(S) Nitrobenzene- <i>d5</i>	77.0			14.0-149		11/19/2021 23:02	WG1777082
(S) 2-Fluorobiphenyl	70.2			34.0-125		11/19/2021 23:02	WG1777082

Method Blank (MB)

(MB) R3732475-1 11/22/21 15:21

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1430873-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1430873-14 11/22/21 15:23 • (DUP) R3732475-7 11/22/21 15:23

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	U	1	0.000		20

L1431798-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1431798-03 11/22/21 15:26 • (DUP) R3732475-8 11/22/21 15:26

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3732475-2 11/22/21 15:21

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	23.0	95.9	80.0-120	

L1423071-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423071-02 11/22/21 15:21 • (MS) R3732475-3 11/22/21 15:21 • (MSD) R3732475-4 11/22/21 15:21

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	U	13.1	16.3	65.3	81.5	1	75.0-125	J6	J3	22.1	20

L1423071-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1423071-02 11/22/21 15:21 • (MS) R3732475-5 11/22/21 15:22

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	646	U	756	117	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1430892-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1430892-01 11/16/21 15:00 • (DUP) R3730195-2 11/16/21 15:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.32	8.36	1	0.480		1

Sample Narrative:

OS: 8.32 at 20.5C

DUP: 8.36 at 20.4C



L1431024-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1431024-11 11/16/21 15:00 • (DUP) R3730195-3 11/16/21 15:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	9.96	9.94	1	0.201		1

Sample Narrative:

OS: 9.96 at 19.7C

DUP: 9.94 at 19.6C

Laboratory Control Sample (LCS)

(LCS) R3730195-1 11/16/21 15:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.01 at 18.9C

Method Blank (MB)

(MB) R3730887-1 11/18/21 04:28

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1430885-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1430885-03 11/18/21 04:28 • (DUP) R3730887-3 11/18/21 04:28

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1230	1230	1	0.0812		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1431022-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1431022-02 11/18/21 04:28 • (DUP) R3730887-4 11/18/21 04:28

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	504	493	1	2.21		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3730887-2 11/18/21 04:28

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	280	105	85.0-115	

Sample Narrative:

LCS: at 25C

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3731679-1 11/19/21 11:00

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3731679-2 11/19/21 11:08

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.467	93.4	80.0-120	

L1431971-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1431971-05 11/19/21 11:10 • (MS) R3731679-3 11/19/21 11:13 • (MSD) R3731679-4 11/19/21 11:16

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	0.0192	0.459	0.458	88.0	87.8	1	75.0-125			0.255	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3731480-1 11/18/21 16:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3731480-2 11/18/21 16:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	96.7	96.7	80.0-120	
Cadmium	100	103	103	80.0-120	
Chromium	100	102	102	80.0-120	
Copper	100	105	105	80.0-120	
Lead	100	101	101	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	95.6	95.6	80.0-120	
Silver	20.0	19.4	97.2	80.0-120	
Zinc	100	97.6	97.6	80.0-120	

L1429487-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1429487-01 11/18/21 16:09 • (MS) R3731480-5 11/18/21 16:17 • (MSD) R3731480-6 11/18/21 16:20

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	10400	10600	10700	214	345	1	75.0-125	E V	E V	1.23	20
Cadmium	100	U	107	106	107	106	1	75.0-125			0.877	20
Chromium	100	14.6	116	115	102	101	1	75.0-125			1.02	20
Copper	100	214	296	296	81.6	82.2	1	75.0-125			0.209	20
Lead	100	3.99	110	109	106	105	1	75.0-125			1.15	20
Nickel	100	7.96	118	118	110	110	1	75.0-125			0.0653	20
Selenium	100	U	104	103	104	103	1	75.0-125			1.31	20
Silver	20.0	U	20.5	20.3	103	101	1	75.0-125			1.19	20
Zinc	100	49.0	148	144	99.3	95.3	1	75.0-125			2.71	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3731791-1 11/19/21 13:32

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3731791-2 11/19/21 13:35 • (LCSD) R3731791-3 11/19/21 13:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.961	0.947	96.1	94.7	80.0-120			1.38	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3730853-1 11/17/21 21:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3730853-2 11/17/21 21:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.6	96.6	80.0-120	

L1429487-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1429487-01 11/17/21 21:52 • (MS) R3730853-4 11/17/21 22:01 • (MSD) R3730853-5 11/17/21 22:04

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	2.48	99.8	101	97.3	99.0	5	75.0-125			1.63	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3732033-2 11/20/21 11:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	103			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3732033-1 11/20/21 10:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.52	100	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			108	77.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3731645-3 11/17/21 22:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	107			75.0-131
(S) 4-Bromofluorobenzene	95.4			67.0-138
(S) 1,2-Dichloroethane-d4	98.4			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3731645-1 11/17/21 21:12 • (LCSD) R3731645-2 11/17/21 21:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.124	0.127	99.2	102	70.0-123			2.39	20
Ethylbenzene	0.125	0.106	0.113	84.8	90.4	74.0-126			6.39	20
Toluene	0.125	0.119	0.124	95.2	99.2	75.0-121			4.12	20
Xylenes, Total	0.375	0.329	0.341	87.7	90.9	72.0-127			3.58	20
(S) Toluene-d8				103	107	75.0-131				
(S) 4-Bromofluorobenzene				91.9	89.6	67.0-138				
(S) 1,2-Dichloroethane-d4				105	106	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3731980-1 11/19/21 16:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	55.4			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3731980-2 11/19/21 16:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	35.3	70.6	50.0-150	
(S) o-Terphenyl			86.2	18.0-148	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3732215-2 11/19/21 17:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	79.7			14.0-149
(S) 2-Fluorobiphenyl	80.7			34.0-125
(S) p-Terphenyl-d14	107			23.0-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3732215-1 11/19/21 16:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0690	86.3	50.0-126	
Acenaphthene	0.0800	0.0704	88.0	50.0-120	
Acenaphthylene	0.0800	0.0734	91.8	50.0-120	
Benzo(a)anthracene	0.0800	0.0651	81.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0512	64.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0631	78.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0614	76.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0627	78.4	49.0-125	
Chrysene	0.0800	0.0653	81.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0659	82.4	47.0-125	
Fluoranthene	0.0800	0.0674	84.3	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3732215-1 11/19/21 16:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0652	81.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0665	83.1	46.0-125	
Naphthalene	0.0800	0.0627	78.4	50.0-120	
Phenanthrene	0.0800	0.0656	82.0	47.0-120	
Pyrene	0.0800	0.0655	81.9	43.0-123	
1-Methylnaphthalene	0.0800	0.0672	84.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0637	79.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0633	79.1	50.0-120	
(S) Nitrobenzene-d5			90.8	14.0-149	
(S) 2-Fluorobiphenyl			89.9	34.0-125	
(S) p-Terphenyl-d14			115	23.0-120	

L1429390-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1429390-01 11/19/21 21:51 • (MS) R3732215-3 11/19/21 22:09 • (MSD) R3732215-4 11/19/21 22:26

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0776	U	0.0603	0.0564	77.7	72.7	1	10.0-145			6.68	30
Acenaphthene	0.0776	U	0.0626	0.0621	80.7	80.0	1	14.0-127			0.802	27
Acenaphthylene	0.0776	U	0.0624	0.0663	80.4	85.4	1	21.0-124			6.06	25
Benzo(a)anthracene	0.0776	0.105	0.135	0.129	38.7	30.9	1	10.0-139			4.55	30
Benzo(a)pyrene	0.0776	0.169	0.158	0.144	0.000	0.000	1	10.0-141	J6	J6	9.27	31
Benzo(b)fluoranthene	0.0776	0.0700	0.0998	0.0917	38.4	28.0	1	10.0-140			8.46	36
Benzo(g,h,i)perylene	0.0776	0.113	0.129	0.113	20.6	0.000	1	10.0-140		J6	13.2	33
Benzo(k)fluoranthene	0.0776	0.0143	0.0634	0.0599	63.3	58.8	1	10.0-137			5.68	31
Chrysene	0.0776	0.148	0.117	0.125	0.000	0.000	1	10.0-145	J6	J6	6.61	30
Dibenz(a,h)anthracene	0.0776	0.0352	0.0784	0.0730	55.7	48.7	1	10.0-132			7.13	31
Fluoranthene	0.0776	0.0445	0.0852	0.0851	52.4	52.3	1	10.0-153			0.117	33
Fluorene	0.0776	U	0.0668	0.0647	86.1	83.4	1	11.0-130			3.19	29
Indeno(1,2,3-cd)pyrene	0.0776	0.0226	0.0747	0.0693	67.1	60.2	1	10.0-137			7.50	32
Naphthalene	0.0776	0.0149	0.110	0.0929	123	101	1	10.0-135			16.9	27
Phenanthrene	0.0776	0.0564	0.110	0.0916	69.1	45.4	1	10.0-144			18.3	31
Pyrene	0.0776	0.361	0.262	0.277	0.000	0.000	1	10.0-148	V	V	5.57	35
1-Methylnaphthalene	0.0776	0.0383	0.0778	0.0717	50.9	43.0	1	10.0-142			8.16	28
2-Methylnaphthalene	0.0776	U	0.0577	0.0568	74.4	73.2	1	10.0-137			1.57	28
2-Chloronaphthalene	0.0776	U	0.0531	0.0532	68.4	68.6	1	29.0-120			0.188	24
(S) Nitrobenzene-d5					148	125		14.0-149				
(S) 2-Fluorobiphenyl					72.7	70.8		34.0-125				
(S) p-Terphenyl-d14					100	99.3		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1429390-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1429390-01 11/19/21 21:51 • (MS) R3732215-3 11/19/21 22:09 • (MSD) R3732215-4 11/19/21 22:26

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%

Sample Narrative:

OS: Surrogate failure due to matrix interference

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

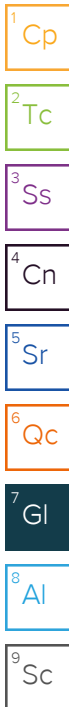
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Caerus Oil and Gas

Sample Delivery Group: L1434701
Samples Received: 11/12/2021
Project Number: B36-496 HISTORICAL
Description: PH05 & PH12
Site: B36-496
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

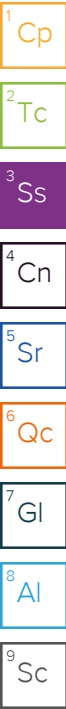
20211110-B36-496-PH12-BASE@5' L1434701-01 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 09:30

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1781453	1	11/30/21 10:45	12/04/21 10:43	RAF	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1782265	1	12/01/21 10:32	12/04/21 10:43	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1780983	1	11/30/21 03:04	11/30/21 07:09	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1782193	1	12/01/21 08:27	12/02/21 09:33	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1781453	1	11/30/21 10:45	11/30/21 23:02	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1780174	1	11/30/21 14:51	12/01/21 18:10	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1781452	5	11/30/21 10:25	11/30/21 21:59	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1779918	1	11/24/21 08:13	11/24/21 21:20	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1779625	1	11/24/21 08:13	11/24/21 11:46	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1779516	1	11/24/21 10:15	11/25/21 01:37	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1779526	1	11/24/21 09:13	11/24/21 19:28	SHG	Mt. Juliet, TN



20211110-B36-496-PH12-NWS@3' L1434701-02 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 09:45

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1781453	1	11/30/21 10:45	11/30/21 23:10	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1780826	1	11/30/21 13:24	11/30/21 13:42	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1782370	1	12/01/21 15:00	12/01/21 15:31	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1780983	1	11/30/21 03:04	11/30/21 07:09	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1782193	1	12/01/21 08:27	12/02/21 09:35	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1781453	1	11/30/21 10:45	11/30/21 23:10	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1780174	1	11/30/21 14:51	12/01/21 18:13	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1781452	5	11/30/21 10:25	11/30/21 22:02	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1780750	25	11/24/21 08:13	11/29/21 02:56	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1780827	1	11/24/21 08:13	11/29/21 15:39	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1779516	1	11/24/21 10:15	11/25/21 02:41	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1779526	1	11/24/21 09:13	11/24/21 19:48	SHG	Mt. Juliet, TN

20211110-B36-496-PH12-WSW@3' L1434701-03 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 09:50

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1781453	1	11/30/21 10:45	11/30/21 23:13	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1780826	1	11/29/21 17:00	11/30/21 13:42	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1782370	1	12/01/21 15:00	12/01/21 15:31	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1780983	1	11/30/21 03:04	11/30/21 07:09	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1782193	1	12/01/21 08:27	12/02/21 09:37	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1781453	1	11/30/21 10:45	11/30/21 23:13	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1780174	1	11/30/21 14:51	12/01/21 18:16	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1781452	5	11/30/21 10:25	11/30/21 22:06	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1779918	1	11/24/21 08:13	11/24/21 21:42	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1779625	1	11/24/21 08:13	11/24/21 12:06	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1779516	1	11/24/21 10:15	11/25/21 02:03	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1779526	1	11/24/21 09:13	11/24/21 20:08	SHG	Mt. Juliet, TN

20211110-B36-496-PH12-ESW2@3' L1434701-04 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 10:15

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1781453	1	11/30/21 10:45	11/30/21 23:15	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1780826	1	11/29/21 17:00	11/30/21 13:43	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1782370	1	12/01/21 15:00	12/01/21 15:31	PSN	Mt. Juliet, TN

SAMPLE SUMMARY

20211110-B36-496-PH12-ESW2@3' L1434701-04 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 10:15

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9050AMod	WG1780983	1	11/30/21 03:04	11/30/21 07:09	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1782193	1	12/01/21 08:27	12/02/21 09:39	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1781453	1	11/30/21 10:45	11/30/21 23:15	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1780174	1	11/30/21 14:51	12/01/21 18:19	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1781452	5	11/30/21 10:25	11/30/21 22:17	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1779918	1	11/24/21 08:13	11/24/21 22:04	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1779625	1	11/24/21 08:13	11/24/21 12:25	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1779516	1	11/24/21 10:15	11/25/21 02:15	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1779526	1	11/24/21 09:13	11/24/21 20:28	SHG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

20211110-B36-496-PH12-SSW@3' L1434701-05 Solid

Collected by
Andrew Smith

Collected date/time
11/10/21 10:30

Received date/time
11/12/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1781453	1	11/30/21 10:45	11/30/21 23:18	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1780826	1	11/29/21 17:00	11/30/21 13:43	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1782370	1	12/01/21 15:00	12/01/21 15:31	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1780983	1	11/30/21 03:04	11/30/21 07:09	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1782193	1	12/01/21 08:27	12/02/21 09:41	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1781453	1	11/30/21 10:45	11/30/21 23:18	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1780174	1	11/30/21 14:51	12/01/21 18:22	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1781452	5	11/30/21 10:25	11/30/21 22:20	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1779918	1	11/24/21 08:13	11/24/21 22:26	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1779625	1	11/24/21 08:13	11/24/21 12:44	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1779516	1	11/24/21 10:15	11/25/21 02:28	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1779526	1	11/24/21 09:13	11/24/21 20:48	SHG	Mt. Juliet, TN

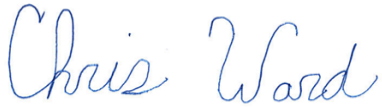
⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	33.3		0.133	1.00	1	12/04/2021 10:43	WG1781453

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	12/04/2021 10:43	WG1782265

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	764		umhos/cm	10.0	1	11/30/2021 07:09	WG1780983

Sample Narrative:

L1434701-01 WG1780983: at 25C

Mercury by Method 7471A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	0.0309	J	0.0180	0.0400	1	12/02/2021 09:33	WG1782193

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Barium	345		0.0852	0.500	1	11/30/2021 23:02	WG1781453
Cadmium	0.363	J	0.0471	0.500	1	11/30/2021 23:02	WG1781453
Chromium	33.3		0.133	1.00	1	11/30/2021 23:02	WG1781453
Copper	13.7		0.400	2.00	1	11/30/2021 23:02	WG1781453
Lead	14.4		0.208	0.500	1	11/30/2021 23:02	WG1781453
Nickel	20.6		0.132	2.00	1	11/30/2021 23:02	WG1781453
Selenium	U		0.764	2.00	1	11/30/2021 23:02	WG1781453
Silver	U		0.127	1.00	1	11/30/2021 23:02	WG1781453
Zinc	39.1		0.832	5.00	1	11/30/2021 23:02	WG1781453

Metals (ICP) by Method 6010B-NE493 Ch 2

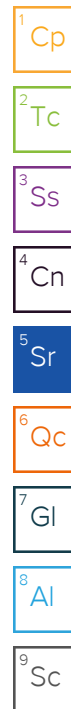
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.407		0.0167	0.200	1	12/01/2021 18:10	WG1780174

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Arsenic	5.39		0.100	1.00	5	11/30/2021 21:59	WG1781452

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0305	B J	0.0217	0.100	1	11/24/2021 21:20	WG1779918
(S) a,a,a-Trifluorotoluene(FID)	89.7			77.0-120		11/24/2021 21:20	WG1779918



Volatile Organic Compounds (GC/MS) by Method 8260B

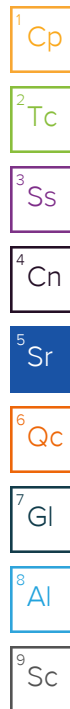
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	11/24/2021 11:46	WG1779625
Toluene	U		0.00130	0.00500	1	11/24/2021 11:46	WG1779625
Ethylbenzene	U		0.000737	0.00250	1	11/24/2021 11:46	WG1779625
Total Xylenes	U		0.000880	0.00650	1	11/24/2021 11:46	WG1779625
(S) Toluene-d8	104			75.0-131		11/24/2021 11:46	WG1779625
(S) 4-Bromofluorobenzene	107			67.0-138		11/24/2021 11:46	WG1779625
(S) 1,2-Dichloroethane-d4	81.4			70.0-130		11/24/2021 11:46	WG1779625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	12.5		0.769	4.00	1	11/25/2021 01:37	WG1779516
(S) o-Terphenyl	51.5			18.0-148		11/25/2021 01:37	WG1779516

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	11/24/2021 19:28	WG1779526
Acenaphthene	U		0.00209	0.00600	1	11/24/2021 19:28	WG1779526
Acenaphthylene	U		0.00216	0.00600	1	11/24/2021 19:28	WG1779526
Benzo(a)anthracene	U		0.00173	0.00600	1	11/24/2021 19:28	WG1779526
Benzo(a)pyrene	U		0.00179	0.00600	1	11/24/2021 19:28	WG1779526
Benzo(b)fluoranthene	U		0.00153	0.00600	1	11/24/2021 19:28	WG1779526
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	11/24/2021 19:28	WG1779526
Benzo(k)fluoranthene	U		0.00215	0.00600	1	11/24/2021 19:28	WG1779526
Chrysene	U		0.00232	0.00600	1	11/24/2021 19:28	WG1779526
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	11/24/2021 19:28	WG1779526
Fluoranthene	U		0.00227	0.00600	1	11/24/2021 19:28	WG1779526
Fluorene	U		0.00205	0.00600	1	11/24/2021 19:28	WG1779526
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	11/24/2021 19:28	WG1779526
Naphthalene	U		0.00408	0.0200	1	11/24/2021 19:28	WG1779526
Phenanthrene	U		0.00231	0.00600	1	11/24/2021 19:28	WG1779526
Pyrene	U		0.00200	0.00600	1	11/24/2021 19:28	WG1779526
1-Methylnaphthalene	U		0.00449	0.0200	1	11/24/2021 19:28	WG1779526
2-Methylnaphthalene	U		0.00427	0.0200	1	11/24/2021 19:28	WG1779526
2-Chloronaphthalene	U		0.00466	0.0200	1	11/24/2021 19:28	WG1779526
(S) p-Terphenyl-d14	89.0			23.0-120		11/24/2021 19:28	WG1779526
(S) Nitrobenzene-d5	53.5			14.0-149		11/24/2021 19:28	WG1779526
(S) 2-Fluorobiphenyl	72.4			34.0-125		11/24/2021 19:28	WG1779526



Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	29.9		0.133	1.00	1	11/30/2021 23:10	WG1781453

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	11/30/2021 13:42	WG1780826

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.45	T8	1	12/01/2021 15:31	WG1782370

Sample Narrative:

L1434701-02 WG1782370: 8.45 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	783		10.0	1	11/30/2021 07:09	WG1780983

Sample Narrative:

L1434701-02 WG1780983: at 25C

Mercury by Method 7471A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	0.0339	J	0.0180	0.0400	1	12/02/2021 09:35	WG1782193

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Barium	974		0.0852	0.500	1	11/30/2021 23:10	WG1781453
Cadmium	0.309	J	0.0471	0.500	1	11/30/2021 23:10	WG1781453
Chromium	29.9		0.133	1.00	1	11/30/2021 23:10	WG1781453
Copper	40.9		0.400	2.00	1	11/30/2021 23:10	WG1781453
Lead	20.5		0.208	0.500	1	11/30/2021 23:10	WG1781453
Nickel	22.5		0.132	2.00	1	11/30/2021 23:10	WG1781453
Selenium	U		0.764	2.00	1	11/30/2021 23:10	WG1781453
Silver	U		0.127	1.00	1	11/30/2021 23:10	WG1781453
Zinc	42.1		0.832	5.00	1	11/30/2021 23:10	WG1781453

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.146	J	0.0167	0.200	1	12/01/2021 18:13	WG1780174

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.53		0.100	1.00	5	11/30/2021 22:02	WG1781452



Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.36	J	0.543	2.50	25	11/29/2021 02:56	WG1780750
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	92.8			77.0-120		11/29/2021 02:56	WG1780750

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000675	J T8	0.000467	0.00100	1	11/29/2021 15:39	WG1780827
Toluene	0.00347	J T8	0.00130	0.00500	1	11/29/2021 15:39	WG1780827
Ethylbenzene	0.00185	J T8	0.000737	0.00250	1	11/29/2021 15:39	WG1780827
Total Xylenes	0.00862		0.000880	0.00650	1	11/29/2021 15:39	WG1780827
(S) Toluene-d8	101			75.0-131		11/29/2021 15:39	WG1780827
(S) 4-Bromofluorobenzene	103			67.0-138		11/29/2021 15:39	WG1780827
(S) 1,2-Dichloroethane-d4	100			70.0-130		11/29/2021 15:39	WG1780827

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	58.2		0.769	4.00	1	11/25/2021 02:41	WG1779516
(S) <i>o</i> -Terphenyl	48.0			18.0-148		11/25/2021 02:41	WG1779516

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	11/24/2021 19:48	WG1779526
Acenaphthene	U		0.00209	0.00600	1	11/24/2021 19:48	WG1779526
Acenaphthylene	U		0.00216	0.00600	1	11/24/2021 19:48	WG1779526
Benzo(a)anthracene	U		0.00173	0.00600	1	11/24/2021 19:48	WG1779526
Benzo(a)pyrene	U		0.00179	0.00600	1	11/24/2021 19:48	WG1779526
Benzo(b)fluoranthene	U		0.00153	0.00600	1	11/24/2021 19:48	WG1779526
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	11/24/2021 19:48	WG1779526
Benzo(k)fluoranthene	U		0.00215	0.00600	1	11/24/2021 19:48	WG1779526
Chrysene	U		0.00232	0.00600	1	11/24/2021 19:48	WG1779526
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	11/24/2021 19:48	WG1779526
Fluoranthene	U		0.00227	0.00600	1	11/24/2021 19:48	WG1779526
Fluorene	U		0.00205	0.00600	1	11/24/2021 19:48	WG1779526
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	11/24/2021 19:48	WG1779526
Naphthalene	U		0.00408	0.0200	1	11/24/2021 19:48	WG1779526
Phenanthrene	U		0.00231	0.00600	1	11/24/2021 19:48	WG1779526
Pyrene	U		0.00200	0.00600	1	11/24/2021 19:48	WG1779526
1-Methylnaphthalene	U		0.00449	0.0200	1	11/24/2021 19:48	WG1779526
2-Methylnaphthalene	U		0.00427	0.0200	1	11/24/2021 19:48	WG1779526
2-Chloronaphthalene	U		0.00466	0.0200	1	11/24/2021 19:48	WG1779526
(S) <i>p</i> -Terphenyl-d14	105			23.0-120		11/24/2021 19:48	WG1779526
(S) Nitrobenzene-d5	63.1			14.0-149		11/24/2021 19:48	WG1779526
(S) 2-Fluorobiphenyl	78.1			34.0-125		11/24/2021 19:48	WG1779526

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	27.9		0.133	1.00	1	11/30/2021 23:13	WG1781453

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	11/30/2021 13:42	WG1780826

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.52	T8	1	12/01/2021 15:31	WG1782370

Sample Narrative:

L1434701-03 WG1782370: 8.52 at 19.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	712		10.0	1	11/30/2021 07:09	WG1780983

Sample Narrative:

L1434701-03 WG1780983: at 25C

Mercury by Method 7471A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	0.0404		0.0180	0.0400	1	12/02/2021 09:37	WG1782193

Metals (ICP) by Method 6010B

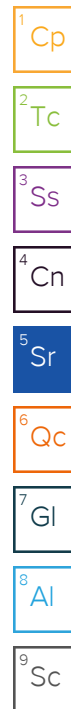
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Barium	499		0.0852	0.500	1	11/30/2021 23:13	WG1781453
Cadmium	0.378	J	0.0471	0.500	1	11/30/2021 23:13	WG1781453
Chromium	27.9		0.133	1.00	1	11/30/2021 23:13	WG1781453
Copper	15.8		0.400	2.00	1	11/30/2021 23:13	WG1781453
Lead	16.6		0.208	0.500	1	11/30/2021 23:13	WG1781453
Nickel	21.8		0.132	2.00	1	11/30/2021 23:13	WG1781453
Selenium	U		0.764	2.00	1	11/30/2021 23:13	WG1781453
Silver	U		0.127	1.00	1	11/30/2021 23:13	WG1781453
Zinc	35.3		0.832	5.00	1	11/30/2021 23:13	WG1781453

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.130	J	0.0167	0.200	1	12/01/2021 18:16	WG1780174

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.57		0.100	1.00	5	11/30/2021 22:06	WG1781452



Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0293	B J	0.0217	0.100	1	11/24/2021 21:42	WG1779918
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	87.3			77.0-120		11/24/2021 21:42	WG1779918

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	11/24/2021 12:06	WG1779625
Toluene	U		0.00130	0.00500	1	11/24/2021 12:06	WG1779625
Ethylbenzene	U		0.000737	0.00250	1	11/24/2021 12:06	WG1779625
Total Xylenes	U		0.000880	0.00650	1	11/24/2021 12:06	WG1779625
(S) Toluene-d8	104			75.0-131		11/24/2021 12:06	WG1779625
(S) 4-Bromofluorobenzene	103			67.0-138		11/24/2021 12:06	WG1779625
(S) 1,2-Dichloroethane-d4	77.4			70.0-130		11/24/2021 12:06	WG1779625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	9.31		0.769	4.00	1	11/25/2021 02:03	WG1779516
(S) <i>o</i> -Terphenyl	56.2			18.0-148		11/25/2021 02:03	WG1779516

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	11/24/2021 20:08	WG1779526
Acenaphthene	U		0.00209	0.00600	1	11/24/2021 20:08	WG1779526
Acenaphthylene	U		0.00216	0.00600	1	11/24/2021 20:08	WG1779526
Benzo(a)anthracene	U		0.00173	0.00600	1	11/24/2021 20:08	WG1779526
Benzo(a)pyrene	U		0.00179	0.00600	1	11/24/2021 20:08	WG1779526
Benzo(b)fluoranthene	U		0.00153	0.00600	1	11/24/2021 20:08	WG1779526
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	11/24/2021 20:08	WG1779526
Benzo(k)fluoranthene	U		0.00215	0.00600	1	11/24/2021 20:08	WG1779526
Chrysene	U		0.00232	0.00600	1	11/24/2021 20:08	WG1779526
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	11/24/2021 20:08	WG1779526
Fluoranthene	U		0.00227	0.00600	1	11/24/2021 20:08	WG1779526
Fluorene	U		0.00205	0.00600	1	11/24/2021 20:08	WG1779526
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	11/24/2021 20:08	WG1779526
Naphthalene	U		0.00408	0.0200	1	11/24/2021 20:08	WG1779526
Phenanthrene	U		0.00231	0.00600	1	11/24/2021 20:08	WG1779526
Pyrene	U		0.00200	0.00600	1	11/24/2021 20:08	WG1779526
1-Methylnaphthalene	U		0.00449	0.0200	1	11/24/2021 20:08	WG1779526
2-Methylnaphthalene	U		0.00427	0.0200	1	11/24/2021 20:08	WG1779526
2-Chloronaphthalene	U		0.00466	0.0200	1	11/24/2021 20:08	WG1779526
(S) <i>p</i> -Terphenyl-d14	85.4			23.0-120		11/24/2021 20:08	WG1779526
(S) Nitrobenzene-d5	51.3			14.0-149		11/24/2021 20:08	WG1779526
(S) 2-Fluorobiphenyl	68.7			34.0-125		11/24/2021 20:08	WG1779526

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	31.4		0.133	1.00	1	11/30/2021 23:15	WG1781453

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	11/30/2021 13:43	WG1780826

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.61	T8	1	12/01/2021 15:31	WG1782370

Sample Narrative:

L1434701-04 WG1782370: 8.61 at 18.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	1340		10.0	1	11/30/2021 07:09	WG1780983

Sample Narrative:

L1434701-04 WG1780983: at 25C

Mercury by Method 7471A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	0.0321	J	0.0180	0.0400	1	12/02/2021 09:39	WG1782193

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Barium	646		0.0852	0.500	1	11/30/2021 23:15	WG1781453
Cadmium	0.317	J	0.0471	0.500	1	11/30/2021 23:15	WG1781453
Chromium	31.4		0.133	1.00	1	11/30/2021 23:15	WG1781453
Copper	15.0		0.400	2.00	1	11/30/2021 23:15	WG1781453
Lead	16.5		0.208	0.500	1	11/30/2021 23:15	WG1781453
Nickel	18.5		0.132	2.00	1	11/30/2021 23:15	WG1781453
Selenium	U		0.764	2.00	1	11/30/2021 23:15	WG1781453
Silver	U		0.127	1.00	1	11/30/2021 23:15	WG1781453
Zinc	35.9		0.832	5.00	1	11/30/2021 23:15	WG1781453

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.166	J	0.0167	0.200	1	12/01/2021 18:19	WG1780174

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.05		0.100	1.00	5	11/30/2021 22:17	WG1781452

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0277	B J	0.0217	0.100	1	11/24/2021 22:04	WG1779918
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	88.4			77.0-120		11/24/2021 22:04	WG1779918

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	11/24/2021 12:25	WG1779625
Toluene	U		0.00130	0.00500	1	11/24/2021 12:25	WG1779625
Ethylbenzene	U		0.000737	0.00250	1	11/24/2021 12:25	WG1779625
Total Xylenes	U		0.000880	0.00650	1	11/24/2021 12:25	WG1779625
(S) Toluene-d8	104			75.0-131		11/24/2021 12:25	WG1779625
(S) 4-Bromofluorobenzene	101			67.0-138		11/24/2021 12:25	WG1779625
(S) 1,2-Dichloroethane-d4	77.1			70.0-130		11/24/2021 12:25	WG1779625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	6.09		0.769	4.00	1	11/25/2021 02:15	WG1779516
(S) <i>o</i> -Terphenyl	42.1			18.0-148		11/25/2021 02:15	WG1779516

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	11/24/2021 20:28	WG1779526
Acenaphthene	U		0.00209	0.00600	1	11/24/2021 20:28	WG1779526
Acenaphthylene	U		0.00216	0.00600	1	11/24/2021 20:28	WG1779526
Benzo(a)anthracene	U		0.00173	0.00600	1	11/24/2021 20:28	WG1779526
Benzo(a)pyrene	U		0.00179	0.00600	1	11/24/2021 20:28	WG1779526
Benzo(b)fluoranthene	0.00257	J	0.00153	0.00600	1	11/24/2021 20:28	WG1779526
Benzo(g,h,i)perylene	0.00199	J	0.00177	0.00600	1	11/24/2021 20:28	WG1779526
Benzo(k)fluoranthene	U		0.00215	0.00600	1	11/24/2021 20:28	WG1779526
Chrysene	U		0.00232	0.00600	1	11/24/2021 20:28	WG1779526
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	11/24/2021 20:28	WG1779526
Fluoranthene	U		0.00227	0.00600	1	11/24/2021 20:28	WG1779526
Fluorene	U		0.00205	0.00600	1	11/24/2021 20:28	WG1779526
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	11/24/2021 20:28	WG1779526
Naphthalene	U		0.00408	0.0200	1	11/24/2021 20:28	WG1779526
Phenanthrene	U		0.00231	0.00600	1	11/24/2021 20:28	WG1779526
Pyrene	U		0.00200	0.00600	1	11/24/2021 20:28	WG1779526
1-Methylnaphthalene	U		0.00449	0.0200	1	11/24/2021 20:28	WG1779526
2-Methylnaphthalene	U		0.00427	0.0200	1	11/24/2021 20:28	WG1779526
2-Chloronaphthalene	U		0.00466	0.0200	1	11/24/2021 20:28	WG1779526
(S) <i>p</i> -Terphenyl-d14	93.9			23.0-120		11/24/2021 20:28	WG1779526
(S) Nitrobenzene-d5	55.0			14.0-149		11/24/2021 20:28	WG1779526
(S) 2-Fluorobiphenyl	75.3			34.0-125		11/24/2021 20:28	WG1779526

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	32.2		0.133	1.00	1	11/30/2021 23:18	WG1781453

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	11/30/2021 13:43	WG1780826

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.61	T8	1	12/01/2021 15:31	WG1782370

Sample Narrative:

L1434701-05 WG1782370: 8.61 at 18.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	518		10.0	1	11/30/2021 07:09	WG1780983

Sample Narrative:

L1434701-05 WG1780983: at 25C

Mercury by Method 7471A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	0.0349	J	0.0180	0.0400	1	12/02/2021 09:41	WG1782193

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Barium	590		0.0852	0.500	1	11/30/2021 23:18	WG1781453
Cadmium	0.291	J	0.0471	0.500	1	11/30/2021 23:18	WG1781453
Chromium	32.2		0.133	1.00	1	11/30/2021 23:18	WG1781453
Copper	15.1		0.400	2.00	1	11/30/2021 23:18	WG1781453
Lead	16.8		0.208	0.500	1	11/30/2021 23:18	WG1781453
Nickel	19.4		0.132	2.00	1	11/30/2021 23:18	WG1781453
Selenium	U		0.764	2.00	1	11/30/2021 23:18	WG1781453
Silver	U		0.127	1.00	1	11/30/2021 23:18	WG1781453
Zinc	38.6		0.832	5.00	1	11/30/2021 23:18	WG1781453

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.152	J	0.0167	0.200	1	12/01/2021 18:22	WG1780174

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.48		0.100	1.00	5	11/30/2021 22:20	WG1781452

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0275	B J	0.0217	0.100	1	11/24/2021 22:26	WG1779918
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	87.8			77.0-120		11/24/2021 22:26	WG1779918

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	11/24/2021 12:44	WG1779625
Toluene	U		0.00130	0.00500	1	11/24/2021 12:44	WG1779625
Ethylbenzene	U		0.000737	0.00250	1	11/24/2021 12:44	WG1779625
Total Xylenes	U		0.000880	0.00650	1	11/24/2021 12:44	WG1779625
(S) Toluene-d8	105			75.0-131		11/24/2021 12:44	WG1779625
(S) 4-Bromofluorobenzene	103			67.0-138		11/24/2021 12:44	WG1779625
(S) 1,2-Dichloroethane-d4	77.4			70.0-130		11/24/2021 12:44	WG1779625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	5.17		0.769	4.00	1	11/25/2021 02:28	WG1779516
(S) <i>o</i> -Terphenyl	44.0			18.0-148		11/25/2021 02:28	WG1779516

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	11/24/2021 20:48	WG1779526
Acenaphthene	U		0.00209	0.00600	1	11/24/2021 20:48	WG1779526
Acenaphthylene	U		0.00216	0.00600	1	11/24/2021 20:48	WG1779526
Benzo(a)anthracene	U		0.00173	0.00600	1	11/24/2021 20:48	WG1779526
Benzo(a)pyrene	U		0.00179	0.00600	1	11/24/2021 20:48	WG1779526
Benzo(b)fluoranthene	U		0.00153	0.00600	1	11/24/2021 20:48	WG1779526
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	11/24/2021 20:48	WG1779526
Benzo(k)fluoranthene	U		0.00215	0.00600	1	11/24/2021 20:48	WG1779526
Chrysene	U		0.00232	0.00600	1	11/24/2021 20:48	WG1779526
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	11/24/2021 20:48	WG1779526
Fluoranthene	U		0.00227	0.00600	1	11/24/2021 20:48	WG1779526
Fluorene	U		0.00205	0.00600	1	11/24/2021 20:48	WG1779526
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	11/24/2021 20:48	WG1779526
Naphthalene	U		0.00408	0.0200	1	11/24/2021 20:48	WG1779526
Phenanthrene	U		0.00231	0.00600	1	11/24/2021 20:48	WG1779526
Pyrene	U		0.00200	0.00600	1	11/24/2021 20:48	WG1779526
1-Methylnaphthalene	U		0.00449	0.0200	1	11/24/2021 20:48	WG1779526
2-Methylnaphthalene	U		0.00427	0.0200	1	11/24/2021 20:48	WG1779526
2-Chloronaphthalene	U		0.00466	0.0200	1	11/24/2021 20:48	WG1779526
(S) <i>p</i> -Terphenyl-d14	92.7			23.0-120		11/24/2021 20:48	WG1779526
(S) Nitrobenzene-d5	53.7			14.0-149		11/24/2021 20:48	WG1779526
(S) 2-Fluorobiphenyl	72.4			34.0-125		11/24/2021 20:48	WG1779526

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3735268-1 11/30/21 13:37

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1423071-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1423071-01 11/30/21 13:38 • (DUP) R3735268-3 11/30/21 13:38

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	U	1	0.000		20

L1435575-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1435575-01 11/30/21 13:44 • (DUP) R3735268-8 11/30/21 13:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3735268-2 11/30/21 13:37

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	22.5	93.8	80.0-120	

L1434136-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1434136-02 11/30/21 13:39 • (MS) R3735268-4 11/30/21 13:39 • (MSD) R3735268-5 11/30/21 13:40

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	U	18.2	19.0	91.2	94.8	1	75.0-125			3.88	20

L1434136-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1434136-02 11/30/21 13:39 • (MS) R3735268-6 11/30/21 13:40

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	683	U	673	98.5	50	75.0-125	

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

Method Blank (MB)

(MB) R3737048-1 12/04/21 10:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1435786-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1435786-02 12/04/21 10:44 • (DUP) R3737048-3 12/04/21 10:45

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	U	U	1	0.000		20

L1436194-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1436194-04 12/04/21 11:02 • (DUP) R3737048-8 12/04/21 11:04

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3737048-2 12/04/21 10:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	24.0	23.9	99.5	80.0-120	

L1436175-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1436175-05 12/04/21 10:53 • (MS) R3737048-4 12/04/21 10:53 • (MSD) R3737048-5 12/04/21 10:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	20.0	U	10.0	10.1	50.2	50.6	1	75.0-125	J6	J6	0.797	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1436152-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1436152-01 12/01/21 15:31 • (DUP) R3735921-2 12/01/21 15:31

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.08	8.03	1	0.621		1

Sample Narrative:

OS: 8.08 at 18.5C
DUP: 8.03 at 18.5C

L1436394-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1436394-01 12/01/21 15:31 • (DUP) R3735921-3 12/01/21 15:31

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	9.40	9.43	1	0.319		1

Sample Narrative:

OS: 9.4 at 19.3C
DUP: 9.43 at 19.4C

Laboratory Control Sample (LCS)

(LCS) R3735921-1 12/01/21 15:31

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.99	99.9	99.0-101	

Sample Narrative:

LCS: 9.99 at 19C



Method Blank (MB)

(MB) R3734991-1 11/30/21 07:09

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1434701-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1434701-05 11/30/21 07:09 • (DUP) R3734991-3 11/30/21 07:09

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	518	506	1	2.34		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3734991-2 11/30/21 07:09

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	263	98.1	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3736214-1 12/02/21 09:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3736214-2 12/02/21 09:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.510	102	80.0-120	

L1435865-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1435865-01 12/02/21 09:23 • (MS) R3736214-3 12/02/21 09:25 • (MSD) R3736214-4 12/02/21 09:27

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.500	U	0.570	0.455	114	90.9	1	75.0-125		J3	22.6	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3735627-1 11/30/21 22:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3735627-2 11/30/21 22:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	100	100	80.0-120	
Cadmium	100	94.8	94.8	80.0-120	
Chromium	100	97.0	97.0	80.0-120	
Copper	100	97.8	97.8	80.0-120	
Lead	100	97.3	97.3	80.0-120	
Nickel	100	97.2	97.2	80.0-120	
Selenium	100	97.8	97.8	80.0-120	
Silver	20.0	18.6	93.2	80.0-120	
Zinc	100	94.8	94.8	80.0-120	

L1434125-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1434125-03 11/30/21 22:07 • (MS) R3735627-5 11/30/21 22:16 • (MSD) R3735627-6 11/30/21 22:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	149	227	226	77.7	76.1	1	75.0-125			0.685	20
Cadmium	100	0.325	95.0	92.4	94.6	92.1	1	75.0-125			2.69	20
Chromium	100	6.76	95.7	93.7	88.9	86.9	1	75.0-125			2.09	20
Copper	100	19.0	115	113	95.7	94.1	1	75.0-125			1.34	20
Lead	100	12.2	108	106	95.4	94.1	1	75.0-125			1.19	20
Nickel	100	13.6	111	110	97.4	96.6	1	75.0-125			0.700	20
Selenium	100	U	91.7	90.5	91.7	90.5	1	75.0-125			1.39	20
Silver	20.0	U	18.9	18.4	94.7	92.1	1	75.0-125			2.74	20
Zinc	100	40.0	126	127	85.8	86.7	1	75.0-125			0.736	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3736034-1 12/01/21 18:01

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3736034-2 12/01/21 18:04 • (LCSD) R3736034-3 12/01/21 18:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.02	1.00	102	100	80.0-120			1.17	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3735490-1 11/30/21 20:51

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3735490-2 11/30/21 20:55

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	92.4	92.4	80.0-120	

L1434125-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1434125-03 11/30/21 20:58 • (MS) R3735490-5 11/30/21 21:09 • (MSD) R3735490-6 11/30/21 21:12

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	100	7.33	91.1	89.6	83.8	82.2	5	75.0-125			1.73	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3734347-2 11/24/21 20:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0233	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	89.2			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3734347-1 11/24/21 19:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.27	77.6	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			107	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3736001-2 11/29/21 02:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	91.4			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3736001-1 11/29/21 01:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.01	91.1	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			101	77.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3734396-3 11/24/21 10:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	109			75.0-131
(S) 4-Bromofluorobenzene	104			67.0-138
(S) 1,2-Dichloroethane-d4	75.6			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3734396-1 11/24/21 09:30 • (LCSD) R3734396-2 11/24/21 09:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.152	0.144	122	115	70.0-123			5.41	20
Ethylbenzene	0.125	0.141	0.140	113	112	74.0-126			0.712	20
Toluene	0.125	0.137	0.142	110	114	75.0-121			3.58	20
Xylenes, Total	0.375	0.427	0.423	114	113	72.0-127			0.941	20
(S) Toluene-d8				101	104	75.0-131				
(S) 4-Bromofluorobenzene				107	104	67.0-138				
(S) 1,2-Dichloroethane-d4				81.3	81.5	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3736109-3 11/29/21 09:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	104			75.0-131
(S) 4-Bromofluorobenzene	101			67.0-138
(S) 1,2-Dichloroethane-d4	96.4			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3736109-1 11/29/21 08:39 • (LCSD) R3736109-2 11/29/21 08:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.111	0.106	88.8	84.8	70.0-123			4.61	20
Ethylbenzene	0.125	0.115	0.113	92.0	90.4	74.0-126			1.75	20
Toluene	0.125	0.112	0.112	89.6	89.6	75.0-121			0.000	20
Xylenes, Total	0.375	0.349	0.349	93.1	93.1	72.0-127			0.000	20
(S) Toluene-d8				103	106	75.0-131				
(S) 4-Bromofluorobenzene				102	104	67.0-138				
(S) 1,2-Dichloroethane-d4				102	98.7	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3733880-1 11/24/21 22:35

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	48.8			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3733880-2 11/24/21 22:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	28.6	57.2	50.0-150	
(S) o-Terphenyl			70.7	18.0-148	

L1431852-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1431852-01 11/24/21 23:14 • (MS) R3733880-3 11/24/21 23:27 • (MSD) R3733880-4 11/24/21 23:40

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	48.6	2.62	20.2	24.5	36.2	45.1	1	50.0-150	J6	J6	19.2	20
(S) o-Terphenyl					43.2	53.9		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3733851-2 11/24/21 17:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	44.4			14.0-149
(S) 2-Fluorobiphenyl	55.9			34.0-125
(S) p-Terphenyl-d14	73.7			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3733851-1 11/24/21 16:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0662	82.8	50.0-126	
Acenaphthene	0.0800	0.0650	81.3	50.0-120	
Acenaphthylene	0.0800	0.0717	89.6	50.0-120	
Benzo(a)anthracene	0.0800	0.0667	83.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0553	69.1	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0535	66.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0539	67.4	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0561	70.1	49.0-125	
Chrysene	0.0800	0.0640	80.0	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0605	75.6	47.0-125	
Fluoranthene	0.0800	0.0687	85.9	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3733851-1 11/24/21 16:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0663	82.9	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0568	71.0	46.0-125	
Naphthalene	0.0800	0.0642	80.3	50.0-120	
Phenanthrene	0.0800	0.0617	77.1	47.0-120	
Pyrene	0.0800	0.0638	79.8	43.0-123	
1-Methylnaphthalene	0.0800	0.0697	87.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0631	78.9	50.0-120	
2-Chloronaphthalene	0.0800	0.0602	75.3	50.0-120	
(S) Nitrobenzene-d5			65.8	14.0-149	
(S) 2-Fluorobiphenyl			77.7	34.0-125	
(S) p-Terphenyl-d14			94.5	23.0-120	

L1431116-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1431116-03 11/24/21 23:28 • (MS) R3733851-3 11/24/21 23:47 • (MSD) R3733851-4 11/25/21 00:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0776	0.0408	0.245	0.0799	263	49.6	1	10.0-145	J5	J3	102	30
Acenaphthene	0.0776	0.0678	0.312	0.114	315	58.6	1	14.0-127	J5	J3	93.0	27
Acenaphthylene	0.0776	0.0231	0.121	0.0713	126	61.2	1	21.0-124	J5	J3	51.7	25
Benzo(a)anthracene	0.0776	0.104	0.419	0.178	406	93.9	1	10.0-139	J5	J3	80.7	30
Benzo(a)pyrene	0.0776	0.0910	0.231	0.166	180	95.2	1	10.0-141	J5	J3	32.7	31
Benzo(b)fluoranthene	0.0776	0.0766	0.192	0.129	149	66.5	1	10.0-140	J5	J3	39.3	36
Benzo(g,h,i)perylene	0.0776	0.0924	0.147	0.156	70.4	80.7	1	10.0-140			5.94	33
Benzo(k)fluoranthene	0.0776	0.00771	0.0649	0.0521	73.7	56.3	1	10.0-137			21.9	31
Chrysene	0.0776	0.145	0.608	0.220	597	95.2	1	10.0-145	J5	J3	93.7	30
Dibenz(a,h)anthracene	0.0776	0.0262	0.0889	0.0744	80.8	61.2	1	10.0-132			17.8	31
Fluoranthene	0.0776	0.137	0.496	0.226	463	113	1	10.0-153	J5	J3	74.8	33
Fluorene	0.0776	0.152	0.608	0.192	588	50.8	1	11.0-130	J5	J3	104	29
Indeno(1,2,3-cd)pyrene	0.0776	0.0492	0.102	0.112	68.0	79.7	1	10.0-137			9.35	32
Naphthalene	0.0776	0.0742	0.283	0.143	269	87.3	1	10.0-135	J5	J3	65.7	27
Phenanthrene	0.0776	0.257	1.25	0.318	1280	77.4	1	10.0-144	J5	J3	119	31
Pyrene	0.0776	0.332	0.919	0.366	756	43.1	1	10.0-148	V	J3	86.1	35
1-Methylnaphthalene	0.0776	0.733	4.23	0.854	4510	154	1	10.0-142	E V	J3 V	133	28
2-Methylnaphthalene	0.0776	0.557	2.76	0.721	2840	208	1	10.0-137	V	J3 V	117	28
2-Chloronaphthalene	0.0776	U	0.0260	0.0416	33.5	52.8	1	29.0-120		J3	46.2	24
(S) Nitrobenzene-d5					67.5	66.1		14.0-149				
(S) 2-Fluorobiphenyl					64.4	56.2		34.0-125				
(S) p-Terphenyl-d14					112	86.2		23.0-120				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

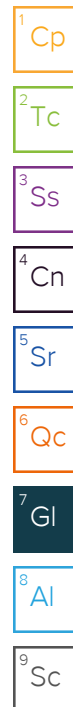
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

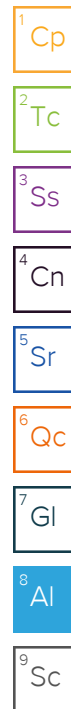
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

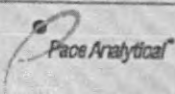
Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/trubts/pas-standard-terms.pdf>
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: Caerus Oil and Gas LLC		Billing Information:	
Address: Info on file		Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins		Email To: Info on file	
Copy To: Chris McKisson, remediation@confluence-cc.com		Site Collection Info/Address:	
Customer Project Name/Number: B36-496 Historical; PH05 & PH12		State: County/City: Time Zone Collected:	
		CO / Garfield [] PT [X] MT [] CT [] ET	
Phone:	Site/Facility ID #: B36-496	Compliance Monitoring?	
Email:		[] Yes [X] No	
Collected By (print):	Purchase Order #:	DW PWS ID #:	
Andrew Smith	Quote #:	DW Location Code:	
Collected By (signature):	Turnaround Date Required: Standard 5-Day	Immediately Packed on Ice:	
		[X] Yes [] No	
Sample Disposal:	Rush: (Expedite Charges Apply)	Field Filtered (if applicable):	
[] Dispose as appropriate	[] Same Day [] Next Day	[] Yes [] No	
[] Return	[] 2 Day [] 3 Day		
[] Archive:	[] 4 Day [] 5 Day	Analysis:	
[] Hold:			

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)
			Date	Time	Date	Time			
20211110-B36-496-PH12-EASE@3	SL	G	11/10/2021	0930				2	G
20211110-B36-496-PH12-NSW@3	SL	G	11/10/2021	0945				2	G
20211110-B36-496-PH12-WSW@3	SL	G	11/10/2021	0950				2	G
20211110-B36-496-PH12-WSW2@3	SL	G	11/10/2021	0955				2	G
20211110-B36-496-PH12-WSW3@3	SL	G	11/10/2021	1000				2	G
20211110-B36-496-PH12-ESW@3	SL	G	11/10/2021	1010				2	G
20211110-B36-496-PH12-ESW2@3	SL	G	11/10/2021	1015				2	G
20211110-B36-496-PH12-ESW3@3	SL	G	11/10/2021	1020				2	G
20211110-B36-496-PH12-ESW4@3	SL	G	11/10/2021	1025				2	G
20211110-B36-496-PH12-GSW@3	SL	G	11/10/2021	1030				2	G

Customer Remarks / Special Conditions / Possible Hazards:

Please hold all extra material for additional 910-1 analysis.

Type of Ice Used:	Wet Blue Dry None
Packing Material Used:	
Radchem sample(s) screened (<500 cpm):	Y N NA

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Container Preservative Type **	Lab Project Manager:
** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other	

Analyses								Lab Profile/Line:	
BTEX	TPH (GRO, DRO)	Table 910-1 Metal's	Table 910-1 PAH's	EC, SAR, pH, Arsenic	pH Only	SAR Only		Lab Sample Receipt Checklist:	
								Custody Seals Present/Intact	Y N NA
								Custody Signatures Present	Y N NA
								Collector Signature Present	Y N NA
								Bottles Intact	Y N NA
								Correct Bottles	Y N NA
								Sufficient Volume	Y N NA
								Samples Received on Ice	Y N NA
								VGA - Headspace Acceptable	Y N NA
								USDA Regulated Soils	Y N NA
								Samples in Holding Time	Y N NA
								Residual Chlorine Present	Y N NA
								Cl Strips:	
								Sample pH Acceptable	Y N NA
								pH Strips:	
								Sulfide Present	Y N NA
								Lead Acetate Strips:	

LAB USE ONLY:

Lab Sample # / Comments:

LIV34701
11430873
-01
-02
-03
-04
-05
-06
-07
-08
-09
-10
-05

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via:

FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: °C
Cooler 1 Therm Corr. Factor: °C
Cooler 1 Corrected Temp: °C

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	11-11-21/1000		11/11/20
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	11/12/21 1500		11/12/21 0045
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

K085

Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s):

YES / NO

Page: 1
of: 2

L1430873 *CAERUSPCO* Coming up on Hold time

R1/R2

Please relog the below to a new SDG to run for the remainder of TABLE910

- PH12BASE@5 (L1430873-01)
- PH12NSWALL@3 (L1430873-02)
- PH12WSWALL@3 (L1430873-03)
- PH12ESWALL2@3 (L1430873-07)
- PH12SSWALL@3 (L1430873-10)

* _ *

**Please note that email addresses for staff at the Pace Analytical National Center for Testing & Innovation have changed*.*

_My new email address is <u>Chris.Ward@pacelabs.com</u>. Please update your records accordingly.

-

**

Thanks,

*✉ *Chris

Ward

Project Manager2_

*_*Pace Analytical National*

*

12065 Lebanon Road | Mt. Juliet, TN 37122**

Chris.ward@pacelabs.com

| www.pacenational.com

<u>615.773.9712</u>

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P Please consider the environment before printing this email

Time estimate: oh

Time spent: oh

Members



Chris Ward (responsible)