



VIA ELECTRONIC MAIL –

October 25, 2022

Jake Janicek
EH&S Specialist
Environmental Health and Safety
Caerus Oil and Gas LLC
143 Diamond Avenue
Parachute, Colorado 81635

**Subject: Facility Decommissioning Sampling
YELLOW CREEK FEDERAL 27-13-1
Piceance Creek
Rio Blanco, Colorado**

Dear Mr. Janicek:

WSP USA Inc. (WSP), on behalf of Caerus Oil and Gas LLC (Caerus), completed soil screening, and confirmation and background soil sampling associated with the decommissioning of production well YELLOW CREEK FEDERAL #27-13-1 and associated production infrastructure at the YELLOW CREEK FEDERAL -61N98W 27NWSW (YELLOW CREEK FEDERAL 27-13-1) (Location ID: 316449) (Site). The samples were collected pursuant to the Colorado Oil and Gas Conservation Commission (COGCC) Rule 913.c.(9): *Decommissioning of Oil and Gas Facilities*. The Site is located in the Caerus' Piceance Creek area of operation in Rio Blanco, Colorado (Figure 1).

SOIL SAMPLING ACTIVITIES - YELLOW CREEK FEDERAL 27-13-1

On August 17, 2022, WSP conducted soil screening, and confirmation and background soil sampling activities associated with the decommissioning of the YELLOW CREEK FEDERAL 27-13-1 production well and associated production equipment. MK Hydrovac, Inc. of Parachute, Colorado was contracted by Caerus to provide hydro-vacuum (hydro-vac) services to assist with the confirmation soil sampling efforts associated with the decommissioning of the production well and associated production equipment at the Site. Prior to sampling, the hydro-vac was utilized to removed standing meteoric water and mud surrounding the base of the abandoned well head to provide better access for the future cut and cap operation. Additionally, the hydro-vac was utilized to collect 12 confirmation soil samples from below or within the footprints of various former production equipment. The decommissioning confirmation soil samples were collected at depths ranging from ground surface to 6 feet below ground surface (bgs). Five site-specific background soil samples were also collected from 2 locations to the west and east of the pad from comparable, nearby, non-impacted, native soil per COGCC Rule 915.e.(2). The site-specific soil samples were collected at depths ranging from ground surface to 3 feet bgs. All samples were collected using either as spade shovel or hand auger. The soil sample locations are listed below.

- 20220817-YCF 27-13-1 (PH01) @ 6', 20220817-YCF 27-13-1 (PH02) @ 6', and 20220817-YCF 27-13-1 (PH03) @ 6',
 - Samples were collected from the three previously potholed locations at the mouth of the pad surrounding the flowline vault and pig launcher.
- 20220817-YCF 27-13-1 (ACCESS RD. VAULT),
 - Sample collected from the flowline vault located at the mouth of the pad.
- 20220817-YCF 27-13-1 (TANK A), 20220817-YCF 27-13-1 (TANK B), and 20220817-YCF 27-13-1 (TANK C),
 - Samples were collected from the footprints of the three former tank batteries.

WSP USA
820 MEGAN AVENUE, UNIT B
RIFLE CO 81650

Tel.: 970-285-9985
wsp.com



- 20220817-YCF 27-13-1 (SEP) @ 4.5',
 - Sample collected from the footprint of the former separator unit.
- 20220817-YCF 27-13-1 (SEP 90) @ 3',
 - Samples collected from beneath the 90 degree bend parallel to the former separator unit.
- 20220817-YCF 27-13-1 (PAD VAULT),
 - Sample collected from the vault located on pad.
- 20220817-YCF 27-13-1 (METER SKID),
 - Collected from the footprint of the former meter skid unit.
- 20220817-YCF 27-13-1 (OFF LOC. FL) @ 5',
 - Collected from the previously potholed off location flowline located near the former meter skid unit and,
- 20220817-YCF 27-13-1(BGW), 20220817-YCF 27-13-1(BGW)@1.5-2', 20220817-YCF 27-13-1(BGW)@2.5-3', 20220817-YCF 27-13-1(BGE), and 20220817-YCF 27-13-1(BGE) @ 2.5',
 - Two site-specific background locations (5 samples total) collected to the west and east directions of the pad.

During sampling and potholing activities, the soil was characterized by a WSP geologist by visually inspecting the confirmation soil samples for the presence or absence of any odors and/or staining and by field screening the soil using a photoionization detector (PID) to monitor for the presence or absence of volatile organic vapors. Elevated PID readings, hydrocarbon odors, and staining were not observed in any of the sampling locations. PID readings of the confirmation soil samples did not exceed greater than 2.5 parts per million (ppm).

All soil samples were collected in clean, laboratory-prepared containers and submitted to Pace Analytical of Mount Juliet, Tennessee for analysis. All facility decommissioning confirmation soil samples, and two of the five site-specific background soil samples were submitted for constituents listed in COGCC Table 915-1. The remaining three site-specific background soil samples were submitted for analysis of arsenic, sodium adsorption ratio (SAR), electrical conductivity (EC), pH, and boron. Field soil screening results are summarized in Table 1 and a soil screening photolog is included in Enclosure A. The confirmation soil sample and background soil sample locations are illustrated on Figure 2.

ANALYTICAL RESULTS - YELLOW CREEK FEDERAL 27-13-1

Laboratory analytical results of the 12 facility decommissioning confirmation soil samples collected from the Site on August 17, 2022, indicate exceedances of the COGCC Table 915-1 Residential Soil Screening Level Concentrations (RSSLs) for arsenic and boron and exceedances of the COGCC Table 915-1 Cleanup Concentrations (CCs) for pH and SAR. The documented exceedances are summarized below:

- Arsenic concentrations were exceeded by all 12 facility decommissioning confirmation soil samples with concentrations ranging from 2.59 milligrams per kilogram (mg/kg) in soil samples 20220817-YCF 27-13-1 (OFF LOC. FL) @ 5' and 20220817-YCF 27-13-1 (PH02) @ 6' to 9.40 mg/kg in soil sample 20220817-YCF 27-13-1 (SEP) @ 4.5';
- Boron concentrations were exceeded by facility decommissioning confirmation soil samples 20220817-YCF 27-13-1 (METER SKID), 20220817-YCF 27-13-1 (PAD VAULT), and 20220817-YCF 27-13-1 (ACCESS RD. VAULT) with concentrations of 3.33 mg/l, 3.91 mg/l, and 5.23 mg/l, respectively;
- pH concentrations were exceeded by all 12 facility decommissioning confirmation soil samples with concentrations ranging from 8.33 standard unit (SU) in soil sample 20220817-YCF 27-13-1 (ACCESS RD. VAULT) to 9.61 SU in site-specific soil sample 20220817-YCF 27-13-1 (TANK C); and
- SAR concentrations were exceeded by facility decommissioning confirmation soil samples 20220817-YCF 27-13-1 (ACCESS RD. VAULT) and 20220817-YCF 27-13-1 (PH03) @ 6' with concentrations of 8.25 and 14.9, respectively.



Laboratory analytical results of the five site-specific background soil samples collected on August 17, 2022, indicate exceedances of the COGCC Table 915-1 RSSLCs for arsenic and exceedances of the COGCC Table 915-1 CCs for SAR and pH. The exceedances are summarized below:

- Arsenic concentrations were exceeded by all five site-specific background soil samples with concentrations ranging from 2.22 mg/kg in site-specific background soil sample 20220817-YCF 27-13-1(BGW)@2.5-3' to 3.68 mg/kg in site-specific background soil sample 20220817-YCF 27-13-1(BGW);
- SAR concentrations were exceeded by site-specific background soil sample 20220817-YCF 27-13-1(BGE) with a concentration of 6.59; and
- pH concentrations were exceeded by four of the five site-specific background soil samples with concentrations ranging from 8.31 SU in site-specific background soil sample 20220817-YCF 27-13-1(BGW) to 8.73 SU in site-specific background soil sample 20220817-YCF 27-13-1(BGE) @ 2.5'.

All other analytes were either below the laboratory detection limit or within the COGCC Table 915-1 RSSLCs. The laboratory analytical reports are included in Enclosure B and the results are summarized in Table 2.

CONCLUSIONS - YELLOW CREEK FEDERAL 27-13-1

Based on the analytical data provided in the initial facility decommissioning confirmation soil sampling, there are remaining COGCC Table 915-1 exceedances of arsenic, boron, pH, and SAR associated with the removed production equipment at the YELLOW CREEK FEDERAL 27-13-1.

Following the cut and capping of the decommissioned wellhead, YELLOW CREEK FEDERAL 27-13-1, WSP will return to the Site to collect confirmation soil samples from the base and sidewalls of the wellhead footprint. When onsite WSP will also collect a produced water sample from nearby location YELLOW CREEK FEDERAL UNIT-61N98W 35NWSE (Location ID:316660) for Operator's Knowledge to address the elevated arsenic and pH values observed at the Site. Additional site-specific background soil samples will be collected to address the elevated boron and SAR values observed in the initial facility decommissioning confirmation soil samples associated with the removed production equipment.

WSP recommends that Caerus request the COGCC Director to sample under a reduced analytical suite for all future samples of arsenic, boron, pH, and SAR with the exception of the decommissioned wellhead soil samples. All initial soil samples associated with the decommissioned wellhead will be submitted for COGCC Full Table 915-1.

Please contact us at (970) 618-4514 or (970) 658-7025 if you have any questions regarding this report or require additional information.

Kind regards,

Dustin Held
Sr. Consultant, Environmental Geologist

Parker Coit, P.G.
Sr. Consultant, Geologist

Encl.

FIGURES

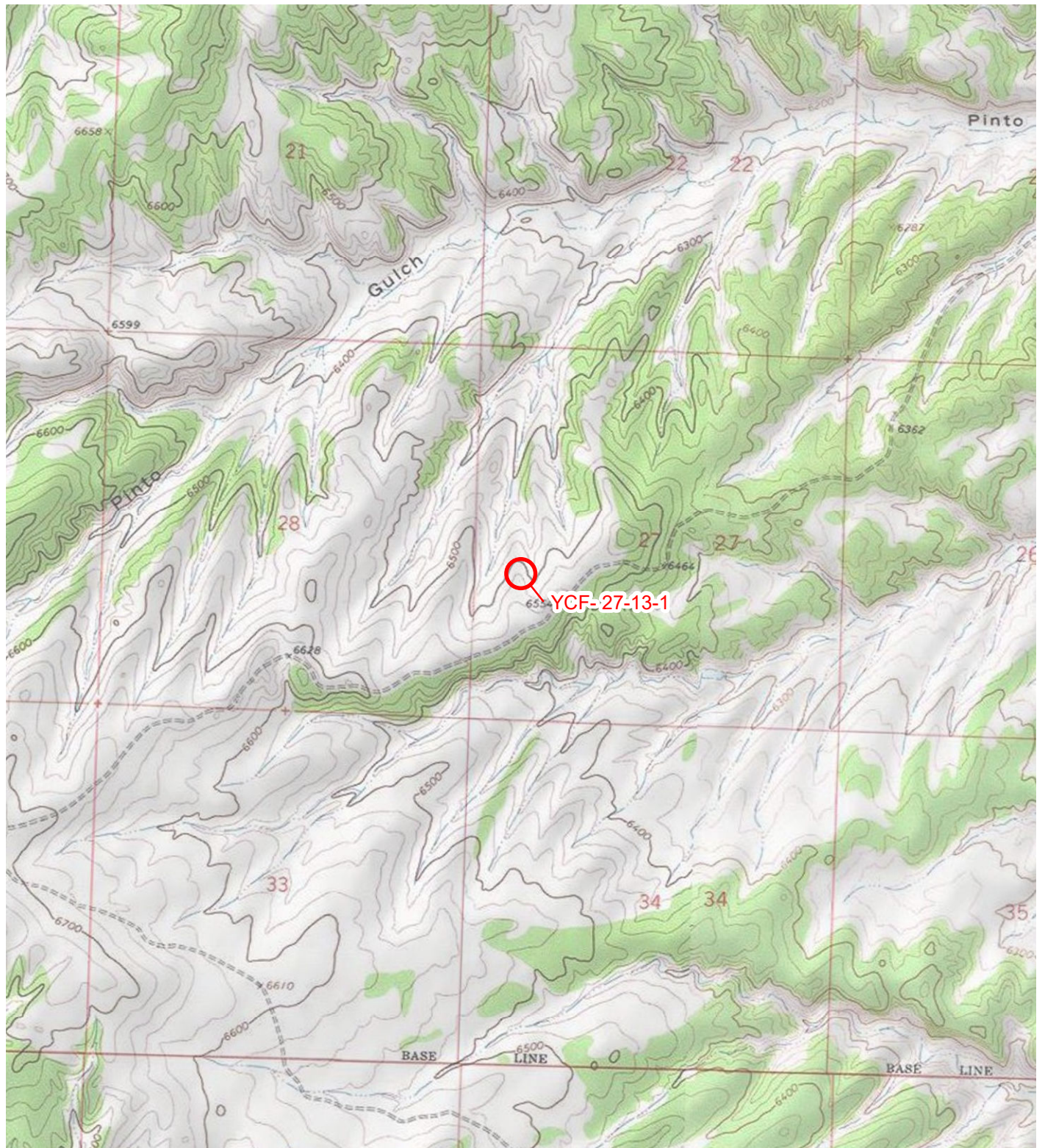


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION

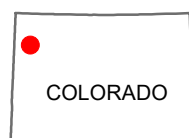
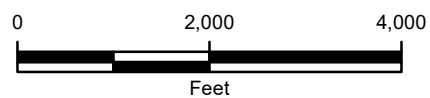


FIGURE 1
SITE LOCATION MAP
YCF- 27-13-1
SEC 27-T1N-R98W
RIO BLANCO COUNTY, COLORADO
CAERUS OIL AND GAS LLC



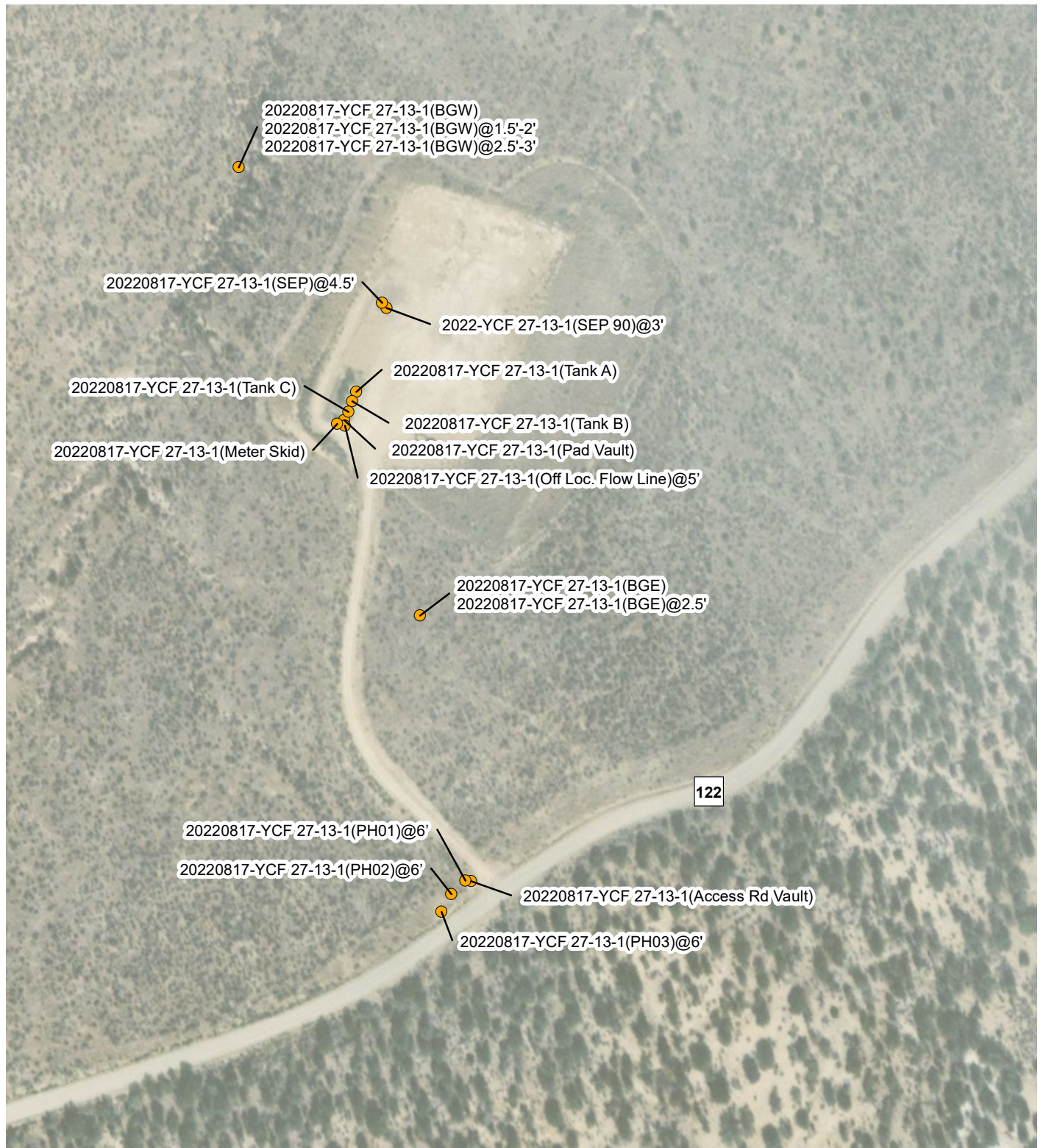


IMAGE COURTESY OF ESRI (MAXAR 9/29/2018)

LEGEND

● SOIL SAMPLE

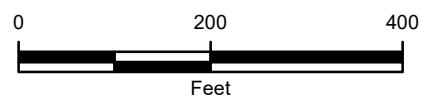


FIGURE 2
SAMPLE LOCATION MAP
YCF- 27-13-1
SEC 27-T1N-R98W
RIO BLANCO COUNTY, COLORADO
CAERUS OIL AND GAS LLC



TABLES

TABLE 1

**SOIL SCREENING RESULTS
YCF 27-13-1
RIO BLANCO COUNTY, COLORADO
CAERUS OIL AND GAS LLC**

Sample ID	PID (ppm)	Notes	Submitted COGCC Table 915
20220817-YCF 27-13-1 (ACCESS RD. VAULT)	2.5	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (PH01) @ 6'	1.0	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (TANK A)	1.0	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (TANK B)	0.5	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (TANK C)	0.7	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (SEP) @ 4.5'	0.8	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (SEP 90) @ 3'	0.6	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (PAD VAULT)	1.5	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (METER SKID)	0.7	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (OFF LOC. FL) @ 5'	1.0	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (PH02) @ 6'	1.0	No Odor/No Staining	Yes
20220817-YCF 27-13-1 (PH03) @ 6'	0.7	No Odor/No Staining	Yes

Notes:

PID: photoionization detector

ppm: parts per million

COGCC - Colorado Oil and Gas Conservation Commission

TABLE 2

SOIL ANALYTICAL RESULTS

YCF 27-13-1

RIO BLANCO COUNTY, COLORADO

CAERUS OIL AND GAS LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	UNITS	CONFIRMATION SOIL SAMPLES				
				20220817-YCF 27-13-1 (ACCESS RD. VAULT)	20220817-YCF 27-13-1 (PH01) @ 6'	20220817-YCF 27-13-1 (TANK A)	20220817-YCF 27-13-1 (TANK B)	20220817-YCF 27-13-1 (TANK C)
Sample Date				8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022
Sample Depth (feet)				0-1	6	0-1	0-1	0-1
Sample Type				Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.68	0.29 (M)	mg/kg	5.48	3.54	3.45	4.79	3.50
Barium	15,000	82 (M)	mg/kg	299	217	189	169	205
Boron	2	2	mg/l	5.23	0.471	ND	ND	ND
Cadmium	71	0.38 (M)	mg/kg	ND	ND	ND	ND	ND
Chromium (VI)	0.3	0.00067 (R)	mg/kg	ND	ND	ND	ND	ND
Copper	3,100	46 (M)	mg/kg	16.8	12.2	17.9	18.3	15.7
Lead	400	14 (M)	mg/kg	10.9	8.20	4.89	5.45	6.16
Nickel	1,500	26 (R)	mg/kg	27.4	21.0	41.1	41.6	34.7
Selenium	390	0.26 (M)	mg/kg	ND	ND	ND	ND	ND
Silver	390	0.8 (R)	mg/kg	ND	ND	ND	ND	ND
Zinc	23,000	370 (R)	mg/kg	166	39.5	39.4	38.9	39.7
EC	<4	<4	mmhos/cm	3.170	0.432	0.245	0.146	0.217
pH	6 - 8.3	6 - 8.3	SU	8.33	8.91	9.43	9.49	9.61
SAR	<6	<6	unitless	8.25	1.20	1.02	1.13	2.84
TPH-GRO			mg/kg	0.170	ND	ND	ND	ND
TPH-DRO			mg/kg	61.1	4.64	4.98	ND	ND
TPH-ORO			mg/kg	108	8.02	ND	ND	ND
TPH	500	500	mg/kg	169.270	12.66	4.98	ND	ND
Benzene	1.2	0.0026 (M)	mg/kg	0.00940	ND	ND	ND	ND
Toluene	490	0.69 (M)	mg/kg	0.0357	ND	ND	ND	ND
Ethylbenzene	5.8	0.78 (M)	mg/kg	ND	ND	ND	ND	ND
Total Xylenes	58	9.9 (M)	mg/kg	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	ND	ND	ND	ND	ND
Anthracene	1,800	5.8 (R)	mg/kg	ND	ND	ND	ND	ND
Acenaphthene	360	0.55 (R)	mg/kg	ND	ND	ND	ND	ND
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	ND	ND	ND	ND	0.0161
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	ND	ND	ND	ND	0.0299
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	ND	ND	ND	ND	0.0109
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	ND	ND	ND	ND	0.0223
Chrysene	110	9 (R)	mg/kg	ND	ND	ND	ND	0.0182
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	ND	ND	ND	ND	ND
Fluoranthene	240	8.9 (R)	mg/kg	ND	ND	ND	ND	0.0171
Fluorene	240	0.54 (R)	mg/kg	ND	ND	ND	ND	ND
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	ND	ND	ND	ND	0.0158
1-methylnaphthalene	18	0.006 (R)	mg/kg	ND	ND	ND	ND	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	ND	ND	ND	ND	ND
Naphthalene	2	0.0038 (R)	mg/kg	ND	ND	ND	ND	ND
Pyrene	180	1.3 (R)	mg/kg	ND	ND	ND	ND	0.0151

NOTES:

BOLD - indicates result exceeds the COGCC protection of groundwater soil screening concentration level

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/l - milligrams per liter

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

SAR - sodium adsorption ratio

SU - standard unit

TPH-ORO - total petroleum hydrocarbons- oil range organics

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH - combination of TPH-GRO, TPH-DRO, and TPH-ORO

NA - analyte not analyzed

ND - analyte not detected

R - risk based

MCL - maximum containment level (M)

TABLE 2

SOIL ANALYTICAL RESULTS
YCF 27-13-1
RIO BLANCO COUNTY, COLORADO
CAERUS OIL AND GAS LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	UNITS	CONFIRMATION SOIL SAMPLES						
				20220817-YCF 27-13-1 (SEP) @ 4.5'	20220817-YCF 27-13-1 (SEP 90) @ 3'	20220817-YCF 27-13-1 (PAD VAULT)	20220817-YCF 27-13-1 (METER SKID)	20220817-YCF 27-13-1 (OFF LOC. FL) @ 5'	20220817-YCF 27-13-1 (PH02) @ 6'	20220817-YCF 27-13-1 (PH03) @ 6'
Sample Date				8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022
Sample Depth (feet)				4.5	3	0-1	0-1	5	6	6
Sample Type				Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.68	0.29 (M)	mg/kg	9.40	3.73	2.53	3.00	2.59	2.59	3.52
Barium	15,000	82 (M)	mg/kg	339	262	182	175	259	214	278
Boron	2	2	mg/l	0.267	0.325	3.91	3.33	0.227	0.566	1.94
Cadmium	71	0.38 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Chromium (VI)	0.3	0.00067 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Copper	3,100	46 (M)	mg/kg	19.3	16.7	12.8	12.3	16.5	11.8	12.1
Lead	400	14 (M)	mg/kg	19.6	5.18	7.07	7.78	8.52	9.16	8.99
Nickel	1,500	26 (R)	mg/kg	29.9	39.2	18.2	20.0	21.4	20.4	22.5
Selenium	390	0.26 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Silver	390	0.8 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Zinc	23,000	370 (R)	mg/kg	47.5	38.0	33.4	36.9	38.7	35.3	38.7
EC	<4	<4	mmhos/cm	0.335	0.173	0.904	0.282	0.289	0.708	1.860
pH	6 - 8.3	6 - 8.3	SU	9.51	9.29	9.02	9.43	9.09	8.84	8.34
SAR	<6	<6	unitless	2.86	2.34	5.66	3.31	1.95	5.22	14.9
TPH-GRO			mg/kg	ND	ND	ND	ND	ND	ND	ND
TPH-DRO			mg/kg	ND	ND	6.37	ND	ND	4.22	18.6
TPH-ORO			mg/kg	ND	ND	6.47	ND	ND	4.64	19.8
TPH	500	500	mg/kg	ND	ND	12.84	ND	ND	8.86	38.4
Benzene	1.2	0.0026 (M)	mg/kg	0.00240	ND	ND	ND	ND	ND	ND
Toluene	490	0.69 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5.8	0.78 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	58	9.9 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Anthracene	1,800	5.8 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	360	0.55 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Chrysene	110	9 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	240	8.9 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Fluorene	240	0.54 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
1-methylnaphthalene	18	0.006 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Naphthalene	2	0.0038 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND
Pyrene	180	1.3 (R)	mg/kg	ND	ND	ND	ND	ND	ND	ND

NOTES:
BOLD - indicates result exceeds the COGCC protection of groundwater soil screening concentration level
COGCC - Colorado Oil and Gas Conservation Commission
EC- electrical conductivity
mg/l - milligrams per liter
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
SAR - sodium adsorption ratio
SU - standard unit
TPH-ORO - total petroleum hydrocarbons- oil range organics
TPH-GRO - total petroleum hydrocarbons-gasoline range organics
TPH-DRO - total petroleum hydrocarbons-diesel range organics
TPH - combination of TPH-GRO, TPH-DRO, and TPH-ORO
NA - analyte not analyzed
ND - analyte not detected
R - risk based
MCL - maxium containment level (M)

TABLE 2

SOIL ANALYTICAL RESULTS

YCF 27-13-1

RIO BLANCO COUNTY, COLORADO

CAERUS OIL AND GAS LLC

PARAMETER	COGCC RESIDENTIAL SOIL SCREENING LEVEL CONCENTRATIONS	COGCC PROTECTION OF GROUNDWATER SOIL SCREENING LEVEL CONCENTRATIONS	UNITS	BACKGROUND SAMPLES				
				20220817-YCF 27-13-1(BGW)	20220817-YCF 27-13-1(BGW)@1.5-2'	20220817-YCF 27-13-1(BGW)@2.5-3'	20220817-YCF 27-13-1(BGE)	20220817-YCF 27-13-1(BGE) @ 2.5'
Sample Date				8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/12/2022
Sample Depth (feet)				0-1	1.5-2	2.5-3	0-1	2.5
Sample Type				Background	Background	Background	Background	Background
Arsenic	0.68	0.29 (M)	mg/kg	3.68	2.73	2.22	2.31	2.35
Barium	15,000	82 (M)	mg/kg	NA	NA	258	NA	275
Boron	2	2	mg/l	ND	ND	ND	0.885	0.843
Cadmium	71	0.38 (M)	mg/kg	NA	NA	ND	NA	ND
Chromium (VI)	0.3	0.00067 (R)	mg/kg	NA	NA	ND	NA	ND
Copper	3,100	46 (M)	mg/kg	NA	NA	10.7	NA	20.9
Lead	400	14 (M)	mg/kg	NA	NA	8.12	NA	9.19
Nickel	1,500	26 (R)	mg/kg	NA	NA	17.7	NA	19.3
Selenium	390	0.26 (M)	mg/kg	NA	NA	ND	NA	ND
Silver	390	0.8 (R)	mg/kg	NA	NA	ND	NA	ND
Zinc	23,000	370 (R)	mg/kg	NA	NA	36.0	NA	38.5
EC	<4	<4	mmhos/cm	0.148	0.102	0.129	0.235	0.711
pH	6 - 8.3	6 - 8.3	SU	8.31	8.40	8.48	8.16	8.73
SAR	<6	<6	unitless	0.108	0.161	0.413	0.313	6.59
TPH-GRO			mg/kg	NA	NA	ND	NA	ND
TPH-DRO			mg/kg	NA	NA	ND	NA	13.1
TPH-ORO			mg/kg	NA	NA	ND	NA	11.8
TPH	500	500	mg/kg	NA	NA	ND	NA	24.9
Benzene	1.2	0.0026 (M)	mg/kg	NA	NA	ND	NA	ND
Toluene	490	0.69 (M)	mg/kg	NA	NA	ND	NA	ND
Ethylbenzene	5.8	0.78 (M)	mg/kg	NA	NA	ND	NA	ND
Total Xylenes	58	9.9 (M)	mg/kg	NA	NA	0.0220	NA	ND
1,2,4-trimethylbenzene	30	0.0081 (R)	mg/kg	NA	NA	ND	NA	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	mg/kg	NA	NA	ND	NA	ND
Anthracene	1,800	5.8 (R)	mg/kg	NA	NA	ND	NA	ND
Acenaphthene	360	0.55 (R)	mg/kg	NA	NA	ND	NA	ND
Benzo(A)anthracene	1.1	0.011 (R)	mg/kg	NA	NA	ND	NA	ND
Benzo(B)fluoranthene	1.1	0.3 (R)	mg/kg	NA	NA	ND	NA	ND
Benzo(K)fluoranthene	11	2.9 (R)	mg/kg	NA	NA	ND	NA	ND
Benzo(A)pyrene	0.11	0.24 (M)	mg/kg	NA	NA	ND	NA	ND
Chrysene	110	9 (R)	mg/kg	NA	NA	ND	NA	ND
Dibenzo(A,H)anthracene	0.11	0.096 (R)	mg/kg	NA	NA	ND	NA	ND
Fluoranthene	240	8.9 (R)	mg/kg	NA	NA	ND	NA	ND
Fluorene	240	0.54 (R)	mg/kg	NA	NA	ND	NA	ND
Indeno(1,2,3,c-d)pyrene	1.1	0.98 (R)	mg/kg	NA	NA	ND	NA	ND
1-methylnaphthalene	18	0.006 (R)	mg/kg	NA	NA	ND	NA	ND
2-methylnaphthalene	24	0.019 (R)	mg/kg	NA	NA	ND	NA	ND
Naphthalene	2	0.0038 (R)	mg/kg	NA	NA	ND	NA	ND
Pyrene	180	1.3 (R)	mg/kg	NA	NA	ND	NA	ND

NOTES:

BOLD - indicates result exceeds the COGCC protection of groundwater soil screening concentration level

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/l - milligrams per liter

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

SAR - sodium adsorption ratio

SU - standard unit

TPH-ORO - total petroleum hydrocarbons- oil range organics

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH - combination of TPH-GRO, TPH-DRO, and TPH-ORO

NA - analyte not analyzed

ND - analyte not detected


R - risk based

MCL - maxium containment level (M)

ENCLOSURE A – SOIL SCREENING PHOTOLOG

PHOTOGRAPHIC LOG		
Caerus Oil and Gas LLC	YCF 27-13-1 Facility Decommissioning	31404550.013

Photo No.	Date	
1	August 17, 2022	
YCF 27-13-1 decommissioning equipment meter skid, off-location flowline, tanks, and vault overview; View northeast		

Photo No.	Date	
2	August 17, 2022	
YCF 27-13-1 decommissioning equipment meter skid, off-location flowline, and vault; View east		

PHOTOGRAPHIC LOG

Caerus Oil and Gas LLC	YCF 27-13-1 Facility Decommissioning	31404550.013
------------------------	--------------------------------------	--------------



Photo No.	Date	
3	August 17, 2022	
YCF 27-13-1 decommissioning wellhead post sediment and washout removal; View northeast		

Photo No.	Date	
4	August 17, 2022	
YCF 27-13-1 decommissioned separator and associated infrastructure; View northwest		




PHOTOGRAPHIC LOG

**Caerus Oil and Gas
LLC**

YCF 27-13-1 Facility Decommissioning

31404550.013

Photo No.	Date	
5	August 17, 2022	
YCF 27-13-1 decommission sampling separator and associated infrastructure ; View southeast		

Photo No.	Date	
6	August 17, 2022	
YCF 27-13-1 decommission sampling separator associated infrastructure; View northeast		

PHOTOGRAPHIC LOG

Caerus Oil and Gas LLC	YCF 27-13-1 Facility Decommissioning	31404550.013
------------------------	--------------------------------------	--------------

Photo No.	Date	
7	August 17, 2022	
YCF 27-13-1 decommission sampling access road vault; View northwest		

Photo No.	Date	
8	August 17, 2022	
YCF 27-13-1 decommission sampling PH01; View southeast		

PHOTOGRAPHIC LOG

Caerus Oil and Gas LLC	YCF 27-13-1 Facility Decommissioning	31404550.013
------------------------	--------------------------------------	--------------


Photo No.	Date	
9	August 17, 2022	
YCF 27-13-1 decommission sampling PH02; View southeast		


Photo No.	Date	
10	August 17, 2022	
YCF 27-13-1 decommission sampling PH03; View northeast		

PHOTOGRAPHIC LOG		
Caerus Oil and Gas LLC	YCF 27-13-1 Facility Decommissioning	31404550.013

Photo No.	Date	
11	August 17, 2022	
YCF 27-13-1 decommission sampling former tank footprints; View north		

PHOTOGRAPHIC LOG		
Caerus Oil and Gas LLC	YCF 27-13-1 Facility Decommissioning	31404550.013

Photo No.	Date	
12	August 17, 2022	
YCF 27-13-1 advancing BGE; View east		

Photo No.	Date	
13	August 17, 2022	
YCF 27-13-1 BGE; View east		

PHOTOGRAPHIC LOG

Caerus Oil and Gas LLC	YCF 27-13-1 Facility Decommissioning	31404550.013
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Photo No.	Date	
14	August 17, 2022	
YCF 27-13-1 BGW; View south		

Photo No.	Date	
15	August 17, 2022	
YCF 27-13-1 BGW; View south		

ENCLOSURE B – LABORATORY ANALYTICAL REPORTS

October 10, 2022

Revised Report

Caerus Oil and Gas

Sample Delivery Group: L1527412
Samples Received: 08/19/2022
Project Number: YCF 27-13-1
Description: YCF 27-13-1 Facility Decommissioning
Site: YCF 27-13-1
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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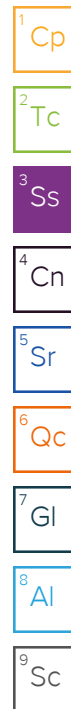
¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

20220817-YCF 27-13-1 (ACCESS RD. VAULT) L1527412-01 Solid

Collected by K. Moreland
Collected date/time 08/17/22 08:35
Received date/time 08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915249	1	08/30/22 16:07	08/30/22 16:07	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917376	1	09/02/22 00:22	09/09/22 13:37	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922234	1	09/07/22 11:28	09/09/22 12:50	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913981	1	08/23/22 09:44	08/25/22 11:52	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914113	1	08/22/22 10:52	08/26/22 15:45	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913980	5	08/23/22 09:21	08/24/22 12:18	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914069	1	08/20/22 18:39	08/21/22 13:22	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1914699	1	08/20/22 18:39	08/22/22 21:06	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	5	08/20/22 11:00	08/21/22 04:50	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 17:11	AMG	Mt. Juliet, TN



20220817-YCF 27-13-1 (PH01) @ 6' L1527412-02 Solid

Collected by K. Moreland
Collected date/time 08/17/22 08:50
Received date/time 08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915249	1	08/30/22 16:10	08/30/22 16:10	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917376	1	09/02/22 00:22	09/09/22 13:42	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922234	1	09/07/22 11:28	09/09/22 12:50	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913981	1	08/23/22 09:44	08/25/22 10:39	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:05	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913980	5	08/23/22 09:21	08/24/22 10:56	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914069	1	08/20/22 18:39	08/21/22 13:43	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1914804	1	08/20/22 18:39	08/23/22 02:41	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/21/22 01:07	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 13:15	AMG	Mt. Juliet, TN

20220817-YCF 27-13-1 (TANK A) L1527412-03 Solid

Collected by K. Moreland
Collected date/time 08/17/22 09:50
Received date/time 08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915249	1	08/30/22 16:13	08/30/22 16:13	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917376	1	09/02/22 00:22	09/09/22 13:53	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922234	1	09/07/22 11:28	09/09/22 12:50	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913981	1	08/23/22 09:44	08/25/22 11:55	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:08	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913980	5	08/23/22 09:21	08/24/22 12:22	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914069	1.01	08/20/22 18:39	08/21/22 14:03	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1914804	1	08/20/22 18:39	08/23/22 03:00	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 22:16	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 13:34	AMG	Mt. Juliet, TN

20220817-YCF 27-13-1 (TANK B) L1527412-04 Solid

Collected by K. Moreland
Collected date/time 08/17/22 09:55
Received date/time 08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915249	1	08/30/22 16:21	08/30/22 16:21	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917376	1	09/02/22 00:22	09/09/22 13:58	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922234	1	09/07/22 11:28	09/09/22 12:50	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913985	1	08/24/22 16:24	08/26/22 11:48	KMG	Mt. Juliet, TN

SAMPLE SUMMARY

20220817-YCF 27-13-1 (TANK B) L1527412-04 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 09:55

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:11	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913984	5	08/24/22 16:17	08/25/22 18:18	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914069	1.01	08/20/22 18:39	08/21/22 14:23	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1914804	1	08/20/22 18:39	08/23/22 03:19	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 22:55	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 13:54	AMG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

20220817-YCF 27-13-1 (TANK C) L1527412-05 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 10:00

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 10:38	08/26/22 10:38	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917376	1	09/02/22 00:22	09/09/22 14:03	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913981	1	08/23/22 09:44	08/25/22 11:58	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:13	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913980	5	08/23/22 09:21	08/24/22 12:25	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914069	1.01	08/20/22 18:39	08/21/22 14:44	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1914804	1	08/20/22 18:39	08/23/22 03:38	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 19:12	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 14:14	AMG	Mt. Juliet, TN

20220817-YCF 27-13-1 (SEP) @ 4.5' L1527412-06 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 10:30

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 10:41	08/26/22 10:41	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917376	1	09/02/22 00:22	09/09/22 14:08	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913985	1	08/24/22 16:24	08/26/22 11:51	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:16	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913984	5	08/24/22 16:17	08/25/22 18:21	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914356	1	08/20/22 18:39	08/24/22 05:49	EBD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1914804	1.01	08/20/22 18:39	08/23/22 03:57	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 18:46	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 14:34	AMG	Mt. Juliet, TN

20220817-YCF 27-13-1 (SEP 90) @ 3' L1527412-07 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 10:50

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 10:44	08/26/22 10:44	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917376	1	09/02/22 00:22	09/09/22 14:21	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913985	1	08/24/22 16:24	08/26/22 11:54	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:19	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913984	5	08/24/22 16:17	08/25/22 18:24	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914356	1	08/20/22 18:39	08/24/22 05:27	EBD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1914804	1	08/20/22 18:39	08/23/22 04:16	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 20:57	NH	Mt. Juliet, TN

SAMPLE SUMMARY

20220817-YCF 27-13-1 (SEP 90) @ 3' L1527412-07 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 10:50

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 14:53	AMG	Mt. Juliet, TN

20220817-YCF 27-13-1 (PAD VAULT) L1527412-08 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 11:20

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 10:47	08/26/22 10:47	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917378	1	08/30/22 19:11	09/02/22 13:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913985	1	08/24/22 16:24	08/26/22 12:02	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:22	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913984	5	08/24/22 16:17	08/25/22 18:34	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914356	1	08/20/22 18:39	08/24/22 05:06	EBD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1914804	1.01	08/20/22 18:39	08/23/22 04:35	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 22:42	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 15:13	AMG	Mt. Juliet, TN

20220817-YCF 27-13-1 (METER SKID) L1527412-09 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 14:00

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 10:49	08/26/22 10:49	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917378	1	08/30/22 19:11	09/02/22 13:11	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913985	1	08/24/22 16:24	08/26/22 12:05	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:30	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913984	5	08/24/22 16:17	08/25/22 18:37	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914356	1	08/20/22 18:39	08/24/22 04:44	EBD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1915243	1	08/20/22 18:39	08/23/22 16:10	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 20:31	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 15:32	AMG	Mt. Juliet, TN

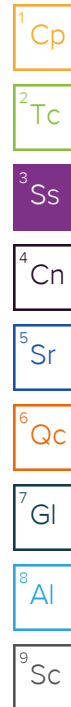
20220817-YCF 27-13-1 (OFF LOC. FL) @ 5' L1527412-10 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 14:15

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 10:52	08/26/22 10:52	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917378	1	08/30/22 19:11	09/02/22 13:16	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913985	1	08/24/22 16:24	08/26/22 12:08	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:33	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913984	5	08/24/22 16:17	08/25/22 18:41	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914356	1	08/20/22 18:39	08/24/22 04:23	EBD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1915243	1	08/20/22 18:39	08/23/22 16:29	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 21:23	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 15:52	AMG	Mt. Juliet, TN



SAMPLE SUMMARY

20220817-YCF 27-13-1 (PH02) @ 6' L1527412-11 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 14:40

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 10:55	08/26/22 10:55	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917378	1	08/30/22 19:11	09/02/22 13:22	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913985	1	08/24/22 16:24	08/26/22 11:34	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:36	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913984	5	08/24/22 16:17	08/25/22 18:02	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914356	1	08/20/22 18:39	08/24/22 04:01	EBD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1915243	1	08/20/22 18:39	08/23/22 16:48	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 21:50	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913757	1	08/20/22 15:06	08/21/22 12:57	AMG	Mt. Juliet, TN

20220817-YCF 27-13-1 (PH03) @ 6' L1527412-12 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 15:00

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 10:58	08/26/22 10:58	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917378	1	08/30/22 19:11	09/02/22 13:27	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1915800	1	08/24/22 15:30	08/24/22 17:30	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913985	1	08/24/22 16:24	08/26/22 12:11	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:39	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913984	5	08/24/22 16:17	08/25/22 18:44	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914356	1	08/20/22 18:39	08/24/22 03:39	EBD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1915243	1	08/20/22 18:39	08/23/22 17:06	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 23:09	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913757	1	08/20/22 15:06	08/21/22 13:14	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.



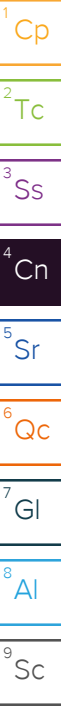
Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 09/14/22 12:35

Project Narrative

Rerun for updated project info



Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	SAR				
Sodium Adsorption Ratio	8.25		1	08/30/2022 16:07	WG1915249

Wet Chemistry by Method 7199

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Hexavalent Chromium	U		0.255	1.00	1	09/09/2022 13:37	WG1917376

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	pH				
pH	8.33	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:
L1527412-01 WG1915800: 8.33 at 22.6C

Wet Chemistry by Method 9050AMod

	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Analyte						
Specific Conductance	3170		10.0	1	09/09/2022 12:50	WG1922234

Sample Narrative:
L1527412-01 WG1922234: at 25C

Metals (ICP) by Method 6010B

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Barium	299		0.0852	0.500	1	08/25/2022 11:52	WG1913981
Cadmium	0.123	J	0.0471	0.500	1	08/25/2022 11:52	WG1913981
Copper	16.8		0.400	2.00	1	08/25/2022 11:52	WG1913981
Lead	10.9		0.208	0.500	1	08/25/2022 11:52	WG1913981
Nickel	27.4		0.132	2.00	1	08/25/2022 11:52	WG1913981
Selenium	U		0.764	2.00	1	08/25/2022 11:52	WG1913981
Silver	U		0.127	1.00	1	08/25/2022 11:52	WG1913981
Zinc	166		0.832	5.00	1	08/25/2022 11:52	WG1913981

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

	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Analyte							
Hot Water Sol. Boron	5.23		0.0167	0.200	1	08/26/2022 15:45	WG1914113

Metals (ICPMS) by Method 6020

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Arsenic	5.48		0.100	1.00	5	08/24/2022 12:18	WG1913980

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

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
TPH (GC/FID) Low Fraction	0.170		0.0217	0.100	1	08/21/2022 13:22	WG1914069
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	92.0			77.0-120		08/21/2022 13:22	WG1914069

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	0.00940		0.000467	0.00100	1	08/22/2022 21:06	WG1914699
Toluene	0.0357		0.00130	0.00500	1	08/22/2022 21:06	WG1914699
Ethylbenzene	0.000800	U	0.000737	0.00250	1	08/22/2022 21:06	WG1914699
Xylenes, Total	0.00565	U	0.000880	0.00650	1	08/22/2022 21:06	WG1914699
1,2,4-Trimethylbenzene	0.00210	U	0.00158	0.00500	1	08/22/2022 21:06	WG1914699
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/22/2022 21:06	WG1914699
(S) Toluene-d8	103			75.0-131		08/22/2022 21:06	WG1914699
(S) 4-Bromofluorobenzene	98.8			67.0-138		08/22/2022 21:06	WG1914699
(S) 1,2-Dichloroethane-d4	95.3			70.0-130		08/22/2022 21:06	WG1914699

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	61.1		8.05	20.0	5	08/21/2022 04:50	WG1913741
C28-C36 Motor Oil Range	108		1.37	20.0	5	08/21/2022 04:50	WG1913741
(S) o-Terphenyl	45.3			18.0-148		08/21/2022 04:50	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 17:11	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 17:11	WG1913756
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 17:11	WG1913756
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/21/2022 17:11	WG1913756
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 17:11	WG1913756
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 17:11	WG1913756
Chrysene	U		0.00232	0.00600	1	08/21/2022 17:11	WG1913756
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 17:11	WG1913756
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 17:11	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 17:11	WG1913756
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 17:11	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 17:11	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 17:11	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 17:11	WG1913756
Pyrene	U		0.00200	0.00600	1	08/21/2022 17:11	WG1913756
(S) p-Terphenyl-d14	52.6			23.0-120		08/21/2022 17:11	WG1913756
(S) Nitrobenzene-d5	60.5			14.0-149		08/21/2022 17:11	WG1913756
(S) 2-Fluorobiphenyl	54.1			34.0-125		08/21/2022 17:11	WG1913756

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	SAR				
Sodium Adsorption Ratio	1.20		1	08/30/2022 16:10	WG1915249

Wet Chemistry by Method 7199

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Hexavalent Chromium	U		0.255	1.00	1	09/09/2022 13:42	WG1917376

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	pH				
pH	8.91	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:
L1527412-02 WG1915800: 8.91 at 22.7C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	432		10.0	1	09/09/2022 12:50	WG1922234

Sample Narrative:
L1527412-02 WG1922234: at 25C

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	217	J3 J6 O1	0.0852	0.500	1	08/25/2022 10:39	WG1913981
Cadmium	0.0778	J	0.0471	0.500	1	08/25/2022 10:39	WG1913981
Copper	12.2		0.400	2.00	1	08/25/2022 10:39	WG1913981
Lead	8.20		0.208	0.500	1	08/25/2022 10:39	WG1913981
Nickel	21.0	O1	0.132	2.00	1	08/25/2022 10:39	WG1913981
Selenium	1.13	J	0.764	2.00	1	08/25/2022 10:39	WG1913981
Silver	U		0.127	1.00	1	08/25/2022 10:39	WG1913981
Zinc	39.5	O1	0.832	5.00	1	08/25/2022 10:39	WG1913981

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	0.471		0.0167	0.200	1	08/26/2022 19:05	WG1914114

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	3.54		0.100	1.00	5	08/24/2022 10:56	WG1913980

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

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
TPH (GC/FID) Low Fraction	0.0355	J	0.0217	0.100	1	08/21/2022 13:43	WG1914069
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	91.2			77.0-120		08/21/2022 13:43	WG1914069

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	08/23/2022 02:41	WG1914804
Toluene	U		0.00130	0.00500	1	08/23/2022 02:41	WG1914804
Ethylbenzene	U		0.000737	0.00250	1	08/23/2022 02:41	WG1914804
Xylenes, Total	U		0.000880	0.00650	1	08/23/2022 02:41	WG1914804
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/23/2022 02:41	WG1914804
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/23/2022 02:41	WG1914804
(S) Toluene-d8	104			75.0-131		08/23/2022 02:41	WG1914804
(S) 4-Bromofluorobenzene	98.0			67.0-138		08/23/2022 02:41	WG1914804
(S) 1,2-Dichloroethane-d4	103			70.0-130		08/23/2022 02:41	WG1914804

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	4.64		1.61	4.00	1	08/21/2022 01:07	WG1913741
C28-C36 Motor Oil Range	8.02		0.274	4.00	1	08/21/2022 01:07	WG1913741
(S) o-Terphenyl	45.3			18.0-148		08/21/2022 01:07	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 13:15	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 13:15	WG1913756
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 13:15	WG1913756
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/21/2022 13:15	WG1913756
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 13:15	WG1913756
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 13:15	WG1913756
Chrysene	U		0.00232	0.00600	1	08/21/2022 13:15	WG1913756
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 13:15	WG1913756
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 13:15	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 13:15	WG1913756
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 13:15	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 13:15	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 13:15	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 13:15	WG1913756
Pyrene	U		0.00200	0.00600	1	08/21/2022 13:15	WG1913756
(S) p-Terphenyl-d14	50.1			23.0-120		08/21/2022 13:15	WG1913756
(S) Nitrobenzene-d5	49.4			14.0-149		08/21/2022 13:15	WG1913756
(S) 2-Fluorobiphenyl	53.1			34.0-125		08/21/2022 13:15	WG1913756

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	1.02		1	08/30/2022 16:13	WG1915249

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	09/09/2022 13:53	WG1917376

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.43	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:

L1527412-03 WG1915800: 9.43 at 22.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	245		10.0	1	09/09/2022 12:50	WG1922234

Sample Narrative:

L1527412-03 WG1922234: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	189		0.0852	0.500	1	08/25/2022 11:55	WG1913981
Cadmium	0.0952	J	0.0471	0.500	1	08/25/2022 11:55	WG1913981
Copper	17.9		0.400	2.00	1	08/25/2022 11:55	WG1913981
Lead	4.89		0.208	0.500	1	08/25/2022 11:55	WG1913981
Nickel	41.1		0.132	2.00	1	08/25/2022 11:55	WG1913981
Selenium	U		0.764	2.00	1	08/25/2022 11:55	WG1913981
Silver	U		0.127	1.00	1	08/25/2022 11:55	WG1913981
Zinc	39.4		0.832	5.00	1	08/25/2022 11:55	WG1913981

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	0.180	J	0.0167	0.200	1	08/26/2022 19:08	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.45		0.100	1.00	5	08/24/2022 12:22	WG1913980

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	0.0465	J	0.0219	0.101	1.01	08/21/2022 14:03	WG1914069
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	91.1			77.0-120		08/21/2022 14:03	WG1914069



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

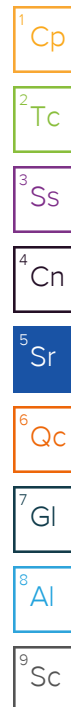
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	08/23/2022 03:00	WG1914804
Toluene	U		0.00130	0.00500	1	08/23/2022 03:00	WG1914804
Ethylbenzene	U		0.000737	0.00250	1	08/23/2022 03:00	WG1914804
Xylenes, Total	U		0.000880	0.00650	1	08/23/2022 03:00	WG1914804
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/23/2022 03:00	WG1914804
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/23/2022 03:00	WG1914804
(S) Toluene-d8	106			75.0-131		08/23/2022 03:00	WG1914804
(S) 4-Bromofluorobenzene	97.4			67.0-138		08/23/2022 03:00	WG1914804
(S) 1,2-Dichloroethane-d4	98.3			70.0-130		08/23/2022 03:00	WG1914804

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	4.98		1.61	4.00	1	08/20/2022 22:16	WG1913741
C28-C36 Motor Oil Range	1.69	B J	0.274	4.00	1	08/20/2022 22:16	WG1913741
(S) o-Terphenyl	56.8			18.0-148		08/20/2022 22:16	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 13:34	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 13:34	WG1913756
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 13:34	WG1913756
Benzo(b)fluoranthene	0.00297	I J	0.00153	0.00600	1	08/21/2022 13:34	WG1913756
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 13:34	WG1913756
Benzo(a)pyrene	0.00223	I J	0.00179	0.00600	1	08/21/2022 13:34	WG1913756
Chrysene	U		0.00232	0.00600	1	08/21/2022 13:34	WG1913756
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 13:34	WG1913756
Fluoranthene	0.00276	I J	0.00227	0.00600	1	08/21/2022 13:34	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 13:34	WG1913756
Indeno(1,2,3-cd)pyrene	0.00200	I J	0.00181	0.00600	1	08/21/2022 13:34	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 13:34	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 13:34	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 13:34	WG1913756
Pyrene	0.00228	I J	0.00200	0.00600	1	08/21/2022 13:34	WG1913756
(S) p-Terphenyl-d14	74.8			23.0-120		08/21/2022 13:34	WG1913756
(S) Nitrobenzene-d5	75.2			14.0-149		08/21/2022 13:34	WG1913756
(S) 2-Fluorobiphenyl	80.7			34.0-125		08/21/2022 13:34	WG1913756



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.13		1	08/30/2022 16:21	WG1915249

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	09/09/2022 13:58	WG1917376

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.49	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:
L1527412-04 WG1915800: 9.49 at 22.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	146		10.0	1	09/09/2022 12:50	WG1922234

Sample Narrative:
L1527412-04 WG1922234: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	169		0.0852	0.500	1	08/26/2022 11:48	WG1913985
Cadmium	0.0681	J	0.0471	0.500	1	08/26/2022 11:48	WG1913985
Copper	18.3		0.400	2.00	1	08/26/2022 11:48	WG1913985
Lead	5.45		0.208	0.500	1	08/26/2022 11:48	WG1913985
Nickel	41.6		0.132	2.00	1	08/26/2022 11:48	WG1913985
Selenium	U		0.764	2.00	1	08/26/2022 11:48	WG1913985
Silver	U		0.127	1.00	1	08/26/2022 11:48	WG1913985
Zinc	38.9		0.832	5.00	1	08/26/2022 11:48	WG1913985

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	0.169	J	0.0167	0.200	1	08/26/2022 19:11	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.79		0.100	1.00	5	08/25/2022 18:18	WG1913984

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	0.0461	J	0.0219	0.101	1.01	08/21/2022 14:23	WG1914069
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	91.5			77.0-120		08/21/2022 14:23	WG1914069

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	08/23/2022 03:19	WG1914804
Toluene	U		0.00130	0.00500	1	08/23/2022 03:19	WG1914804
Ethylbenzene	U		0.000737	0.00250	1	08/23/2022 03:19	WG1914804
Xylenes, Total	U		0.000880	0.00650	1	08/23/2022 03:19	WG1914804
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/23/2022 03:19	WG1914804
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/23/2022 03:19	WG1914804
(S) Toluene-d8	102			75.0-131		08/23/2022 03:19	WG1914804
(S) 4-Bromofluorobenzene	95.5			67.0-138		08/23/2022 03:19	WG1914804
(S) 1,2-Dichloroethane-d4	104			70.0-130		08/23/2022 03:19	WG1914804

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	2.12	<u>J</u>	1.61	4.00	1	08/20/2022 22:55	WG1913741
C28-C36 Motor Oil Range	1.83	<u>B J</u>	0.274	4.00	1	08/20/2022 22:55	WG1913741
(S) o-Terphenyl	55.0			18.0-148		08/20/2022 22:55	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 13:54	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 13:54	WG1913756
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 13:54	WG1913756
Benzo(b)fluoranthene	0.00232	<u>J</u>	0.00153	0.00600	1	08/21/2022 13:54	WG1913756
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 13:54	WG1913756
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 13:54	WG1913756
Chrysene	U		0.00232	0.00600	1	08/21/2022 13:54	WG1913756
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 13:54	WG1913756
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 13:54	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 13:54	WG1913756
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 13:54	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 13:54	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 13:54	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 13:54	WG1913756
Pyrene	U		0.00200	0.00600	1	08/21/2022 13:54	WG1913756
(S) p-Terphenyl-d14	73.3			23.0-120		08/21/2022 13:54	WG1913756
(S) Nitrobenzene-d5	73.0			14.0-149		08/21/2022 13:54	WG1913756
(S) 2-Fluorobiphenyl	78.6			34.0-125		08/21/2022 13:54	WG1913756

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	2.84		1	08/26/2022 10:38	WG1915560

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	09/09/2022 14:03	WG1917376

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.61	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:

L1527412-05 WG1915800: 9.61 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	217		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:

L1527412-05 WG1922243: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	205		0.0852	0.500	1	08/25/2022 11:58	WG1913981
Cadmium	0.0909	J	0.0471	0.500	1	08/25/2022 11:58	WG1913981
Copper	15.7		0.400	2.00	1	08/25/2022 11:58	WG1913981
Lead	6.16		0.208	0.500	1	08/25/2022 11:58	WG1913981
Nickel	34.7		0.132	2.00	1	08/25/2022 11:58	WG1913981
Selenium	U		0.764	2.00	1	08/25/2022 11:58	WG1913981
Silver	U		0.127	1.00	1	08/25/2022 11:58	WG1913981
Zinc	39.7		0.832	5.00	1	08/25/2022 11:58	WG1913981

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	0.163	J	0.0167	0.200	1	08/26/2022 19:13	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.50		0.100	1.00	5	08/24/2022 12:25	WG1913980

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	0.0385	J	0.0219	0.101	1.01	08/21/2022 14:44	WG1914069
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	91.1			77.0-120		08/21/2022 14:44	WG1914069

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	08/23/2022 03:38	WG1914804
Toluene	U		0.00130	0.00500	1	08/23/2022 03:38	WG1914804
Ethylbenzene	U		0.000737	0.00250	1	08/23/2022 03:38	WG1914804
Xylenes, Total	U		0.000880	0.00650	1	08/23/2022 03:38	WG1914804
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/23/2022 03:38	WG1914804
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/23/2022 03:38	WG1914804
(S) Toluene-d8	105			75.0-131		08/23/2022 03:38	WG1914804
(S) 4-Bromofluorobenzene	98.9			67.0-138		08/23/2022 03:38	WG1914804
(S) 1,2-Dichloroethane-d4	104			70.0-130		08/23/2022 03:38	WG1914804

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	U		1.61	4.00	1	08/20/2022 19:12	WG1913741
C28-C36 Motor Oil Range	0.989	B J	0.274	4.00	1	08/20/2022 19:12	WG1913741
(S) o-Terphenyl	53.8			18.0-148		08/20/2022 19:12	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 14:14	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 14:14	WG1913756
Benzo(a)anthracene	0.0161		0.00173	0.00600	1	08/21/2022 14:14	WG1913756
Benzo(b)fluoranthene	0.0299		0.00153	0.00600	1	08/21/2022 14:14	WG1913756
Benzo(k)fluoranthene	0.0109		0.00215	0.00600	1	08/21/2022 14:14	WG1913756
Benzo(a)pyrene	0.0223		0.00179	0.00600	1	08/21/2022 14:14	WG1913756
Chrysene	0.0182		0.00232	0.00600	1	08/21/2022 14:14	WG1913756
Dibenz(a,h)anthracene	0.00300	J	0.00172	0.00600	1	08/21/2022 14:14	WG1913756
Fluoranthene	0.0171		0.00227	0.00600	1	08/21/2022 14:14	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 14:14	WG1913756
Indeno(1,2,3-cd)pyrene	0.0158		0.00181	0.00600	1	08/21/2022 14:14	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 14:14	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 14:14	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 14:14	WG1913756
Pyrene	0.0151		0.00200	0.00600	1	08/21/2022 14:14	WG1913756
(S) p-Terphenyl-d14	77.2			23.0-120		08/21/2022 14:14	WG1913756
(S) Nitrobenzene-d5	75.5			14.0-149		08/21/2022 14:14	WG1913756
(S) 2-Fluorobiphenyl	79.3			34.0-125		08/21/2022 14:14	WG1913756

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	2.86		1	08/26/2022 10:41	WG1915560

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.338	J	0.255	1.00	1	09/09/2022 14:08	WG1917376

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.51	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:

L1527412-06 WG1915800: 9.51 at 22.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	335		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:

L1527412-06 WG1922243: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	339		0.0852	0.500	1	08/26/2022 11:51	WG1913985
Cadmium	0.173	J	0.0471	0.500	1	08/26/2022 11:51	WG1913985
Copper	19.3		0.400	2.00	1	08/26/2022 11:51	WG1913985
Lead	19.6		0.208	0.500	1	08/26/2022 11:51	WG1913985
Nickel	29.9		0.132	2.00	1	08/26/2022 11:51	WG1913985
Selenium	1.15	J	0.764	2.00	1	08/26/2022 11:51	WG1913985
Silver	U		0.127	1.00	1	08/26/2022 11:51	WG1913985
Zinc	47.5		0.832	5.00	1	08/26/2022 11:51	WG1913985

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	0.267		0.0167	0.200	1	08/26/2022 19:16	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.40		0.100	1.00	5	08/25/2022 18:21	WG1913984

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	08/24/2022 05:49	WG1914356
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	111			77.0-120		08/24/2022 05:49	WG1914356

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	0.00240		0.000472	0.00101	1.01	08/23/2022 03:57	WG1914804
Toluene	0.00460	J	0.00131	0.00505	1.01	08/23/2022 03:57	WG1914804
Ethylbenzene	U		0.000744	0.00253	1.01	08/23/2022 03:57	WG1914804
Xylenes, Total	U		0.000889	0.00656	1.01	08/23/2022 03:57	WG1914804
1,2,4-Trimethylbenzene	U		0.00160	0.00505	1.01	08/23/2022 03:57	WG1914804
1,3,5-Trimethylbenzene	U		0.00202	0.00505	1.01	08/23/2022 03:57	WG1914804
(S) Toluene-d8	105			75.0-131		08/23/2022 03:57	WG1914804
(S) 4-Bromofluorobenzene	96.4			67.0-138		08/23/2022 03:57	WG1914804
(S) 1,2-Dichloroethane-d4	98.6			70.0-130		08/23/2022 03:57	WG1914804

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	U		1.61	4.00	1	08/20/2022 18:46	WG1913741
C28-C36 Motor Oil Range	0.587	B J	0.274	4.00	1	08/20/2022 18:46	WG1913741
(S) o-Terphenyl	44.5			18.0-148		08/20/2022 18:46	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 14:34	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 14:34	WG1913756
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 14:34	WG1913756
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/21/2022 14:34	WG1913756
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 14:34	WG1913756
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 14:34	WG1913756
Chrysene	U		0.00232	0.00600	1	08/21/2022 14:34	WG1913756
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 14:34	WG1913756
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 14:34	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 14:34	WG1913756
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 14:34	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 14:34	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 14:34	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 14:34	WG1913756
Pyrene	U		0.00200	0.00600	1	08/21/2022 14:34	WG1913756
(S) p-Terphenyl-d14	42.8			23.0-120		08/21/2022 14:34	WG1913756
(S) Nitrobenzene-d5	64.8			14.0-149		08/21/2022 14:34	WG1913756
(S) 2-Fluorobiphenyl	54.8			34.0-125		08/21/2022 14:34	WG1913756

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	SAR				
Sodium Adsorption Ratio	2.34		1	08/26/2022 10:44	WG1915560

Wet Chemistry by Method 7199

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Hexavalent Chromium	U		0.255	1.00	1	09/09/2022 14:21	WG1917376

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	pH				
pH	9.29	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:
L1527412-07 WG1915800: 9.29 at 22.8C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	173		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:
L1527412-07 WG1922243: at 25C

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	262		0.0852	0.500	1	08/26/2022 11:54	WG1913985
Cadmium	0.0517	J	0.0471	0.500	1	08/26/2022 11:54	WG1913985
Copper	16.7		0.400	2.00	1	08/26/2022 11:54	WG1913985
Lead	5.18		0.208	0.500	1	08/26/2022 11:54	WG1913985
Nickel	39.2		0.132	2.00	1	08/26/2022 11:54	WG1913985
Selenium	U		0.764	2.00	1	08/26/2022 11:54	WG1913985
Silver	U		0.127	1.00	1	08/26/2022 11:54	WG1913985
Zinc	38.0		0.832	5.00	1	08/26/2022 11:54	WG1913985

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	0.325		0.0167	0.200	1	08/26/2022 19:19	WG1914114

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	3.73		0.100	1.00	5	08/25/2022 18:24	WG1913984

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

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
TPH (GC/FID) Low Fraction	0.0292	J	0.0217	0.100	1	08/24/2022 05:27	WG1914356
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	110			77.0-120		08/24/2022 05:27	WG1914356

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	08/23/2022 04:16	WG1914804
Toluene	U		0.00130	0.00500	1	08/23/2022 04:16	WG1914804
Ethylbenzene	U		0.000737	0.00250	1	08/23/2022 04:16	WG1914804
Xylenes, Total	U		0.000880	0.00650	1	08/23/2022 04:16	WG1914804
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/23/2022 04:16	WG1914804
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/23/2022 04:16	WG1914804
(S) Toluene-d8	105			75.0-131		08/23/2022 04:16	WG1914804
(S) 4-Bromofluorobenzene	94.7			67.0-138		08/23/2022 04:16	WG1914804
(S) 1,2-Dichloroethane-d4	99.4			70.0-130		08/23/2022 04:16	WG1914804

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	U		1.61	4.00	1	08/20/2022 20:57	WG1913741
C28-C36 Motor Oil Range	1.89	B J	0.274	4.00	1	08/20/2022 20:57	WG1913741
(S) o-Terphenyl	56.5			18.0-148		08/20/2022 20:57	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 14:53	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 14:53	WG1913756
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 14:53	WG1913756
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/21/2022 14:53	WG1913756
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 14:53	WG1913756
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 14:53	WG1913756
Chrysene	U		0.00232	0.00600	1	08/21/2022 14:53	WG1913756
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 14:53	WG1913756
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 14:53	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 14:53	WG1913756
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 14:53	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 14:53	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 14:53	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 14:53	WG1913756
Pyrene	U		0.00200	0.00600	1	08/21/2022 14:53	WG1913756
(S) p-Terphenyl-d14	72.8			23.0-120		08/21/2022 14:53	WG1913756
(S) Nitrobenzene-d5	74.2			14.0-149		08/21/2022 14:53	WG1913756
(S) 2-Fluorobiphenyl	81.5			34.0-125		08/21/2022 14:53	WG1913756

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	5.66		1	08/26/2022 10:47	WG1915560

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	09/02/2022 13:06	WG1917378

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.02	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:

L1527412-08 WG1915800: 9.02 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	904		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:

L1527412-08 WG1922243: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	182		0.0852	0.500	1	08/26/2022 12:02	WG1913985
Cadmium	0.239	J	0.0471	0.500	1	08/26/2022 12:02	WG1913985
Copper	12.8		0.400	2.00	1	08/26/2022 12:02	WG1913985
Lead	7.07		0.208	0.500	1	08/26/2022 12:02	WG1913985
Nickel	18.2		0.132	2.00	1	08/26/2022 12:02	WG1913985
Selenium	U		0.764	2.00	1	08/26/2022 12:02	WG1913985
Silver	U		0.127	1.00	1	08/26/2022 12:02	WG1913985
Zinc	33.4		0.832	5.00	1	08/26/2022 12:02	WG1913985

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

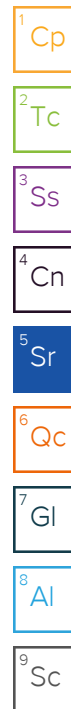
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	3.91		0.0167	0.200	1	08/26/2022 19:22	WG1914114

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	08/25/2022 18:34	WG1913984

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	08/24/2022 05:06	WG1914356
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	111			77.0-120		08/24/2022 05:06	WG1914356



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		0.000472	0.00101	1.01	08/23/2022 04:35	WG1914804
Toluene	U		0.00131	0.00505	1.01	08/23/2022 04:35	WG1914804
Ethylbenzene	U		0.000744	0.00253	1.01	08/23/2022 04:35	WG1914804
Xylenes, Total	U		0.000889	0.00656	1.01	08/23/2022 04:35	WG1914804
1,2,4-Trimethylbenzene	U		0.00160	0.00505	1.01	08/23/2022 04:35	WG1914804
1,3,5-Trimethylbenzene	U		0.00202	0.00505	1.01	08/23/2022 04:35	WG1914804
(S) Toluene-d8	104			75.0-131		08/23/2022 04:35	WG1914804
(S) 4-Bromofluorobenzene	97.2			67.0-138		08/23/2022 04:35	WG1914804
(S) 1,2-Dichloroethane-d4	102			70.0-130		08/23/2022 04:35	WG1914804

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	6.37		1.61	4.00	1	08/20/2022 22:42	WG1913741
C28-C36 Motor Oil Range	6.47		0.274	4.00	1	08/20/2022 22:42	WG1913741
(S) o-Terphenyl	45.2			18.0-148		08/20/2022 22:42	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 15:13	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 15:13	WG1913756
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 15:13	WG1913756
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/21/2022 15:13	WG1913756
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 15:13	WG1913756
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 15:13	WG1913756
Chrysene	U		0.00232	0.00600	1	08/21/2022 15:13	WG1913756
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 15:13	WG1913756
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 15:13	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 15:13	WG1913756
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 15:13	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 15:13	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 15:13	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 15:13	WG1913756
Pyrene	U		0.00200	0.00600	1	08/21/2022 15:13	WG1913756
(S) p-Terphenyl-d14	52.3			23.0-120		08/21/2022 15:13	WG1913756
(S) Nitrobenzene-d5	63.8			14.0-149		08/21/2022 15:13	WG1913756
(S) 2-Fluorobiphenyl	63.8			34.0-125		08/21/2022 15:13	WG1913756

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	3.31		1	08/26/2022 10:49	WG1915560

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.430	J	0.255	1.00	1	09/02/2022 13:11	WG1917378

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.43	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:
L1527412-09 WG1915800: 9.43 at 22.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	282		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:
L1527412-09 WG1922243: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	175		0.0852	0.500	1	08/26/2022 12:05	WG1913985
Cadmium	0.111	J	0.0471	0.500	1	08/26/2022 12:05	WG1913985
Copper	12.3		0.400	2.00	1	08/26/2022 12:05	WG1913985
Lead	7.78		0.208	0.500	1	08/26/2022 12:05	WG1913985
Nickel	20.0		0.132	2.00	1	08/26/2022 12:05	WG1913985
Selenium	U		0.764	2.00	1	08/26/2022 12:05	WG1913985
Silver	U		0.127	1.00	1	08/26/2022 12:05	WG1913985
Zinc	36.9		0.832	5.00	1	08/26/2022 12:05	WG1913985

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	3.33		0.0167	0.200	1	08/26/2022 19:30	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.00		0.100	1.00	5	08/25/2022 18:37	WG1913984

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	0.0268	J	0.0217	0.100	1	08/24/2022 04:44	WG1914356
(S) a,a,a-Trifluorotoluene(FID)	111			77.0-120		08/24/2022 04:44	WG1914356

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	08/23/2022 16:10	WG1915243
Toluene	U		0.00130	0.00500	1	08/23/2022 16:10	WG1915243
Ethylbenzene	U		0.000737	0.00250	1	08/23/2022 16:10	WG1915243
Xylenes, Total	U		0.000880	0.00650	1	08/23/2022 16:10	WG1915243
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/23/2022 16:10	WG1915243
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/23/2022 16:10	WG1915243
(S) Toluene-d8	109			75.0-131		08/23/2022 16:10	WG1915243
(S) 4-Bromofluorobenzene	100			67.0-138		08/23/2022 16:10	WG1915243
(S) 1,2-Dichloroethane-d4	83.0			70.0-130		08/23/2022 16:10	WG1915243

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	U		1.61	4.00	1	08/20/2022 20:31	WG1913741
C28-C36 Motor Oil Range	2.41	B J	0.274	4.00	1	08/20/2022 20:31	WG1913741
(S) o-Terphenyl	51.1			18.0-148		08/20/2022 20:31	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 15:32	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 15:32	WG1913756
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 15:32	WG1913756
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/21/2022 15:32	WG1913756
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 15:32	WG1913756
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 15:32	WG1913756
Chrysene	U		0.00232	0.00600	1	08/21/2022 15:32	WG1913756
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 15:32	WG1913756
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 15:32	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 15:32	WG1913756
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 15:32	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 15:32	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 15:32	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 15:32	WG1913756
Pyrene	U		0.00200	0.00600	1	08/21/2022 15:32	WG1913756
(S) p-Terphenyl-d14	77.5			23.0-120		08/21/2022 15:32	WG1913756
(S) Nitrobenzene-d5	77.8			14.0-149		08/21/2022 15:32	WG1913756
(S) 2-Fluorobiphenyl	80.9			34.0-125		08/21/2022 15:32	WG1913756

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	1.95		1	08/26/2022 10:52	WG1915560

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.436	J	0.255	1.00	1	09/02/2022 13:16	WG1917378

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.09	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:

L1527412-10 WG1915800: 9.09 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	289		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:

L1527412-10 WG1922243: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	259		0.0852	0.500	1	08/26/2022 12:08	WG1913985
Cadmium	0.0568	J	0.0471	0.500	1	08/26/2022 12:08	WG1913985
Copper	16.5		0.400	2.00	1	08/26/2022 12:08	WG1913985
Lead	8.52		0.208	0.500	1	08/26/2022 12:08	WG1913985
Nickel	21.4		0.132	2.00	1	08/26/2022 12:08	WG1913985
Selenium	U		0.764	2.00	1	08/26/2022 12:08	WG1913985
Silver	U		0.127	1.00	1	08/26/2022 12:08	WG1913985
Zinc	38.7		0.832	5.00	1	08/26/2022 12:08	WG1913985

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	0.227		0.0167	0.200	1	08/26/2022 19:33	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.59		0.100	1.00	5	08/25/2022 18:41	WG1913984

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	08/24/2022 04:23	WG1914356
(S) a,a,a-Trifluorotoluene(FID)	111			77.0-120		08/24/2022 04:23	WG1914356

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	08/23/2022 16:29	WG1915243
Toluene	U		0.00130	0.00500	1	08/23/2022 16:29	WG1915243
Ethylbenzene	U		0.000737	0.00250	1	08/23/2022 16:29	WG1915243
Xylenes, Total	U		0.000880	0.00650	1	08/23/2022 16:29	WG1915243
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/23/2022 16:29	WG1915243
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/23/2022 16:29	WG1915243
(S) Toluene-d8	109			75.0-131		08/23/2022 16:29	WG1915243
(S) 4-Bromofluorobenzene	101			67.0-138		08/23/2022 16:29	WG1915243
(S) 1,2-Dichloroethane-d4	81.6			70.0-130		08/23/2022 16:29	WG1915243

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	1.69	J	1.61	4.00	1	08/20/2022 21:23	WG1913741
C28-C36 Motor Oil Range	1.63	B J	0.274	4.00	1	08/20/2022 21:23	WG1913741
(S) o-Terphenyl	52.3			18.0-148		08/20/2022 21:23	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 15:52	WG1913756
Anthracene	U		0.00230	0.00600	1	08/21/2022 15:52	WG1913756
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 15:52	WG1913756
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/21/2022 15:52	WG1913756
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 15:52	WG1913756
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 15:52	WG1913756
Chrysene	U		0.00232	0.00600	1	08/21/2022 15:52	WG1913756
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 15:52	WG1913756
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 15:52	WG1913756
Fluorene	U		0.00205	0.00600	1	08/21/2022 15:52	WG1913756
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 15:52	WG1913756
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 15:52	WG1913756
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 15:52	WG1913756
Naphthalene	U		0.00408	0.0200	1	08/21/2022 15:52	WG1913756
Pyrene	U		0.00200	0.00600	1	08/21/2022 15:52	WG1913756
(S) p-Terphenyl-d14	50.9			23.0-120		08/21/2022 15:52	WG1913756
(S) Nitrobenzene-d5	55.4			14.0-149		08/21/2022 15:52	WG1913756
(S) 2-Fluorobiphenyl	54.9			34.0-125		08/21/2022 15:52	WG1913756

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	5.22		1	08/26/2022 10:55	WG1915560

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.345	J	0.255	1.00	1	09/02/2022 13:22	WG1917378

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.84	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:

L1527412-11 WG1915800: 8.84 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	708		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:

L1527412-11 WG1922243: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	214	J5	0.0852	0.500	1	08/26/2022 11:34	WG1913985
Cadmium	0.0702	J	0.0471	0.500	1	08/26/2022 11:34	WG1913985
Copper	11.8		0.400	2.00	1	08/26/2022 11:34	WG1913985
Lead	9.16		0.208	0.500	1	08/26/2022 11:34	WG1913985
Nickel	20.4	O1	0.132	2.00	1	08/26/2022 11:34	WG1913985
Selenium	U		0.764	2.00	1	08/26/2022 11:34	WG1913985
Silver	U		0.127	1.00	1	08/26/2022 11:34	WG1913985
Zinc	35.3		0.832	5.00	1	08/26/2022 11:34	WG1913985

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

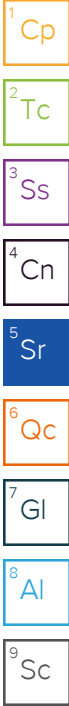
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.566		0.0167	0.200	1	08/26/2022 19:36	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.59		0.100	1.00	5	08/25/2022 18:02	WG1913984

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	08/24/2022 04:01	WG1914356
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		08/24/2022 04:01	WG1914356



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	08/23/2022 16:48	WG1915243
Toluene	U		0.00130	0.00500	1	08/23/2022 16:48	WG1915243
Ethylbenzene	U		0.000737	0.00250	1	08/23/2022 16:48	WG1915243
Xylenes, Total	U		0.000880	0.00650	1	08/23/2022 16:48	WG1915243
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/23/2022 16:48	WG1915243
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/23/2022 16:48	WG1915243
(S) Toluene-d8	109			75.0-131		08/23/2022 16:48	WG1915243
(S) 4-Bromofluorobenzene	100			67.0-138		08/23/2022 16:48	WG1915243
(S) 1,2-Dichloroethane-d4	83.6			70.0-130		08/23/2022 16:48	WG1915243

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	4.22		1.61	4.00	1	08/20/2022 21:50	WG1913741
C28-C36 Motor Oil Range	4.64		0.274	4.00	1	08/20/2022 21:50	WG1913741
(S) o-Terphenyl	52.7			18.0-148		08/20/2022 21:50	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 12:57	WG1913757
Anthracene	U		0.00230	0.00600	1	08/21/2022 12:57	WG1913757
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 12:57	WG1913757
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/21/2022 12:57	WG1913757
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 12:57	WG1913757
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 12:57	WG1913757
Chrysene	U		0.00232	0.00600	1	08/21/2022 12:57	WG1913757
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 12:57	WG1913757
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 12:57	WG1913757
Fluorene	U		0.00205	0.00600	1	08/21/2022 12:57	WG1913757
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 12:57	WG1913757
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 12:57	WG1913757
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 12:57	WG1913757
Naphthalene	U		0.00408	0.0200	1	08/21/2022 12:57	WG1913757
Pyrene	U		0.00200	0.00600	1	08/21/2022 12:57	WG1913757
(S) p-Terphenyl-d14	64.5			23.0-120		08/21/2022 12:57	WG1913757
(S) Nitrobenzene-d5	67.9			14.0-149		08/21/2022 12:57	WG1913757
(S) 2-Fluorobiphenyl	57.8			34.0-125		08/21/2022 12:57	WG1913757

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	14.9		1	08/26/2022 10:58	WG1915560

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	09/02/2022 13:27	WG1917378

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.34	T8	1	08/24/2022 17:30	WG1915800

Sample Narrative:

L1527412-12 WG1915800: 8.34 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1860		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:

L1527412-12 WG1922243: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	278		0.0852	0.500	1	08/26/2022 12:11	WG1913985
Cadmium	0.0575	J	0.0471	0.500	1	08/26/2022 12:11	WG1913985
Copper	12.1		0.400	2.00	1	08/26/2022 12:11	WG1913985
Lead	8.99		0.208	0.500	1	08/26/2022 12:11	WG1913985
Nickel	22.5		0.132	2.00	1	08/26/2022 12:11	WG1913985
Selenium	U		0.764	2.00	1	08/26/2022 12:11	WG1913985
Silver	U		0.127	1.00	1	08/26/2022 12:11	WG1913985
Zinc	38.7		0.832	5.00	1	08/26/2022 12:11	WG1913985

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

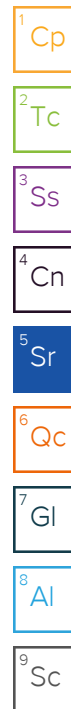
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.94		0.0167	0.200	1	08/26/2022 19:39	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.52		0.100	1.00	5	08/25/2022 18:44	WG1913984

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	08/24/2022 03:39	WG1914356
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	112			77.0-120		08/24/2022 03:39	WG1914356



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	08/23/2022 17:06	WG1915243
Toluene	U		0.00130	0.00500	1	08/23/2022 17:06	WG1915243
Ethylbenzene	U		0.000737	0.00250	1	08/23/2022 17:06	WG1915243
Xylenes, Total	U		0.000880	0.00650	1	08/23/2022 17:06	WG1915243
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/23/2022 17:06	WG1915243
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/23/2022 17:06	WG1915243
(S) Toluene-d8	109			75.0-131		08/23/2022 17:06	WG1915243
(S) 4-Bromofluorobenzene	100			67.0-138		08/23/2022 17:06	WG1915243
(S) 1,2-Dichloroethane-d4	79.9			70.0-130		08/23/2022 17:06	WG1915243

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	18.6		1.61	4.00	1	08/20/2022 23:09	WG1913741
C28-C36 Motor Oil Range	19.8		0.274	4.00	1	08/20/2022 23:09	WG1913741
(S) o-Terphenyl	65.2			18.0-148		08/20/2022 23:09	WG1913741

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
Acenaphthene	U		0.00209	0.00600	1	08/21/2022 13:14	WG1913757
Anthracene	U		0.00230	0.00600	1	08/21/2022 13:14	WG1913757
Benzo(a)anthracene	U		0.00173	0.00600	1	08/21/2022 13:14	WG1913757
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/21/2022 13:14	WG1913757
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/21/2022 13:14	WG1913757
Benzo(a)pyrene	U		0.00179	0.00600	1	08/21/2022 13:14	WG1913757
Chrysene	U		0.00232	0.00600	1	08/21/2022 13:14	WG1913757
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/21/2022 13:14	WG1913757
Fluoranthene	U		0.00227	0.00600	1	08/21/2022 13:14	WG1913757
Fluorene	U		0.00205	0.00600	1	08/21/2022 13:14	WG1913757
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/21/2022 13:14	WG1913757
1-Methylnaphthalene	U		0.00449	0.0200	1	08/21/2022 13:14	WG1913757
2-Methylnaphthalene	U		0.00427	0.0200	1	08/21/2022 13:14	WG1913757
Naphthalene	U		0.00408	0.0200	1	08/21/2022 13:14	WG1913757
Pyrene	U		0.00200	0.00600	1	08/21/2022 13:14	WG1913757
(S) p-Terphenyl-d14	62.8			23.0-120		08/21/2022 13:14	WG1913757
(S) Nitrobenzene-d5	71.1			14.0-149		08/21/2022 13:14	WG1913757
(S) 2-Fluorobiphenyl	68.5			34.0-125		08/21/2022 13:14	WG1913757

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3836809-1 09/09/22 10:56

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

L1526729-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1526729-06 09/09/22 11:17 • (DUP) R3836809-3 09/09/22 11:22

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	5.83	5.80	1	0.538		20

L1527412-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1527412-02 09/09/22 13:42 • (DUP) R3836809-8 09/09/22 13:48

	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) R3836809-2 09/09/22 11:01

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.2	102	80.0-120	

L1526729-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1526729-09 09/09/22 12:14 • (MS) R3836809-4 09/09/22 12:19 • (MSD) R3836809-5 09/09/22 12:35

	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	19.3	19.8	96.6	98.9	1	75.0-125			2.27	20

L1526729-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1526729-09 09/09/22 12:14 • (MS) R3836809-7 09/09/22 12:45

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	646	U	1080	168	50	75.0-125	J5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3835642-1 09/02/22 12:53

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1527412-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1527412-12 09/02/22 13:27 • (DUP) R3835642-3 09/02/22 13:32

	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

L1527720-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1527720-04 09/02/22 14:45 • (DUP) R3835642-8 09/02/22 15:00

	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) R3835642-2 09/02/22 13:01

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.58	95.8	80.0-120	

L1527710-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527710-03 09/02/22 14:08 • (MS) R3835642-4 09/02/22 14:13 • (MSD) R3835642-5 09/02/22 14:19

	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	11.2	14.3	55.9	71.3	1	75.0-125	J6	J3 J6	24.2	20

Sample Narrative:

OS: Sample is a reducer.

L1527710-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1527710-03 09/02/22 14:08 • (MS) R3835642-7 09/02/22 14:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Hexavalent Chromium	643	U	577	89.7	50	75.0-125	

Sample Narrative:

OS: Sample is a reducer.

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1527412-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1527412-03 08/24/22 17:30 • (DUP) R3830059-2 08/24/22 17:30

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	9.43	9.45	1	0.212		1

Sample Narrative:

OS: 9.43 at 22.6C

DUP: 9.45 at 22.7C



L1527412-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1527412-08 08/24/22 17:30 • (DUP) R3830059-3 08/24/22 17:30

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	9.02	8.97	1	0.556		1

Sample Narrative:

OS: 9.02 at 22.5C

DUP: 8.97 at 22.8C

Laboratory Control Sample (LCS)

(LCS) R3830059-1 08/24/22 17:30

	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 21.7C

Method Blank (MB)

(MB) R3835497-1 09/09/22 12:50

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

L1527410-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1527410-02 09/09/22 12:50 • (DUP) R3835497-3 09/09/22 12:50

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	102	102	1	0.000		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1527410-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1527410-03 09/09/22 12:50 • (DUP) R3835497-4 09/09/22 12:50

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	129	130	1	0.693		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3835497-2 09/09/22 12:50

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1140	102	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3835430-1 09/09/22 11:20

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

L1527412-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1527412-06 09/09/22 11:20 • (DUP) R3835430-3 09/09/22 11:20

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	335	340	1	1.48		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1527710-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1527710-01 09/09/22 11:20 • (DUP) R3835430-4 09/09/22 11:20

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	367	360	1	1.93		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3835430-2 09/09/22 11:20

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3830404-1 08/25/22 10:33

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	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) R3830404-2 08/25/22 10:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	101	101	80.0-120	
Cadmium	100	97.4	97.4	80.0-120	
Copper	100	98.2	98.2	80.0-120	
Lead	100	95.9	95.9	80.0-120	
Nickel	100	96.5	96.5	80.0-120	
Selenium	100	97.1	97.1	80.0-120	
Silver	20.0	19.3	96.5	80.0-120	
Zinc	100	94.3	94.3	80.0-120	

L1527412-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527412-02 08/25/22 10:39 • (MS) R3830404-5 08/25/22 10:47 • (MSD) R3830404-6 08/25/22 10:50

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	217	303	234	86.5	17.1	1	75.0-125		J3 J6	25.8	20
Cadmium	100	0.0778	97.3	96.4	97.2	96.3	1	75.0-125			0.963	20
Copper	100	12.2	112	108	99.6	96.3	1	75.0-125			3.06	20
Lead	100	8.20	101	98.5	92.6	90.3	1	75.0-125			2.29	20
Nickel	100	21.0	117	115	95.9	94.3	1	75.0-125			1.42	20
Selenium	100	1.13	95.6	94.8	94.4	93.6	1	75.0-125			0.865	20
Silver	20.0	U	19.1	18.9	95.6	94.3	1	75.0-125			1.31	20
Zinc	100	39.5	127	131	87.2	91.7	1	75.0-125			3.52	20

Method Blank (MB)

(MB) R3830941-1 08/26/22 11:29

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	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) R3830941-2 08/26/22 11:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	97.4	97.4	80.0-120	
Cadmium	100	93.3	93.3	80.0-120	
Copper	100	95.4	95.4	80.0-120	
Lead	100	93.6	93.6	80.0-120	
Nickel	100	93.7	93.7	80.0-120	
Selenium	100	95.4	95.4	80.0-120	
Silver	20.0	18.3	91.7	80.0-120	
Zinc	100	91.2	91.2	80.0-120	

L1527412-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527412-11 08/26/22 11:34 • (MS) R3830941-5 08/26/22 11:42 • (MSD) R3830941-6 08/26/22 11:45

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	214	395	325	180	111	1	75.0-125	J5		19.3	20
Cadmium	100	0.0702	106	106	105	106	1	75.0-125			0.275	20
Copper	100	11.8	119	119	107	107	1	75.0-125			0.165	20
Lead	100	9.16	109	109	100	99.6	1	75.0-125			0.611	20
Nickel	100	20.4	122	124	102	103	1	75.0-125			1.44	20
Selenium	100	U	105	106	105	106	1	75.0-125			0.824	20
Silver	20.0	U	20.5	20.5	103	103	1	75.0-125			0.0349	20
Zinc	100	35.3	131	134	96.2	98.9	1	75.0-125			2.05	20

Method Blank (MB)

(MB) R3830973-1 08/26/22 14:29

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) R3830973-2 08/26/22 14:32 • (LCSD) R3830973-3 08/26/22 14:34

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	1.01	1.01	101	101	80.0-120			0.300	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3831219-1 08/26/22 18:57

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) R3831219-2 08/26/22 18:59 • (LCSD) R3831219-3 08/26/22 19:02

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	1.08	1.03	108	103	80.0-120			4.38	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3829852-1 08/24/22 10:50

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) R3829852-2 08/24/22 10:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	93.1	93.1	80.0-120	

L1527412-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527412-02 08/24/22 10:56 • (MS) R3829852-5 08/24/22 11:06 • (MSD) R3829852-6 08/24/22 11:09

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	3.54	89.7	88.9	86.1	85.4	5	75.0-125			0.858	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3830609-1 08/25/22 17:56

	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) R3830609-2 08/25/22 17:59

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	92.3	92.3	80.0-120	

L1527412-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527412-11 08/25/22 18:02 • (MS) R3830609-5 08/25/22 18:12 • (MSD) R3830609-6 08/25/22 18:15

	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	2.59	97.3	99.6	94.7	97.0	5	75.0-125			2.30	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3828688-2 08/21/22 07:54

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)	92.4			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3828688-1 08/21/22 07:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.88	88.7	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			99.9	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3829964-3 08/24/22 03:18

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)	112			77.0-120

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

(LCS) R3829964-1 08/23/22 23:46 • (LCSD) R3829964-2 08/24/22 00:07

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 %
TPH (GC/FID) Low Fraction	5.50	5.16	4.49	93.8	81.6	72.0-127			13.9	20
(S) a,a,a-Trifluorotoluene(FID)				103	102	77.0-120				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3829906-2 08/22/22 11:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
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	103			75.0-131
(S) 4-Bromofluorobenzene	97.6			67.0-138
(S) 1,2-Dichloroethane-d4	97.9			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3829906-1 08/22/22 10:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.105	84.0	70.0-123	
Toluene	0.125	0.106	84.8	75.0-121	
Ethylbenzene	0.125	0.110	88.0	74.0-126	
Xylenes, Total	0.375	0.317	84.5	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.114	91.2	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.116	92.8	73.0-127	
(S) Toluene-d8			103	75.0-131	
(S) 4-Bromofluorobenzene			96.6	67.0-138	
(S) 1,2-Dichloroethane-d4			99.1	70.0-130	

L1527198-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527198-01 08/22/22 15:24 • (MS) R3829906-3 08/22/22 21:44 • (MSD) R3829906-4 08/22/22 22:03

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	0.124	U	0.126	0.118	102	95.2	1	10.0-149			6.56	37
Toluene	0.124	0.00510	0.149	0.135	116	105	1	10.0-156			9.86	38
Ethylbenzene	0.124	U	0.130	0.113	105	91.1	1	10.0-160			14.0	38
Xylenes, Total	0.372	0.00245	0.364	0.356	97.2	95.0	1	10.0-160			2.22	38
1,2,4-Trimethylbenzene	0.124	U	0.132	0.111	106	89.5	1	10.0-160			17.3	36
1,3,5-Trimethylbenzene	0.124	0.00398	0.149	0.129	117	101	1	10.0-160			14.4	38
(S) Toluene-d8					100	102		75.0-131				
(S) 4-Bromofluorobenzene					101	101		67.0-138				
(S) 1,2-Dichloroethane-d4					99.6	99.6		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3829407-3 08/22/22 21:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
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	106			75.0-131
(S) 4-Bromofluorobenzene	96.7			67.0-138
(S) 1,2-Dichloroethane-d4	94.8			70.0-130

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

(LCS) R3829407-1 08/22/22 20:38 • (LCSD) R3829407-2 08/22/22 20:57

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	0.123	0.119	98.4	95.2	70.0-123			3.31	20
Toluene	0.125	0.116	0.118	92.8	94.4	75.0-121			1.71	20
Ethylbenzene	0.125	0.112	0.111	89.6	88.8	74.0-126			0.897	20
Xylenes, Total	0.375	0.334	0.339	89.1	90.4	72.0-127			1.49	20
1,2,4-Trimethylbenzene	0.125	0.113	0.115	90.4	92.0	70.0-126			1.75	20
1,3,5-Trimethylbenzene	0.125	0.114	0.115	91.2	92.0	73.0-127			0.873	20
(S) Toluene-d8				103	103	75.0-131				
(S) 4-Bromofluorobenzene				102	100	67.0-138				
(S) 1,2-Dichloroethane-d4				111	112	70.0-130				

L1527412-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527412-03 08/23/22 03:00 • (MS) R3829407-4 08/23/22 05:51 • (MSD) R3829407-5 08/23/22 06:10

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	0.122	0.139	97.6	111	1	10.0-149			13.0	37
Toluene	0.125	U	0.118	0.141	94.4	113	1	10.0-156			17.8	38
Ethylbenzene	0.125	U	0.109	0.132	87.2	106	1	10.0-160			19.1	38
Xylenes, Total	0.375	U	0.340	0.393	90.7	105	1	10.0-160			14.5	38
1,2,4-Trimethylbenzene	0.125	U	0.119	0.138	95.2	110	1	10.0-160			14.8	36
1,3,5-Trimethylbenzene	0.125	U	0.122	0.141	97.6	113	1	10.0-160			14.4	38
(S) Toluene-d8					101	105		75.0-131				
(S) 4-Bromofluorobenzene					96.8	99.0		67.0-138				
(S) 1,2-Dichloroethane-d4					98.4	99.9		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3830814-3 08/23/22 15:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
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	101			67.0-138
(S) 1,2-Dichloroethane-d4	86.3			70.0-130

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

(LCS) R3830814-1 08/23/22 11:00 • (LCSD) R3830814-2 08/23/22 11:19

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	0.122	95.2	97.6	70.0-123			2.49	20
Toluene	0.125	0.130	0.131	104	105	75.0-121			0.766	20
Ethylbenzene	0.125	0.132	0.135	106	108	74.0-126			2.25	20
Xylenes, Total	0.375	0.391	0.393	104	105	72.0-127			0.510	20
1,2,4-Trimethylbenzene	0.125	0.123	0.121	98.4	96.8	70.0-126			1.64	20
1,3,5-Trimethylbenzene	0.125	0.121	0.126	96.8	101	73.0-127			4.05	20
(S) Toluene-d8				110	107	75.0-131				
(S) 4-Bromofluorobenzene				102	98.9	67.0-138				
(S) 1,2-Dichloroethane-d4				89.2	86.1	70.0-130				

L1527720-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527720-03 08/23/22 20:33 • (MS) R3830814-4 08/23/22 22:06 • (MSD) R3830814-5 08/23/22 22:25

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 %
Benzene	0.125	U	0.129	0.136	103	109	1	10.0-149			5.28	37
Toluene	0.125	U	0.142	0.146	114	117	1	10.0-156			2.78	38
Ethylbenzene	0.125	U	0.145	0.153	116	122	1	10.0-160			5.37	38
Xylenes, Total	0.375	U	0.411	0.416	110	111	1	10.0-160			1.21	38
1,2,4-Trimethylbenzene	0.125	U	0.128	0.131	102	105	1	10.0-160			2.32	36
1,3,5-Trimethylbenzene	0.125	U	0.135	0.139	108	111	1	10.0-160			2.92	38
(S) Toluene-d8					108	110		75.0-131				
(S) 4-Bromofluorobenzene					101	100		67.0-138				
(S) 1,2-Dichloroethane-d4					76.0	80.7		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3828779-1 08/20/22 14:47

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	0.388	⌵	0.274	4.00
(S) o-Terphenyl	58.0			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3828779-2 08/20/22 15:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	33.9	67.8	50.0-150	
(S) o-Terphenyl			81.5	18.0-148	

L1527410-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527410-03 08/20/22 19:38 • (MS) R3828779-3 08/20/22 19:51 • (MSD) R3828779-4 08/20/22 20:04

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 %
C10-C28 Diesel Range	47.7	U	30.1	34.4	63.1	69.5	1	50.0-150			13.3	20
(S) o-Terphenyl					74.1	78.9		18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3829314-2 08/21/22 09:58

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	72.9			23.0-120
(S) Nitrobenzene-d5	74.0			14.0-149
(S) 2-Fluorobiphenyl	76.6			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3829314-1 08/21/22 09:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0554	69.3	50.0-120	
Anthracene	0.0800	0.0599	74.9	50.0-126	
Benzo(a)anthracene	0.0800	0.0587	73.4	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0532	66.5	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0535	66.9	49.0-125	
Benzo(a)pyrene	0.0800	0.0585	73.1	42.0-120	
Chrysene	0.0800	0.0571	71.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0520	65.0	47.0-125	
Fluoranthene	0.0800	0.0587	73.4	49.0-129	
Fluorene	0.0800	0.0581	72.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0555	69.4	46.0-125	
1-Methylnaphthalene	0.0800	0.0537	67.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0548	68.5	50.0-120	
Naphthalene	0.0800	0.0525	65.6	50.0-120	
Pyrene	0.0800	0.0565	70.6	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3829314-1 08/21/22 09:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			65.7	23.0-120	
(S) Nitrobenzene-d5			74.6	14.0-149	
(S) 2-Fluorobiphenyl			71.5	34.0-125	

L1527380-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527380-01 08/21/22 16:12 • (MS) R3829314-3 08/21/22 16:31 • (MSD) R3829314-4 08/21/22 16:51

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	0.0800	U	0.0616	0.0538	77.0	67.3	1	14.0-127			13.5	27
Anthracene	0.0800	U	0.0628	0.0554	78.5	69.3	1	10.0-145			12.5	30
Benzo(a)anthracene	0.0800	U	0.0690	0.0600	86.3	75.0	1	10.0-139			14.0	30
Benzo(b)fluoranthene	0.0800	U	0.0575	0.0491	71.9	61.4	1	10.0-140			15.8	36
Benzo(k)fluoranthene	0.0800	0.0167	0.0630	0.0558	57.9	48.9	1	10.0-137			12.1	31
Benzo(a)pyrene	0.0800	U	0.0671	0.0570	83.9	71.3	1	10.0-141			16.3	31
Chrysene	0.0800	U	0.0642	0.0543	80.3	67.9	1	10.0-145			16.7	30
Dibenz(a,h)anthracene	0.0800	U	0.0526	0.0435	65.8	54.4	1	10.0-132			18.9	31
Fluoranthene	0.0800	0.00489	0.0653	0.0580	75.5	66.4	1	10.0-153			11.8	33
Fluorene	0.0800	0.0221	0.0778	0.0731	69.6	63.8	1	11.0-130			6.23	29
Indeno(1,2,3-cd)pyrene	0.0800	U	0.0614	0.0499	76.8	62.4	1	10.0-137			20.7	32
1-Methylnaphthalene	0.0800	0.0367	0.0845	0.0826	59.8	57.4	1	10.0-142			2.27	28
2-Methylnaphthalene	0.0800	0.0576	0.0999	0.104	52.9	58.0	1	10.0-137			4.02	28
Naphthalene	0.0800	0.0314	0.0789	0.0753	59.4	54.9	1	10.0-135			4.67	27
Pyrene	0.0800	0.0426	0.0858	0.0867	54.0	55.1	1	10.0-148			1.04	35
(S) p-Terphenyl-d14					71.7	59.5		23.0-120				
(S) Nitrobenzene-d5					93.5	80.3		14.0-149				
(S) 2-Fluorobiphenyl					72.1	58.5		34.0-125				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

Method Blank (MB)

(MB) R3829388-2 08/21/22 11:47

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	78.3			23.0-120
(S) Nitrobenzene-d5	75.1			14.0-149
(S) 2-Fluorobiphenyl	75.9			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3829388-1 08/21/22 11:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0651	81.4	50.0-120	
Anthracene	0.0800	0.0630	78.8	50.0-126	
Benzo(a)anthracene	0.0800	0.0642	80.3	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0655	81.9	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0668	83.5	49.0-125	
Benzo(a)pyrene	0.0800	0.0671	83.9	42.0-120	
Chrysene	0.0800	0.0676	84.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0620	77.5	47.0-125	
Fluoranthene	0.0800	0.0672	84.0	49.0-129	
Fluorene	0.0800	0.0675	84.4	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0654	81.8	46.0-125	
1-Methylnaphthalene	0.0800	0.0629	78.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0652	81.5	50.0-120	
Naphthalene	0.0800	0.0621	77.6	50.0-120	
Pyrene	0.0800	0.0694	86.8	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3829388-1 08/21/22 11:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			83.9	23.0-120	
(S) Nitrobenzene-d5			81.3	14.0-149	
(S) 2-Fluorobiphenyl			82.4	34.0-125	

L1527348-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527348-10 08/21/22 15:16 • (MS) R3829388-3 08/21/22 15:33 • (MSD) R3829388-4 08/21/22 15:51

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 %
Acenaphthene	0.0800	0.00280	0.0673	0.0634	80.6	75.8	1	14.0-127			5.97	27
Anthracene	0.0800	0.0161	0.0786	0.0856	78.1	86.9	1	10.0-145			8.53	30
Benzo(a)anthracene	0.0800	0.0527	0.104	0.198	64.1	182	1	10.0-139		J3 J5	62.3	30
Benzo(b)fluoranthene	0.0800	0.0891	0.118	0.298	36.1	261	1	10.0-140		J3 J5	86.5	36
Benzo(k)fluoranthene	0.0800	0.0352	0.0859	0.156	63.4	151	1	10.0-137		J3 J5	58.0	31
Benzo(a)pyrene	0.0800	0.0990	0.129	0.316	37.5	271	1	10.0-141		J3 J5	84.0	31
Chrysene	0.0800	0.0488	0.111	0.221	77.8	215	1	10.0-145		J3 J5	66.3	30
Dibenz(a,h)anthracene	0.0800	0.0207	0.0753	0.0944	68.3	92.1	1	10.0-132			22.5	31
Fluoranthene	0.0800	0.0647	0.118	0.215	66.6	188	1	10.0-153		J3 J5	58.3	33
Fluorene	0.0800	0.00680	0.0728	0.0713	82.5	80.6	1	11.0-130			2.08	29
Indeno(1,2,3-cd)pyrene	0.0800	0.127	0.147	0.336	25.0	261	1	10.0-137		J3 J5	78.3	32
1-Methylnaphthalene	0.0800	0.107	0.0760	0.0712	0.000	0.000	1	10.0-142	J6	J6	6.52	28
2-Methylnaphthalene	0.0800	0.242	0.0920	0.0878	0.000	0.000	1	10.0-137	J6	J6	4.67	28
Naphthalene	0.0800	0.515	0.106	0.128	0.000	0.000	1	10.0-135	V	V	18.8	27
Pyrene	0.0800	0.0643	0.117	0.214	65.9	187	1	10.0-148		J3 J5	58.6	35
(S) p-Terphenyl-d14					82.3	73.4		23.0-120				
(S) Nitrobenzene-d5					86.9	77.6		14.0-149				
(S) 2-Fluorobiphenyl					85.0	76.1		34.0-125				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

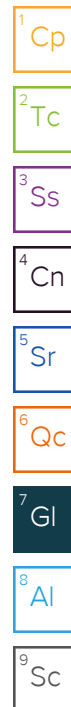
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
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.



Caerus Oil & Gas LLC 143 Diamond Avenue Parachute, CO 81635 970-285-9606				Billing Information:				Analysis / Container / Preservative										Chain of Custody Page <u>1</u> of <u>2</u>	
				Same as above														 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859	
Report to: bmiddleton@caerusoilandgas.com				Email To: bmiddleton@caerusoilandgas.com				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH - GRO, DRO, ORO</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TABLE 915-1 - PAH's</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">SAR, EC, pH, Boron</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TABLE 915-1 - Metals</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">1,2,4- Trimethylbenzene</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">1,3,5- Trimethylbenzene</div> </div>										L# <u>U527412</u> D058 Acctnum: Template: Prelogin: TSR: PB: Shipped Via:	
Project Description: YCF 27-13-1 Facility Decommissioning				City/State Collected: Yellow Creek, CO															
Phone:		Client Project #		Lab Project #															
Fax:		YCF 27-13-1		YCF 27-13-1															
Collected by (print): <u>K. MORELAND</u>		Site/Facility ID #		P.O. #															
Collected by (signature): <u>K. Moreland</u>		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		Quote #															
Immediately Packed on Ice N <input type="checkbox"/> Y <input checked="" type="checkbox"/>				Date Results Needed Standard TAT		No. of Cntrs													
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time													
20220817-YCF 27-13-1 (ACCESS Rd. VAULT)		GRAB	SS	0"-1"	8/17/22	835	3												
20220817-YCF 27-13-1 (PH01) @ 0'				0'		850													
20220817-YCF 27-13-1 (TANK A)				0"-1'		950													
20220817-YCF 27-13-1 (TANK B)				0"-1'		955													
20220817-YCF 27-13-1 (TANK C)				0"-1'		1000													
20220817-YCF 27-13-1 (SEP) @ 4.5'				4.5		1030													
20220817-YCF 27-13-1 (SEP 90) @ 3'				3'		1050													
20220817-YCF 27-13-1 (PAD VAULT)				0"-1'		1120													
20220817-YCF 27-13-1 (METER S&SD)				0"-1'		1400													
20220817-YCF 27-13-1 (OFF LOC. FLOW LINE) @ 5'		✓	✓	5'	✓	1415	✓												
* Matrix:		Remarks:																	
SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - Waste Water DW - Drinking Water OT - Other		pH _____ Temp _____ Flow _____ Other _____																	
Samples returned via:		Tracking #																	
<input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier																			
Relinquished by: (Signature) <u>K. Moreland</u>		Date: <u>8/18/22</u>	Time: <u>1300</u>	Received by: (Signature) <u>[Signature]</u>		Trip Blank Received: Yes / No HCL / MeOH TBR													
Relinquished by: (Signature) <u>[Signature]</u>		Date: <u>8/18/22</u>	Time: <u>1500</u>	Received by: (Signature) <u>[Signature]</u>		Temp: °C Bottles Received: <u>36</u>													
Relinquished by: (Signature) <u>[Signature]</u>		Date:	Time:	Received for lab by: (Signature) <u>D. Ramsey</u>		Date:	Time:												
						Hold:	Condition: NCF / OK /												

[illegible]

U522412

<u>Tracking Numbers</u>		<u>Temperature</u>
57558084 9451		NSA6 2.7+0± 2-7
5755 8084 9234		NSA6 4.0+0± 4-6

Caerus Oil and Gas

Sample Delivery Group: L1527410
Samples Received: 08/19/2022
Project Number: YCF 27-13-1
Description: YCF 27-13-1 Facility Decommissioning
Site: YCF 27-13-1
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

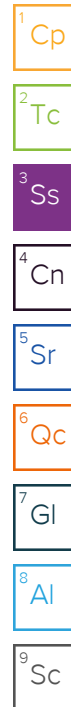
20220817-YCF 27-13-1 (BGW). L1527410-01 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 13:10

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915249	1	08/30/22 15:58	08/30/22 15:58	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1916042	1	08/25/22 10:00	08/25/22 12:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922234	1	09/07/22 11:28	09/09/22 12:50	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914113	1	08/22/22 10:52	08/26/22 15:31	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1915940	5	08/24/22 16:47	08/25/22 19:56	LD	Mt. Juliet, TN



20220817-YCF 27-13-1 (BGW) @ 1.5-2' L1527410-02 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 13:20

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915249	1	08/30/22 16:01	08/30/22 16:01	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1916042	1	08/25/22 10:00	08/25/22 12:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922234	1	09/07/22 11:28	09/09/22 12:50	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914113	1	08/22/22 10:52	08/26/22 15:39	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1915940	5	08/24/22 16:47	08/25/22 19:59	LD	Mt. Juliet, TN

20220817-YCF 27-13-1 (BGW) @ 2.5-3' L1527410-03 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 13:35

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915249	1	08/30/22 16:04	08/30/22 16:04	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917376	1	09/02/22 00:22	09/09/22 13:22	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1916042	1	08/25/22 10:00	08/25/22 12:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922234	1	09/07/22 11:28	09/09/22 12:50	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913981	1	08/23/22 09:44	08/25/22 11:49	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914113	1	08/22/22 10:52	08/26/22 15:42	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913980	5	08/23/22 09:21	08/24/22 12:15	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914069	1	08/20/22 16:44	08/21/22 13:02	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1914699	1	08/20/22 16:44	08/22/22 19:50	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1915898	1	08/20/22 16:44	08/25/22 03:58	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/20/22 19:38	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913756	1	08/20/22 15:03	08/21/22 12:55	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.



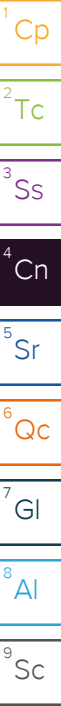
Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 09/14/22 12:17

Project Narrative

Rerun for correct project info



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.108		1	08/30/2022 15:58	WG1915249

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.31	T8	1	08/25/2022 12:00	WG1916042

Sample Narrative:

L1527410-01 WG1916042: 8.31 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	148		10.0	1	09/09/2022 12:50	WG1922234

Sample Narrative:

L1527410-01 WG1922234: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	mg/l		mg/l			
Hot Water Sol. Boron	ND		0.200	1	08/26/2022 15:31	WG1914113

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	mg/kg		mg/kg			
Arsenic	3.68		1.00	5	08/25/2022 19:56	WG1915940

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	0.161		1	08/30/2022 16:01	WG1915249

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.40	T8	1	08/25/2022 12:00	WG1916042

Sample Narrative:

L1527410-02 WG1916042: 8.4 at 22.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	102		umhos/cm	1	09/09/2022 12:50	WG1922234

Sample Narrative:

L1527410-02 WG1922234: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		mg/l	1	08/26/2022 15:39	WG1914113

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.73		mg/kg	5	08/25/2022 19:59	WG1915940

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	0.413		1	08/30/2022 16:04	WG1915249

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	09/09/2022 13:22	WG1917376

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.48	T8	1	08/25/2022 12:00	WG1916042

Sample Narrative:

L1527410-03 WG1916042: 8.48 at 21.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	129		10.0	1	09/09/2022 12:50	WG1922234

Sample Narrative:

L1527410-03 WG1922234: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	258		0.500	1	08/25/2022 11:49	WG1913981
Cadmium	ND		0.500	1	08/25/2022 11:49	WG1913981
Copper	10.7		2.00	1	08/25/2022 11:49	WG1913981
Lead	8.12		0.500	1	08/25/2022 11:49	WG1913981
Nickel	17.7		2.00	1	08/25/2022 11:49	WG1913981
Selenium	ND		2.00	1	08/25/2022 11:49	WG1913981
Silver	ND		1.00	1	08/25/2022 11:49	WG1913981
Zinc	36.0		5.00	1	08/25/2022 11:49	WG1913981

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.200	1	08/26/2022 15:42	WG1914113

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.22		1.00	5	08/24/2022 12:15	WG1913980

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	08/21/2022 13:02	WG1914069
(S) a,a,a-Trifluorotoluene(FID)	91.4		77.0-120		08/21/2022 13:02	WG1914069

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	08/22/2022 19:50	WG1914699
Toluene	ND		0.00500	1	08/25/2022 03:58	WG1915898
Ethylbenzene	ND		0.00250	1	08/25/2022 03:58	WG1915898
Xylenes, Total	0.0220		0.00650	1	08/25/2022 03:58	WG1915898
1,2,4-Trimethylbenzene	ND		0.00500	1	08/25/2022 03:58	WG1915898
1,3,5-Trimethylbenzene	ND		0.00500	1	08/25/2022 03:58	WG1915898
(S) Toluene-d8	103		75.0-131		08/22/2022 19:50	WG1914699
(S) Toluene-d8	110		75.0-131		08/25/2022 03:58	WG1915898
(S) 4-Bromofluorobenzene	97.2		67.0-138		08/22/2022 19:50	WG1914699
(S) 4-Bromofluorobenzene	103		67.0-138		08/25/2022 03:58	WG1915898
(S) 1,2-Dichloroethane-d4	90.9		70.0-130		08/22/2022 19:50	WG1914699
(S) 1,2-Dichloroethane-d4	77.6		70.0-130		08/25/2022 03:58	WG1915898

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		4.00	1	08/20/2022 19:38	WG1913741
C28-C36 Motor Oil Range	ND		4.00	1	08/20/2022 19:38	WG1913741
(S) o-Terphenyl	50.8		18.0-148		08/20/2022 19:38	WG1913741

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	08/21/2022 12:55	WG1913756
Anthracene	ND		0.00600	1	08/21/2022 12:55	WG1913756
Benzo(a)anthracene	ND		0.00600	1	08/21/2022 12:55	WG1913756
Benzo(b)fluoranthene	ND		0.00600	1	08/21/2022 12:55	WG1913756
Benzo(k)fluoranthene	ND		0.00600	1	08/21/2022 12:55	WG1913756
Benzo(a)pyrene	ND		0.00600	1	08/21/2022 12:55	WG1913756
Chrysene	ND		0.00600	1	08/21/2022 12:55	WG1913756
Dibenz(a,h)anthracene	ND		0.00600	1	08/21/2022 12:55	WG1913756
Fluoranthene	ND		0.00600	1	08/21/2022 12:55	WG1913756
Fluorene	ND		0.00600	1	08/21/2022 12:55	WG1913756
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/21/2022 12:55	WG1913756
1-Methylnaphthalene	ND		0.0200	1	08/21/2022 12:55	WG1913756
2-Methylnaphthalene	ND		0.0200	1	08/21/2022 12:55	WG1913756
Naphthalene	ND		0.0200	1	08/21/2022 12:55	WG1913756
Pyrene	ND		0.00600	1	08/21/2022 12:55	WG1913756
(S) p-Terphenyl-d14	75.4		23.0-120		08/21/2022 12:55	WG1913756
(S) Nitrobenzene-d5	73.7		14.0-149		08/21/2022 12:55	WG1913756
(S) 2-Fluorobiphenyl	79.7		34.0-125		08/21/2022 12:55	WG1913756

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3836809-1 09/09/22 10:56

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

L1526729-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1526729-06 09/09/22 11:17 • (DUP) R3836809-3 09/09/22 11:22

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	5.83	5.80	1	0.538		20

L1527412-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1527412-02 09/09/22 13:42 • (DUP) R3836809-8 09/09/22 13:48

	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) R3836809-2 09/09/22 11:01

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.2	102	80.0-120	

L1526729-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1526729-09 09/09/22 12:14 • (MS) R3836809-4 09/09/22 12:19 • (MSD) R3836809-5 09/09/22 12:35

	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	19.3	19.8	96.6	98.9	1	75.0-125			2.27	20

L1526729-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1526729-09 09/09/22 12:14 • (MS) R3836809-7 09/09/22 12:45

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	646	ND	1080	168	50	75.0-125	J5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1527198-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1527198-03 08/25/22 12:00 • (DUP) R3830338-2 08/25/22 12:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.68	7.73	1	0.649		1

Sample Narrative:

OS: 7.68 at 22.5C

DUP: 7.73 at 22.2C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1527896-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1527896-02 08/25/22 12:00 • (DUP) R3830338-3 08/25/22 12:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.52	7.53	1	0.133		1

Sample Narrative:

OS: 7.52 at 22.4C

DUP: 7.53 at 22.5C

Laboratory Control Sample (LCS)

(LCS) R3830338-1 08/25/22 12:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.93	99.3	99.0-101	

Sample Narrative:

LCS: 9.93 at 22C

Method Blank (MB)

(MB) R3835497-1 09/09/22 12:50

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

L1527410-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1527410-02 09/09/22 12:50 • (DUP) R3835497-3 09/09/22 12:50

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	102	102	1	0.000		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1527410-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1527410-03 09/09/22 12:50 • (DUP) R3835497-4 09/09/22 12:50

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	129	130	1	0.693		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3835497-2 09/09/22 12:50

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1140	102	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) R3830404-1 08/25/22 10:33

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	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) R3830404-2 08/25/22 10:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	101	101	80.0-120	
Cadmium	100	97.4	97.4	80.0-120	
Copper	100	98.2	98.2	80.0-120	
Lead	100	95.9	95.9	80.0-120	
Nickel	100	96.5	96.5	80.0-120	
Selenium	100	97.1	97.1	80.0-120	
Silver	20.0	19.3	96.5	80.0-120	
Zinc	100	94.3	94.3	80.0-120	

L1527412-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527412-02 08/25/22 10:39 • (MS) R3830404-5 08/25/22 10:47 • (MSD) R3830404-6 08/25/22 10:50

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	217	303	234	86.5	17.1	1	75.0-125		J3 J6	25.8	20
Cadmium	100	ND	97.3	96.4	97.2	96.3	1	75.0-125			0.963	20
Copper	100	12.2	112	108	99.6	96.3	1	75.0-125			3.06	20
Lead	100	8.20	101	98.5	92.6	90.3	1	75.0-125			2.29	20
Nickel	100	21.0	117	115	95.9	94.3	1	75.0-125			1.42	20
Selenium	100	ND	95.6	94.8	94.4	93.6	1	75.0-125			0.865	20
Silver	20.0	ND	19.1	18.9	95.6	94.3	1	75.0-125			1.31	20
Zinc	100	39.5	127	131	87.2	91.7	1	75.0-125			3.52	20

Method Blank (MB)

(MB) R3830973-1 08/26/22 14:29

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) R3830973-2 08/26/22 14:32 • (LCSD) R3830973-3 08/26/22 14:34

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	1.01	1.01	101	101	80.0-120			0.300	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3829852-1 08/24/22 10:50

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) R3829852-2 08/24/22 10:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	93.1	93.1	80.0-120	

L1527412-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527412-02 08/24/22 10:56 • (MS) R3829852-5 08/24/22 11:06 • (MSD) R3829852-6 08/24/22 11:09

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	3.54	89.7	88.9	86.1	85.4	5	75.0-125			0.858	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3830616-1 08/25/22 19:33

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3830616-2 08/25/22 19:36

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

⁷Gl

⁸Al

⁹Sc

L1527809-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527809-03 08/25/22 19:40 • (MS) R3830616-5 08/25/22 19:49 • (MSD) R3830616-6 08/25/22 19:53

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	4.37	98.7	97.1	94.4	92.7	5	75.0-125			1.68	20

Method Blank (MB)

(MB) R3828688-2 08/21/22 07:54

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)	92.4			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3828688-1 08/21/22 07:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.88	88.7	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			99.9	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) R3829906-2 08/22/22 11:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
(S) Toluene-d8	103			75.0-131
(S) 4-Bromofluorobenzene	97.6			67.0-138
(S) 1,2-Dichloroethane-d4	97.9			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3829906-1 08/22/22 10:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.105	84.0	70.0-123	
(S) Toluene-d8			103	75.0-131	
(S) 4-Bromofluorobenzene			96.6	67.0-138	
(S) 1,2-Dichloroethane-d4			99.1	70.0-130	

L1527198-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527198-01 08/22/22 15:24 • (MS) R3829906-3 08/22/22 21:44 • (MSD) R3829906-4 08/22/22 22:03

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	0.124	ND	0.126	0.118	102	95.2	1	10.0-149			6.56	37
(S) Toluene-d8					100	102		75.0-131				
(S) 4-Bromofluorobenzene					101	101		67.0-138				
(S) 1,2-Dichloroethane-d4					99.6	99.6		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3830251-3 08/24/22 22:01

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	104			75.0-131
(S) 4-Bromofluorobenzene	98.1			67.0-138
(S) 1,2-Dichloroethane-d4	89.3			70.0-130

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

(LCS) R3830251-1 08/24/22 20:07 • (LCSD) R3830251-2 08/24/22 20:25

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	0.113	0.120	90.4	96.0	75.0-121			6.01	20
Ethylbenzene	0.125	0.117	0.127	93.6	102	74.0-126			8.20	20
Xylenes, Total	0.375	0.336	0.364	89.6	97.1	72.0-127			8.00	20
1,2,4-Trimethylbenzene	0.125	0.102	0.116	81.6	92.8	70.0-126			12.8	20
1,3,5-Trimethylbenzene	0.125	0.109	0.124	87.2	99.2	73.0-127			12.9	20
(S) Toluene-d8				107	107	75.0-131				
(S) 4-Bromofluorobenzene				100	98.3	67.0-138				
(S) 1,2-Dichloroethane-d4				89.3	90.5	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3828779-1 08/20/22 14:47

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	0.388	⬇	0.274	4.00
(S) o-Terphenyl	58.0			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3828779-2 08/20/22 15:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	33.9	67.8	50.0-150	
(S) o-Terphenyl			81.5	18.0-148	

L1527410-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527410-03 08/20/22 19:38 • (MS) R3828779-3 08/20/22 19:51 • (MSD) R3828779-4 08/20/22 20:04

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 %
C10-C28 Diesel Range	47.7	ND	30.1	34.4	63.1	69.5	1	50.0-150			13.3	20
(S) o-Terphenyl					74.1	78.9		18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3829314-2 08/21/22 09:58

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	72.9			23.0-120
(S) Nitrobenzene-d5	74.0			14.0-149
(S) 2-Fluorobiphenyl	76.6			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3829314-1 08/21/22 09:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0554	69.3	50.0-120	
Anthracene	0.0800	0.0599	74.9	50.0-126	
Benzo(a)anthracene	0.0800	0.0587	73.4	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0532	66.5	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0535	66.9	49.0-125	
Benzo(a)pyrene	0.0800	0.0585	73.1	42.0-120	
Chrysene	0.0800	0.0571	71.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0520	65.0	47.0-125	
Fluoranthene	0.0800	0.0587	73.4	49.0-129	
Fluorene	0.0800	0.0581	72.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0555	69.4	46.0-125	
1-Methylnaphthalene	0.0800	0.0537	67.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0548	68.5	50.0-120	
Naphthalene	0.0800	0.0525	65.6	50.0-120	
Pyrene	0.0800	0.0565	70.6	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3829314-1 08/21/22 09:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			65.7	23.0-120	
(S) Nitrobenzene-d5			74.6	14.0-149	
(S) 2-Fluorobiphenyl			71.5	34.0-125	

L1527380-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527380-01 08/21/22 16:12 • (MS) R3829314-3 08/21/22 16:31 • (MSD) R3829314-4 08/21/22 16:51

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	0.0800	ND	0.0616	0.0538	77.0	67.3	1	14.0-127			13.5	27
Anthracene	0.0800	ND	0.0628	0.0554	78.5	69.3	1	10.0-145			12.5	30
Benzo(a)anthracene	0.0800	ND	0.0690	0.0600	86.3	75.0	1	10.0-139			14.0	30
Benzo(b)fluoranthene	0.0800	ND	0.0575	0.0491	71.9	61.4	1	10.0-140			15.8	36
Benzo(k)fluoranthene	0.0800	0.0167	0.0630	0.0558	57.9	48.9	1	10.0-137			12.1	31
Benzo(a)pyrene	0.0800	ND	0.0671	0.0570	83.9	71.3	1	10.0-141			16.3	31
Chrysene	0.0800	ND	0.0642	0.0543	80.3	67.9	1	10.0-145			16.7	30
Dibenz(a,h)anthracene	0.0800	ND	0.0526	0.0435	65.8	54.4	1	10.0-132			18.9	31
Fluoranthene	0.0800	ND	0.0653	0.0580	75.5	66.4	1	10.0-153			11.8	33
Fluorene	0.0800	0.0221	0.0778	0.0731	69.6	63.8	1	11.0-130			6.23	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0614	0.0499	76.8	62.4	1	10.0-137			20.7	32
1-Methylnaphthalene	0.0800	0.0367	0.0845	0.0826	59.8	57.4	1	10.0-142			2.27	28
2-Methylnaphthalene	0.0800	0.0576	0.0999	0.104	52.9	58.0	1	10.0-137			4.02	28
Naphthalene	0.0800	0.0314	0.0789	0.0753	59.4	54.9	1	10.0-135			4.67	27
Pyrene	0.0800	0.0426	0.0858	0.0867	54.0	55.1	1	10.0-148			1.04	35
(S) p-Terphenyl-d14					71.7	59.5		23.0-120				
(S) Nitrobenzene-d5					93.5	80.3		14.0-149				
(S) 2-Fluorobiphenyl					72.1	58.5		34.0-125				

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.

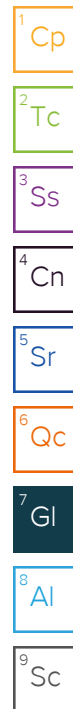
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

Abbreviations and Definitions

MDL	Method Detection Limit.
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.
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.



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		


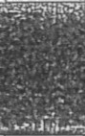

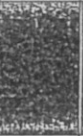



¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* 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.



4527410

<u>Tracking Numbers</u>		<u>Temperature</u>
57558084 9451		NSA6 2.7+0 = 2.7
5755 8084 9234		NSA6 4.0+0 = 4.0
		
		
		
		

Caerus Oil and Gas

Sample Delivery Group: L1527414
Samples Received: 08/19/2022
Project Number: YCF 27-13-1
Description: YCF 27-13-1 Facility Decommissioning
Site: YCF 27-13-1
Report To: Jake Janicek
143 Diamond Avenue
Parachute, CO 81635

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

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

2022817-YCF 27-13-1 (BGE) L1527414-01 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 11:30

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 11:00	08/26/22 11:00	ABL	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1916042	1	08/25/22 10:00	08/25/22 12:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:42	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1918761	5	08/30/22 17:42	08/31/22 11:14	SJM	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

2022817-YCF 27-13-1 (BGE) @ 2.5' L1527414-02 Solid

Collected by
K. Moreland

Collected date/time
08/17/22 11:45

Received date/time
08/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1915560	1	08/26/22 11:08	08/26/22 11:08	ABL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1917378	1	08/30/22 19:11	09/02/22 13:37	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1916042	1	08/25/22 10:00	08/25/22 12:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1922243	1	09/07/22 11:44	09/09/22 11:20	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1913985	1	08/24/22 16:24	08/26/22 12:14	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1914114	1	08/22/22 10:03	08/26/22 19:45	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1913984	5	08/24/22 16:17	08/25/22 18:47	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1914357	1	08/20/22 16:44	08/23/22 15:57	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1915197	1	08/20/22 16:44	08/23/22 15:13	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1913741	1	08/20/22 11:00	08/21/22 00:40	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1913757	1	08/20/22 15:06	08/21/22 13:31	AMG	Mt. Juliet, TN

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

Report Revision History

Level II Report - Version 1: 09/09/22 16:42

Project Narrative

Rerun to update project info



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.313		1	08/26/2022 11:00	WG1915560

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.16	T8	1	08/25/2022 12:00	WG1916042

Sample Narrative:

L1527414-01 WG1916042: 8.16 at 22C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	235		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:

L1527414-01 WG1922243: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.885		0.200	1	08/26/2022 19:42	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.31		1.00	5	08/31/2022 11:14	WG1918761

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.59		1	08/26/2022 11:08	WG1915560

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	09/02/2022 13:37	WG1917378

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.73	T8	1	08/25/2022 12:00	WG1916042

Sample Narrative:

L1527414-02 WG1916042: 8.73 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	711		10.0	1	09/09/2022 11:20	WG1922243

Sample Narrative:

L1527414-02 WG1922243: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	275		0.500	1	08/26/2022 12:14	WG1913985
Cadmium	ND		0.500	1	08/26/2022 12:14	WG1913985
Copper	20.9		2.00	1	08/26/2022 12:14	WG1913985
Lead	9.19		0.500	1	08/26/2022 12:14	WG1913985
Nickel	19.3		2.00	1	08/26/2022 12:14	WG1913985
Selenium	ND		2.00	1	08/26/2022 12:14	WG1913985
Silver	ND		1.00	1	08/26/2022 12:14	WG1913985
Zinc	38.5		5.00	1	08/26/2022 12:14	WG1913985

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.843		0.200	1	08/26/2022 19:45	WG1914114

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.35		1.00	5	08/25/2022 18:47	WG1913984

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	08/23/2022 15:57	WG1914357
(S) a,a,a-Trifluorotoluene(FID)	102		77.0-120		08/23/2022 15:57	WG1914357



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	08/23/2022 15:13	WG1915197
Toluene	ND		0.00500	1	08/23/2022 15:13	WG1915197
Ethylbenzene	ND		0.00250	1	08/23/2022 15:13	WG1915197
Xylenes, Total	ND		0.00650	1	08/23/2022 15:13	WG1915197
1,2,4-Trimethylbenzene	ND		0.00500	1	08/23/2022 15:13	WG1915197
1,3,5-Trimethylbenzene	ND		0.00500	1	08/23/2022 15:13	WG1915197
(S) Toluene-d8	96.1		75.0-131		08/23/2022 15:13	WG1915197
(S) 4-Bromofluorobenzene	95.3		67.0-138		08/23/2022 15:13	WG1915197
(S) 1,2-Dichloroethane-d4	106		70.0-130		08/23/2022 15:13	WG1915197

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	13.1		4.00	1	08/21/2022 00:40	WG1913741
C28-C36 Motor Oil Range	11.8		4.00	1	08/21/2022 00:40	WG1913741
(S) o-Terphenyl	51.7		18.0-148		08/21/2022 00:40	WG1913741

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	08/21/2022 13:31	WG1913757
Anthracene	ND		0.00600	1	08/21/2022 13:31	WG1913757
Benzo(a)anthracene	ND		0.00600	1	08/21/2022 13:31	WG1913757
Benzo(b)fluoranthene	ND		0.00600	1	08/21/2022 13:31	WG1913757
Benzo(k)fluoranthene	ND		0.00600	1	08/21/2022 13:31	WG1913757
Benzo(a)pyrene	ND		0.00600	1	08/21/2022 13:31	WG1913757
Chrysene	ND		0.00600	1	08/21/2022 13:31	WG1913757
Dibenz(a,h)anthracene	ND		0.00600	1	08/21/2022 13:31	WG1913757
Fluoranthene	ND		0.00600	1	08/21/2022 13:31	WG1913757
Fluorene	ND		0.00600	1	08/21/2022 13:31	WG1913757
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/21/2022 13:31	WG1913757
1-Methylnaphthalene	ND		0.0200	1	08/21/2022 13:31	WG1913757
2-Methylnaphthalene	ND		0.0200	1	08/21/2022 13:31	WG1913757
Naphthalene	ND		0.0200	1	08/21/2022 13:31	WG1913757
Pyrene	ND		0.00600	1	08/21/2022 13:31	WG1913757
(S) p-Terphenyl-d14	48.3		23.0-120		08/21/2022 13:31	WG1913757
(S) Nitrobenzene-d5	51.3		14.0-149		08/21/2022 13:31	WG1913757
(S) 2-Fluorobiphenyl	45.9		34.0-125		08/21/2022 13:31	WG1913757

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3835642-1 09/02/22 12:53

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

L1527412-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1527412-12 09/02/22 13:27 • (DUP) R3835642-3 09/02/22 13:32

	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

L1527720-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1527720-04 09/02/22 14:45 • (DUP) R3835642-8 09/02/22 15:00

	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) R3835642-2 09/02/22 13:01

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.58	95.8	80.0-120	

L1527710-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527710-03 09/02/22 14:08 • (MS) R3835642-4 09/02/22 14:13 • (MSD) R3835642-5 09/02/22 14:19

	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	11.2	14.3	55.9	71.3	1	75.0-125	J6	J3 J6	24.2	20

Sample Narrative:

OS: Sample is a reducer.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1527710-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1527710-03 09/02/22 14:08 • (MS) R3835642-7 09/02/22 14:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Hexavalent Chromium	643	ND	577	89.7	50	75.0-125	

Sample Narrative:

OS: Sample is a reducer.

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1527198-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1527198-03 08/25/22 12:00 • (DUP) R3830338-2 08/25/22 12:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	7.68	7.73	1	0.649		1

Sample Narrative:

OS: 7.68 at 22.5C

DUP: 7.73 at 22.2C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1527896-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1527896-02 08/25/22 12:00 • (DUP) R3830338-3 08/25/22 12:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.52	7.53	1	0.133		1

Sample Narrative:

OS: 7.52 at 22.4C

DUP: 7.53 at 22.5C

Laboratory Control Sample (LCS)

(LCS) R3830338-1 08/25/22 12:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.93	99.3	99.0-101	

Sample Narrative:

LCS: 9.93 at 22C

Method Blank (MB)

(MB) R3835430-1 09/09/22 11:20

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

L1527412-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1527412-06 09/09/22 11:20 • (DUP) R3835430-3 09/09/22 11:20

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	335	340	1	1.48		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1527710-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1527710-01 09/09/22 11:20 • (DUP) R3835430-4 09/09/22 11:20

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	367	360	1	1.93		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3835430-2 09/09/22 11:20

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3830941-1 08/26/22 11:29

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	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) R3830941-2 08/26/22 11:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	97.4	97.4	80.0-120	
Cadmium	100	93.3	93.3	80.0-120	
Copper	100	95.4	95.4	80.0-120	
Lead	100	93.6	93.6	80.0-120	
Nickel	100	93.7	93.7	80.0-120	
Selenium	100	95.4	95.4	80.0-120	
Silver	20.0	18.3	91.7	80.0-120	
Zinc	100	91.2	91.2	80.0-120	

L1527412-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527412-11 08/26/22 11:34 • (MS) R3830941-5 08/26/22 11:42 • (MSD) R3830941-6 08/26/22 11:45

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	214	395	325	180	111	1	75.0-125	J5		19.3	20
Cadmium	100	ND	106	106	105	106	1	75.0-125			0.275	20
Copper	100	11.8	119	119	107	107	1	75.0-125			0.165	20
Lead	100	9.16	109	109	100	99.6	1	75.0-125			0.611	20
Nickel	100	20.4	122	124	102	103	1	75.0-125			1.44	20
Selenium	100	ND	105	106	105	106	1	75.0-125			0.824	20
Silver	20.0	ND	20.5	20.5	103	103	1	75.0-125			0.0349	20
Zinc	100	35.3	131	134	96.2	98.9	1	75.0-125			2.05	20

Method Blank (MB)

(MB) R3831219-1 08/26/22 18:57

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) R3831219-2 08/26/22 18:59 • (LCSD) R3831219-3 08/26/22 19:02

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	1.08	1.03	108	103	80.0-120			4.38	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3830609-1 08/25/22 17:56

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) R3830609-2 08/25/22 17:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.3	92.3	80.0-120	

L1527412-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527412-11 08/25/22 18:02 • (MS) R3830609-5 08/25/22 18:12 • (MSD) R3830609-6 08/25/22 18:15

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	2.59	97.3	99.6	94.7	97.0	5	75.0-125			2.30	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3832398-1 08/31/22 11:07

	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) R3832398-2 08/31/22 11:11

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	91.9	91.9	80.0-120	

L1527414-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527414-01 08/31/22 11:14 • (MS) R3832398-5 08/31/22 11:24 • (MSD) R3832398-6 08/31/22 11:27

	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	2.31	73.9	64.3	71.6	62.0	5	75.0-125	J6	J6	13.9	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3830551-2 08/23/22 15:05

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) R3830551-1 08/23/22 14:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.54	119	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) R3830509-3 08/23/22 12:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
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	96.6			75.0-131
(S) 4-Bromofluorobenzene	93.6			67.0-138
(S) 1,2-Dichloroethane-d4	104			70.0-130

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

(LCS) R3830509-1 08/23/22 11:01 • (LCSD) R3830509-2 08/23/22 11:21

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
Toluene	0.125	0.111	0.107	88.8	85.6	75.0-121			3.67	20
Ethylbenzene	0.125	0.106	0.102	84.8	81.6	74.0-126			3.85	20
Xylenes, Total	0.375	0.309	0.307	82.4	81.9	72.0-127			0.649	20
1,2,4-Trimethylbenzene	0.125	0.121	0.116	96.8	92.8	70.0-126			4.22	20
1,3,5-Trimethylbenzene	0.125	0.126	0.123	101	98.4	73.0-127			2.41	20
(S) Toluene-d8				93.6	95.2	75.0-131				
(S) 4-Bromofluorobenzene				92.9	95.0	67.0-138				
(S) 1,2-Dichloroethane-d4				114	119	70.0-130				

L1527582-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527582-05 08/23/22 21:23 • (MS) R3830509-4 08/23/22 21:42 • (MSD) R3830509-5 08/23/22 22:02

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	4.05	0.0599	3.39	3.06	82.2	74.1	40	10.0-149			10.2	37
Toluene	4.05	ND	2.94	2.62	72.6	64.7	40	10.0-156			11.5	38
Ethylbenzene	4.05	1.22	3.61	3.26	59.0	50.4	40	10.0-160			10.2	38
Xylenes, Total	12.2	5.42	11.3	11.6	48.2	50.7	40	10.0-160			2.62	38
1,2,4-Trimethylbenzene	4.05	3.35	5.84	5.52	61.5	53.6	40	10.0-160			5.63	36
1,3,5-Trimethylbenzene	4.05	1.11	4.32	3.88	79.3	68.4	40	10.0-160			10.7	38
(S) Toluene-d8					94.6	92.8		75.0-131				
(S) 4-Bromofluorobenzene					93.7	95.0		67.0-138				
(S) 1,2-Dichloroethane-d4					118	119		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3828779-1 08/20/22 14:47

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	0.388	⌵	0.274	4.00
(S) o-Terphenyl	58.0			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3828779-2 08/20/22 15:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	33.9	67.8	50.0-150	
(S) o-Terphenyl			81.5	18.0-148	

L1527410-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527410-03 08/20/22 19:38 • (MS) R3828779-3 08/20/22 19:51 • (MSD) R3828779-4 08/20/22 20:04

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 %
C10-C28 Diesel Range	47.7	ND	30.1	34.4	63.1	69.5	1	50.0-150			13.3	20
(S) o-Terphenyl					74.1	78.9		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3829388-2 08/21/22 11:47

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	78.3			23.0-120
(S) Nitrobenzene-d5	75.1			14.0-149
(S) 2-Fluorobiphenyl	75.9			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3829388-1 08/21/22 11:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0651	81.4	50.0-120	
Anthracene	0.0800	0.0630	78.8	50.0-126	
Benzo(a)anthracene	0.0800	0.0642	80.3	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0655	81.9	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0668	83.5	49.0-125	
Benzo(a)pyrene	0.0800	0.0671	83.9	42.0-120	
Chrysene	0.0800	0.0676	84.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0620	77.5	47.0-125	
Fluoranthene	0.0800	0.0672	84.0	49.0-129	
Fluorene	0.0800	0.0675	84.4	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0654	81.8	46.0-125	
1-Methylnaphthalene	0.0800	0.0629	78.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0652	81.5	50.0-120	
Naphthalene	0.0800	0.0621	77.6	50.0-120	
Pyrene	0.0800	0.0694	86.8	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3829388-1 08/21/22 11:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			83.9	23.0-120	
(S) Nitrobenzene-d5			81.3	14.0-149	
(S) 2-Fluorobiphenyl			82.4	34.0-125	

L1527348-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1527348-10 08/21/22 15:16 • (MS) R3829388-3 08/21/22 15:33 • (MSD) R3829388-4 08/21/22 15:51

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	0.0800	ND	0.0673	0.0634	80.6	75.8	1	14.0-127			5.97	27
Anthracene	0.0800	0.0161	0.0786	0.0856	78.1	86.9	1	10.0-145			8.53	30
Benzo(a)anthracene	0.0800	0.0527	0.104	0.198	64.1	182	1	10.0-139		J3 J5	62.3	30
Benzo(b)fluoranthene	0.0800	0.0891	0.118	0.298	36.1	261	1	10.0-140		J3 J5	86.5	36
Benzo(k)fluoranthene	0.0800	0.0352	0.0859	0.156	63.4	151	1	10.0-137		J3 J5	58.0	31
Benzo(a)pyrene	0.0800	0.0990	0.129	0.316	37.5	271	1	10.0-141		J3 J5	84.0	31
Chrysene	0.0800	0.0488	0.111	0.221	77.8	215	1	10.0-145		J3 J5	66.3	30
Dibenz(a,h)anthracene	0.0800	0.0207	0.0753	0.0944	68.3	92.1	1	10.0-132			22.5	31
Fluoranthene	0.0800	0.0647	0.118	0.215	66.6	188	1	10.0-153		J3 J5	58.3	33
Fluorene	0.0800	0.00680	0.0728	0.0713	82.5	80.6	1	11.0-130			2.08	29
Indeno(1,2,3-cd)pyrene	0.0800	0.127	0.147	0.336	25.0	261	1	10.0-137		J3 J5	78.3	32
1-Methylnaphthalene	0.0800	0.107	0.0760	0.0712	0.000	0.000	1	10.0-142	J6	J6	6.52	28
2-Methylnaphthalene	0.0800	0.242	0.0920	0.0878	0.000	0.000	1	10.0-137	J6	J6	4.67	28
Naphthalene	0.0800	0.515	0.106	0.128	0.000	0.000	1	10.0-135	V	V	18.8	27
Pyrene	0.0800	0.0643	0.117	0.214	65.9	187	1	10.0-148		J3 J5	58.6	35
(S) p-Terphenyl-d14					82.3	73.4		23.0-120				
(S) Nitrobenzene-d5					86.9	77.6		14.0-149				
(S) 2-Fluorobiphenyl					85.0	76.1		34.0-125				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

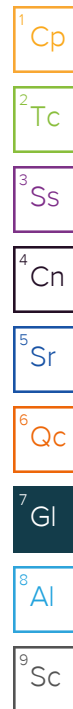
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
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.
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.



[illegible]

<u>Tracking Numbers</u>	<u>Temperature</u>
5755 8084 9451	NSA6 2.7+0 = 2.7
5755 8084 9234	NSA6 4.0+0 = 4.0

145274M