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LT Environmental, Inc.
820 Megan Avenue, Unit B
Rifle, Colorado 81650
970.285.9985

November 6, 2020

Jake Janicek
EH&S Specialist
143 Diamond Avenue
Parachute, Colorado 81635

RE: Partially Buried Vault Sampling Summary (Remediation Number 16017)
Puckett #262-25
Caerus Oil & Gas, LLC
Garfield County, Colorado

Dear Mr. Janicek:

LT Environmental, Inc. (LTE) was contracted by Caerus Oil and Gas, LLC (Caerus) to conduct soil sampling associated with the removal of a partially buried vault (PBV) at the PUCKETT-66S97W/25NENE (Well Name: PUCKETT # 262-25) (Facility ID: 335086) (Site). Per the Colorado Oil and Gas Conservation Commission (COGCC) Document Number 402503738, representative confirmation soil samples were collected from the sidewalls and base of the removed PBV footprint. The Site is located in Caerus's Logan Mesa area of operation in Garfield County, Colorado (Figure 1).

SOIL SAMPLING ACTVITIES

On October 12, 2020, LTE personnel conducted soil sampling activities associated with the removal of the PBV at the Site. Using a spade shovel, a total of five confirmation soil samples were collected from each sidewall and the base of the former PBV footprint. The confirmation soil samples were collected at depths ranging from 3 feet to 4 feet below ground surface (bgs). The soil sampling was conducted by an LTE geologist who inspected the soil for the presence or absence of petroleum hydrocarbon odor and/or staining. The soil was characterized by visual and olfactory inspection of each soil sample. Additionally, four background soil samples were collected in each cardinal direction, on and off the original pad disturbance from disturbed to undisturbed soil. The PBV soil samples were submitted for laboratory analysis of constituents listed in COGCC Table 910-1. All background soil samples were submitted for the analysis of arsenic, pH, electrical conductivity (EC), and sodium adsorption ratio (SAR). All soil samples were submitted to Pace of Mt. Juliet, Tennessee. The former PBV location along with the confirmation soil samples and background soil sample locations are depicted on the attached Figure 2.

ANALYTICAL RESULTS

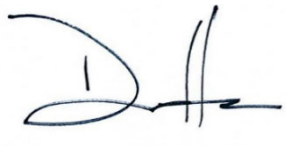
Laboratory analytical results of all confirmation soil samples collected were either below the laboratory detection limit or within the COGCC Table 910-1 Concentration Levels except for

arsenic. All of the five confirmation soil samples collected exceeded the COGCC Table 910-1 Concentration Level for arsenic with concentrations ranging from 3.72 milligrams per kilogram (mg/kg) in soil sample 20201012 – PUCKETT 262-25 (NWALL) @ 3’ to 21.5 mg/kg in soil sample 20201012 – PUCKETT 262-25 (WWALL) @ 3’. Additionally, the four background soil samples collected were within the COGCC Table 910-1 Concentration Levels for pH, EC, and SAR. All four background soil samples exceeded the COGCC Table 910-1 Concentration Level for arsenic with concentrations ranging from 3.16 mg/kg in soil sample 20201012 – PUCKETT 262-25 (BG04) @ 6’’ to 4.73 mg/kg in soil sample 20201012 – PUCKETT 262-25 (BG01) @ 6’’. Laboratory analytical results are included as an attachment and summarized in Table 1.

Please call Dustin Held at (970) 433-8253 if you have any questions regarding this report or require additional information.

Sincerely,

LT ENVIRONMENTAL, INC.



Dustin Held
Project Geologist

Chris McKisson
Western Slope Manager

Attachments:

Figure 1 – Site Location Map
Figure 2 – Site Map
Table 1 -Laboratory Results Summary Table
Attachment – Laboratory Analytical Reports

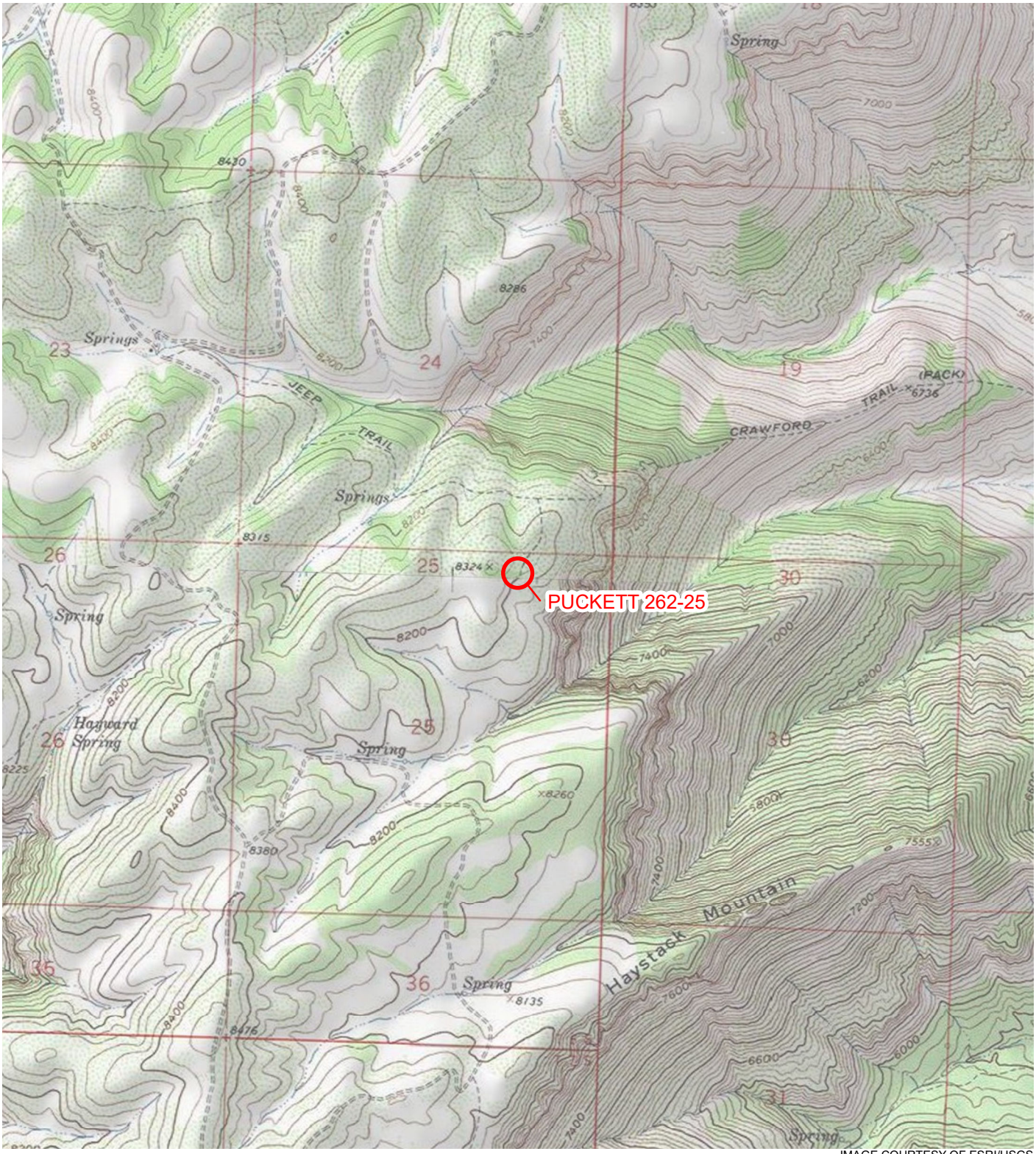


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

COLORADO

FIGURE 1
SITE LOCATION MAP
PUCKETT 262-25
NWNE SEC 25-T6S-R97W
GARFIELD COUNTY, COLORADO
CAERUS OIL AND GAS, LLC

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P:\Caerus Oil & Gas\GIS\MXD\050820032_PUCKETT 262-25\050820032_FIG01_SL.mxd

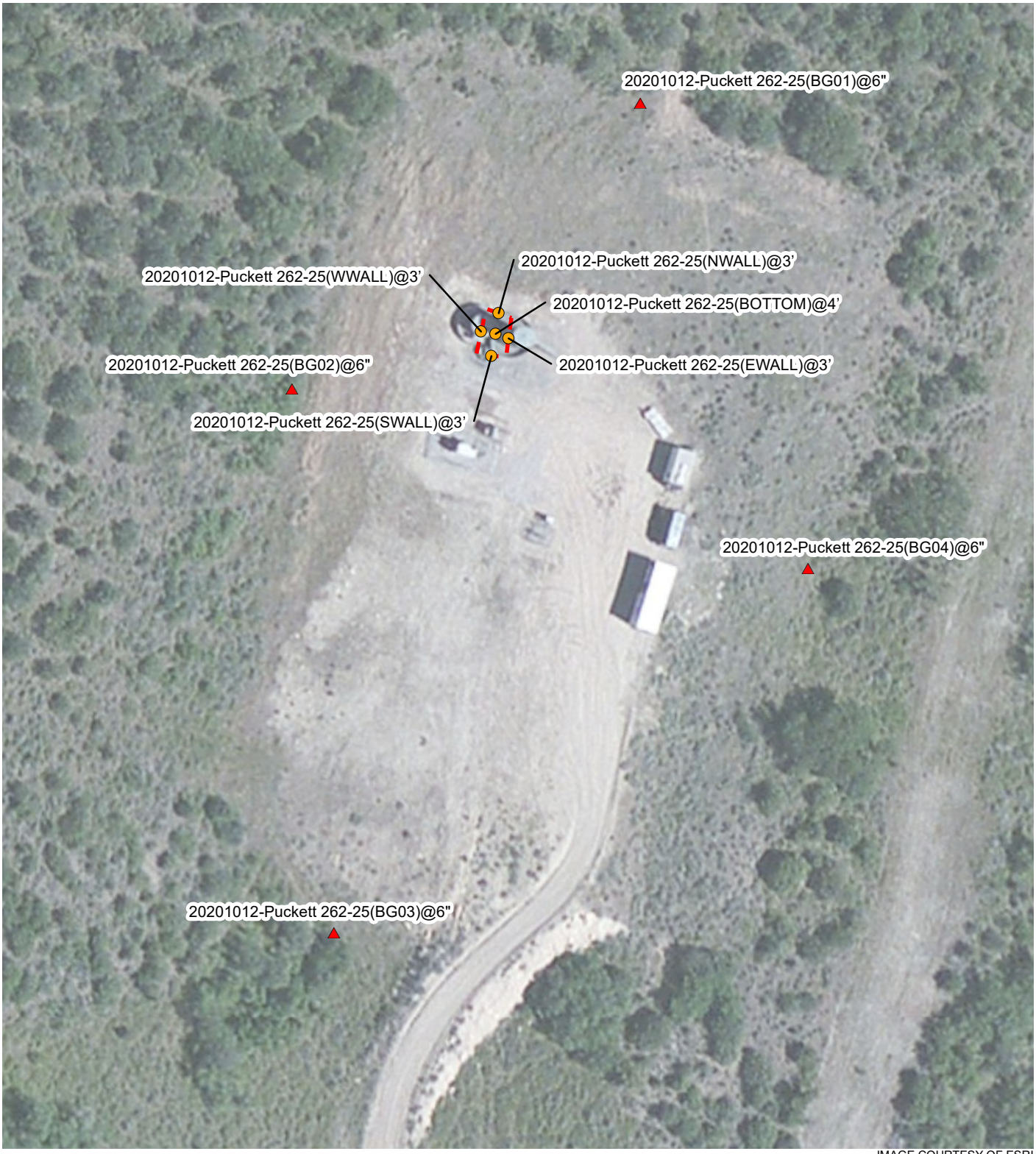

IMAGE COURTESY OF ESRI

LEGEND

- SOIL SAMPLE
- BACKGROUND SOIL SAMPLE
- EXCAVATION EXTENT

0 80 160

Feet

N

FIGURE 2
SITE MAP
PUCKETT 262-25
NWNE SEC 25-T6S-R97W
GARFIELD COUNTY, COLORADO
CAERUS OIL AND GAS, LLC

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P:\Caerus Oil & Gas\GIS\MXD\050820032_PUCKETT 262-25\050820032_FIG02_SITE_2020.mxd

TABLE 1
LABORATORY RESULTS SUMMARY TABLE

PUCKETT 262-25
GARFIELD COUNTY, COLORADO
CAERUS OIL GAS, LLC

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	CONFIRMATION SOIL SAMPLES					BACKGROUND SOIL SAMPLES			
			20201012 - PUCKETT 262-25 (NWALL) @3'	20201012 - PUCKETT 262-25 (SWALL) @3'	20201012 - PUCKETT 262-25 (WWALL) @3'	20201012 - PUCKETT 262-25 (EWALL) @3'	20201012 - PUCKETT 262-25 (BOTTOM) @4'	20201006 - PUCKETT 262-25 (BG01) @6"	20201006 - PUCKETT 262-25 (BG02) @6"	20201006 - PUCKETT 262-25 (BG03) @6"	20201006 - PUCKETT 262-25 (BG04) @6"
Sample Date			10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
Sample Depth		FEET	3'	3'	3'	3'	4'	6"	6"	6"	6"
Arsenic	0.39	mg/kg	**3.72**	**4.01**	**21.5**	**3.68**	**5.45**	**4.73**	**3.18**	**3.40**	**3.16**
Barium	15,000	mg/kg	214	199	224	193	257	NA	NA	NA	NA
Cadmium	70	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Chromium (III)	120,000	mg/kg	26.9	26.8	29.2	20.7	37.9	NA	NA	NA	NA
Chromium (VI)	23	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Copper	3,100	mg/kg	14.0	12.1	14.9	11.7	14.9	NA	NA	NA	NA
Lead	400	mg/kg	10.6	10.8	16.1	7.74	13.7	NA	NA	NA	NA
Mercury	23	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Nickel	1,600	mg/kg	17.8	17.2	19.2	12.2	21.5	NA	NA	NA	NA
Selenium	390	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Silver	390	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Zinc	23,000	mg/kg	44.9	57.6	52.1	40.3	57.6	NA	NA	NA	NA
EC	4.0	mmhos/cm	0.105	0.146	0.106	0.065	0.326	0.0526	0.121	0.221	0.165
pH	6 - 9	SU	7.22	8.67	8.75	8.91	7.83	6.57	7.51	6.84	7.08
SAR	12	unitless	0.409	0.428	0.530	0.144	0.619	0.0569	0.0463	0.0665	0.0878
TPH-GRO		mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
TPH-DRO		mg/kg	ND	9.20	5.64	19.5	6.15	NA	NA	NA	NA
TPH	500	mg/kg	ND	9.20	5.64	19.5	6.15	NA	NA	NA	NA
Benzene	0.17	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Toluene	85	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Ethylbenzene	100	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Total Xylenes	175	mg/kg	ND	ND	ND	0.0191	ND	NA	NA	NA	NA
Acenaphthene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Anthracene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Benzo(A)anthracene	0.22	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Benzo(B)fluoranthene	0.22	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Benzo(K)fluoranthene	2.2	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Benzo(A)pyrene	0.022	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Chrysene	22	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.022	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Fluoranthene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Fluorene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Indeno(1,2,3,C,D)pyrene	0.22	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Naphthalene	23	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Pyrene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA

NOTES:
ND - analyte not detected above the stated reporting limit
COGCC - Colorado Oil and Gas Conservation Commission
BOLD - indicates result exceeds the COGCC concentration level
EC- electrical conductivity
mmhos/cm - millimhos per centimeter
NA - not analyzed
SU - standard unit
mg/kg - milligrams per kilogram
SAR - sodium adsorption ratio
-- sample depth not assciated with sample

ATTACHMENT: LABORATORY ANALYTICAL REPORTS

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

October 23, 2020

Caerus Oil and Gas

Sample Delivery Group:	L1273331
Samples Received:	10/14/2020
Project Number:	PUCKETT 262-25
Description:	PUCKETT 262-25
Site:	PUCKETT 262-25
Report To:	Jake Janicek 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

TABLE OF CONTENTS

20201012- PUCKETT 251-1 (NWALL) @ 3' L1273331-01 Solid

Collected by: Evan Mason | Collected date/time: 10/12/20 14:15 | Received date/time: 10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 00:05	10/20/20 00:05	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 02:08	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	.01004016	10/18/20 17:16	10/19/20 21:00	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561139	1	10/19/20 10:57	10/19/20 19:00	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 02:08	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/19/20 00:24	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1561394	1	10/17/20 22:38	10/19/20 08:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 22:38	10/22/20 02:47	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1562190	1	10/20/20 16:42	10/21/20 07:36	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1561699	1	10/20/20 11:47	10/21/20 02:15	JNJ	Mt. Juliet, TN

20201012- PUCKETT 251-1 (SWALL) @ 3' L1273331-02 Solid

Collected by: Evan Mason | Collected date/time: 10/12/20 14:25 | Received date/time: 10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 00:08	10/20/20 00:08	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 02:11	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	.01004016	10/18/20 17:16	10/19/20 21:01	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561139	1	10/19/20 10:57	10/19/20 18:50	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 02:11	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/19/20 00:28	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1561394	1	10/17/20 22:38	10/19/20 09:18	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 22:38	10/22/20 03:07	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1562190	1	10/20/20 16:42	10/21/20 07:49	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1561266	1	10/20/20 08:51	10/20/20 20:54	KME	Mt. Juliet, TN

20201012- PUCKETT 251-1 (WWALL) @ 3' L1273331-03 Solid

Collected by: Evan Mason | Collected date/time: 10/12/20 14:35 | Received date/time: 10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 00:11	10/20/20 00:11	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 02:14	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	1	10/18/20 17:16	10/19/20 21:03	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561139	1	10/19/20 10:57	10/19/20 19:08	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 02:14	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/19/20 00:31	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1561394	1	10/17/20 22:38	10/19/20 09:40	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 22:38	10/22/20 03:27	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1562190	1	10/20/20 16:42	10/21/20 08:03	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1561266	1	10/20/20 08:51	10/20/20 21:17	KME	Mt. Juliet, TN

20201012- PUCKETT 251-1 (EWALL) @ 3' L1273331-04 Solid

Collected by: Evan Mason
Collected date/time: 10/12/20 14:45
Received date/time: 10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 02:59	10/20/20 02:59	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 02:16	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	1	10/18/20 17:16	10/19/20 21:03	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561139	1	10/19/20 10:57	10/19/20 19:10	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 02:16	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/19/20 00:35	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1563561	1	10/22/20 09:37	10/22/20 16:26	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 22:38	10/22/20 03:48	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1562190	1	10/20/20 16:42	10/21/20 08:16	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1562203	1	10/20/20 16:46	10/21/20 03:33	JNJ	Mt. Juliet, TN

20201012- PUCKETT 251-1 (BOTTOM) @ 4' L1273331-05 Solid

Collected by: Evan Mason
Collected date/time: 10/12/20 14:55
Received date/time: 10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 00:16	10/20/20 00:16	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 02:19	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	1	10/18/20 17:16	10/19/20 21:04	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561139	1	10/19/20 10:57	10/19/20 19:13	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 02:19	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/19/20 00:38	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1561437	1	10/17/20 22:38	10/19/20 09:17	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 22:38	10/22/20 04:08	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1562190	1	10/20/20 16:42	10/21/20 08:29	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1562203	1	10/20/20 16:46	10/21/20 03:56	JNJ	Mt. Juliet, TN

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	0.409		1	10/20/2020 00:05	WG1561068

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	26.9		0.0201	1	10/20/2020 02:08	WG1560871

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		0.0201	.01004016	10/19/2020 21:00	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.22	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273331-01 WG1561781: 7.22 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	105		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 19:00	WG1561139

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	214		0.500	1	10/20/2020 02:08	WG1560871
Cadmium	ND		0.500	1	10/20/2020 02:08	WG1560871
Chromium	26.9		1.00	1	10/20/2020 02:08	WG1560871
Copper	14.0		2.00	1	10/20/2020 02:08	WG1560871
Lead	10.6		0.500	1	10/20/2020 02:08	WG1560871
Nickel	17.8		2.00	1	10/20/2020 02:08	WG1560871
Selenium	ND		2.00	1	10/20/2020 02:08	WG1560871
Silver	ND		1.00	1	10/20/2020 02:08	WG1560871
Zinc	44.9		5.00	1	10/20/2020 02:08	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.72		1.00	5	10/19/2020 00:24	WG1560873

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/19/2020 08:56	WG1561394
(S) a,a,a-Trifluorotoluene(FID)	*97.8*		*77.0-120*		*10/19/2020 08:56*	WG1561394

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 02:47	WG1562727
Toluene	ND		0.00500	1	10/22/2020 02:47	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 02:47	WG1562727
Total Xylenes	ND		0.00650	1	10/22/2020 02:47	WG1562727
(S) Toluene-d8	*109*		*75.0-131*		*10/22/2020 02:47*	WG1562727
(S) 4-Bromofluorobenzene	*91.6*		*67.0-138*		*10/22/2020 02:47*	WG1562727
(S) 1,2-Dichloroethane-d4	*89.3*		*70.0-130*		*10/22/2020 02:47*	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	10/21/2020 07:36	WG1562190
(S) o-Terphenyl	*38.3*		*18.0-148*		*10/21/2020 07:36*	WG1562190

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Acenaphthene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Acenaphthylene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Benzo(a)anthracene	ND	J4	0.00600	1	10/21/2020 02:15	WG1561699
Benzo(a)pyrene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Chrysene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Dibenz(a,h)anthracene	ND	J4	0.00600	1	10/21/2020 02:15	WG1561699
Fluoranthene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Fluorene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Naphthalene	ND		0.0200	1	10/21/2020 02:15	WG1561699
Phenanthrene	ND		0.00600	1	10/21/2020 02:15	WG1561699
Pyrene	ND		0.00600	1	10/21/2020 02:15	WG1561699
1-Methylnaphthalene	ND		0.0200	1	10/21/2020 02:15	WG1561699
2-Methylnaphthalene	ND		0.0200	1	10/21/2020 02:15	WG1561699
2-Chloronaphthalene	ND		0.0200	1	10/21/2020 02:15	WG1561699
(S) p-Terphenyl-d14	*91.7*		*23.0-120*		*10/21/2020 02:15*	WG1561699
(S) Nitrobenzene-d5	*83.0*		*14.0-149*		*10/21/2020 02:15*	WG1561699
(S) 2-Fluorobiphenyl	*86.6*		*34.0-125*		*10/21/2020 02:15*	WG1561699

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.428		1	10/20/2020 00:08	WG1561068

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	26.8		0.0201	1	10/20/2020 02:11	WG1560871

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		0.0201	.01004016	10/19/2020 21:01	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.67	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273331-02 WG1561781: 8.67 at 22.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	146		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 18:50	WG1561139

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	199		0.500	1	10/20/2020 02:11	WG1560871
Cadmium	ND		0.500	1	10/20/2020 02:11	WG1560871
Chromium	26.8		1.00	1	10/20/2020 02:11	WG1560871
Copper	12.1		2.00	1	10/20/2020 02:11	WG1560871
Lead	10.8		0.500	1	10/20/2020 02:11	WG1560871
Nickel	17.2		2.00	1	10/20/2020 02:11	WG1560871
Selenium	ND		2.00	1	10/20/2020 02:11	WG1560871
Silver	ND		1.00	1	10/20/2020 02:11	WG1560871
Zinc	57.6		5.00	1	10/20/2020 02:11	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.01		1.00	5	10/19/2020 00:28	WG1560873

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/19/2020 09:18	WG1561394
(S) a,a,a-Trifluorotoluene(FID)	*97.7*		*77.0-120*		*10/19/2020 09:18*	WG1561394

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 03:07	WG1562727
Toluene	ND		0.00500	1	10/22/2020 03:07	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 03:07	WG1562727
Total Xylenes	ND		0.00650	1	10/22/2020 03:07	WG1562727
(S) Toluene-d8	*109*		*75.0-131*		*10/22/2020 03:07*	WG1562727
(S) 4-Bromofluorobenzene	*95.1*		*67.0-138*		*10/22/2020 03:07*	WG1562727
(S) 1,2-Dichloroethane-d4	*87.8*		*70.0-130*		*10/22/2020 03:07*	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	9.20		4.00	1	10/21/2020 07:49	WG1562190
(S) o-Terphenyl	*63.5*		*18.0-148*		*10/21/2020 07:49*	WG1562190

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Acenaphthene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Acenaphthylene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Benzo(a)anthracene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Benzo(a)pyrene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Benzo(b)fluoranthene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Benzo(g,h,i)perylene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Benzo(k)fluoranthene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Chrysene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Dibenz(a,h)anthracene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Fluoranthene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Fluorene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Naphthalene	ND		0.0200	1	10/20/2020 20:54	WG1561266
Phenanthrene	ND		0.00600	1	10/20/2020 20:54	WG1561266
Pyrene	ND		0.00600	1	10/20/2020 20:54	WG1561266
1-Methylnaphthalene	ND		0.0200	1	10/20/2020 20:54	WG1561266
2-Methylnaphthalene	ND		0.0200	1	10/20/2020 20:54	WG1561266
2-Chloronaphthalene	ND		0.0200	1	10/20/2020 20:54	WG1561266
(S) p-Terphenyl-d14	*82.8*		*23.0-120*		*10/20/2020 20:54*	WG1561266
(S) Nitrobenzene-d5	*89.9*		*14.0-149*		*10/20/2020 20:54*	WG1561266
(S) 2-Fluorobiphenyl	*85.9*		*34.0-125*		*10/20/2020 20:54*	WG1561266

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.530		1	10/20/2020 00:11	WG1561068

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	29.2		1.00	1	10/20/2020 02:14	WG1560871

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	10/19/2020 21:03	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.75	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:
L1273331-03 WG1561781: 8.75 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	106		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 19:08	WG1561139

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	224		0.500	1	10/20/2020 02:14	WG1560871
Cadmium	ND		0.500	1	10/20/2020 02:14	WG1560871
Chromium	29.2		1.00	1	10/20/2020 02:14	WG1560871
Copper	14.9		2.00	1	10/20/2020 02:14	WG1560871
Lead	16.1		0.500	1	10/20/2020 02:14	WG1560871
Nickel	19.2		2.00	1	10/20/2020 02:14	WG1560871
Selenium	ND		2.00	1	10/20/2020 02:14	WG1560871
Silver	ND		1.00	1	10/20/2020 02:14	WG1560871
Zinc	52.1		5.00	1	10/20/2020 02:14	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	21.5		1.00	5	10/19/2020 00:31	WG1560873

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/19/2020 09:40	WG1561394

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*98.1*		*77.0-120*		*10/19/2020 09:40*	WG1561394

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 03:27	WG1562727
Toluene	ND		0.00500	1	10/22/2020 03:27	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 03:27	WG1562727
Total Xylenes	ND		0.00650	1	10/22/2020 03:27	WG1562727
(S) Toluene-d8	*108*		*75.0-131*		*10/22/2020 03:27*	WG1562727
(S) 4-Bromofluorobenzene	*97.2*		*67.0-138*		*10/22/2020 03:27*	WG1562727
(S) 1,2-Dichloroethane-d4	*88.0*		*70.0-130*		*10/22/2020 03:27*	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	5.64		4.00	1	10/21/2020 08:03	WG1562190
(S) o-Terphenyl	*52.6*		*18.0-148*		*10/21/2020 08:03*	WG1562190

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Acenaphthene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Acenaphthylene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Benzo(a)anthracene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Benzo(a)pyrene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Benzo(b)fluoranthene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Benzo(g,h,i)perylene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Benzo(k)fluoranthene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Chrysene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Dibenz(a,h)anthracene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Fluoranthene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Fluorene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Naphthalene	ND		0.0200	1	10/20/2020 21:17	WG1561266
Phenanthrene	ND		0.00600	1	10/20/2020 21:17	WG1561266
Pyrene	ND		0.00600	1	10/20/2020 21:17	WG1561266
1-Methylnaphthalene	ND		0.0200	1	10/20/2020 21:17	WG1561266
2-Methylnaphthalene	ND		0.0200	1	10/20/2020 21:17	WG1561266
2-Chloronaphthalene	ND		0.0200	1	10/20/2020 21:17	WG1561266
(S) p-Terphenyl-d14	*86.0*		*23.0-120*		*10/20/2020 21:17*	WG1561266
(S) Nitrobenzene-d5	*94.3*		*14.0-149*		*10/20/2020 21:17*	WG1561266
(S) 2-Fluorobiphenyl	*90.1*		*34.0-125*		*10/20/2020 21:17*	WG1561266

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.144		1	10/20/2020 02:59	WG1561068

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	20.7		1.00	1	10/20/2020 02:16	WG1560871

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	10/19/2020 21:03	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.91	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:
L1273331-04 WG1561781: 8.91 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	65.0		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 19:10	WG1561139

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	193		0.500	1	10/20/2020 02:16	WG1560871
Cadmium	ND		0.500	1	10/20/2020 02:16	WG1560871
Chromium	20.7		1.00	1	10/20/2020 02:16	WG1560871
Copper	11.7		2.00	1	10/20/2020 02:16	WG1560871
Lead	7.74		0.500	1	10/20/2020 02:16	WG1560871
Nickel	12.2		2.00	1	10/20/2020 02:16	WG1560871
Selenium	ND		2.00	1	10/20/2020 02:16	WG1560871
Silver	ND		1.00	1	10/20/2020 02:16	WG1560871
Zinc	40.3		5.00	1	10/20/2020 02:16	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.68		1.00	5	10/19/2020 00:35	WG1560873

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND	J3	0.100	1	10/22/2020 16:26	WG1563561

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*108*		*77.0-120*		*10/22/2020 16:26*	WG1563561

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 03:48	WG1562727
Toluene	ND		0.00500	1	10/22/2020 03:48	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 03:48	WG1562727
Total Xylenes	0.0191		0.00650	1	10/22/2020 03:48	WG1562727
(S) Toluene-d8	*107*		*75.0-131*		*10/22/2020 03:48*	WG1562727
(S) 4-Bromofluorobenzene	*93.2*		*67.0-138*		*10/22/2020 03:48*	WG1562727
(S) 1,2-Dichloroethane-d4	*86.6*		*70.0-130*		*10/22/2020 03:48*	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	19.5		4.00	1	10/21/2020 08:16	WG1562190
(S) o-Terphenyl	*69.8*		*18.0-148*		*10/21/2020 08:16*	WG1562190

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Acenaphthene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Acenaphthylene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Benzo(a)anthracene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Benzo(a)pyrene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Chrysene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Fluoranthene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Fluorene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Naphthalene	ND		0.0200	1	10/21/2020 03:33	WG1562203
Phenanthrene	ND		0.00600	1	10/21/2020 03:33	WG1562203
Pyrene	ND		0.00600	1	10/21/2020 03:33	WG1562203
1-Methylnaphthalene	ND		0.0200	1	10/21/2020 03:33	WG1562203
2-Methylnaphthalene	ND		0.0200	1	10/21/2020 03:33	WG1562203
2-Chloronaphthalene	ND		0.0200	1	10/21/2020 03:33	WG1562203
(S) p-Terphenyl-d14	*90.8*		*23.0-120*		*10/21/2020 03:33*	WG1562203
(S) Nitrobenzene-d5	*89.3*		*14.0-149*		*10/21/2020 03:33*	WG1562203
(S) 2-Fluorobiphenyl	*93.7*		*34.0-125*		*10/21/2020 03:33*	WG1562203

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.619		1	10/20/2020 00:16	WG1561068

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	37.9		1.00	1	10/20/2020 02:19	WG1560871

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	10/19/2020 21:04	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.83	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273331-05 WG1561781: 7.83 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	326		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 19:13	WG1561139

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	257		0.500	1	10/20/2020 02:19	WG1560871
Cadmium	ND		0.500	1	10/20/2020 02:19	WG1560871
Chromium	37.9		1.00	1	10/20/2020 02:19	WG1560871
Copper	14.9		2.00	1	10/20/2020 02:19	WG1560871
Lead	13.7		0.500	1	10/20/2020 02:19	WG1560871
Nickel	21.5		2.00	1	10/20/2020 02:19	WG1560871
Selenium	ND		2.00	1	10/20/2020 02:19	WG1560871
Silver	ND		1.00	1	10/20/2020 02:19	WG1560871
Zinc	57.6		5.00	1	10/20/2020 02:19	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.45		1.00	5	10/19/2020 00:38	WG1560873

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/19/2020 09:17	WG1561437

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*104*		*77.0-120*		*10/19/2020 09:17*	WG1561437

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 04:08	WG1562727
Toluene	ND		0.00500	1	10/22/2020 04:08	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 04:08	WG1562727
Total Xylenes	ND		0.00650	1	10/22/2020 04:08	WG1562727
(S) Toluene-d8	*102*		*75.0-131*		*10/22/2020 04:08*	WG1562727
(S) 4-Bromofluorobenzene	*93.4*		*67.0-138*		*10/22/2020 04:08*	WG1562727
(S) 1,2-Dichloroethane-d4	*87.5*		*70.0-130*		*10/22/2020 04:08*	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	6.15		4.00	1	10/21/2020 08:29	WG1562190
(S) o-Terphenyl	*64.2*		*18.0-148*		*10/21/2020 08:29*	WG1562190

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Acenaphthene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Acenaphthylene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Benzo(a)anthracene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Benzo(a)pyrene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Chrysene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Fluoranthene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Fluorene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Naphthalene	ND		0.0200	1	10/21/2020 03:56	WG1562203
Phenanthrene	ND		0.00600	1	10/21/2020 03:56	WG1562203
Pyrene	ND		0.00600	1	10/21/2020 03:56	WG1562203
1-Methylnaphthalene	ND		0.0200	1	10/21/2020 03:56	WG1562203
2-Methylnaphthalene	ND		0.0200	1	10/21/2020 03:56	WG1562203
2-Chloronaphthalene	ND		0.0200	1	10/21/2020 03:56	WG1562203
(S) p-Terphenyl-d14	*95.3*		*23.0-120*		*10/21/2020 03:56*	WG1562203
(S) Nitrobenzene-d5	*94.5*		*14.0-149*		*10/21/2020 03:56*	WG1562203
(S) 2-Fluorobiphenyl	*95.6*		*34.0-125*		*10/21/2020 03:56*	WG1562203

Method Blank (MB)

(MB) R3583232-1 10/19/20 20:48

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

L1273327-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1273327-01 10/19/20 20:55 • (DUP) R3583232-7 10/19/20 20:56

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

L1273331-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1273331-02 10/19/20 21:01 • (DUP) R3583232-8 10/19/20 21:02

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

Laboratory Control Sample (LCS)

(LCS) R3583232-2 10/19/20 20:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	24.0	23.0	96.0	80.0-120	

L1273324-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273324-03 10/19/20 20:52 • (MS) R3583232-3 10/19/20 20:53 • (MSD) R3583232-4 10/19/20 20:53

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	20.0	ND	17.6	17.2	88.0	85.9	1	75.0-125			2.52	20

L1273331-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1273331-02 10/19/20 18:43 • (DUP) R3583205-2 10/19/20 18:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.67	8.69	1	0.230		1

Sample Narrative:

OS: 8.67 at 22.3C

DUP: 8.69 at 22.7C

L1273333-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1273333-02 10/19/20 18:43 • (DUP) R3583205-3 10/19/20 18:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.25	7.24	1	0.138		1

Sample Narrative:

OS: 7.25 at 22.6C

DUP: 7.24 at 22.6C

Laboratory Control Sample (LCS)

(LCS) R3583205-1 10/19/20 18:43

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 21.1C

Method Blank (MB)

(MB) R3583533-1 10/20/20 16:04

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

L1270863-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1270863-01 10/20/20 16:04 • (DUP) R3583533-3 10/20/20 16:04

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	740	718	1	3.02		20

L1273331-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1273331-05 10/20/20 16:04 • (DUP) R3583533-4 10/20/20 16:04

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	326	325	1	0.307		20

Laboratory Control Sample (LCS)

(LCS) R3583533-2 10/20/20 16:04

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	326	326	100	85.0-115	

Method Blank (MB)

(MB) R3583252-1 10/19/20 18:45

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

Laboratory Control Sample (LCS)

(LCS) R3583252-2 10/19/20 18:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.493	98.6	80.0-120	

L1273331-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273331-02 10/19/20 18:50 • (MS) R3583252-3 10/19/20 18:52 • (MSD) R3583252-4 10/19/20 18:55

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.500	ND	0.465	0.451	86.2	83.4	1	75.0-125			3.08	20

Method Blank (MB)

(MB) R3583269-7 10/20/20 01:31

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.240	0.500
Cadmium	U		0.0810	0.500
Chromium	U		0.250	1.00
Copper	U		0.506	2.00
Lead	U		0.208	0.500
Nickel	U		0.490	2.00
Selenium	U		0.617	2.00
Silver	U		0.228	1.00
Zinc	1.44	J	0.939	5.00

Laboratory Control Sample (LCS)

(LCS) R3583269-8 10/20/20 01:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	101	101	80.0-120	
Cadmium	100	95.6	95.6	80.0-120	
Chromium	100	97.0	97.0	80.0-120	
Copper	100	95.9	95.9	80.0-120	
Lead	100	97.1	97.1	80.0-120	
Nickel	100	100	100	80.0-120	
Selenium	100	94.3	94.3	80.0-120	
Silver	20.0	18.0	89.8	80.0-120	
Zinc	100	98.9	98.9	80.0-120	

L1273327-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273327-03 10/20/20 01:37 • (MS) R3583269-11 10/20/20 01:45 • (MSD) R3583269-12 10/20/20 01:48

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	301	384	366	82.3	64.8	1	75.0-125		J6	4.65	20
Cadmium	100	0.719	91.0	93.4	90.3	92.6	1	75.0-125			2.52	20
Chromium	100	35.1	127	129	91.4	94.1	1	75.0-125			2.06	20
Copper	100	22.0	113	117	91.4	95.3	1	75.0-125			3.38	20
Lead	100	11.2	108	111	97.2	99.9	1	75.0-125			2.43	20
Nickel	100	25.7	128	130	102	104	1	75.0-125			1.63	20
Selenium	100	ND	89.4	91.8	89.4	91.8	1	75.0-125			2.72	20
Silver	20.0	ND	16.5	17.3	82.6	86.5	1	75.0-125			4.56	20
Zinc	100	77.1	156	158	79.3	80.6	1	75.0-125			0.784	20

Method Blank (MB)

(MB) R3582852-1 10/18/20 23:40

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

Laboratory Control Sample (LCS)

(LCS) R3582852-2 10/18/20 23:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	89.8	89.8	80.0-120	

L1273327-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273327-03 10/18/20 23:47 • (MS) R3582852-5 10/18/20 23:57 • (MSD) R3582852-6 10/19/20 00:00

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	20.0	7.01	91.1	95.1	84.1	88.0	5	75.0-125			4.26	20

Method Blank (MB)

(MB) R3584619-1 10/18/20 15:06

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3584619-2 10/18/20 16:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.55	101	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*99.9*	*77.0-120*	

Method Blank (MB)

(MB) R3583557-4 10/19/20 07:32

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)	*110*			*77.0-120*

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

(LCS) R3583557-2 10/19/20 06:50 • (LCSD) R3583557-3 10/19/20 07:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.09	6.06	92.5	110	72.0-127			17.4	20
(S) a,a,a-Trifluorotoluene(FID)				*97.6*	*98.8*	*77.0-120*				

L1273344-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273344-09 10/19/20 14:31 • (MS) R3583557-5 10/19/20 15:33 • (MSD) R3583557-6 10/19/20 15:54

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	601	876	1690	2320	149	265	100	10.0-151	E	E J3 J5	31.4	28
(S) a,a,a-Trifluorotoluene(FID)					*142*	*155*		*77.0-120*	J1	J1		

Method Blank (MB)

(MB) R3584544-3 10/22/20 10:53

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0430	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*111*			*77.0-120*

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

(LCS) R3584544-2 10/22/20 10:32 • (LCSD) R3584544-4 10/22/20 15:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.14	6.51	93.5	118	72.0-127		J3	23.5	20
(S) a,a,a-Trifluorotoluene(FID)				*102*	*107*	*77.0-120*				

Method Blank (MB)

(MB) R3584445-2 10/21/20 23:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*109*			*75.0-131*
(S) 4-Bromofluorobenzene	*93.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*84.4*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3584445-1 10/21/20 22:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.133	106	70.0-123	
Ethylbenzene	0.125	0.113	90.4	74.0-126	
Toluene	0.125	0.122	97.6	75.0-121	
Xylenes, Total	0.375	0.351	93.6	72.0-127	
(S) Toluene-d8			*104*	*75.0-131*	
(S) 4-Bromofluorobenzene			*98.1*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*90.9*	*70.0-130*	

Method Blank (MB)

(MB) R3583816-1 10/21/20 03:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	*63.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3583816-2 10/21/20 03:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	30.0	60.0	50.0-150	
(S) o-Terphenyl			*75.5*	*18.0-148*	

L1273324-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273324-01 10/21/20 11:09 • (MS) R3583816-3 10/21/20 11:22 • (MSD) R3583816-4 10/21/20 11:35

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	49.8	ND	27.4	22.9	55.0	46.0	1	50.0-150		J6	17.9	20
(S) o-Terphenyl					*65.4*	*57.7*		*18.0-148*				

Method Blank (MB)

(MB) R3583644-2 10/20/20 12:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	*94.8*			*14.0-149*
(S) 2-Fluorobiphenyl	*97.2*			*34.0-125*
(S) p-Terphenyl-d14	*92.4*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3583644-1 10/20/20 11:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0661	82.6	50.0-126	
Acenaphthene	0.0800	0.0684	85.5	50.0-120	
Acenaphthylene	0.0800	0.0739	92.4	50.0-120	
Benzo(a)anthracene	0.0800	0.0734	91.8	45.0-120	
Benzo(a)pyrene	0.0800	0.0666	83.3	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0733	91.6	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0817	102	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0753	94.1	49.0-125	
Chrysene	0.0800	0.0701	87.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0781	97.6	47.0-125	
Fluoranthene	0.0800	0.0772	96.5	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3583644-1 10/20/20 11:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0748	93.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0792	99.0	46.0-125	
Naphthalene	0.0800	0.0654	81.8	50.0-120	
Phenanthrene	0.0800	0.0720	90.0	47.0-120	
Pyrene	0.0800	0.0653	81.6	43.0-123	
1-Methylnaphthalene	0.0800	0.0707	88.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0684	85.5	50.0-120	
2-Chloronaphthalene	0.0800	0.0739	92.4	50.0-120	
(S) Nitrobenzene-d5			*96.9*	*14.0-149*	
(S) 2-Fluorobiphenyl			*93.0*	*34.0-125*	
(S) p-Terphenyl-d14			*84.5*	*23.0-120*	

L1274087-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1274087-01 10/20/20 13:53 • (MS) R3583644-3 10/20/20 14:16 • (MSD) R3583644-4 10/20/20 14:39

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0784	ND	0.0468	0.0450	59.7	57.7	1	10.0-145			3.92	30
Acenaphthene	0.0784	ND	0.0498	0.0469	63.5	60.1	1	14.0-127			6.00	27
Acenaphthylene	0.0784	ND	0.0543	0.0518	69.3	66.4	1	21.0-124			4.71	25
Benzo(a)anthracene	0.0784	ND	0.0507	0.0470	64.7	60.3	1	10.0-139			7.57	30
Benzo(a)pyrene	0.0784	ND	0.0487	0.0462	62.1	59.2	1	10.0-141			5.27	31
Benzo(b)fluoranthene	0.0784	0.00658	0.0494	0.0465	54.6	51.2	1	10.0-140			6.05	36
Benzo(g,h,i)perylene	0.0784	ND	0.0517	0.0496	65.9	63.6	1	10.0-140			4.15	33
Benzo(k)fluoranthene	0.0784	ND	0.0479	0.0452	61.1	57.9	1	10.0-137			5.80	31
Chrysene	0.0784	ND	0.0505	0.0462	64.4	59.2	1	10.0-145			8.89	30
Dibenz(a,h)anthracene	0.0784	ND	0.0512	0.0489	65.3	62.7	1	10.0-132			4.60	31
Fluoranthene	0.0784	0.0109	0.0565	0.0504	58.2	50.6	1	10.0-153			11.4	33
Fluorene	0.0784	ND	0.0535	0.0500	68.2	64.1	1	11.0-130			6.76	29
Indeno(1,2,3-cd)pyrene	0.0784	ND	0.0511	0.0487	65.2	62.4	1	10.0-137			4.81	32
Naphthalene	0.0784	ND	0.0547	0.0503	69.8	64.5	1	10.0-135			8.38	27
Phenanthrene	0.0784	0.0116	0.0550	0.0497	55.4	48.8	1	10.0-144			10.1	31
Pyrene	0.0784	0.00666	0.0466	0.0419	50.9	45.2	1	10.0-148			10.6	35
1-Methylnaphthalene	0.0784	ND	0.0587	0.0539	74.9	69.1	1	10.0-142			8.53	28
2-Methylnaphthalene	0.0784	ND	0.0571	0.0521	72.8	66.8	1	10.0-137			9.16	28
2-Chloronaphthalene	0.0784	ND	0.0549	0.0520	70.0	66.7	1	29.0-120			5.43	24
(S) Nitrobenzene-d5					*67.8*	*72.6*		*14.0-149*				
(S) 2-Fluorobiphenyl					*70.5*	*70.4*		*34.0-125*				
(S) p-Terphenyl-d14					*61.1*	*58.4*		*23.0-120*				

Method Blank (MB)

(MB) R3583854-2 10/20/20 20:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	*87.9*			*14.0-149*
(S) 2-Fluorobiphenyl	*97.8*			*34.0-125*
(S) p-Terphenyl-d14	*110*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3583854-1 10/20/20 19:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0890	111	50.0-126	
Acenaphthene	0.0800	0.0940	117	50.0-120	
Acenaphthylene	0.0800	0.0839	105	50.0-120	
Benzo(a)anthracene	0.0800	0.0979	122	45.0-120	J4
Benzo(a)pyrene	0.0800	0.0739	92.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0841	105	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0991	124	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0884	111	49.0-125	
Chrysene	0.0800	0.0965	121	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.101	126	47.0-125	J4
Fluoranthene	0.0800	0.0891	111	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3583854-1 10/20/20 19:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0933	117	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0985	123	46.0-125	
Naphthalene	0.0800	0.0872	109	50.0-120	
Phenanthrene	0.0800	0.0935	117	47.0-120	
Pyrene	0.0800	0.0962	120	43.0-123	
1-Methylnaphthalene	0.0800	0.0827	103	51.0-121	
2-Methylnaphthalene	0.0800	0.0779	97.4	50.0-120	
2-Chloronaphthalene	0.0800	0.0908	114	50.0-120	
(S) Nitrobenzene-d5			*100*	*14.0-149*	
(S) 2-Fluorobiphenyl			*112*	*34.0-125*	
(S) p-Terphenyl-d14			*127*	*23.0-120*	J1

Method Blank (MB)

(MB) R3583822-2 10/21/20 02:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	*98.2*			*14.0-149*
(S) 2-Fluorobiphenyl	*101*			*34.0-125*
(S) p-Terphenyl-d14	*98.9*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3583822-1 10/21/20 02:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0740	92.5	50.0-126	
Acenaphthene	0.0800	0.0720	90.0	50.0-120	
Acenaphthylene	0.0800	0.0799	99.9	50.0-120	
Benzo(a)anthracene	0.0800	0.0725	90.6	45.0-120	
Benzo(a)pyrene	0.0800	0.0664	83.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0780	97.5	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0809	101	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0771	96.4	49.0-125	
Chrysene	0.0800	0.0697	87.1	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0814	102	47.0-125	
Fluoranthene	0.0800	0.0801	100	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3583822-1 10/21/20 02:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0782	97.8	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0806	101	46.0-125	
Naphthalene	0.0800	0.0702	87.8	50.0-120	
Phenanthrene	0.0800	0.0754	94.3	47.0-120	
Pyrene	0.0800	0.0667	83.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0773	96.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0754	94.3	50.0-120	
2-Chloronaphthalene	0.0800	0.0782	97.8	50.0-120	
(S) Nitrobenzene-d5			*105*	*14.0-149*	
(S) 2-Fluorobiphenyl			*104*	*34.0-125*	
(S) p-Terphenyl-d14			*96.3*	*23.0-120*	

L1275330-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1275330-01 10/21/20 10:03 • (MS) R3583822-3 10/21/20 10:26 • (MSD) R3583822-4 10/21/20 10:49

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	ND	0.239	0.167	299	211	1	10.0-145	J5	J3 J5	35.5	30
Acenaphthene	0.0800	0.355	0.580	0.282	281	0.000	1	14.0-127	V	J3 V	69.1	27
Acenaphthylene	0.0800	ND	0.168	0.101	210	128	1	21.0-124	J5	J3 J5	49.8	25
Benzo(a)anthracene	0.0800	ND	0.0726	0.0714	87.0	86.4	1	10.0-139			1.67	30
Benzo(a)pyrene	0.0800	ND	0.0672	0.0701	84.0	88.5	1	10.0-141			4.22	31
Benzo(b)fluoranthene	0.0800	ND	0.0648	0.0652	81.0	82.3	1	10.0-140			0.615	36
Benzo(g,h,i)perylene	0.0800	ND	0.0722	0.0744	90.3	93.9	1	10.0-140			3.00	33
Benzo(k)fluoranthene	0.0800	ND	0.0635	0.0716	79.4	90.4	1	10.0-137			12.0	31
Chrysene	0.0800	ND	0.0743	0.0727	86.9	85.8	1	10.0-145			2.18	30
Dibenz(a,h)anthracene	0.0800	ND	0.0718	0.0738	89.8	93.2	1	10.0-132			2.75	31
Fluoranthene	0.0800	ND	0.0654	0.0672	81.8	84.8	1	10.0-153			2.71	33
Fluorene	0.0800	0.596	0.941	0.439	431	0.000	1	11.0-130	V	J3 V	72.8	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0712	0.0731	89.0	92.3	1	10.0-137			2.63	32
Naphthalene	0.0800	0.191	0.361	0.207	213	20.2	1	10.0-135	J5	J3	54.2	27
Phenanthrene	0.0800	1.07	1.65	0.990	725	0.000	1	10.0-144	V	J3 V	50.0	31
Pyrene	0.0800	0.167	0.322	0.229	194	78.3	1	10.0-148	J5		33.8	35
1-Methylnaphthalene	0.0800	1.96	2.76	1.45	1000	0.000	1	10.0-142	V	J3 V	62.2	28
2-Methylnaphthalene	0.0800	1.82	2.04	0.918	275	0.000	1	10.0-137	V	J3 V	75.9	28
2-Chloronaphthalene	0.0800	ND	0.0874	0.0634	109	80.1	1	29.0-120		J3	31.8	24
(S) Nitrobenzene-d5					*0.000*	*0.000*		*14.0-149*	J2	J2		
(S) 2-Fluorobiphenyl					*89.9*	*73.1*		*34.0-125*				
(S) p-Terphenyl-d14					*92.8*	*96.2*		*23.0-120*				

L1275330-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1275330-01 10/21/20 10:03 • (MS) R3583822-3 10/21/20 10:26 • (MSD) R3583822-4 10/21/20 10:49

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %

Sample Narrative:

OS: Surrogate failure due to matrix interference

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).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* 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 National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
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	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

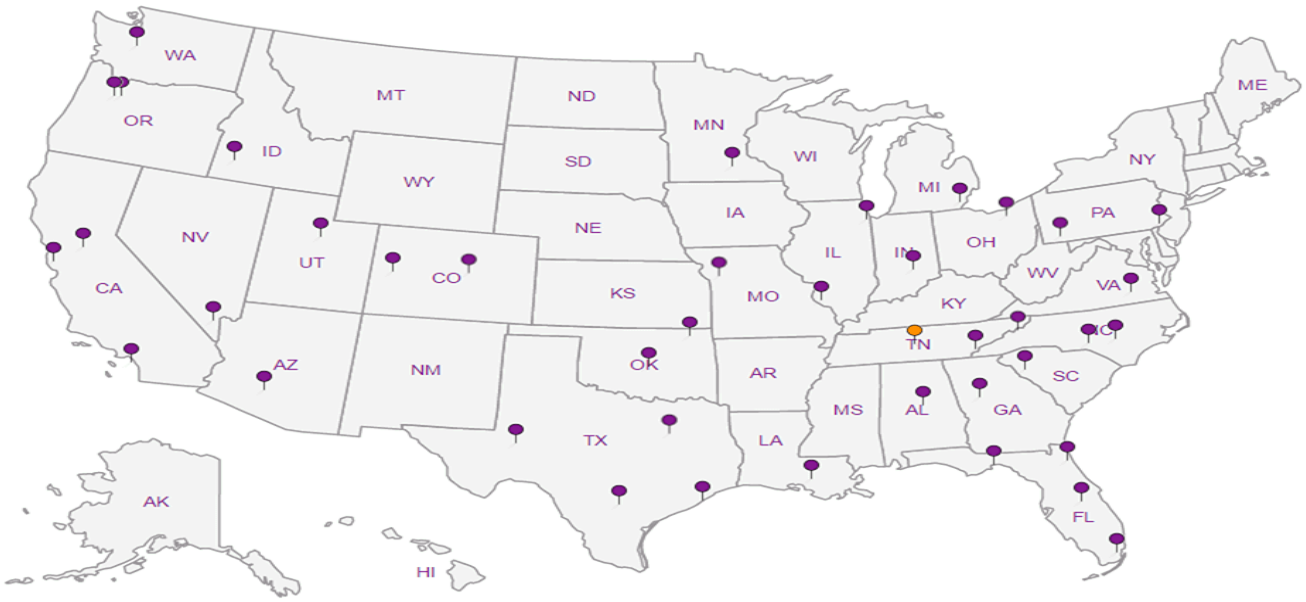
Third Party Federal Accreditations

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Caerus Oil & Gas LLC
143 Diamond Avenue
Parachute, CO 81635
970-285-9606

Billing Information: **Same as above**

Report to: **jjanicek@caerusoilandgas.com**

Email To: **jjanicek@caerusoilandgas.com**

Project Description: **Puckett 262-25**

City/State Collected: **Piceance, CO**

Phone:
Fax:

Client Project # **Puckett 262-25**

Lab Project # **Puckett 262-25**

Collected by (print): Evan Mason

Site/Facility ID # **Puckett 262-25**

P.O. # **Puckett 262-25**

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
~~X Two Day~~ EM ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard TAT

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH- GRO/DRO	BTEX	TABLE 910- PAH's	SAR, EC, pH	TABLE 910- Metals	Remarks	Sample # (lab only)
20201012-Puckett 262-25(NWALL)@3'	Grab	SS	3'	10/12/20	1415	2	X	X	X	X	X		01
20201012-Puckett 262-25(SWALL)@3'			3'		1425	2	X	X	X	X	X		02
20201012-Puckett 262-25(WWALL)@3'			3'		1435	2	X	X	X	X	X		03
20201012-Puckett 262-25(EWALL)@3'			3'		1445	2	X	X	X	X	X		04
20201012-Puckett 262-25(BOTTOM)@4'			4'		1455	2	X	X	X	X	X		05

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # 173391

H029

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking # 1676 2750 5825 / 6501

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/13/20	1130	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/13/20	1700	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			MPappas

Trip Blank Received: Yes (No) HCL / MeoH TBR

Temp: 1.0+.1=1.1 °C Bottles Received: 10

Date: 10-14-20 Time: 900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

October 22, 2020

Caerus Oil and Gas

Sample Delivery Group:	L1273332
Samples Received:	10/14/2020
Project Number:	PUCKETT 262-25
Description:	PUCKETT 262-25
Site:	PUCKETT 262-25
Report To:	Jake Janicek 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

TABLE OF CONTENTS

20201012-PUCKETT 262-25 (BG01) @ 6" L1273332-01 Solid

Collected by: Evan Mason
Collected date/time: 10/12/20 15:10
Received date/time: 10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 03:02	10/20/20 03:02	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1562691	1	10/21/20 13:48	10/21/20 17:46	MMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560550	1	10/16/20 14:38	10/17/20 10:42	EL	Mt. Juliet, TN

20201012-PUCKETT 262-25 (BG02) @ 6" L1273332-02 Solid

Collected by: Evan Mason
Collected date/time: 10/12/20 15:20
Received date/time: 10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 03:05	10/20/20 03:05	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1562691	1	10/21/20 13:48	10/21/20 17:46	MMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560550	1	10/16/20 14:38	10/17/20 10:44	EL	Mt. Juliet, TN

20201012-PUCKETT 262-25 (BG03) @ 6" L1273332-03 Solid

Collected by: Evan Mason
Collected date/time: 10/12/20 15:30
Received date/time: 10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 03:18	10/20/20 03:18	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1562691	1	10/21/20 13:48	10/21/20 17:46	MMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560550	1	10/16/20 14:38	10/17/20 10:47	EL	Mt. Juliet, TN

20201012-PUCKETT 262-25 (BG04) @ 6" L1273332-04 Solid

Collected by: Evan Mason
Collected date/time: 10/12/20 15:40
Received date/time: 10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 03:20	10/20/20 03:20	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1562691	1	10/21/20 13:48	10/21/20 17:46	MMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560550	1	10/16/20 14:38	10/17/20 10:49	EL	Mt. Juliet, TN

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	0.0569		1	10/20/2020 03:02	WG1561068

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.57	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273332-01 WG1561781: 6.57 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	52.6		10.0	1	10/21/2020 17:46	WG1562691

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.73		2.00	1	10/17/2020 10:42	WG1560550

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0463		1	10/20/2020 03:05	WG1561068

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.51	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273332-02 WG1561781: 7.51 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	121		10.0	1	10/21/2020 17:46	WG1562691

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.18		2.00	1	10/17/2020 10:44	WG1560550

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0665		1	10/20/2020 03:18	WG1561068

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.84	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273332-03 WG1561781: 6.84 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	221		10.0	1	10/21/2020 17:46	WG1562691

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.40		2.00	1	10/17/2020 10:47	WG1560550

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0878		1	10/20/2020 03:20	WG1561068

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.08	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273332-04 WG1561781: 7.08 at 22.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	165		10.0	1	10/21/2020 17:46	WG1562691

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.16		2.00	1	10/17/2020 10:49	WG1560550

L1273331-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1273331-02 10/19/20 18:43 • (DUP) R3583205-2 10/19/20 18:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.67	8.69	1	0.230		1

Sample Narrative:

OS: 8.67 at 22.3C

DUP: 8.69 at 22.7C

L1273333-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1273333-02 10/19/20 18:43 • (DUP) R3583205-3 10/19/20 18:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.25	7.24	1	0.138		1

Sample Narrative:

OS: 7.25 at 22.6C

DUP: 7.24 at 22.6C

Laboratory Control Sample (LCS)

(LCS) R3583205-1 10/19/20 18:43

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 21.1C

Method Blank (MB)

(MB) R3584073-1 10/21/20 17:46

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

L1273332-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1273332-01 10/21/20 17:46 • (DUP) R3584073-3 10/21/20 17:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	52.6	52.0	1	1.15		20

L1273336-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1273336-01 10/21/20 17:46 • (DUP) R3584073-4 10/21/20 17:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	88.4	85.0	1	3.92		20

Laboratory Control Sample (LCS)

(LCS) R3584073-2 10/21/20 17:46

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	umhos/cm	umhos/cm	%	%	
Specific Conductance	326	326	100	85.0-115	

Method Blank (MB)

(MB) R3582797-1 10/17/20 09:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00

Laboratory Control Sample (LCS)

(LCS) R3582797-2 10/17/20 10:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	93.8	93.8	80.0-120	

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
T8	Sample(s) received past/too close to holding time expiration.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* 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 National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
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	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

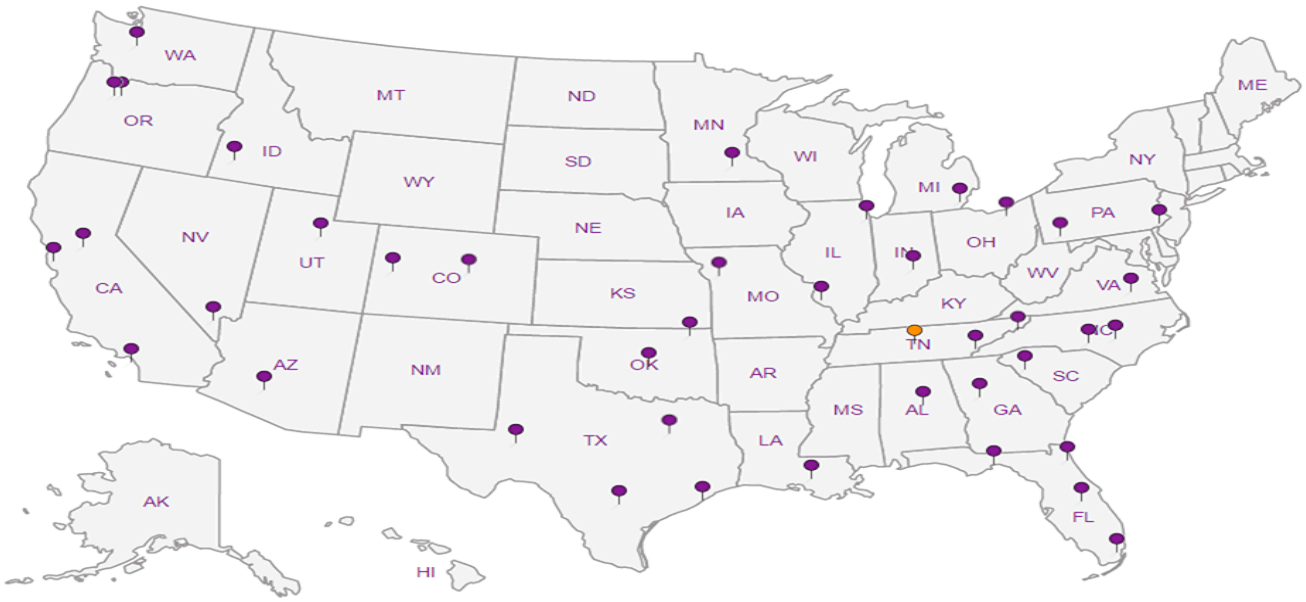
Third Party Federal Accreditations

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Caerus Oil & Gas LLC
143 Diamond Avenue
Parachute, CO 81635
970-285-9606

Billing Information: **Same as above**

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **jjanicek@caerusoilandgas.com**

Email To: **jjanicek@caerusoilandgas.com**

Project Description: **Puckett 262-25**

City/State Collected: **Piceance, CO**

Phone:
Fax:

Client Project # **Puckett 262-25**

Lab Project # **Puckett 262-25**

L # 127332
H030

Collected by (print): Evan Mason

Site/Facility ID # **Puckett 262-25**

P.O. # **Puckett 262-25**

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
~~X~~ ~~Two Day~~ EM ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard TAT

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Arsenic	SAR, EC, pH	Remarks	Sample # (lab only)
20201012-Puckett 262-25 (BG01) @6"	Grab	SS		10/12/20	1510	1	X	X		01
20201012-Puckett 262-25 (BG02) @6"					1520	1	X	X		02
20201012-Puckett 262-25 (BG03) @6"					1530	1	X	X		03
20201012-Puckett 262-25 (BG04) @6"					1540	1	X	X		04

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: Standard TAT

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier __ _____

Tracking # 1676 2750 5835 6501

Sample Receipt Checklist

COC Seal Present/Intact:	__NP	__Y __N
COC Signed/Accurate:		X __N
Bottles arrive intact:		X __N
Correct bottles used:		X __N
Sufficient volume sent:		__Y __N
If Applicable		
VOA Zero Headspace:		__Y __N
Preservation Correct/Checked:		__Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	10/13/20	1130		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.3°C Bottles Received: 4
	10/13/20	1700		1.0+, 1=1.1
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10-14-20 Time: 900
			MKappas	

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK