January 19, 2024

Jake Janicek
EHS Specialist
Caerus Oil & Gas LLC
jjanicek@caerusoilandgas.com

Report of Work Completed – Partially Buried Vessel Removal

ECMC Location Name (ID)	PUCKETT- 67S97W/1NWSE (324311)
Operator Location Name	Puckett 266-1
ECMC Remediation Project Number	30188
Legal Description	NWSE Sec. 1 T7S-R97W
Coordinates (Lat/Long)	39.471740 / -108.164468
County	Garfield County, Colorado

Mr. Janicek,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil & Gas LLC (Caerus) to document findings of the site assessment activities associated with the removal of a partially buried vessel (PBV) at the Puckett 266-1 well pad (Location). The Location is 6.1 miles northwest of Parachute, 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 Diagrams, and laboratory analytical reports. This ROWC provides background on the Location, methods used to complete the assessment, results of the assessment, and recommendations for how to proceed with this information.

Background

On June 28, 2023, Energy & Carbon Management Commission (ECMC) Form 27 Document 403422139 was submitted as notification to remove the PBV and to open Remediation Project 30188. The form and associated investigation plan were approved on July 7, 2023.

Methodology

On September 7, 2023, following the removal of the PBV, Confluence personnel completed initial investigation. One soil sample was collected from the base of the excavation at 8 feet below ground surface (bgs), and four samples were collected from the sidewalls of the excavation at 7 feet bgs. Soil samples were characterized using visual and olfactory observations and field screened using a photoionization detector (PID).

Soil samples were collected in laboratory provided jars, immediately placed on ice, and shipped under a completed chain-of-custody form to Pace Analytical Services (Pace). Excavation soil samples were analyzed for ECMC Table 915-1 soil constituents of concern.

Results

These results summarize observations from onsite 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 Diagrams. Laboratory analytical reports are attached and summarized in the Laboratory Results Summary Table.

Lithology and Hydrogeology

Lithology at the Location is characterized as organic silts and clays. Groundwater is expected to flow southeast toward Starkey Gulch and ultimately to the Colorado River, located 5.8 miles southeast of the Location. Division of Water Resources well permit 271289, located approximately 0.85 miles north of the Location, lists depth to groundwater as 234 feet bgs. The well sits at approximately 100 feet lower elevation than the Location. Based on this information, it is estimated that depth to groundwater at the Location is greater than 100 feet bgs. No groundwater was observed during sampling activities.

Initial Investigation

Field screening results indicated PID measurements ranging from 0.8 to 2.6 parts per million (ppm). Analytical results of excavation soil samples are compliant with Table 915-1 Residential Soil Screening Levels (RSSLs) except for pH, arsenic, and hexavalent chromium. The south sidewall sample exceeds for pH at 8.41. Exceedances of arsenic and hexavalent chromium were detected in all samples with concentrations ranging 5.44 to 21.3 milligrams per kilogram (mg/kg) and 0.382 to 0.545 mg/kg, respectively.

Analysis and Recommendations

Based on the estimated depth to groundwater of greater than 100 feet bgs, Confluence recommends that Caerus request to compare analytical results for the site assessment to Table 915-1 RSSLs as no reasonable pathway to groundwater appears to exist.

Although hexavalent chromium concentrations exceeding Table 915-1 RSSLs are present in the investigation area, they are below the laboratory Reported Detection Limit (RDL), or Practical Quantitation Limit (PQL), of 1.0 mg/kg. Consequently, Confluence recommends Caerus request consideration of ECMC Table 915-1 Footnote 9 to substitute the RDL of 1.0 mg/kg as an alternative screening level for hexavalent chromium.

Assuming the above requests are approved, levels of pH and arsenic exceeding Table 915-1 RSSLs remain in the investigation area. However, produced water characterization data collected from the Starkey 7 well pad (ECMC Location ID 335092), located 0.83 miles northeast of the Location, indicates a near-neutral pH of 6.99 and an arsenic value below laboratory detection limits. The produced water characterization sample collected from Starkey 7 was obtained from wells within the same formation (Williams Fork-Cameo) as the wells at the Location. Therefore, it is reasonable to assume the produced water sample is representative of produced water at the Location. Based on this information, Confluence recommends Caerus request consideration of Rule 915.e.(2).C to remove pH and arsenic as constituents of concern based on the process knowledge and analytical results derived from the Williams Fork-Cameo Formation.

Assuming the process knowledge and the recommended requests are approved, all constituents of concern are within Table 915-1 RSSLs or their proposed alternative allowable limit. Based on these results, Confluence concludes historical impacts are not present at the Location and recommends Caerus request a no further action (NFA) determination for Remediation Project 30188.

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.

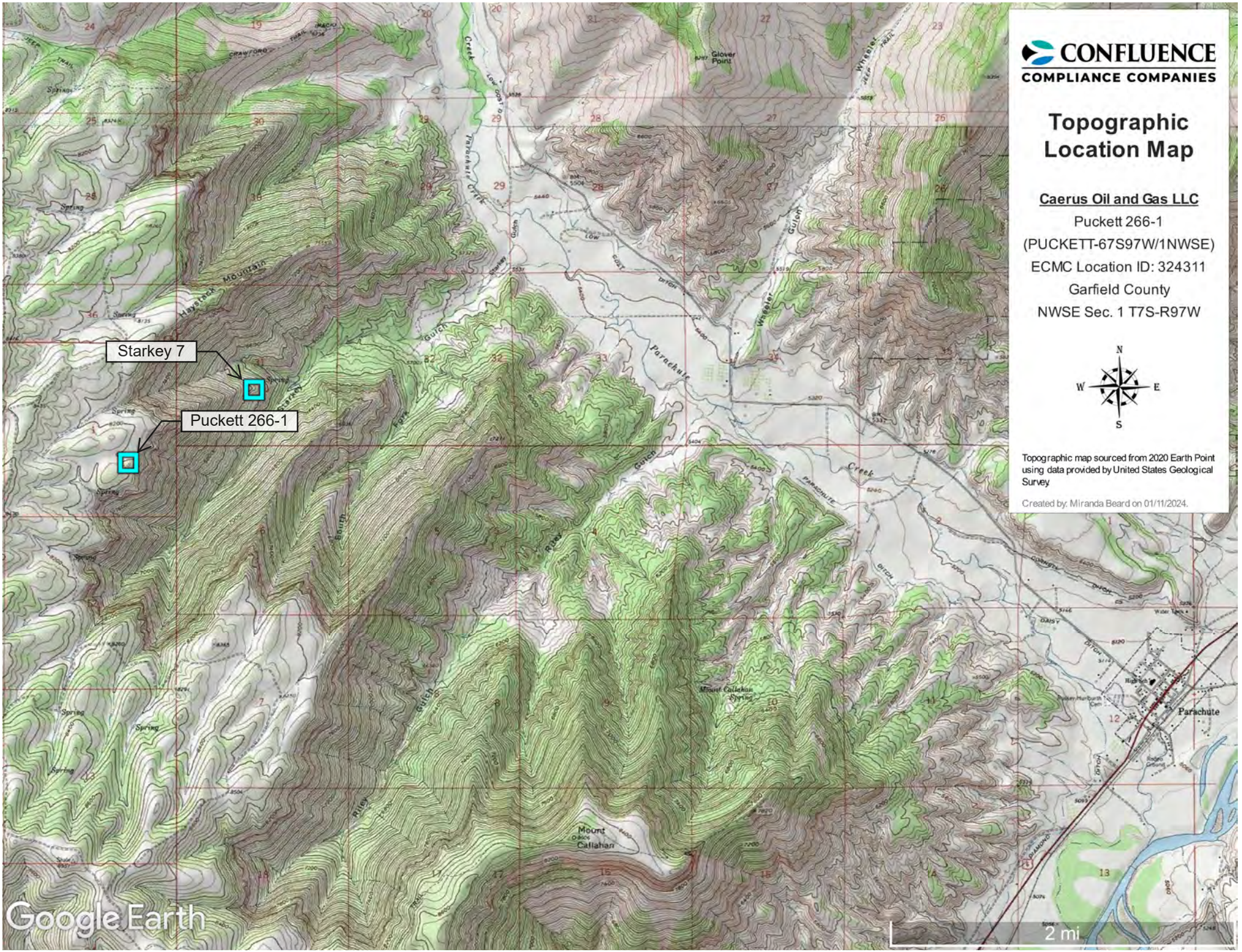
Regards,

Steve Sivigliano
Senior Project Manager
(970) 619-0600
steve.sivigliano@confluence-cc.com

Chris McKisson
Managing Partner
(720) 490-6758
chris.mckisson@confluence-cc.com

Attachments

- Topographic Location Diagram
- Site Diagram – Excavation Samples
- Laboratory Results Summary Table – Soil
- Laboratory Results Summary Table – Produced Water
- Laboratory Reports



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Topographic Location Map

Caerus Oil and Gas LLC

Puckett 266-1

(PUCKETT-67S97W/1NWSE)

ECMC Location ID: 324311

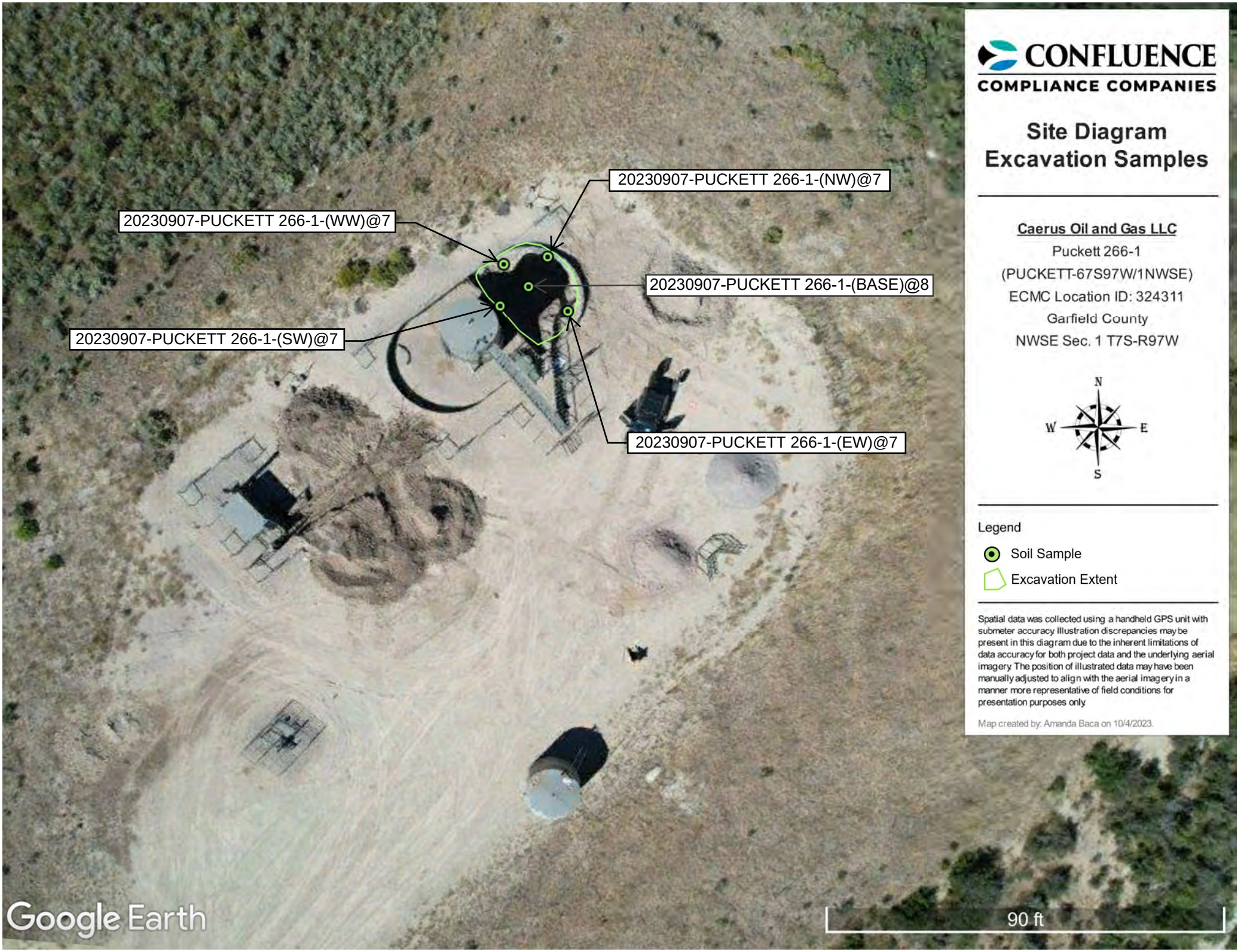
Garfield County

NWSE Sec. 1 T7S-R97W

N
W E
S

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

Created by: Miranda Beard on 01/11/2024.



CONFLUENCE
COMPLIANCE COMPANIES

Site Diagram
Excavation Samples

Caerus Oil and Gas LLC
Puckett 266-1
(PUCKETT-67S97W/1NWSE)
ECMC Location ID: 324311
Garfield County
NWSE Sec. 1 T7S-R97W

N
W E
S

Legend
- Soil Sample
- Excavation Extent

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

Map created by: Amanda Baca on 10/4/2023.

CONFLUENCE

Laboratory Results Summary Table - Soil
Puckett 266-1

1/19/2024

ECMC Soil Screening Levels				Organic Compounds (mg/kg [ppm])																											
ECMC Table 915-1 Residential -->			NA	500	NA	NA	NA	1.2	490	5.8	58	30	27	360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	18	24	2	180		
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Sample ID	PID (ppm)	TPH (total volatile and extractable petroleum hydrocarbons) (GRO+DRO+ORO)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-ORO (C28-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total (sum of o-, m-, p- isomers)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(A)pyrene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Chrysene	Dibenz(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,C,D)pyrene	1- Methylnaphthalene	2- Methylnaphthalene	Naphthalene	Pyrene		
9/7/2023	Tank	**20230907-PUCKETT 266-1-(BASE)@8**	**2.0**	**103.2**	**0.0262**	**32.9**	**70.3**	*<0.00100*	*<0.00500*	*<0.00250*	*<0.00650*	*<0.00500*	*<0.00500*	*<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*		
9/7/2023	Tank	**20230907-PUCKETT 266-1-(EW)@7**	**2.5**	**13.51**	*<0.100*	**7.34**	**6.17**	*<0.00100*	*<0.00500*	*<0.00250*	*<0.00650*	*<0.00500*	*<0.00500*	*<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*		
9/7/2023	Tank	**20230907-PUCKETT 266-1-(NW)@7**	**0.8**	**2.74**	*<0.100*	**1.66**	**1.08**	*<0.00100*	*<0.00500*	*<0.00250*	*<0.00650*	*<0.00500*	*<0.00500*	*<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*		
9/7/2023	Tank	**20230907-PUCKETT 266-1-(SW)@7**	**2.6**	**50.4**	*<0.100*	**16.2**	**34.2**	*<0.00100*	*<0.00500*	*<0.00250*	*<0.00650*	*<0.00500*	*<0.00500*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.00600*	*<0.0200*	**0.00549**	*<0.0200*	*<0.00600*		
9/7/2023	Tank	**20230907-PUCKETT 266-1-(WW)@7**	**2.1**	**39.0**	*<0.100*	**15.5**	**23.5**	*<0.00100*	*<0.00500*	*<0.00250*	*<0.00650*	*<0.00500*	*<0.00500*	*<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*		

Confluence Compliance Companies, LLC
info@confluence-cc.com

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

CONFLUENCE

Laboratory Results Summary Table - Soil
Puckett 266-1

1/19/2024

		ECMC Soil Screening Levels	Soil Suitability for Reclamation				Metals (mg/kg [ppm])									
		ECMC Table 915-1 Residential -->	4	6	6-8.3	2	0.68	15000	71	0.3	3100	400	1500	390	390	23000
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Sample ID	EC (Specific Conductance) (millimhos/centimeter) (by saturated paste method)	SAR (Sodium Adsorption Ratio) (calculation) (by saturated paste method)	pH (pH Units) (by saturated paste method)	Boron - Hot Water Soluble (mg/L)	Arsenic	Barium	Cadmium (mg/kg)	Chromium (VI)	Copper	Lead	Nickel	Selenium	Silver	Zinc
9/7/2023	Tank	**20230907-PUCKETT 266-1-(BASE)@8**	**0.125**	**0.382**	**8.15**	**0.136**	**7.73**	**290**	**0.340**	**0.545**	**15.0**	**9.30**	**15.3**	**0.492**	*<0.500*	**41.5**
9/7/2023	Tank	**20230907-PUCKETT 266-1-(EW)@7**	**0.126**	**0.330**	**8.24**	**0.193**	**9.26**	**268**	**0.394**	**0.464**	**19.1**	**12.7**	**17.8**	**0.521**	*<0.500*	**56.2**
9/7/2023	Tank	**20230907-PUCKETT 266-1-(NW)@7**	**0.116**	**0.510**	**8.18**	**0.231**	**9.57**	**282**	**0.350**	**0.480**	**19.4**	**13.9**	**22.2**	**0.547**	*<0.500*	**58.2**
9/7/2023	Tank	**20230907-PUCKETT 266-1-(SW)@7**	**0.150**	**1.71**	**8.41**	**0.332**	**5.44**	**202**	**0.325**	**0.447**	**18.4**	**10.6**	**17.2**	**0.410**	*<0.500*	**57.3**
9/7/2023	Tank	**20230907-PUCKETT 266-1-(WW)@7**	**0.118**	**0.461**	**8.26**	**0.238**	**21.3**	**265**	**0.405**	**0.382**	**20.0**	**10.8**	**24.0**	**0.975**	*<0.500*	**57.6**

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"NA" = Not Analyzed
mg/kg = milligrams per kilogram / parts per million

CONFLUENCE

Laboratory Results Summary Table - Source Water
Starkey 7

1/9/2024

ECMC Allowable Concentration (915-Groundwater)			ECMC Standard Not Applicable	
Location	**Sample Date**	**Sample ID**	**Arsenic, dissolved (mg/L)**	**pH (su)**
Starkey 7	12/4/23	**20231204-LMSOURCE-(STARKEY 7-T)**	*<0.0200*	**6.99**

Confluence Compliance Companies, LLC
info@confluence-cc.com

mg/L = milligrams per liter / parts per million
su = standard units

ANALYTICAL REPORT

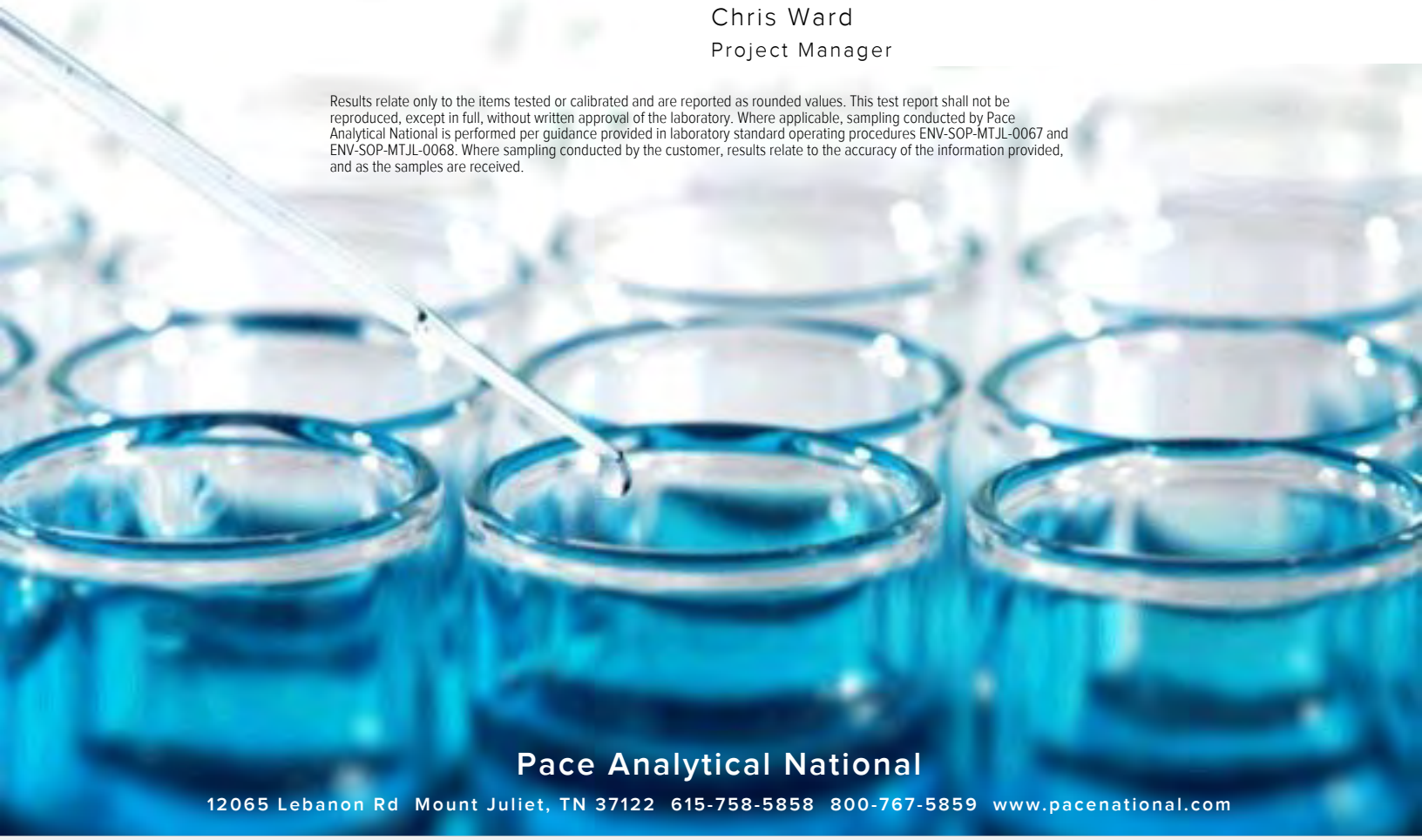
September 19, 2023

Caerus Oil and Gas

Sample Delivery Group:	L1654319
Samples Received:	09/09/2023
Project Number:	
Description:	Puckett 266-1 PBV
Site:	PUCKETT 266-1
Report To:	Jake J. / Brett M. / Blair R, / Andy V. 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

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20230907-PUCKETT 266-1-(BASE)@8 L1654319-01 Solid

Collected by: Ahmed Shah | Collected date/time: 09/07/23 14:15 | Received date/time: 09/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2131635	1	09/17/23 12:02	09/17/23 12:02	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2131982	1	09/14/23 15:15	09/15/23 10:53	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2132984	1	09/15/23 16:00	09/15/23 16:40	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2132495	1	09/15/23 10:30	09/15/23 13:31	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2131641	1	09/15/23 13:14	09/16/23 13:29	SPL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2132117	5	09/14/23 08:25	09/16/23 16:06	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2132620	1	09/14/23 11:13	09/15/23 01:50	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2132650	1	09/14/23 11:13	09/14/23 22:15	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2132049	1	09/16/23 13:54	09/17/23 03:37	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2132067	1	09/15/23 15:41	09/16/23 19:36	JCH	Mt. Juliet, TN

20230907-PUCKETT 266-1-(NW)@7 L1654319-02 Solid

Collected by: Ahmed Shah | Collected date/time: 09/07/23 14:30 | Received date/time: 09/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2131633	1	09/18/23 11:05	09/18/23 11:05	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2131982	1	09/14/23 15:15	09/15/23 10:58	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2132984	1	09/15/23 16:00	09/15/23 16:40	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2132495	1	09/15/23 10:30	09/15/23 13:31	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2131644	1	09/15/23 11:58	09/15/23 22:16	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2132117	5	09/14/23 08:25	09/16/23 16:09	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2132620	1	09/14/23 11:13	09/15/23 02:08	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2132650	1	09/14/23 11:13	09/14/23 22:35	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2132049	1	09/16/23 13:54	09/17/23 02:58	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2132067	1	09/15/23 15:41	09/16/23 19:54	JCH	Mt. Juliet, TN

20230907-PUCKETT 266-1-(EW)@7 L1654319-03 Solid

Collected by: Ahmed Shah | Collected date/time: 09/07/23 14:45 | Received date/time: 09/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2131633	1	09/18/23 11:07	09/18/23 11:07	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2131982	1	09/14/23 15:15	09/15/23 11:03	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2132984	1	09/15/23 16:00	09/15/23 16:40	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2132495	1	09/15/23 10:30	09/15/23 13:31	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2131644	1	09/15/23 11:58	09/15/23 22:24	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2132117	5	09/14/23 08:25	09/16/23 16:13	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2132620	1	09/14/23 11:13	09/15/23 02:27	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2132650	1	09/14/23 11:13	09/14/23 22:54	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2133792	1	09/19/23 05:02	09/19/23 12:27	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2132067	1	09/15/23 15:41	09/16/23 20:12	JCH	Mt. Juliet, TN

20230907-PUCKETT 266-1-(SW)@7 L1654319-04 Solid

Collected by: Ahmed Shah | Collected date/time: 09/07/23 14:40 | Received date/time: 09/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2131635	1	09/17/23 12:08	09/17/23 12:08	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2131982	1	09/14/23 15:15	09/15/23 11:08	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2132984	1	09/15/23 16:00	09/15/23 16:40	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2133342	1	09/15/23 17:10	09/16/23 10:26	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2131641	1	09/15/23 13:14	09/16/23 13:38	SPL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2132117	5	09/14/23 08:25	09/16/23 15:33	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2132620	1	09/14/23 11:13	09/15/23 02:45	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2132650	1	09/14/23 11:13	09/14/23 23:14	JAH	Mt. Juliet, TN

SAMPLE SUMMARY

20230907-PUCKETT 266-1-(SW)@7 L1654319-04 Solid

Collected by: Ahmed Shah
Collected date/time: 09/07/23 14:40
Received date/time: 09/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2132834	1	09/16/23 15:08	09/17/23 10:58	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2132067	1	09/15/23 15:41	09/16/23 20:30	JCH	Mt. Juliet, TN

20230907-PUCKETT 266-1-(WW)@7 L1654319-05 Solid

Collected by: Ahmed Shah
Collected date/time: 09/07/23 14:50
Received date/time: 09/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2131633	1	09/18/23 11:10	09/18/23 11:10	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2131982	1	09/14/23 15:15	09/15/23 11:19	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2132984	1	09/15/23 16:00	09/15/23 16:40	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2132495	1	09/15/23 10:30	09/15/23 13:31	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2131644	1	09/15/23 11:58	09/15/23 22:27	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2132117	5	09/14/23 08:25	09/16/23 16:16	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2132620	1	09/14/23 11:13	09/15/23 03:03	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2132650	1	09/14/23 11:13	09/14/23 23:33	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2132834	1	09/16/23 15:08	09/17/23 10:45	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2132067	1	09/15/23 15:41	09/16/23 20:47	JCH	Mt. Juliet, TN

CASE NARRATIVE

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.382		1	09/17/2023 12:02	WG2131635

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.545	J	0.255	1.00	1	09/15/2023 10:53	WG2131982

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.15	T8	1	09/15/2023 16:40	WG2132984

Sample Narrative:

L1654319-01 WG2132984: 8.15 at 20.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	125		10.0	1	09/15/2023 13:31	WG2132495

Sample Narrative:

L1654319-01 WG2132495: at 25C

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	0.136	J	0.0167	0.200	1	09/16/2023 13:29	WG2131641

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.73		0.100	1.00	5	09/16/2023 16:06	WG2132117
Barium	290		0.152	2.50	5	09/16/2023 16:06	WG2132117
Cadmium	0.340	B J	0.0855	1.00	5	09/16/2023 16:06	WG2132117
Copper	15.0		0.132	5.00	5	09/16/2023 16:06	WG2132117
Lead	9.30		0.0990	2.00	5	09/16/2023 16:06	WG2132117
Nickel	15.3		0.197	2.50	5	09/16/2023 16:06	WG2132117
Selenium	0.492	B J	0.180	2.50	5	09/16/2023 16:06	WG2132117
Silver	U		0.0865	0.500	5	09/16/2023 16:06	WG2132117
Zinc	41.5		0.740	25.0	5	09/16/2023 16:06	WG2132117

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	0.0262	J	0.0217	0.100	1	09/15/2023 01:50	WG2132620
(S) a,a,a-Trifluorotoluene(FID)	*86.9*			*77.0-120*		*09/15/2023 01:50*	WG2132620

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2023 22:15	WG2132650
Toluene	U		0.00130	0.00500	1	09/14/2023 22:15	WG2132650
Ethylbenzene	U		0.000737	0.00250	1	09/14/2023 22:15	WG2132650
Xylenes, Total	U		0.000880	0.00650	1	09/14/2023 22:15	WG2132650
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	09/14/2023 22:15	WG2132650
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	09/14/2023 22:15	WG2132650
(S) Toluene-d8	*104*			*75.0-131*		*09/14/2023 22:15*	WG2132650
(S) 4-Bromofluorobenzene	*101*			*67.0-138*		*09/14/2023 22:15*	WG2132650
(S) 1,2-Dichloroethane-d4	*91.6*			*70.0-130*		*09/14/2023 22:15*	WG2132650

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	32.9		1.61	4.00	1	09/17/2023 03:37	WG2132049
C28-C36 Motor Oil Range	70.3		0.274	4.00	1	09/17/2023 03:37	WG2132049
(S) o-Terphenyl	*33.5*			*18.0-148*		*09/17/2023 03:37*	WG2132049

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	09/16/2023 19:36	WG2132067
Anthracene	U		0.00230	0.00600	1	09/16/2023 19:36	WG2132067
Benzo(a)anthracene	U		0.00173	0.00600	1	09/16/2023 19:36	WG2132067
Benzo(b)fluoranthene	U		0.00153	0.00600	1	09/16/2023 19:36	WG2132067
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/16/2023 19:36	WG2132067
Benzo(a)pyrene	U		0.00179	0.00600	1	09/16/2023 19:36	WG2132067
Chrysene	U		0.00232	0.00600	1	09/16/2023 19:36	WG2132067
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/16/2023 19:36	WG2132067
Fluoranthene	U		0.00227	0.00600	1	09/16/2023 19:36	WG2132067
Fluorene	U		0.00205	0.00600	1	09/16/2023 19:36	WG2132067
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/16/2023 19:36	WG2132067
1-Methylnaphthalene	U		0.00449	0.0200	1	09/16/2023 19:36	WG2132067
2-Methylnaphthalene	U		0.00427	0.0200	1	09/16/2023 19:36	WG2132067
Naphthalene	U		0.00408	0.0200	1	09/16/2023 19:36	WG2132067
Pyrene	U		0.00200	0.00600	1	09/16/2023 19:36	WG2132067
(S) p-Terphenyl-d14	*83.4*			*23.0-120*		*09/16/2023 19:36*	WG2132067
(S) Nitrobenzene-d5	*107*			*14.0-149*		*09/16/2023 19:36*	WG2132067
(S) 2-Fluorobiphenyl	*90.6*			*34.0-125*		*09/16/2023 19:36*	WG2132067

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.510		1	09/18/2023 11:05	WG2131633

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.480	J	0.255	1.00	1	09/15/2023 10:58	WG2131982

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.18	T8	1	09/15/2023 16:40	WG2132984

Sample Narrative:

L1654319-02 WG2132984: 8.18 at 21C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	116		10.0	1	09/15/2023 13:31	WG2132495

Sample Narrative:

L1654319-02 WG2132495: at 25C

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	0.231		0.0167	0.200	1	09/15/2023 22:16	WG2131644

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.57		0.100	1.00	5	09/16/2023 16:09	WG2132117
Barium	282		0.152	2.50	5	09/16/2023 16:09	WG2132117
Cadmium	0.350	B J	0.0855	1.00	5	09/16/2023 16:09	WG2132117
Copper	19.4		0.132	5.00	5	09/16/2023 16:09	WG2132117
Lead	13.9		0.0990	2.00	5	09/16/2023 16:09	WG2132117
Nickel	22.2		0.197	2.50	5	09/16/2023 16:09	WG2132117
Selenium	0.547	B J	0.180	2.50	5	09/16/2023 16:09	WG2132117
Silver	U		0.0865	0.500	5	09/16/2023 16:09	WG2132117
Zinc	58.2		0.740	25.0	5	09/16/2023 16:09	WG2132117

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/15/2023 02:08	WG2132620
(S) a,a,a-Trifluorotoluene(FID)	*86.9*			*77.0-120*		*09/15/2023 02:08*	WG2132620

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2023 22:35	WG2132650
Toluene	U		0.00130	0.00500	1	09/14/2023 22:35	WG2132650
Ethylbenzene	U		0.000737	0.00250	1	09/14/2023 22:35	WG2132650
Xylenes, Total	U		0.000880	0.00650	1	09/14/2023 22:35	WG2132650
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	09/14/2023 22:35	WG2132650
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	09/14/2023 22:35	WG2132650
(S) Toluene-d8	*103*			*75.0-131*		*09/14/2023 22:35*	WG2132650
(S) 4-Bromofluorobenzene	*101*			*67.0-138*		*09/14/2023 22:35*	WG2132650
(S) 1,2-Dichloroethane-d4	*93.1*			*70.0-130*		*09/14/2023 22:35*	WG2132650

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	1.66	J	1.61	4.00	1	09/17/2023 02:58	WG2132049
C28-C36 Motor Oil Range	1.08	J	0.274	4.00	1	09/17/2023 02:58	WG2132049
(S) o-Terphenyl	*26.6*			*18.0-148*		*09/17/2023 02:58*	WG2132049

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	09/16/2023 19:54	WG2132067
Anthracene	U		0.00230	0.00600	1	09/16/2023 19:54	WG2132067
Benzo(a)anthracene	U		0.00173	0.00600	1	09/16/2023 19:54	WG2132067
Benzo(b)fluoranthene	U		0.00153	0.00600	1	09/16/2023 19:54	WG2132067
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/16/2023 19:54	WG2132067
Benzo(a)pyrene	U		0.00179	0.00600	1	09/16/2023 19:54	WG2132067
Chrysene	U		0.00232	0.00600	1	09/16/2023 19:54	WG2132067
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/16/2023 19:54	WG2132067
Fluoranthene	U		0.00227	0.00600	1	09/16/2023 19:54	WG2132067
Fluorene	U		0.00205	0.00600	1	09/16/2023 19:54	WG2132067
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/16/2023 19:54	WG2132067
1-Methylnaphthalene	U		0.00449	0.0200	1	09/16/2023 19:54	WG2132067
2-Methylnaphthalene	U		0.00427	0.0200	1	09/16/2023 19:54	WG2132067
Naphthalene	U		0.00408	0.0200	1	09/16/2023 19:54	WG2132067
Pyrene	U		0.00200	0.00600	1	09/16/2023 19:54	WG2132067
(S) p-Terphenyl-d14	*61.1*			*23.0-120*		*09/16/2023 19:54*	WG2132067
(S) Nitrobenzene-d5	*98.1*			*14.0-149*		*09/16/2023 19:54*	WG2132067
(S) 2-Fluorobiphenyl	*45.4*			*34.0-125*		*09/16/2023 19:54*	WG2132067

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.330		1	09/18/2023 11:07	WG2131633

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.464	J	0.255	1.00	1	09/15/2023 11:03	WG2131982

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.24	T8	1	09/15/2023 16:40	WG2132984

Sample Narrative:

L1654319-03 WG2132984: 8.24 at 21C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	126		10.0	1	09/15/2023 13:31	WG2132495

Sample Narrative:

L1654319-03 WG2132495: at 25C

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	0.193	J	0.0167	0.200	1	09/15/2023 22:24	WG2131644

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.26		0.100	1.00	5	09/16/2023 16:13	WG2132117
Barium	268		0.152	2.50	5	09/16/2023 16:13	WG2132117
Cadmium	0.394	B J	0.0855	1.00	5	09/16/2023 16:13	WG2132117
Copper	19.1		0.132	5.00	5	09/16/2023 16:13	WG2132117
Lead	12.7		0.0990	2.00	5	09/16/2023 16:13	WG2132117
Nickel	17.8		0.197	2.50	5	09/16/2023 16:13	WG2132117
Selenium	0.521	B J	0.180	2.50	5	09/16/2023 16:13	WG2132117
Silver	U		0.0865	0.500	5	09/16/2023 16:13	WG2132117
Zinc	56.2		0.740	25.0	5	09/16/2023 16:13	WG2132117

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/15/2023 02:27	WG2132620
(S) a,a,a-Trifluorotoluene(FID)	*89.0*			*77.0-120*		*09/15/2023 02:27*	WG2132620

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2023 22:54	WG2132650
Toluene	U		0.00130	0.00500	1	09/14/2023 22:54	WG2132650
Ethylbenzene	U		0.000737	0.00250	1	09/14/2023 22:54	WG2132650
Xylenes, Total	U		0.000880	0.00650	1	09/14/2023 22:54	WG2132650
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	09/14/2023 22:54	WG2132650
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	09/14/2023 22:54	WG2132650
(S) Toluene-d8	*104*			*75.0-131*		*09/14/2023 22:54*	WG2132650
(S) 4-Bromofluorobenzene	*99.1*			*67.0-138*		*09/14/2023 22:54*	WG2132650
(S) 1,2-Dichloroethane-d4	*88.9*			*70.0-130*		*09/14/2023 22:54*	WG2132650

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.34		1.61	4.00	1	09/19/2023 12:27	WG2133792
C28-C36 Motor Oil Range	6.17		0.274	4.00	1	09/19/2023 12:27	WG2133792
(S) o-Terphenyl	*35.1*			*18.0-148*		*09/19/2023 12:27*	WG2133792

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	09/16/2023 20:12	WG2132067
Anthracene	U		0.00230	0.00600	1	09/16/2023 20:12	WG2132067
Benzo(a)anthracene	U		0.00173	0.00600	1	09/16/2023 20:12	WG2132067
Benzo(b)fluoranthene	U		0.00153	0.00600	1	09/16/2023 20:12	WG2132067
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/16/2023 20:12	WG2132067
Benzo(a)pyrene	U		0.00179	0.00600	1	09/16/2023 20:12	WG2132067
Chrysene	U		0.00232	0.00600	1	09/16/2023 20:12	WG2132067
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/16/2023 20:12	WG2132067
Fluoranthene	U		0.00227	0.00600	1	09/16/2023 20:12	WG2132067
Fluorene	U		0.00205	0.00600	1	09/16/2023 20:12	WG2132067
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/16/2023 20:12	WG2132067
1-Methylnaphthalene	U		0.00449	0.0200	1	09/16/2023 20:12	WG2132067
2-Methylnaphthalene	U		0.00427	0.0200	1	09/16/2023 20:12	WG2132067
Naphthalene	U		0.00408	0.0200	1	09/16/2023 20:12	WG2132067
Pyrene	U		0.00200	0.00600	1	09/16/2023 20:12	WG2132067
(S) p-Terphenyl-d14	*58.8*			*23.0-120*		*09/16/2023 20:12*	WG2132067
(S) Nitrobenzene-d5	*92.8*			*14.0-149*		*09/16/2023 20:12*	WG2132067
(S) 2-Fluorobiphenyl	*52.5*			*34.0-125*		*09/16/2023 20:12*	WG2132067

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.71		1	09/17/2023 12:08	WG2131635

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.447	J	0.255	1.00	1	09/15/2023 11:08	WG2131982

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.41	T8	1	09/15/2023 16:40	WG2132984

Sample Narrative:

L1654319-04 WG2132984: 8.41 at 20.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	150		10.0	1	09/16/2023 10:26	WG2133342

Sample Narrative:

L1654319-04 WG2133342: at 25C

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	0.332		0.0167	0.200	1	09/16/2023 13:38	WG2131641

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.44	O1	0.100	1.00	5	09/16/2023 15:33	WG2132117
Barium	202	J5 O1	0.152	2.50	5	09/16/2023 15:33	WG2132117
Cadmium	0.325	B J	0.0855	1.00	5	09/16/2023 15:33	WG2132117
Copper	18.4	O1	0.132	5.00	5	09/16/2023 15:33	WG2132117
Lead	10.6	O1	0.0990	2.00	5	09/16/2023 15:33	WG2132117
Nickel	17.2	O1	0.197	2.50	5	09/16/2023 15:33	WG2132117
Selenium	0.410	B J	0.180	2.50	5	09/16/2023 15:33	WG2132117
Silver	U		0.0865	0.500	5	09/16/2023 15:33	WG2132117
Zinc	57.3	O1	0.740	25.0	5	09/16/2023 15:33	WG2132117

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/15/2023 02:45	WG2132620
(S) a,a,a-Trifluorotoluene(FID)	*89.8*			*77.0-120*		*09/15/2023 02:45*	WG2132620

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2023 23:14	WG2132650
Toluene	U		0.00130	0.00500	1	09/14/2023 23:14	WG2132650
Ethylbenzene	U		0.000737	0.00250	1	09/14/2023 23:14	WG2132650
Xylenes, Total	U		0.000880	0.00650	1	09/14/2023 23:14	WG2132650
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	09/14/2023 23:14	WG2132650
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	09/14/2023 23:14	WG2132650
(S) Toluene-d8	*102*			*75.0-131*		*09/14/2023 23:14*	WG2132650
(S) 4-Bromofluorobenzene	*99.4*			*67.0-138*		*09/14/2023 23:14*	WG2132650
(S) 1,2-Dichloroethane-d4	*94.5*			*70.0-130*		*09/14/2023 23:14*	WG2132650

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	16.2		1.61	4.00	1	09/17/2023 10:58	WG2132834
C28-C36 Motor Oil Range	34.2		0.274	4.00	1	09/17/2023 10:58	WG2132834
(S) o-Terphenyl	*25.5*			*18.0-148*		*09/17/2023 10:58*	WG2132834

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	09/16/2023 20:30	WG2132067
Anthracene	U		0.00230	0.00600	1	09/16/2023 20:30	WG2132067
Benzo(a)anthracene	U		0.00173	0.00600	1	09/16/2023 20:30	WG2132067
Benzo(b)fluoranthene	U		0.00153	0.00600	1	09/16/2023 20:30	WG2132067
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/16/2023 20:30	WG2132067
Benzo(a)pyrene	U		0.00179	0.00600	1	09/16/2023 20:30	WG2132067
Chrysene	U		0.00232	0.00600	1	09/16/2023 20:30	WG2132067
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/16/2023 20:30	WG2132067
Fluoranthene	U		0.00227	0.00600	1	09/16/2023 20:30	WG2132067
Fluorene	U		0.00205	0.00600	1	09/16/2023 20:30	WG2132067
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/16/2023 20:30	WG2132067
1-Methylnaphthalene	U		0.00449	0.0200	1	09/16/2023 20:30	WG2132067
2-Methylnaphthalene	0.00549	J	0.00427	0.0200	1	09/16/2023 20:30	WG2132067
Naphthalene	U		0.00408	0.0200	1	09/16/2023 20:30	WG2132067
Pyrene	U		0.00200	0.00600	1	09/16/2023 20:30	WG2132067
(S) p-Terphenyl-d14	*63.1*			*23.0-120*		*09/16/2023 20:30*	WG2132067
(S) Nitrobenzene-d5	*103*			*14.0-149*		*09/16/2023 20:30*	WG2132067
(S) 2-Fluorobiphenyl	*56.9*			*34.0-125*		*09/16/2023 20:30*	WG2132067

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.461		1	09/18/2023 11:10	WG2131633

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.382	J	0.255	1.00	1	09/15/2023 11:19	WG2131982

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.26	T8	1	09/15/2023 16:40	WG2132984

Sample Narrative:

L1654319-05 WG2132984: 8.26 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	118		10.0	1	09/15/2023 13:31	WG2132495

Sample Narrative:

L1654319-05 WG2132495: at 25C

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	0.238		0.0167	0.200	1	09/15/2023 22:27	WG2131644

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	21.3		0.100	1.00	5	09/16/2023 16:16	WG2132117
Barium	265		0.152	2.50	5	09/16/2023 16:16	WG2132117
Cadmium	0.405	B J	0.0855	1.00	5	09/16/2023 16:16	WG2132117
Copper	20.0		0.132	5.00	5	09/16/2023 16:16	WG2132117
Lead	10.8		0.0990	2.00	5	09/16/2023 16:16	WG2132117
Nickel	24.0		0.197	2.50	5	09/16/2023 16:16	WG2132117
Selenium	0.975	B J	0.180	2.50	5	09/16/2023 16:16	WG2132117
Silver	U		0.0865	0.500	5	09/16/2023 16:16	WG2132117
Zinc	57.6		0.740	25.0	5	09/16/2023 16:16	WG2132117

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/15/2023 03:03	WG2132620
(S) a,a,a-Trifluorotoluene(FID)	*86.7*			*77.0-120*		*09/15/2023 03:03*	WG2132620

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	09/14/2023 23:33	WG2132650
Toluene	U		0.00130	0.00500	1	09/14/2023 23:33	WG2132650
Ethylbenzene	U		0.000737	0.00250	1	09/14/2023 23:33	WG2132650
Xylenes, Total	U		0.000880	0.00650	1	09/14/2023 23:33	WG2132650
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	09/14/2023 23:33	WG2132650
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	09/14/2023 23:33	WG2132650
(S) Toluene-d8	*102*			*75.0-131*		*09/14/2023 23:33*	WG2132650
(S) 4-Bromofluorobenzene	*99.6*			*67.0-138*		*09/14/2023 23:33*	WG2132650
(S) 1,2-Dichloroethane-d4	*92.9*			*70.0-130*		*09/14/2023 23:33*	WG2132650

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	15.5		1.61	4.00	1	09/17/2023 10:45	WG2132834
C28-C36 Motor Oil Range	23.5		0.274	4.00	1	09/17/2023 10:45	WG2132834
(S) o-Terphenyl	*22.3*			*18.0-148*		*09/17/2023 10:45*	WG2132834

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	09/16/2023 20:47	WG2132067
Anthracene	U		0.00230	0.00600	1	09/16/2023 20:47	WG2132067
Benzo(a)anthracene	U		0.00173	0.00600	1	09/16/2023 20:47	WG2132067
Benzo(b)fluoranthene	U		0.00153	0.00600	1	09/16/2023 20:47	WG2132067
Benzo(k)fluoranthene	U		0.00215	0.00600	1	09/16/2023 20:47	WG2132067
Benzo(a)pyrene	U		0.00179	0.00600	1	09/16/2023 20:47	WG2132067
Chrysene	U		0.00232	0.00600	1	09/16/2023 20:47	WG2132067
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	09/16/2023 20:47	WG2132067
Fluoranthene	U		0.00227	0.00600	1	09/16/2023 20:47	WG2132067
Fluorene	U		0.00205	0.00600	1	09/16/2023 20:47	WG2132067
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	09/16/2023 20:47	WG2132067
1-Methylnaphthalene	U		0.00449	0.0200	1	09/16/2023 20:47	WG2132067
2-Methylnaphthalene	U		0.00427	0.0200	1	09/16/2023 20:47	WG2132067
Naphthalene	U		0.00408	0.0200	1	09/16/2023 20:47	WG2132067
Pyrene	U		0.00200	0.00600	1	09/16/2023 20:47	WG2132067
(S) p-Terphenyl-d14	*73.2*			*23.0-120*		*09/16/2023 20:47*	WG2132067
(S) Nitrobenzene-d5	*96.1*			*14.0-149*		*09/16/2023 20:47*	WG2132067
(S) 2-Fluorobiphenyl	*75.3*			*34.0-125*		*09/16/2023 20:47*	WG2132067

Method Blank (MB)

(MB) R3973671-1 09/15/23 09:48

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

L1654319-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1654319-04 09/15/23 11:08 • (DUP) R3973671-7 09/15/23 11:13

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	0.447	0.466	1	4.19	J	20

L1654324-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1654324-03 09/15/23 11:34 • (DUP) R3973671-8 09/15/23 11:39

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	0.333	1	200	J P1	20

Laboratory Control Sample (LCS)

(LCS) R3973671-2 09/15/23 09:56

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

L1654313-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1654313-03 09/15/23 10:16 • (MS) R3973671-3 09/15/23 10:22 • (MSD) R3973671-4 09/15/23 10:27

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	14.8	7.80	74.1	39.0	1	75.0-125	J6	J3 J6	62.1	20

L1654313-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1654313-03 09/15/23 10:16 • (MS) R3973671-5 09/15/23 10:32

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	643	U	669	104	50	75.0-125	

L1654297-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1654297-13 09/15/23 16:40 • (DUP) R3973832-2 09/15/23 16:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.45	8.45	1	0.000		1

Sample Narrative:

OS: 8.45 at 20.9C

DUP: 8.45 at 21.2C

L1654412-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1654412-06 09/15/23 16:40 • (DUP) R3973832-3 09/15/23 16:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.37	8.36	1	0.120		1

Sample Narrative:

OS: 8.37 at 20.3C

DUP: 8.36 at 20.5C

Laboratory Control Sample (LCS)

(LCS) R3973832-1 09/15/23 16:40

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: 10.01 at 20.7C

Method Blank (MB)

(MB) R3973647-1 09/15/23 13:31

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

L1654319-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1654319-05 09/15/23 13:31 • (DUP) R3973647-3 09/15/23 13:31

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	118	118	1	0.254		20

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

L1654770-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1654770-03 09/15/23 13:31 • (DUP) R3973647-4 09/15/23 13:31

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	83.2	84.7	1	1.79		20

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

Laboratory Control Sample (LCS)

(LCS) R3973647-2 09/15/23 13:31

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	716	97.8	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3973923-1 09/16/23 10:26

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

L1654166-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1654166-16 09/16/23 10:26 • (DUP) R3973923-4 09/16/23 10:26

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	36.2	36.8	1	1.64		20

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

L1656113-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1656113-01 09/16/23 10:26 • (DUP) R3973923-5 09/16/23 10:26

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	305	314	1	2.91		20

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

Laboratory Control Sample (LCS)

(LCS) R3973923-2 09/16/23 10:26

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	713	97.4	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3974055-1 09/16/23 13:03

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) R3974055-2 09/16/23 13:06 • (LCSD) R3974055-3 09/16/23 13:09

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	1.20	1.20	120	120	80.0-120			0.720	20

Method Blank (MB)

(MB) R3973990-1 09/15/23 21:45

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) R3973990-2 09/15/23 21:48 • (LCSD) R3973990-3 09/15/23 21:51

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	1.13	1.16	113	116	80.0-120			2.83	20

Method Blank (MB)

(MB) R3974161-1 09/16/23 15:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	0.350	J	0.100	1.00
Barium	0.265	J	0.152	2.50
Cadmium	0.321	J	0.0855	1.00
Copper	0.326	J	0.133	5.00
Lead	0.160	J	0.0990	2.00
Nickel	0.328	J	0.197	2.50
Selenium	0.307	J	0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3974161-2 09/16/23 15:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	102	102	80.0-120	
Barium	100	99.6	99.6	80.0-120	
Cadmium	100	98.2	98.2	80.0-120	
Copper	100	93.9	93.9	80.0-120	
Lead	100	90.5	90.5	80.0-120	
Nickel	100	101	101	80.0-120	
Selenium	100	104	104	80.0-120	
Silver	20.0	19.1	95.6	80.0-120	
Zinc	100	97.5	97.5	80.0-120	

L1654319-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1654319-04 09/16/23 15:33 • (MS) R3974161-5 09/16/23 15:43 • (MSD) R3974161-6 09/16/23 15:46

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	5.44	99.5	101	94.1	95.5	5	75.0-125			1.38	20
Barium	100	202	330	352	128	150	5	75.0-125	J5	J5	6.56	20
Cadmium	100	0.325	93.1	100	92.8	99.9	5	75.0-125			7.39	20
Copper	100	18.4	108	108	89.7	90.0	5	75.0-125			0.216	20
Lead	100	10.6	95.6	104	85.0	93.7	5	75.0-125			8.65	20
Nickel	100	17.2	108	106	90.7	88.6	5	75.0-125			1.95	20
Selenium	100	0.410	99.7	104	99.2	104	5	75.0-125			4.41	20
Silver	20.0	U	18.4	19.5	92.2	97.5	5	75.0-125			5.59	20
Zinc	100	57.3	136	132	78.6	75.2	5	75.0-125			2.57	20

Method Blank (MB)

(MB) R3973722-2 09/14/23 23:23

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)	*95.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3973722-1 09/14/23 22:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.52	100	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*102*	*77.0-120*	

Method Blank (MB)

(MB) R3974525-2 09/14/23 14:22

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	*102*			*75.0-131*
(S) 4-Bromofluorobenzene	*100*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*96.7*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3974525-1 09/14/23 13:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.141	113	70.0-123	
Toluene	0.125	0.134	107	75.0-121	
Ethylbenzene	0.125	0.122	97.6	74.0-126	
Xylenes, Total	0.375	0.400	107	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.140	112	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.135	108	73.0-127	
(S) Toluene-d8			*97.3*	*75.0-131*	
(S) 4-Bromofluorobenzene			*101*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

L1654317-19 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1654317-19 09/14/23 19:37 • (MS) R3974525-3 09/15/23 00:13 • (MSD) R3974525-4 09/15/23 00:33

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	0.135	0.00132	0.177	0.162	130	119	1.08	10.0-149			8.85	37
Toluene	0.135	0.0114	0.183	0.174	127	120	1.08	10.0-156			5.04	38
Ethylbenzene	0.135	0.00610	0.163	0.154	116	110	1.08	10.0-160			5.68	38
Xylenes, Total	0.405	0.0497	0.578	0.554	130	125	1.08	10.0-160			4.24	38
1,2,4-Trimethylbenzene	0.135	0.0597	0.235	0.244	130	137	1.08	10.0-160			3.76	36
1,3,5-Trimethylbenzene	0.135	0.0391	0.210	0.215	127	130	1.08	10.0-160			2.35	38
(S) Toluene-d8					*97.7*	*101*		*75.0-131*				
(S) 4-Bromofluorobenzene					*105*	*100*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*91.9*	*90.6*		*70.0-130*				

Method Blank (MB)

(MB) R3974092-1 09/17/23 01:40

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*57.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3974092-2 09/17/23 01:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	36.2	72.4	50.0-150	
(S) o-Terphenyl			*73.1*	*18.0-148*	

L1654017-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1654017-01 09/17/23 02:06 • (MS) R3974092-3 09/17/23 02:19 • (MSD) R3974092-4 09/17/23 02:32

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	47.8	2.29	28.0	29.6	53.8	56.7	1	50.0-150			5.56	20
(S) o-Terphenyl					*53.8*	*56.1*		*18.0-148*				

Method Blank (MB)

(MB) R3974207-1 09/17/23 08:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*61.9*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3974207-2 09/17/23 08:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	36.4	72.8	50.0-150	
(S) o-Terphenyl			*58.9*	*18.0-148*	

L1654408-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1654408-07 09/17/23 09:31 • (MS) R3974207-3 09/17/23 09:43 • (MSD) R3974207-4 09/17/23 09:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.5	U	27.6	29.7	55.8	60.0	1	50.0-150			7.33	20
(S) o-Terphenyl					*36.2*	*35.5*		*18.0-148*				

Method Blank (MB)

(MB) R3974958-1 09/19/23 08:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*64.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3974958-2 09/19/23 09:10

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	37.0	74.0	50.0-150	
(S) o-Terphenyl			*65.0*	*18.0-148*	

L1654414-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1654414-06 09/19/23 11:08 • (MS) R3974958-3 09/19/23 11:21 • (MSD) R3974958-4 09/19/23 11:34

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.5	3.54	35.8	32.7	66.5	60.0	1	50.0-150			9.05	20
(S) o-Terphenyl					*72.0*	*67.3*		*18.0-148*				

Method Blank (MB)

(MB) R3974150-2 09/16/23 11:38

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	*78.5*			*23.0-120*
(S) Nitrobenzene-d5	*78.7*			*14.0-149*
(S) 2-Fluorobiphenyl	*83.6*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3974150-1 09/16/23 11:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0590	73.8	50.0-120	
Anthracene	0.0800	0.0600	75.0	50.0-126	
Benzo(a)anthracene	0.0800	0.0630	78.8	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0571	71.4	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0563	70.4	49.0-125	
Benzo(a)pyrene	0.0800	0.0553	69.1	42.0-120	
Chrysene	0.0800	0.0674	84.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0596	74.5	47.0-125	
Fluoranthene	0.0800	0.0683	85.4	49.0-129	
Fluorene	0.0800	0.0666	83.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0643	80.4	46.0-125	
1-Methylnaphthalene	0.0800	0.0657	82.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0596	74.5	50.0-120	
Naphthalene	0.0800	0.0588	73.5	50.0-120	
Pyrene	0.0800	0.0610	76.3	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3974150-1 09/16/23 11:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*91.8*	*23.0-120*	
(S) Nitrobenzene-d5			*98.7*	*14.0-149*	
(S) 2-Fluorobiphenyl			*101*	*34.0-125*	

L1654170-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1654170-10 09/16/23 14:52 • (MS) R3974302-1 09/16/23 15:10 • (MSD) R3974302-2 09/16/23 15:27

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0800	U	0.0639	0.0509	79.9	63.6	1	14.0-127			22.6	27
Anthracene	0.0800	0.0120	0.175	0.0539	204	52.4	1	10.0-145	J5	J3	106	30
Benzo(a)anthracene	0.0800	0.0766	0.517	0.0744	551	0.000	1	10.0-139	J5	J3 J6	150	30
Benzo(b)fluoranthene	0.0800	0.0861	0.531	0.0719	556	0.000	1	10.0-140	J5	J3 J6	152	36
Benzo(k)fluoranthene	0.0800	0.0305	0.204	0.0534	217	28.6	1	10.0-137	J5	J3	117	31
Benzo(a)pyrene	0.0800	0.0803	0.488	0.0740	510	0.000	1	10.0-141	J5	J3 J6	147	31
Chrysene	0.0800	0.0657	0.481	0.0724	519	8.38	1	10.0-145	J5	J3 J6	148	30
Dibenz(a,h)anthracene	0.0800	0.0107	0.114	0.0460	129	44.1	1	10.0-132		J3	85.0	31
Fluoranthene	0.0800	0.111	0.792	0.0891	851	0.000	1	10.0-153	J5	J3 J6	160	33
Fluorene	0.0800	U	0.0634	0.0540	79.3	67.5	1	11.0-130			16.0	29
Indeno(1,2,3-cd)pyrene	0.0800	0.0470	0.307	0.0602	325	16.5	1	10.0-137	J5	J3	134	32
1-Methylnaphthalene	0.0800	U	0.0505	0.0537	63.1	67.1	1	10.0-142			6.14	28
2-Methylnaphthalene	0.0800	U	0.0507	0.0522	63.4	65.3	1	10.0-137			2.92	28
Naphthalene	0.0800	U	0.0486	0.0521	60.8	65.1	1	10.0-135			6.95	27
Pyrene	0.0800	0.0938	0.629	0.0785	669	0.000	1	10.0-148	J5	J3 J6	156	35
(S) p-Terphenyl-d14					*76.0*	*57.0*		*23.0-120*				
(S) Nitrobenzene-d5					*67.5*	*69.4*		*14.0-149*				
(S) 2-Fluorobiphenyl					*80.0*	*79.0*		*34.0-125*				

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.
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.

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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

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

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

B084

ALL SHADED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Brett Middleton, Jake Janicek	Email To: Info on file
Copy To: Chris.McKisson@confluence-cc.com; remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: Puckett 266-1 PBV	State: CO / County/City: Garfield / Time Zone Collected: [ ] PT [✓] MT [ ] CT [ ] ET
Phone: Info on file / Email: Info on file	Site/Facility ID #: Puckett 266-1 / Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Ahmed Shah	Purchase Order #: / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: Standard TAT / Immediately Packed on Ice: [✓] Yes [ ] No
Sample Disposal: [✓] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [✓] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [✓] No / Analysis: _____

Container Preservative Type **

Lab Project Manager:

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

* 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) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	TABLE 915-1 VOCs	TPH-(GRO, DRO, ORO)	TABLE 915-1 METALS LIST	TABLE 915-1 PAHs	pH, EC, SAR	Boron (hot water soluble)	Cr6	Lab Sample # / Comments
20230907-PUCKETT 266-1-(BASE)@8	SS		9/07/23	1415				4	X	X	X	X	X	X	X	L1654319 -01
20230907-PUCKETT 266-1-(NW)@7	SS		9/07/23	1430				4	X	X	X	X	X	X	X	-02
20230907-PUCKETT 266-1-(EW)@7	SS		9/07/23	1445				4	X	X	X	X	X	X	X	-03
20230907-PUCKETT 266-1-(SW)@7	SS		9/07/23	1440				4	X	X	X	X	X	X	X	-04
20230907-PUCKETT 266-1-(WW)@7	SS		9/07/23	1450				4	X	X	X	X	X	X	X	-05

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

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

LAB USE ONLY:

Sample Receipt Checklist

COC Seal Present/Intact:	(Y) N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	__Y__N
Bottles arrive intact:	Y N	Pres. Correct/Check:	__Y__N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RA Screen <0.5 mR/hr:	(Y) N		

Customer Re... Please note the site name portion of sample name is letter I, I30A

Type of Ice: Wet Blue Dry None

Packing Material Used:

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

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

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: _____

Cooler 1 Temp Upon Receipt: _____oC

Cooler 1 Therm Corr. Factor: _____oC

Cooler 1 Corrected Temp: _____oC

Comments:

Relinquished by/Company: (Signature)	Date/Time: 9/8/23 1430	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time: 9 8 23 1530	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 9.9.23 9:00

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

UL654319

Tracking Numbers		Temperature
5882 7564 7581	[redacted]	DRAS 3.5 to 3.5
5882 7564 7580	[redacted]	DRAS 1.2 to 1.2
5882 7564 7592	[redacted]	DRAS 4.1 to 4.1
5882 7564 7667	[redacted]	DRAS 4.5 to 4.5
	[redacted]	
	[redacted]	

ANALYTICAL REPORT

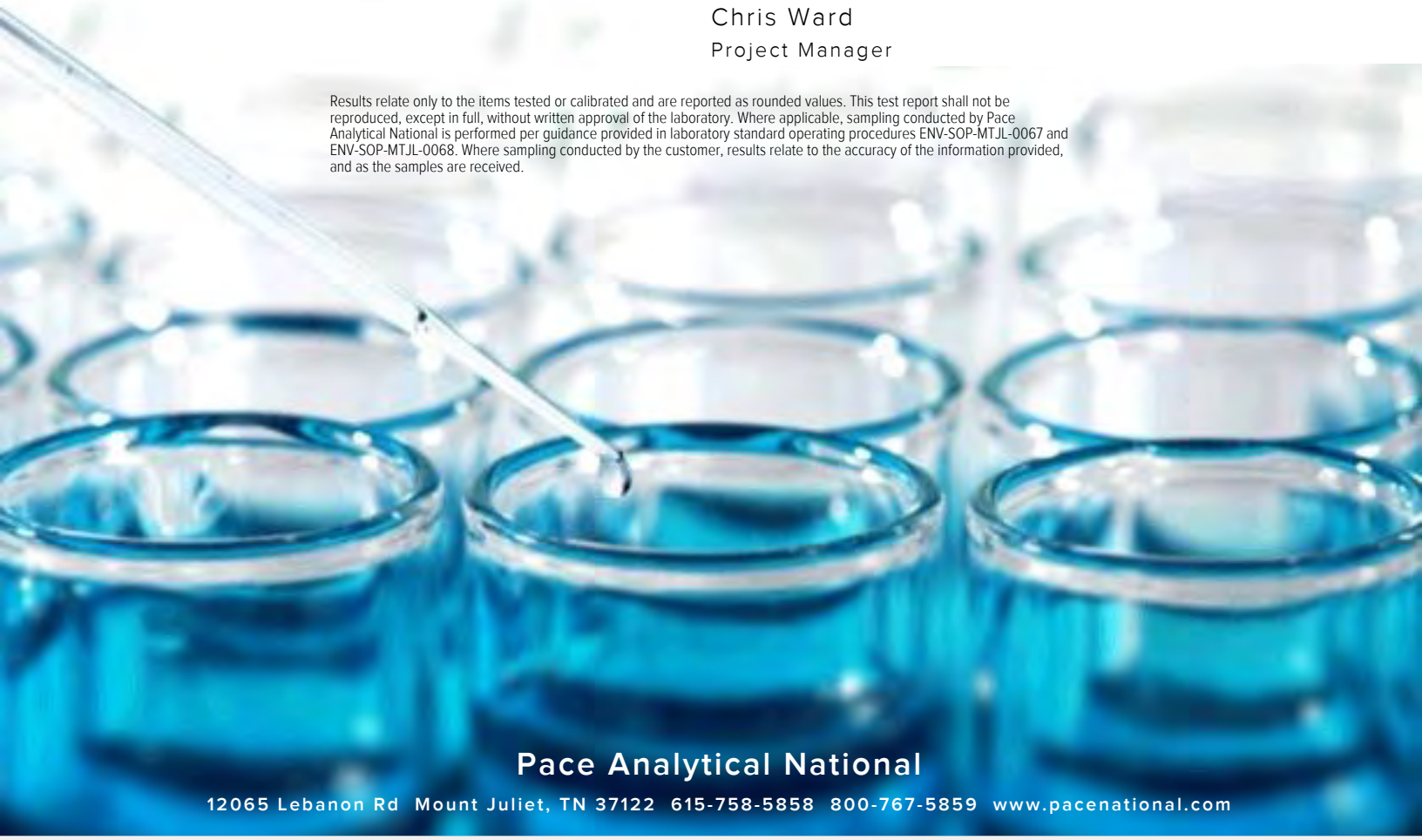
December 13, 2023

Caerus Oil and Gas

Sample Delivery Group:	L1684964
Samples Received:	12/06/2023
Project Number:	
Description:	Starkey 7-T
Site:	STARKEY 7-T
Report To:	Jake J. / Brett M. / Blair R. / Andy V. 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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SAMPLE SUMMARY

20231204-LMSOURCE-(STARKEY 7-T) L1684964-01 GW

Collected by: Dennis Lytle
Collected date/time: 12/04/23 09:00
Received date/time: 12/06/23 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2185145	1	12/08/23 22:21	12/08/23 22:21	JPD	Mt. Juliet, TN
Wet Chemistry by Method 3500Cr C-2011	WG2184238	1	12/09/23 12:57	12/09/23 12:57	SJC	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2185328	1	12/08/23 12:15	12/08/23 12:15	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG2186244	1	12/11/23 15:04	12/11/23 15:04	NTG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2185145	10	12/08/23 03:49	12/08/23 22:21	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

Sample Delivery Group (SDG) Narrative

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

Lab Sample ID	Project Sample ID	Method
L1684964-01	20231204-LMSOURCE-(STARKEY 7-T)	3500Cr C-2011

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	87.8		1	12/08/2023 22:21	WG2185145

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	12/09/2023 12:57	WG2184238

Wet Chemistry by Method 9040C

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	6.99	T8	1	12/08/2023 12:15	WG2185328

Sample Narrative:

L1684964-01 WG2185328: 6.99 at 19.3C

Wet Chemistry by Method 9050A

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	20100		10.0	1	12/11/2023 15:04	WG2186244

Sample Narrative:

L1684964-01 WG2186244: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.0200	10	12/08/2023 22:21	WG2185145
Barium	29.1		0.0200	10	12/08/2023 22:21	WG2185145
Cadmium	ND		0.0100	10	12/08/2023 22:21	WG2185145
Calcium	133		10.0	10	12/08/2023 22:21	WG2185145
Copper	ND		0.0500	10	12/08/2023 22:21	WG2185145
Lead	ND		0.0200	10	12/08/2023 22:21	WG2185145
Magnesium	15.8		10.0	10	12/08/2023 22:21	WG2185145
Nickel	ND		0.0200	10	12/08/2023 22:21	WG2185145
Selenium	ND		0.0200	10	12/08/2023 22:21	WG2185145
Silver	ND		0.0200	10	12/08/2023 22:21	WG2185145
Sodium	4020		20.0	10	12/08/2023 22:21	WG2185145
Zinc	ND		0.250	10	12/08/2023 22:21	WG2185145

Method Blank (MB)

(MB) R4010235-1 12/09/23 10:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hexavalent Chromium	U		0.000150	0.000500

L1684304-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1684304-01 12/09/23 11:08 • (DUP) R4010235-3 12/09/23 11:19

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

Laboratory Control Sample (LCS)

(LCS) R4010235-2 12/09/23 10:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	0.00200	0.00205	102	90.0-110	

L1684610-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1684610-01 12/09/23 11:52 • (MS) R4010235-4 12/09/23 12:03 • (MSD) R4010235-5 12/09/23 12:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.0500	0.00923	0.0601	0.0593	102	100	1	90.0-110			1.32	20

L1684262-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1684262-01 12/08/23 12:15 • (DUP) R4009986-2 12/08/23 12:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.60	7.59	1	0.132		1

Sample Narrative:

OS: 7.6 at 19.6C

DUP: 7.59 at 19.4C

L1685226-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1685226-01 12/08/23 12:15 • (DUP) R4009986-3 12/08/23 12:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.99	7.96	1	0.376		1

Sample Narrative:

OS: 7.99 at 18.5C

DUP: 7.96 at 18.7C

Laboratory Control Sample (LCS)

(LCS) R4009986-1 12/08/23 12:15

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

Method Blank (MB)

(MB) R4010785-1 12/11/23 15:04

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

L1684005-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1684005-02 12/11/23 15:04 • (DUP) R4010785-3 12/11/23 15:04

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1620	1600	1	1.68		20

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

L1684964-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1684964-01 12/11/23 15:04 • (DUP) R4010785-4 12/11/23 15:04

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	20100	19800	1	1.76		20

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

Laboratory Control Sample (LCS)

(LCS) R4010785-2 12/11/23 15:04

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	327	315	96.3	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R4010151-1 12/08/23 21:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	0.000237	J	0.000180	0.00200
Barium	0.000713	J	0.000381	0.00200
Cadmium	U		0.000150	0.00100
Calcium	U		0.0936	1.00
Copper	U		0.00151	0.00500
Lead	U		0.000849	0.00200
Magnesium	U		0.0735	1.00
Nickel	U		0.000816	0.00200
Selenium	U		0.000300	0.00200
Silver	U		0.0000700	0.00200
Sodium	2.17		0.376	2.00
Zinc	U		0.00302	0.0250

Laboratory Control Sample (LCS)

(LCS) R4010151-2 12/08/23 21:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	0.0500	0.0529	106	80.0-120	
Barium	0.0500	0.0509	102	80.0-120	
Cadmium	0.0500	0.0552	110	80.0-120	
Calcium	5.00	5.29	106	80.0-120	
Copper	0.0500	0.0488	97.7	80.0-120	
Lead	0.0500	0.0522	104	80.0-120	
Magnesium	5.00	5.37	107	80.0-120	
Nickel	0.0500	0.0542	108	80.0-120	
Selenium	0.0500	0.0538	108	80.0-120	
Silver	0.0500	0.0534	107	80.0-120	
Sodium	5.00	5.95	119	80.0-120	
Zinc	0.0500	0.0535	107	80.0-120	

L1684918-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1684918-01 12/08/23 21:38 • (MS) R4010151-4 12/08/23 21:44 • (MSD) R4010151-5 12/08/23 21:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	0.0500	ND	0.0530	0.0525	105	104	1	75.0-125			1.02	20
Barium	0.0500	0.00701	0.0563	0.0562	98.5	98.4	1	75.0-125			0.127	20
Cadmium	0.0500	ND	0.0545	0.0549	109	110	1	75.0-125			0.703	20

L1684918-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1684918-01 12/08/23 21:38 • (MS) R4010151-4 12/08/23 21:44 • (MSD) R4010151-5 12/08/23 21:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	5.00	ND	5.65	5.54	104	101	1	75.0-125			1.89	20
Copper	0.0500	ND	0.0518	0.0506	98.8	96.3	1	75.0-125			2.35	20
Lead	0.0500	ND	0.0529	0.0541	103	105	1	75.0-125			2.07	20
Magnesium	5.00	ND	5.37	5.34	104	103	1	75.0-125			0.416	20
Nickel	0.0500	ND	0.0543	0.0540	106	105	1	75.0-125			0.422	20
Selenium	0.0500	ND	0.0532	0.0532	106	106	1	75.0-125			0.0597	20
Silver	0.0500	ND	0.0524	0.0517	105	103	1	75.0-125			1.41	20
Sodium	5.00	6.87	12.1	11.8	105	99.2	1	75.0-125			2.61	20
Zinc	0.0500	ND	0.0639	0.0626	97.7	95.1	1	75.0-125			2.06	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.
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.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

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	Email To: Info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: Starkey 7-T	State: / County/City: Time Zone Collected: [ ]PT [x]MT [ ]CT [ ]ET

Container Preservative Type **

Lab Project Manager:

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

Phone: Info on file Email: Info on file	Site/Facility ID #: Starkey 7-T	Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Dennis Lytle	Purchase Order # : Quote #:	DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required:	Immediately Packed on Ice: [ ] 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: _____

* 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)

Analyses

Lab Profile/Line:

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

LAB USE ONLY:
Lab Sample # / Comments:

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	PH	EC	SAR	Cr6	Table 915-1 metals						
20231204-LMSOURCE-(STARKEY 7-T)	OT	G	12/4/2023	9:00					P	X	X	X	X	X						

L1684964
-01

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

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

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

Lab Tracking #: 6925 8306 9532

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: DPA8
Cooler 1 Temp Upon Receipt: 0.2 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 0.2 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time: 12/5/23 14:20	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time: 12/22 1500	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 12/6/23 0830

B023

Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____