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Report of Work Completed – Dumpline Release

ECMC Location Name (ID)	FEDERAL SAVAGE/11-4A (335004)
Client Location Name	RD11
ECMC Spill/Release Point ID	485686
Legal Description	NWNW Sec. 11 T7S-R94W
Coordinates (Lat/Long)	39.457866 / -107.858903
County	Garfield County, Colorado

Mr. Verbonitz,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil & Gas LLC (Caerus) to document remedial investigation activities associated with a recent release at the RD11 well pad (Location). The Location is 6.5 miles southwest of Rifle, Colorado, in Garfield County as illustrated in the attached Topographic Map. Additional information on the Location and the associated remediation project is provided in the title block above, the attached Site Diagram, and laboratory analytical report. This ROWC provides background on the Location, methods used to complete the investigation, results of the investigation, and recommendations for how to proceed with this information.

Background

On December 11, 2023, a failure point was discovered in the dumpline while conducting wellhead maintenance. An unknown volume of comingled fluid was released. The release was reported via Energy & Carbon Management Commission (ECMC) Form 19 Document 403621001 to open Spill/Release Point ID 485686.

Methodology

On December 21, 2023, Confluence provided initial sampling support to characterize potential soil impacts at the point of release (POR). One soil sample was collected directly beneath the POR at 4 feet below ground surface (bgs). The soil sample was characterized using visual and olfactory observations, and field-screened for volatile organic compounds using a photoionization detector (PID).

On February 1, 2024, Confluence returned to the Location to collect three background soil samples. Soil samples were collected from comparable, nearby, non-impacted soil to establish native levels of inorganic constituents.

All samples were collected in laboratory provided jars, immediately placed on ice, and shipped for laboratory analysis under a complete chain-of-custody form to Pace Analytical Services (Pace). The POR characterization sample was analyzed for ECMC Table 915-1 soil constituents of concern,

while background soil samples were analyzed for electrical conductivity (EC), sodium adsorption ratio (SAR), pH, boron, and Table 915-1 metals.

Results

These results summarize observations from onsite remedial investigation efforts and associated laboratory analytical results. For organizational and presentation purposes, the results summary is divided between general observations of lithology and hydrogeology for the entire Location and site investigation activities. Collected spatial data are depicted in the attached Site Diagram. Laboratory analytical reports are attached and summarized in the Laboratory Results Summary Table.

Lithology and Hydrogeology

Lithology at the Location is characterized as clayey loam with shale and sandy loam with shale. Groundwater is expected to flow east to Porcupine Creek and ultimately to the Colorado River, located 3.0 miles north of the Location. Because the Location sits approximately 60 feet higher in elevation than the nearest surface water, Porcupine Creek, depth to groundwater is estimated to be greater than 60 feet bgs.

Initial Release Characterization Results

Field screening results of the POR characterization sample registered a PID measurement of 222.3 parts per million (ppm). Analytical results of the POR characterization sample indicate compliance with ECOMC Table 915-1 Residential Soil Screening Levels (RSSLs) except for arsenic which exceeded allowable limits at 3.50 milligrams per kilogram (mg/kg). Hexavalent chromium was reported below the laboratory detection limit of 1.00 mg/kg.

Background Results

Analytical results of background samples exceed the Table 915-1 RSSL for arsenic with concentrations ranging from 2.35 to 5.22 mg/kg.

Analysis and Recommendations

Due to the estimated depth to groundwater of greater than 60 feet bgs, Confluence recommends that Caerus request to compare analytical results of site investigation to Table 915-1 RSSLs as no reasonable pathway to groundwater appears to exist.

Although arsenic exceeding the Table 915-1 RSSL remain in the investigation area at 3.50 mg/kg, background data collected from the Location indicates this result is within native levels at the Location. Background samples (except for RD11-W@0.5) and the investigation area share the same soil type: Nihil channery loam and were collected from a distance of no greater than 280 feet from the Location. Additionally, background samples were collected from an elevation ranging from 6,352 feet AMSL to 6,378 feet AMSL. The elevation of the release area is approximately 6,383 feet AMSL and extends to a depth of 4 feet bgs, or 6,379 feet AMSL. Due to these considerations, it is reasonable to conclude that the background sample data is representative of soil conditions at the Location. In accordance with Table 915-1 Footnote 1, Confluence recommends that Caerus request an alternative allowable limit for arsenic of 5.22 mg/kg.



Assuming the proposed soil screening levels and alternative allowable limit are approved, all constituents of concern are compliant with Table 915-1 RSSLs or alternative allowable limit. Therefore, Confluence recommends Caerus request closure of Spill/Release Point ID 485686 with a no further action (NFA) determination.

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

Regards,



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Attachments

- Topographic Location Diagram
- Site Diagram – Site Investigation
- Analytical Results Summary Table
- Photographic Log
- Laboratory Reports



Topographic Location Map

Caerus Oil and Gas LLC

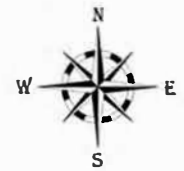
RD11

(FEDERAL SAVAGE/11-4A)

ECMC Location ID: 335004

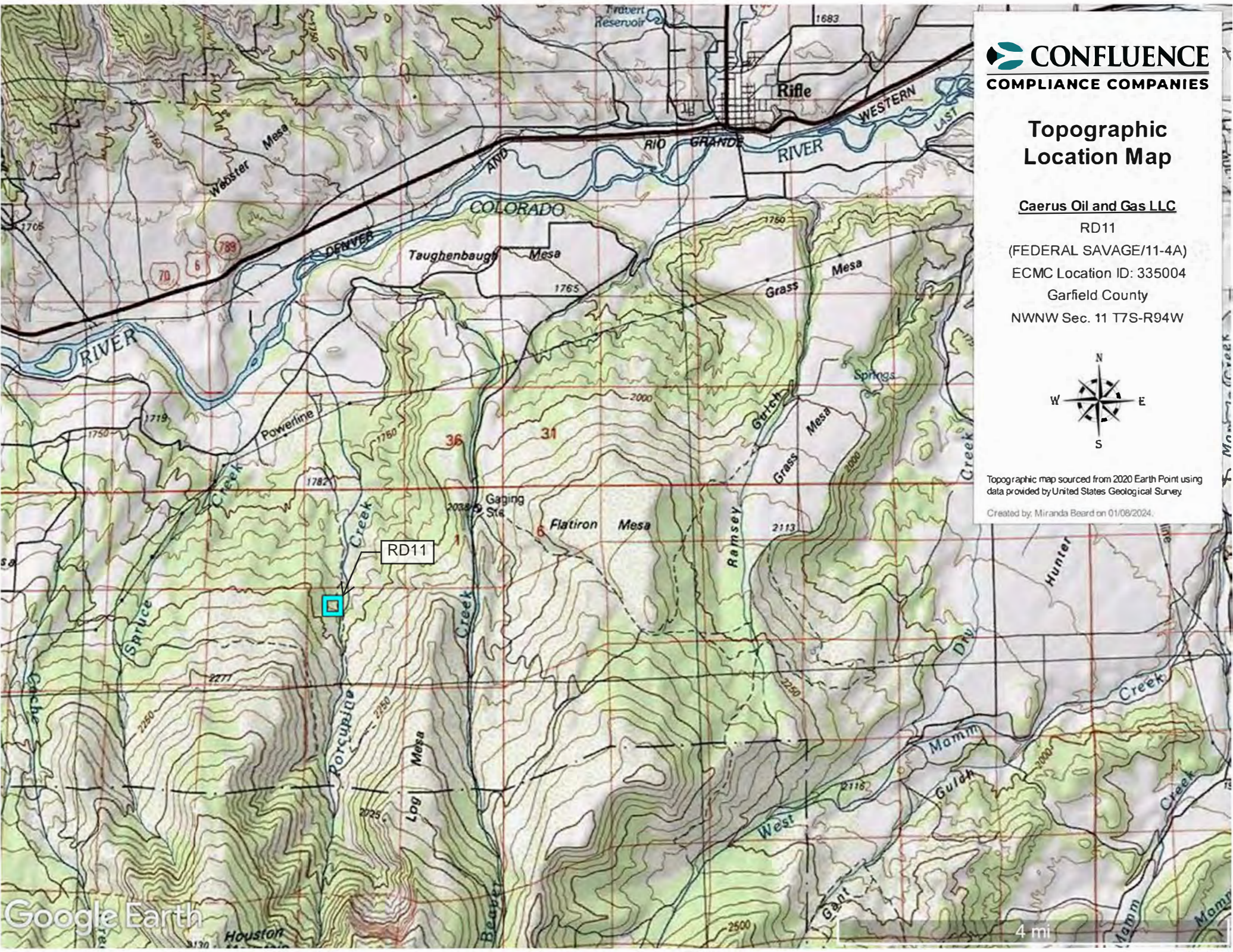
Garfield County

NWNW Sec. 11 T7S-R94W



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

Created by: Miranda Beard on 01/08/2024.



Site Diagram Site Investigation

Caerus Oil and Gas LLC

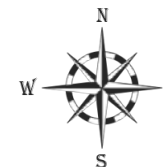
RD11

(FEDERAL SAVAGE/11-4A)



ECMC Location ID: 335004

Garfield County

NWNW Sec. 11 T7S-R94W



Legend

-  Soil Sample
-  Background Soil Sample

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

Map created by: Miranda Beard on 02/21/2024.

20240201-RFBG-(RD11-N)@0.5

20240201-RFBG-(RD11-N)@0.5

20240201-RFBG-(RD11-W)@0.5

20231221-RD11-(POR)@4



SOIL ANALYTICAL RESULTS TABLE
RD11

Analyte			GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Acenaphthene	Anthracene	Benz(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)Pyre	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Pyrene	
			500			1.2	190	5.8	58	30	27	360	1800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	2	180	
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample	Source																									
20231221-RD11-(POR)@4	12/21/2023	Dumpline	3.47	< 4.00	< 4.00	0.00373	0.0356	0.00835	0.130	0.0398	0.0435	< 0.00600	< 0.00600	< 0.00600	< 0.00600	< 0.00600	< 0.00600	< 0.00600	< 0.00600	< 0.00600	< 0.00600	< 0.00600	< 0.0200	< 0.0200	< 0.0200	< 0.00600	

Notes:
Exceeds RSSLs
 "<" (as in, less than laboratory reporting detection limit)



**SOIL ANALYTICAL RESULTS TABLE
RD11**

Analyte			EC	SAR	pH	Boron	Arsenic	Barium	Cadmium	Chromium VI	Copper	Lead	Nickel	Selenium	Silver	Zinc
915-1 RESIDENTIAL SOIL			4000	6	8.3	2	0.68	15000	71	0.3	3100	400	1500	390	390	23000
Units			umhos/cm	No Unit	SU	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Date	Source														
20231221-RD11-(POR)@4	12/21/2023	Dumpline	1300	5.93	7.64	1.38	3.50	157	< 1.00	< 1.00	10.4	8.29	12.8	< 2.50	< 0.500	37.0
20240201-RFBG-(RD11-E)@0.5	02/01/2024	Background	261	0.0751	7.19	0.480	3.71	151	< 1.00	< 1.00	12.8	10.1	25.0	< 2.50	< 0.500	41.7
20240201-RFBG-(RD11-N)@0.5	02/01/2024	Background	258	0.0875	7.39	0.740	2.35	158	< 1.00	< 1.00	10.8	9.48	10.9	< 2.50	< 0.500	45.8
20240201-RFBG-(RD11-W)@0.5	02/01/2024	Background	82.1	0.138	7.03	< 0.200	5.22	197	< 1.00	< 1.00	11.2	10.7	17.6	< 2.50	< 0.500	51.9

Notes:
Bold with silver highlight: Exceeds RSSLs
 "<" (as in, less than laboratory reporting detection limit)



Photo Illustrations of Remediation Investigation

Dumpline Failure Investigation
Caerus Oil and Gas (ECMC Location ID: 335004)



Hydrovac Excavation Point of Release Overview: View Northwest



Photo Illustrations of Remediation Investigation

Dumpline Failure Investigation
Caerus Oil and Gas (ECMC Location ID: 335004)



Hydrovac Excavation Point of Release Overview: View Northwest



Photo Illustrations of Remediation Investigation

Dumpline Failure Investigation
Caerus Oil and Gas (ECMC Location ID: 335004)



Hydrovac Excavation Point of Release: View South



Photo Illustrations of Remediation Investigation

Dumpline Failure Investigation
Caerus Oil and Gas (ECMC Location ID: 335004)



Point of Release: View Northeast

Caerus Oil and Gas

Sample Delivery Group: L1691035
Samples Received: 12/22/2023
Project Number:
Description: RD11
Site: RD11
Report To: Jake J. / Brett M. / Blair R. / Andy V.
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.

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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

20231221-RD11-(POR)@4 L1691035-01 Solid

Collected by: Dennis Lytle
 Collected date/time: 12/21/23 11:00
 Received date/time: 12/22/23 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2196691	1	12/30/23 10:42	12/30/23 10:42	JTM	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2196213	1	01/01/24 04:57	01/02/24 13:01	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2198148	1	12/29/23 12:22	12/30/23 11:30	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2195503	1	12/27/23 12:12	12/28/23 09:18	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2196696	1	12/30/23 09:22	12/30/23 16:00	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2196274	5	12/27/23 11:23	12/30/23 12:38	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2199216	1	12/26/23 14:09	01/02/24 20:08	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2198408	1	12/26/23 14:09	12/31/23 23:27	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2196243	1	12/27/23 16:37	12/28/23 13:09	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2196235	1	12/27/23 15:00	12/28/23 04:40	ALM	Mt. Juliet, TN

¹Cp

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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

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	5.93		1	12/30/2023 10:42	WG2196691

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	01/02/2024 13:01	WG2196213

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.64	<u>T8</u>	1	12/30/2023 11:30	WG2198148

Sample Narrative:

L1691035-01 WG2198148: 7.64 at 20.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	1300		10.0	1	12/28/2023 09:18	WG2195503

Sample Narrative:

L1691035-01 WG2195503: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.38		0.200	1	12/30/2023 16:00	WG2196696

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.50		1.00	5	12/30/2023 12:38	WG2196274
Barium	157		2.50	5	12/30/2023 12:38	WG2196274
Cadmium	ND		1.00	5	12/30/2023 12:38	WG2196274
Copper	10.4		5.00	5	12/30/2023 12:38	WG2196274
Lead	8.29		2.00	5	12/30/2023 12:38	WG2196274
Nickel	12.8		2.50	5	12/30/2023 12:38	WG2196274
Selenium	ND		2.50	5	12/30/2023 12:38	WG2196274
Silver	ND		0.500	5	12/30/2023 12:38	WG2196274
Zinc	37.0		25.0	5	12/30/2023 12:38	WG2196274

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	3.47		0.100	1	01/02/2024 20:08	WG2199216
(S) a, a, a-Trifluorotoluene(FID)	90.8		77.0-120		01/02/2024 20:08	WG2199216

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	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00373		0.00100	1	12/31/2023 23:27	WG2198408
Toluene	0.0356		0.00500	1	12/31/2023 23:27	WG2198408
Ethylbenzene	0.00835		0.00250	1	12/31/2023 23:27	WG2198408
Xylenes, Total	0.130		0.00650	1	12/31/2023 23:27	WG2198408
1,2,4-Trimethylbenzene	0.0398		0.00500	1	12/31/2023 23:27	WG2198408
1,3,5-Trimethylbenzene	0.0435		0.00500	1	12/31/2023 23:27	WG2198408
(S) Toluene-d8	103		75.0-131		12/31/2023 23:27	WG2198408
(S) 4-Bromofluorobenzene	101		67.0-138		12/31/2023 23:27	WG2198408
(S) 1,2-Dichloroethane-d4	114		70.0-130		12/31/2023 23:27	WG2198408

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

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	12/28/2023 13:09	WG2196243
C28-C36 Motor Oil Range	ND		4.00	1	12/28/2023 13:09	WG2196243
(S) o-Terphenyl	35.0		18.0-148		12/28/2023 13:09	WG2196243

6 Qc

7 Gl

8 Al

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	12/28/2023 04:40	WG2196235
Anthracene	ND		0.00600	1	12/28/2023 04:40	WG2196235
Benzo(a)anthracene	ND		0.00600	1	12/28/2023 04:40	WG2196235
Benzo(b)fluoranthene	ND		0.00600	1	12/28/2023 04:40	WG2196235
Benzo(k)fluoranthene	ND		0.00600	1	12/28/2023 04:40	WG2196235
Benzo(a)pyrene	ND		0.00600	1	12/28/2023 04:40	WG2196235
Chrysene	ND		0.00600	1	12/28/2023 04:40	WG2196235
Dibenz(a,h)anthracene	ND		0.00600	1	12/28/2023 04:40	WG2196235
Fluoranthene	ND		0.00600	1	12/28/2023 04:40	WG2196235
Fluorene	ND		0.00600	1	12/28/2023 04:40	WG2196235
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	12/28/2023 04:40	WG2196235
1-Methylnaphthalene	ND		0.0200	1	12/28/2023 04:40	WG2196235
2-Methylnaphthalene	ND		0.0200	1	12/28/2023 04:40	WG2196235
Naphthalene	ND		0.0200	1	12/28/2023 04:40	WG2196235
Pyrene	ND		0.00600	1	12/28/2023 04:40	WG2196235
(S) p-Terphenyl-d14	64.2		23.0-120		12/28/2023 04:40	WG2196235
(S) Nitrobenzene-d5	58.2		14.0-149		12/28/2023 04:40	WG2196235
(S) 2-Fluorobiphenyl	40.2		34.0-125		12/28/2023 04:40	WG2196235

9 Sc

Method Blank (MB)

(MB) R4018797-1 01/02/24 09:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Hexavalent Chromium	U		0.255	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1691031-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1691031-03 01/02/24 12:30 • (DUP) R4018797-7 01/02/24 12:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	ND	1	200	P1	20

L1691588-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1691588-02 01/02/24 13:20 • (DUP) R4018797-8 01/02/24 13:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4018797-2 01/02/24 10:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Hexavalent Chromium	10.0	10.4	104	80.0-120	

L1690974-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1690974-03 01/02/24 10:20 • (MS) R4018797-3 01/02/24 10:27 • (MSD) R4018797-4 01/02/24 10:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	20.0	1.25	22.0	21.5	103	101	1	75.0-125			1.93	20

L1690974-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1690974-03 01/02/24 10:20 • (MS) R4018797-5 01/02/24 10:39

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Hexavalent Chromium	651	1.25	740	114	50	75.0-125	

L1691040-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1691040-04 12/30/23 11:30 • (DUP) R4018446-2 12/30/23 11:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
pH	9.28	9.29	1	0.108		1

Sample Narrative:

OS: 9.28 at 19.6C
 DUP: 9.29 at 20.1C

L1691060-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1691060-03 12/30/23 11:30 • (DUP) R4018446-3 12/30/23 11:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
pH	8.00	7.98	1	0.250		1

Sample Narrative:

OS: 8 at 19.6C
 DUP: 7.98 at 19.6C

Laboratory Control Sample (LCS)

(LCS) R4018446-1 12/30/23 11:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
pH	10.0	9.99	99.9	99.0-101	

Sample Narrative:

LCS: 9.99 at 20C

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4017435-1 12/28/23 09:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1690632-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1690632-01 12/28/23 09:18 • (DUP) R4017435-3 12/28/23 09:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Specific Conductance	192	192	1	0.104		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1690729-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1690729-02 12/28/23 09:18 • (DUP) R4017435-4 12/28/23 09:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Specific Conductance	1770	1730	1	2.00		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4017435-2 12/28/23 09:18

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Specific Conductance	327	333	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) R4018516-1 12/30/23 15:14

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) R4018516-2 12/30/23 15:17 • (LCSD) R4018516-3 12/30/23 15:19

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	1.09	1.13	109	113	80.0-120			3.79	20

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

Method Blank (MB)

(MB) R4018461-1 12/30/23 11:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R4018461-2 12/30/23 11:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	99.5	99.5	80.0-120	
Barium	100	99.0	99.0	80.0-120	
Cadmium	100	105	105	80.0-120	
Copper	100	96.3	96.3	80.0-120	
Lead	100	102	102	80.0-120	
Nickel	100	101	101	80.0-120	
Selenium	100	104	104	80.0-120	
Silver	20.0	20.2	101	80.0-120	
Zinc	100	98.2	98.2	80.0-120	

⁷Gl

⁸Al

⁹Sc

L1691004-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1691004-01 12/30/23 11:55 • (MS) R4018461-5 12/30/23 12:05 • (MSD) R4018461-6 12/30/23 12:08

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	5.31	113	108	108	103	5	75.0-125			4.75	20
Barium	100	83.9	187	169	103	85.1	5	75.0-125			10.1	20
Cadmium	100	ND	111	108	111	108	5	75.0-125			3.35	20
Copper	100	8.82	113	107	104	98.5	5	75.0-125			5.02	20
Lead	100	7.36	117	114	110	107	5	75.0-125			2.47	20
Nickel	100	10.5	119	112	108	102	5	75.0-125			5.56	20
Silver	20.0	ND	22.0	21.4	110	107	5	75.0-125			2.78	20
Zinc	100	25.3	135	128	109	102	5	75.0-125			5.32	20

Method Blank (MB)

(MB) R4018859-2 01/02/24 12:04

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)	102			77.0-120

Laboratory Control Sample (LCS)

(LCS) R4018859-1 01/02/24 11:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.05	110	72.0-127	
^(S) a,a,a-Trifluorotoluene(FID)			107	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) R4019093-3 12/31/23 20:35

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	99.9			75.0-131
(S) 4-Bromofluorobenzene	102			67.0-138
(S) 1,2-Dichloroethane-d4	116			70.0-130

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

(LCS) R4019093-1 12/31/23 19:00 • (LCSD) R4019093-2 12/31/23 19:19

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	0.121	0.123	96.8	98.4	70.0-123			1.64	20
Toluene	0.125	0.131	0.129	105	103	75.0-121			1.54	20
Ethylbenzene	0.125	0.114	0.109	91.2	87.2	74.0-126			4.48	20
Xylenes, Total	0.375	0.336	0.328	89.6	87.5	72.0-127			2.41	20
1,2,4-Trimethylbenzene	0.125	0.117	0.114	93.6	91.2	70.0-126			2.60	20
1,3,5-Trimethylbenzene	0.125	0.110	0.105	88.0	84.0	73.0-127			4.65	20
(S) Toluene-d8				99.5	103	75.0-131				
(S) 4-Bromofluorobenzene				101	96.1	67.0-138				
(S) 1,2-Dichloroethane-d4				117	120	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4017890-1 12/28/23 11:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
<i>(S) o-Terphenyl</i>	58.3			18.0-148

Laboratory Control Sample (LCS)

(LCS) R4017890-2 12/28/23 11:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	38.2	76.4	50.0-150	
<i>(S) o-Terphenyl</i>			59.8	18.0-148	

L1690971-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1690971-01 12/28/23 15:58 • (MS) R4017890-3 12/28/23 16:11 • (MSD) R4017890-4 12/28/23 16:24

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	50.0	108000	105000	166000	0.000	116000	200	50.0-150	<u>E V</u>	<u>E J3 V</u>	45.0	20
<i>(S) o-Terphenyl</i>					0.000	0.000		18.0-148	<u>J7</u>	<u>J7</u>		

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4018245-2 12/28/23 02:19

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	78.2			23.0-120
(S) Nitrobenzene-d5	67.7			14.0-149
(S) 2-Fluorobiphenyl	68.1			34.0-125

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R4018245-1 12/28/23 02:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0622	77.8	50.0-120	
Anthracene	0.0800	0.0662	82.8	50.0-126	
Benzo(a)anthracene	0.0800	0.0733	91.6	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0667	83.4	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0653	81.6	49.0-125	
Benzo(a)pyrene	0.0800	0.0633	79.1	42.0-120	
Chrysene	0.0800	0.0715	89.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0706	88.3	47.0-125	
Fluoranthene	0.0800	0.0693	86.6	49.0-129	
Fluorene	0.0800	0.0692	86.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0776	97.0	46.0-125	
1-Methylnaphthalene	0.0800	0.0653	81.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0653	81.6	50.0-120	
Naphthalene	0.0800	0.0608	76.0	50.0-120	
Pyrene	0.0800	0.0722	90.3	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R4018245-1 12/28/23 02:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			80.9	23.0-120	
(S) Nitrobenzene-d5			75.2	14.0-149	
(S) 2-Fluorobiphenyl			70.6	34.0-125	

L1689054-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1689054-01 12/28/23 02:37 • (MS) R4018245-3 12/28/23 02:54 • (MSD) R4018245-4 12/28/23 03:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0768	ND	0.0456	0.0479	59.4	60.8	1	14.0-127			4.92	27
Anthracene	0.0768	ND	0.0497	0.0534	64.7	67.8	1	10.0-145			7.18	30
Benzo(a)anthracene	0.0768	ND	0.0567	0.0605	73.8	76.8	1	10.0-139			6.48	30
Benzo(b)fluoranthene	0.0768	ND	0.0504	0.0542	65.6	68.8	1	10.0-140			7.27	36
Benzo(k)fluoranthene	0.0768	ND	0.0507	0.0547	66.0	69.4	1	10.0-137			7.59	31
Benzo(a)pyrene	0.0768	ND	0.0584	0.0624	76.0	79.2	1	10.0-141			6.62	31
Chrysene	0.0768	ND	0.0569	0.0612	74.1	77.7	1	10.0-145			7.28	30
Dibenz(a,h)anthracene	0.0768	ND	0.0553	0.0594	72.0	75.4	1	10.0-132			7.15	31
Fluoranthene	0.0768	ND	0.0512	0.0549	66.7	69.7	1	10.0-153			6.97	33
Fluorene	0.0768	ND	0.0505	0.0537	65.8	68.1	1	11.0-130			6.14	29
Indeno(1,2,3-cd)pyrene	0.0768	ND	0.0597	0.0630	77.7	79.9	1	10.0-137			5.38	32
1-Methylnaphthalene	0.0768	0.0544	0.0986	0.106	57.6	65.5	1	10.0-142			7.23	28
2-Methylnaphthalene	0.0768	0.0852	0.129	0.138	57.0	67.0	1	10.0-137			6.74	28
Naphthalene	0.0768	0.0599	0.102	0.109	54.8	62.3	1	10.0-135			6.64	27
Pyrene	0.0768	ND	0.0539	0.0572	70.2	72.6	1	10.0-148			5.94	35
(S) p-Terphenyl-d14					60.2	69.8		23.0-120				
(S) Nitrobenzene-d5					69.7	74.7		14.0-149				
(S) 2-Fluorobiphenyl					53.1	56.5		34.0-125				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

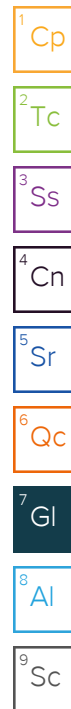
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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

Abbreviations and Definitions

MDL	Method Detection Limit.
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
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

¹ Cp

² Tc

³ Ss

⁴ Cn

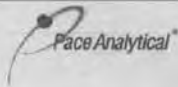
⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

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

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: CAERUS OIL AND GAS LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins, Andy Verbonitz	Email To: Info on file
Copy To: Same as above	Site Collection Info/Address:
Customer Project Name/Number: RD11	State: County/City: Time Zone Collected: CO / Garfield [] PT [X] MT [] CT [] ET

Container Preservative Type **	Lab Project: A021
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** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Phone: Email: info on file	Site/Facility ID #: RD11	Compliance Monitoring? [] Yes [X] No
Collected By (print): Dennis Lytle	Purchase Order #: Quote #:	DW PWS ID #: DW Location Code:
Collected By (signature): <i>Dennis Lytle</i>	Turnaround Date Required: Standard Turnaround	Immediately Packed on Ice: [X] Yes [] No
Sample Disposal: [] Dispose as appropriate [] Return [] Archive: [] Hold:	Rush: (Expedite Charges Apply) [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day	Field Filtered (if applicable): [] Yes [] No Analysis: _____

Analyses	Lab Profile/Line:	
	EC, SAR, pH	Lab Sample Receipt Checklist:
Boron (hot Water soluble)	Custody Seals Present/Intact	
TPH (GRO/DRO/ORO)	Custody Signatures Present	
Table 915-1 VOCs	Collector Signature Present	
Table 915-1 PAHs	Bottles Intact	
Table 915-1 Metals	Correct Bottles	
Cr6	Sufficient Volume	
	Samples Received on Ice	
	VOA - Headspace Acceptable	
	USDA Regulated Soils	
	Samples in Holding Time	
	Residual Chlorine Present	
	CI Strips:	
	Sample pH Acceptable	
	pH Strips:	
	Sulfide Present	
	Lead Acetate Strips:	
	LAB USE ONLY:	
	Lab Sample # / Comments:	

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res CI	# of Ctns	Container Type: Plastic (P) or Glass (G)
			Date	Time	Date	Time			
20231221-RD11-(POR)@4	SL	G	12/21/2023	11:00				4	G

LAB USE ONLY:
Lab Sample # / Comments:
L1691035
-01

Customer Remarks / Special Conditions / Possible Hazards:	Type of Ice Used: Wet Blue Dry None	SHORT HOLDS PRESENT (<72 hours): Y N N/A	LAB Sample Temperature Info: Temp Blank Received: Y <input checked="" type="checkbox"/> N NA Therm ID#: _____ Cooler 1 Temp Upon Receipt: _____ °C Cooler 1 Therm Corr. Factor: _____ °C Cooler 1 Corrected Temp: _____ °C Comments:
	Packing Material Used: 6525 5572 2556	Lab Tracking #:	
	Radchem sample(s) screened (<500 cpm): Y N NA	Samples received via: FEDEX UPS Client Courier Pace Courier	

Relinquished by/Company: (Signature) <i>Dennis Lytle / CCC</i>	Date/Time: 12/21/23 11:15	Received by/Company: (Signature) <i>[Signature]</i>	Date/Time:	MTJL LAB USE ONLY Table #:	OPAG .940 = .9	
Relinquished by/Company: (Signature) <i>[Signature]</i>	Date/Time: 12/21/23 1600	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:		Trip Blank Received: Y <input checked="" type="checkbox"/> N NA HCL MeOH TSP Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature) <i>Fab Wey</i>	Date/Time: 12-22-23	PM: PB:		Non Conformance(s): YES / NO

9:15

Caerus Oil and Gas

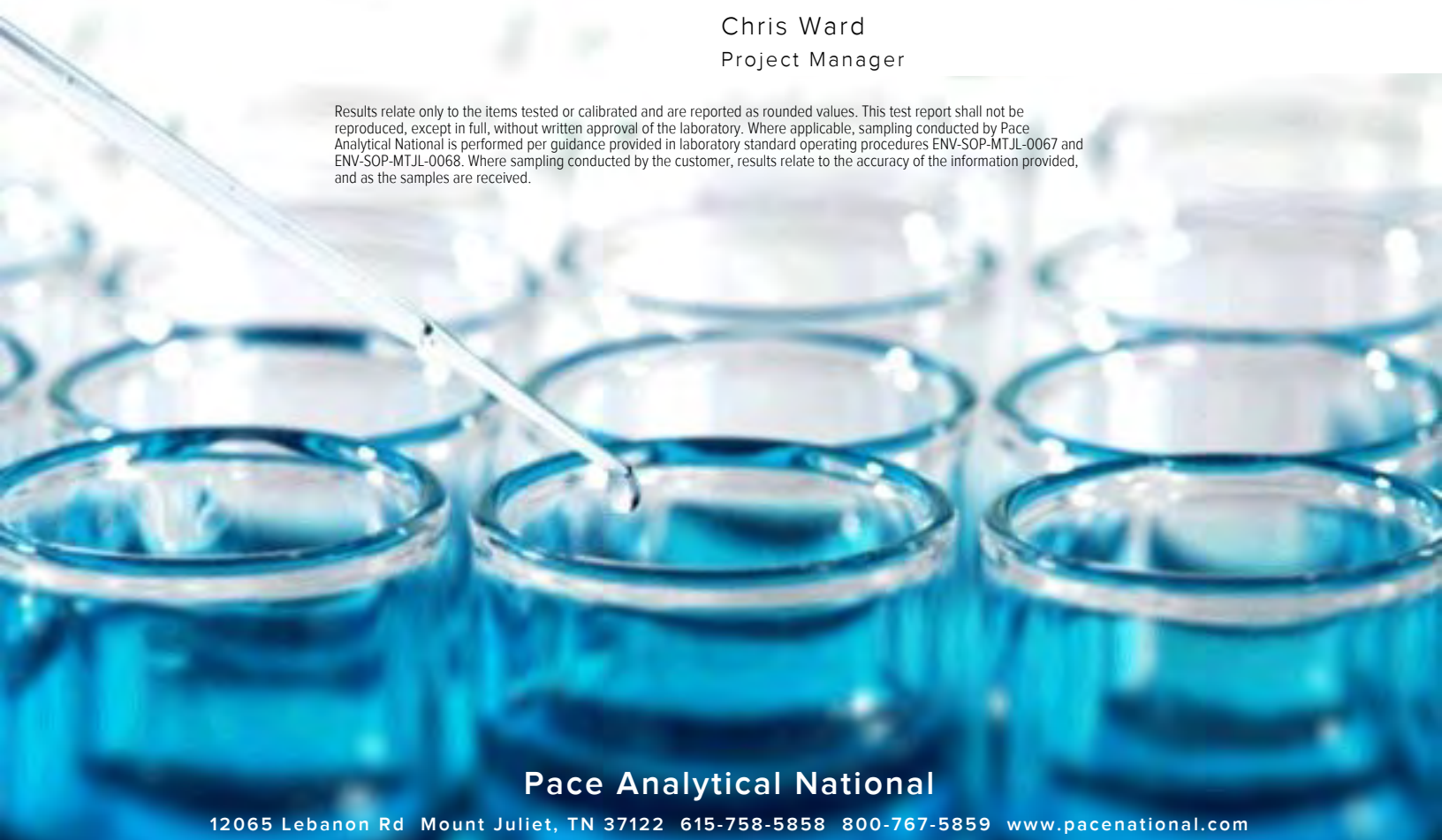
Sample Delivery Group: L1702071
Samples Received: 02/03/2024
Project Number: RD11 335004
Description: RD11 335004
Site: RD11 335004
Report To: Jake J. / Brett M. / Blair R. / Andy V.
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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

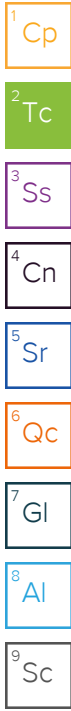


Pace Analytical National

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

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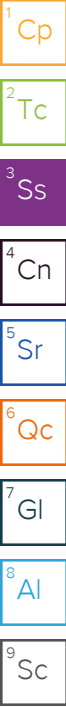


SAMPLE SUMMARY

20240201-RFBG-(RD11-N)@0.5 L1702071-01 Solid

Collected by: Dennis Lytle
 Collected date/time: 02/01/24 11:30
 Received date/time: 02/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2222708	1	02/10/24 11:09	02/10/24 11:09	JTM	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2222612	1	02/08/24 12:05	02/09/24 10:25	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2221518	1	02/07/24 08:33	02/07/24 11:30	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2221914	1	02/07/24 14:09	02/08/24 14:34	BJM	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2222715	1	02/09/24 11:38	02/09/24 18:54	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2221549	5	02/07/24 11:58	02/08/24 11:06	JPD	Mt. Juliet, TN



20240201-RFBG-(RD11-E)@0.5 L1702071-02 Solid

Collected by: Dennis Lytle
 Collected date/time: 02/01/24 11:45
 Received date/time: 02/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2222708	1	02/10/24 11:12	02/10/24 11:12	JTM	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2222612	1	02/08/24 12:05	02/09/24 10:31	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2221518	1	02/07/24 08:33	02/07/24 11:30	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2221914	1	02/07/24 14:09	02/08/24 14:34	BJM	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2222715	1	02/09/24 11:38	02/09/24 18:35	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2221549	5	02/07/24 11:58	02/08/24 11:10	JPD	Mt. Juliet, TN

20240201-RFBG-(RD11-W)@0.5 L1702071-03 Solid

Collected by: Dennis Lytle
 Collected date/time: 02/01/24 11:15
 Received date/time: 02/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2222708	1	02/10/24 11:15	02/10/24 11:15	JTM	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2222612	1	02/08/24 12:05	02/09/24 11:02	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2221518	1	02/07/24 08:33	02/07/24 11:30	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2221914	1	02/07/24 14:09	02/08/24 14:34	BJM	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2222715	1	02/09/24 11:38	02/09/24 18:34	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2221549	5	02/07/24 11:58	02/08/24 11:13	JPD	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0875		1	02/10/2024 11:09	WG2222708

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	02/09/2024 10:25	WG2222612

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.39	<u>T8</u>	1	02/07/2024 11:30	WG2221518

Sample Narrative:

L1702071-01 WG2221518: 7.39 at 21.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	258		10.0	1	02/08/2024 14:34	WG2221914

Sample Narrative:

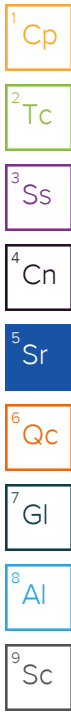
L1702071-01 WG2221914: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.740		0.200	1	02/09/2024 18:54	WG2222715

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.35		1.00	5	02/08/2024 11:06	WG2221549
Barium	158		2.50	5	02/08/2024 11:06	WG2221549
Cadmium	ND		1.00	5	02/08/2024 11:06	WG2221549
Copper	10.8		5.00	5	02/08/2024 11:06	WG2221549
Lead	9.48		2.00	5	02/08/2024 11:06	WG2221549
Nickel	10.9		2.50	5	02/08/2024 11:06	WG2221549
Selenium	ND		2.50	5	02/08/2024 11:06	WG2221549
Silver	ND		0.500	5	02/08/2024 11:06	WG2221549
Zinc	45.8		25.0	5	02/08/2024 11:06	WG2221549



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0751		1	02/10/2024 11:12	WG2222708

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	02/09/2024 10:31	WG2222612

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.19	<u>T8</u>	1	02/07/2024 11:30	WG2221518

Sample Narrative:

L1702071-02 WG2221518: 7.19 at 22.1C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	261		10.0	1	02/08/2024 14:34	WG2221914

Sample Narrative:

L1702071-02 WG2221914: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.480		0.200	1	02/09/2024 18:35	WG2222715

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.71		1.00	5	02/08/2024 11:10	WG2221549
Barium	151		2.50	5	02/08/2024 11:10	WG2221549
Cadmium	ND		1.00	5	02/08/2024 11:10	WG2221549
Copper	12.8		5.00	5	02/08/2024 11:10	WG2221549
Lead	10.1		2.00	5	02/08/2024 11:10	WG2221549
Nickel	25.0		2.50	5	02/08/2024 11:10	WG2221549
Selenium	ND		2.50	5	02/08/2024 11:10	WG2221549
Silver	ND		0.500	5	02/08/2024 11:10	WG2221549
Zinc	41.7		25.0	5	02/08/2024 11:10	WG2221549

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	0.138		1	02/10/2024 11:15	WG2222708

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	02/09/2024 11:02	WG2222612

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.03	<u>T8</u>	1	02/07/2024 11:30	WG2221518

Sample Narrative:

L1702071-03 WG2221518: 7.03 at 22C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	82.1		10.0	1	02/08/2024 14:34	WG2221914

Sample Narrative:

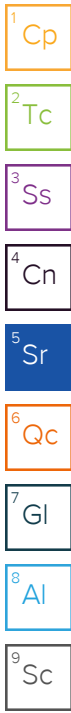
L1702071-03 WG2221914: at 25C

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	02/09/2024 18:34	WG2222715

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	5.22		1.00	5	02/08/2024 11:13	WG2221549
Barium	197		2.50	5	02/08/2024 11:13	WG2221549
Cadmium	ND		1.00	5	02/08/2024 11:13	WG2221549
Copper	11.2		5.00	5	02/08/2024 11:13	WG2221549
Lead	10.7		2.00	5	02/08/2024 11:13	WG2221549
Nickel	17.6		2.50	5	02/08/2024 11:13	WG2221549
Selenium	ND		2.50	5	02/08/2024 11:13	WG2221549
Silver	ND		0.500	5	02/08/2024 11:13	WG2221549
Zinc	51.9		25.0	5	02/08/2024 11:13	WG2221549



Method Blank (MB)

(MB) R4031975-1 02/09/24 10:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Hexavalent Chromium	0.483	↓	0.255	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1702071-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1702071-03 02/09/24 11:02 • (DUP) R4031975-3 02/09/24 11:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	ND	1	0.000		20

L1703363-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1703363-01 02/09/24 12:16 • (DUP) R4031975-4 02/09/24 12:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	ND	1	4.65		20

Laboratory Control Sample (LCS)

(LCS) R4031975-2 02/09/24 10:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Hexavalent Chromium	10.0	11.3	113	80.0-120	

L1703363-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1703363-05 02/09/24 12:47 • (MS) R4031975-5 02/09/24 12:54 • (MSD) R4031975-6 02/09/24 13:00

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	20.0	ND	16.3	15.8	79.4	77.0	1	75.0-125			2.99	20

L1703363-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1703363-05 02/09/24 12:47 • (MS) R4031975-9 02/09/24 13:06

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Hexavalent Chromium	651	ND	578	88.7	50	75.0-125	

L1702125-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1702125-01 02/07/24 11:30 • (DUP) R4030806-2 02/07/24 11:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
su	su			%		%
pH	8.16	8.19	1	0.367		1

Sample Narrative:

OS: 8.16 at 22.4C

DUP: 8.19 at 22C

L1702202-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1702202-01 02/07/24 11:30 • (DUP) R4030806-3 02/07/24 11:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
su	su			%		%
pH	8.08	8.10	1	0.247		1

Sample Narrative:

OS: 8.08 at 21.7C

DUP: 8.1 at 21.7C

Laboratory Control Sample (LCS)

(LCS) R4030806-1 02/07/24 11:30

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

Sample Narrative:

LCS: 10.02 at 20C

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4031478-1 02/08/24 14:34

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1702057-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1702057-01 02/08/24 14:34 • (DUP) R4031478-3 02/08/24 14:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Specific Conductance	82.0	81.8	1	0.244		20

Sample Narrative:

OS: at 25C
DUP: at 25C

L1702075-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1702075-01 02/08/24 14:34 • (DUP) R4031478-4 02/08/24 14:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Specific Conductance	186	183	1	1.57		20

Sample Narrative:

OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4031478-2 02/08/24 14:34

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Specific Conductance	327	338	103	85.0-115	

Sample Narrative:

LCS: at 25C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4032192-1 02/09/24 18:29

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) R4032192-2 02/09/24 18:30 • (LCSD) R4032192-3 02/09/24 18:32

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	1.00	1.04	100	104	80.0-120			4.11	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4031326-1 02/08/24 10:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R4031326-2 02/08/24 10:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	85.8	85.8	80.0-120	
Barium	100	83.8	83.8	80.0-120	
Cadmium	100	84.5	84.5	80.0-120	
Copper	100	82.4	82.4	80.0-120	
Lead	100	83.3	83.3	80.0-120	
Nickel	100	86.9	86.9	80.0-120	
Selenium	100	85.6	85.6	80.0-120	
Silver	20.0	17.5	87.7	80.0-120	
Zinc	100	83.6	83.6	80.0-120	

⁷Gl

⁸Al

⁹Sc

L1702066-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1702066-01 02/08/24 10:50 • (MS) R4031326-5 02/08/24 11:00 • (MSD) R4031326-6 02/08/24 11:03

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 %
Arsenic	100	12.2	97.8	109	85.5	96.4	5	75.0-125			10.5	20
Barium	100	783	930	1010	147	228	5	75.0-125	<u>V</u>	<u>V</u>	8.30	20
Cadmium	100	ND	94.8	107	94.3	107	5	75.0-125			12.3	20
Copper	100	15.9	91.8	106	75.9	90.5	5	75.0-125			14.7	20
Lead	100	13.7	101	115	87.6	101	5	75.0-125			12.5	20
Nickel	100	17.5	98.7	115	81.2	97.7	5	75.0-125			15.4	20
Selenium	100	ND	96.4	108	96.1	108	5	75.0-125			11.2	20
Silver	20.0	ND	19.2	21.4	95.8	107	5	75.0-125			11.2	20
Zinc	100	58.2	118	141	60.0	83.1	5	75.0-125	<u>J6</u>		17.8	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

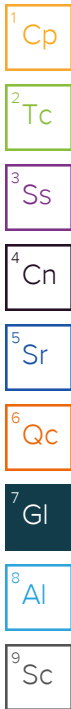
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
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.
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.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

