January 13, 2022

Ms. Laura Spencer
Summit Midstream Partners
910 Louisiana Street, Suite 4200
Houston, Texas 77002

RE: Report of Work Completed
D24W Gathering Line Release – Impacted Soils Removal
COGCC Spill ID: 480836
Garfield County, Colorado

Ms. Spencer,

Entrada Consulting Group (Entrada) has prepared this report of work completed for impacted soil removal at the Summit Midstream Partners (Summit) D24W gathering line release location (Site) located in Garfield County, Colorado. The center location coordinates of the release area are approximately 39.4374898° latitude, and -107.7302758° longitude.

The release was reported to the Colorado Oil and Gas Conservation Commission (COGCC) on September 27th, 2021. This report was completed in accordance with the COGCC approved Form 19 (Document #402823169). Please see that document for additional details.

A search of the Colorado Division of Water Resources (DWR) database revealed that the closest water well to the Site with a static water level is approximately 160 feet northeast (Permit #191875) and 33 feet below the elevation of the POR. Static water level in this well was recorded at 30 feet below ground surface (ft-bgs) at the well for a total of 63 feet below the POR. The closest drainage is West Mamm Creek located approximately 400 feet to the northeast and 45 feet lower in elevation than the POR. Based on this, Entrada asserts that there is no clear path to groundwater on this Site and that Residential Soil Screening Levels (RSSLs) should be applied.

FIELD SCREENING AND SAMPLING ACTIVITIES

On September 27th, 2021, a Summit representative was on site for excavation oversight and field screening of soils to determine necessary extent of excavation.

Soil from each excavation sidewall and the base was visually examined for evidence of potential environmental impacts (e.g., petroleum staining and odor) and screened for volatile organic compounds. VOC screening was conducted by placing the soil into a re-sealable bag, allowing the soil to warm and volatilize any organic compounds, then monitoring the headspace in the bag with a photoionization detector (PID) equipped with a 9.8 eV lamp. When field screening indicated that excavation had likely cleared the impacted soil, the highest PID reading was 74.2 ppm at the bottom of the excavation below the POR at 11 ft-bgs.

On October 13th, 2021, an Entrada representative collected seven (7) soil samples from the Site for laboratory analysis. Five (5) confirmation soil samples were collected from the excavation, one from the bottom of the hole beneath the POR at 11 ft-bgs (D24-BOT-11'), and one from each side wall at 8 ft-bgs (D24-NWALL-8', D24-EWALL-8', D24-SWALL-8', D24-WWALL-8'). Two (2) local background soil samples were collected from nearby undisturbed land outside of the spill area at 12 ft-bgs (D24-NBG-12', D24-EBG-12'). The locations for all soil samples are presented in **Figure 1**. Groundwater was not observed at any point during field activities.

SOIL ANALYSIS

Soil samples were collected in sample containers appropriate for the specified analyses, sealed, labeled, and placed into an ice filled cooler for preservation. Soil samples were submitted to Pace Analytical in Mt. Juliet, Tennessee following chain of custody procedures and analyzed for the analytes below.

- Total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) by United States Environmental Protection Agency (EPA) Method 8015D;
- TPH as diesel range organics (DRO) and TPH as oil range organics (ORO) by EPA Method 8015M;
- Benzene, toluene, ethylbenzene, total xylenes, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene by EPA Method 8260B;
- Polycyclic aromatic hydrocarbons by EPA Method 8270C-SIM;
- Metals (COGCC Table 915-1 list) by EPA Method 6010B except arsenic and hexavalent chromium, which were analyzed by EPA Method 6020 and EPA Method 7199, respectively;
- Sodium adsorption ratio (SAR) by calculation;
- Hot water soluble boron by EPA Method 6010B-NE493 Ch 2;
- pH by EPA Method 9045D; and
- Specific Conductance by EPA Method 9050A Modified.

SOIL ANALYTICAL RESULTS

Soil analytical results were reported for the five (5) confirmation samples at depths ranging from 8 to 11 ft-bgs and the two (2) background soil samples at 12 ft-bgs.

- Arsenic was identified in exceedance of the COGCC Table 915-1 RSSLs in all confirmation samples, with results ranging from 5.33 mg/kg to 7.12 mg/kg. The COGCC Table 915-1 RSSL for arsenic is 0.68 mg/kg. However, arsenic concentrations identified in four of the five confirmation sample were below local background. The remaining sample, D24-NWALL-8', with an arsenic level of 7.12 mg/kg, is within 1.25 times site specific background level and may be addressed under Table 915-1 footnote 11.
- Specific Conductivity (EC) results for four (4) of the five (5) confirmation samples were found to be in exceedance of the COGCC Table 915-1 RSSLs, with exceedances ranging from 5.230 mmhos/cm to 8.030 mmhos/cm. The COGCC Table 915-1 RSSL for specific conductivity is <4 mmhos/cm.

- Sodium Adsorption Ratio (SAR) was found to be in exceedance of COGCC Table 915-1 RSSL's in three (3) of the five (5) confirmation samples, with exceedances ranging from 8.84 to 9.99. The COGCC Table 915-1 RSSL for sodium adsorption ratio is <6.

The soil analytical results are summarized and compared to COGCC Table 915-1 Residential Soil Screening Levels (RSSLs) in **Table 1**. Laboratory analytical reports with chain of custody documentation are included in the attachments.

CONCLUSIONS

Analytical results of the confirmation soil sampling conducted in October 2021 identified subsurface concentrations of arsenic, sodium adsorption ratio (SAR), and specific conductivity (EC) above the applicable COGCC Table 915-1 Residential Soil Screening Levels (RSSLs). Entrada recommends the collection of a produced water sample in order to understand the chemistry of the produced water, specifically arsenic concentration, and the collection of additional background soil samples to provide additional context for SAR and EC levels.

Based upon soil sampling activities completed at the site and laboratory analytical data presented herein, Entrada recommends that Summit file an initial Form 27 Remediation Workplan with the COGCC. Once the Form 27 is approved, a request for closure should be filed for the initial spill/release report Form 19 (Document #402832169). Any future work will proceed under the Form 27.

We appreciate the opportunity to assist Summit Midstream Partners. Please contact me (720) 253-2940 if you have any questions.

Sincerely,

ENTRADA CONSULTING GROUP

Reed Johnson
Senior Project Geologist

Attachments:

Table 1 – Soil Data Summary
Figure 1 – Sample Location Map
Laboratory Analytical Reports

TABLES

Table 1
Summit Midstream - D24W
Soil Analytical Results

LABORATORY DATA SUMMARY										
Sample ID	**D24-NWALL-8'**	**D24-EWALL-8'**	**D24-SWALL8'**	**D24-WWALL- 8'**	**D24-BOT-11'**	**D24-NBG-12'**	**D24-EBG-12'**	**COGCC TABLE 915-1 CONCENTRATION LEVELS**		
Sample Depth	8'	8'	8'	8'	11'	12'	12'			
Longitude	39.437500	39.437470	39.437480	39.437520	39.437492	39.437630	39.437380			
Latitude	-107.73026	-107.73024	-107.73029	-107.73031	-107.73024	-107.73022	-107.72991			
Sample Type	Grab	Grab	Grab	Grab	Grab	Grab	Grab			
Sample Description	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Background	Background			
Sample Date	2021-10-13	2021-10-13	2021-10-13	2021-10-13	2021-10-13	2021-10-13	2021-10-13			
Report Number	L1418048	L1418048	L1418048	L1418048	L1418048	L1418066	L1418066			
Analytical Parameters								**Residential Soil Screening Level**	**Protection of Groundwater Screening Level**	**UNITS**
TPH										
TPH Gasoline Range Organics	0.258	0.107	0.207	0.248	0.644	NT	NT	500		
TPH Diesel Range Organics	<4.0	<4.0	5.29	2.81	<4.0	NT	NT			
TPH Oil Range Organics	2.26	1.84	9.78	5.55	2.22	NT	NT			
TOTAL TPH	2.518	1.947	15.277	8.608	2.864	NT	NT			mg/kg
BTEX										
Benzene	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	NT	NT	1.2	0.0026	mg/kg
Toluene	0.00145 J	<0.00500	0.00285 J	0.00223 J	0.00631	NT	NT	490	0.69	mg/kg
Ethylbenzene	<0.00250	<0.00250	<0.00250	0.00121 J	0.00309	NT	NT	5.8	0.78	mg/kg
Total Xylenes	0.00358	0.00155	0.028	0.0325	0.0611	NT	NT	58	9.9	mg/kg
TMB										
1,2,4-Trimethylbenzene	0.0051	0.00313 J	0.0149	0.0191	0.025	NT	NT	30	0.0081	mg/kg
1,3,5-Trimethylbenzene	0.00263 J	<0.00500	0.011	0.0131	0.0186	NT	NT	27	0.0087	mg/kg
Metals										
Arsenic	7.12	5.33	6.29	5.81	5.47	6.91	5.07	0.68	0.29	mg/kg
Barium	111	144	183	185	159	NT	NT	15,000	82	mg/kg
Cadmium	0.521	0.634	0.535	0.565	0.508	NT	NT	71	0.38	mg/kg
Chromium (Hexavalent)	<1.00	<1.00	<1.00	<1.00	<1.00	NT	NT	0.3	0.00067	mg/kg
Copper	19.1	14.9	13.3	13.2	11.9	NT	NT	3,100	46	mg/kg
Lead	10.9	10.5	9.37	9.19	8.34	NT	NT	400	14	mg/kg
Nickel	19.9	16.7	14.8	17.1	13.3	NT	NT	1,500	26	mg/kg
Selenium	<2.00	<2.00	<2.00	<2.00	<2.00	NT	NT	390	0.26	mg/kg
Silver	<1.00	<1.00	<1.00	<1.00	<1.00	NT	NT	390	0.8	mg/kg
Zinc	66.5	52	43.2	47.8	40.7	NT	NT	23,000	370	mg/kg
SAR Metals Analysis										
Sodium Adsorption Ratio	8.84	9.71	5.28	2.84	9.99	0.172	6.96	<6		ratio
Polynuclear Aromatic Hyrdrocarbons										
Acenaphthene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	360	0.55	mg/kg
Anthracene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	1,800	5.8	mg/kg
Benzo(a)anthracene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	1.1	0.011	mg/kg
Benzo(a)pyrene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	0.11	0.24	mg/kg
Benzo(b)fluoranthene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	1.1	0.3	mg/kg
Benzo(k)fluoranthene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	11	2.9	mg/kg
Chrysene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	110	9	mg/kg
Dibenzo(a,h)anthracene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	0.11	0.096	mg/kg
Fluoranthene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	240	8.9	mg/kg
Fluorene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	240	0.54	mg/kg
Indeno(1,2,3-cd)pyrene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	1.1	0.98	mg/kg
1-Methylnapthalene	<0.0200	<0.0200	<0.0200	0.00723 J	0.00542 J	NT	NT	18	0.006	mg/kg
2-Methylnapthalene	<0.0200	<0.0200	0.00812 J	0.0179 J	0.0140 J	NT	NT	24	0.019	mg/kg
Napthalene	<0.0200	<0.0200	0.00763 J	0.00901 J	0.00945 J	NT	NT	2	0.0038	mg/kg
Pyrene	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	NT	NT	180	1.3	mg/kg
General Chemistry										
Boron	0.865	0.834	0.351	0.475	0.237	NT	NT	2		mg/L
Specific Conductivity	8.030	7.660	5.650	2.08	5.230	0.283	0.812	<4		mmhos/cm
pH	7.79	8.03	7.82	7.74	8.07	8.39	8.53	6-8.3		su

mg/kg - milligrams per kilogram
mg/L - milligrams per liter
J - indicates an estimated value
mmhos/cm - millimhos per centimeter
mv - millivolts
su - standard units
NA - not applicable
NT - parameter was not tested
T8 - Samples received past/too close to holding time expiration

Over COGCC Table 915-1 concentration levels but under BACKGROUND level.
Over COGCC Table 915-1 concentration levels and not within BACKGROUND level.
Over COGCC Table 915-1 concentration levels

FIGURES

LEGEND

Soil Sample Location Excavation

0 75 150 ft

1 inch = 75 ft

N W E S

Project No:	021-174
Map By:	NDB
Date:	11/3/2021

D24 Excavation Diagram
Caerus Oil and Gas LLC
NWNW, Section 24, T7S R93W, 6th PM
Garfield County, Colorado

ENTRADA CONSULTING GROUP
330 Grand Avenue, Unit C
Grand Junction, CO 81501
970-579-1015

Figure
1

SOIL ANALYTICAL REPORTS

ANALYTICAL REPORT

October 28, 2021

Entrada Consulting Group

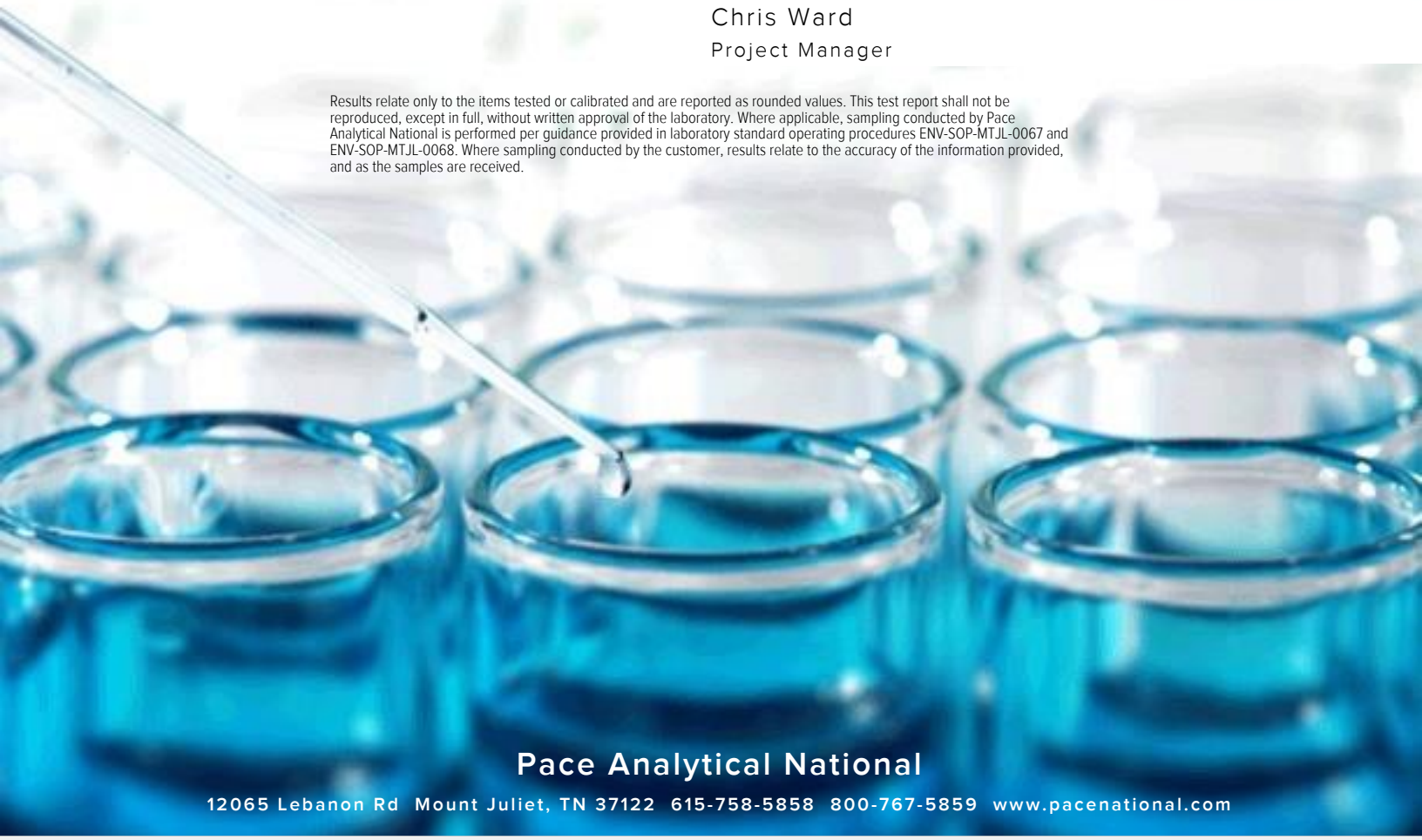
Sample Delivery Group:	L1418048
Samples Received:	10/14/2021
Project Number:	D24
Description:	D24

Report To: Stuart Hall
240 Mesa Avenue
Grand Junction, CO 81501

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

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



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

TABLE OF CONTENTS

20211013-D24-NWALL-8'-1040 L1418048-01 Solid

Collected by: Chance Holder | Collected date/time: 10/13/21 10:40 | Received date/time: 10/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759167	1	10/21/21 12:23	10/21/21 12:23	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1760652	1	10/20/21 17:40	10/21/21 11:59	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759752	1	10/22/21 13:00	10/22/21 15:25	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759140	1	10/19/21 06:41	10/19/21 19:05	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760208	1	10/20/21 10:31	10/20/21 17:34	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759161	1	10/20/21 08:30	10/26/21 17:01	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760211	5	10/20/21 10:34	10/20/21 15:01	JDG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1760802	1	10/19/21 16:47	10/21/21 17:23	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1762260	1	10/19/21 16:47	10/23/21 11:40	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1762932	1	10/25/21 17:06	10/26/21 00:08	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761260	1	10/24/21 10:06	10/25/21 08:03	AAT	Mt. Juliet, TN

20211013-D24-EWALL-8'-1200 L1418048-02 Solid

Collected by: Chance Holder | Collected date/time: 10/13/21 12:00 | Received date/time: 10/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759167	1	10/21/21 12:26	10/21/21 12:26	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1760652	1	10/20/21 17:40	10/21/21 12:04	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759752	1	10/22/21 13:00	10/22/21 15:25	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759140	1	10/19/21 06:41	10/19/21 19:05	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760208	1	10/20/21 10:31	10/20/21 17:42	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759161	1	10/20/21 08:30	10/26/21 17:04	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760211	5	10/20/21 10:34	10/20/21 15:05	JDG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1760802	1	10/19/21 16:47	10/21/21 17:45	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1762260	1	10/19/21 16:47	10/23/21 11:59	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1762932	1	10/25/21 17:06	10/26/21 00:21	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761260	1	10/24/21 10:06	10/25/21 08:23	AAT	Mt. Juliet, TN

20211013-D24-SWALL-8'-1210 L1418048-03 Solid

Collected by: Chance Holder | Collected date/time: 10/13/21 12:10 | Received date/time: 10/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759167	1	10/21/21 12:29	10/21/21 12:29	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1760652	1	10/20/21 17:40	10/21/21 12:09	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759752	1	10/22/21 13:00	10/22/21 15:25	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759140	1	10/19/21 06:41	10/19/21 19:05	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760208	1	10/20/21 10:31	10/20/21 17:45	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759161	1	10/20/21 08:30	10/26/21 17:12	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760211	5	10/20/21 10:34	10/20/21 15:08	JDG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1761792	1	10/19/21 16:47	10/22/21 15:08	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1762260	1	10/19/21 16:47	10/23/21 12:18	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1762932	1	10/25/21 17:06	10/26/21 00:35	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761260	1	10/24/21 10:06	10/25/21 08:43	AAT	Mt. Juliet, TN

20211013-D24-WWALL-8'-1220 L1418048-04 Solid

Collected by: Chance Holder | Collected date/time: 10/13/21 12:20 | Received date/time: 10/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759167	1	10/21/21 12:32	10/21/21 12:32	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1760652	1	10/20/21 17:40	10/21/21 12:14	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1761977	1	10/22/21 16:00	10/24/21 17:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759140	1	10/19/21 06:41	10/19/21 19:05	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760208	1	10/20/21 10:31	10/20/21 17:48	CCE	Mt. Juliet, TN

SAMPLE SUMMARY

20211013-D24-WWALL-8'-1220 L1418048-04 Solid

Collected by: Chance Holder
Collected date/time: 10/13/21 12:20
Received date/time: 10/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759161	1	10/20/21 08:30	10/26/21 17:15	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760211	5	10/20/21 10:34	10/20/21 15:11	JDG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1760802	1	10/19/21 16:47	10/21/21 18:28	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1762260	1	10/19/21 16:47	10/23/21 12:37	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1762932	1	10/25/21 17:06	10/26/21 00:48	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761260	1	10/24/21 10:06	10/25/21 09:02	AAT	Mt. Juliet, TN

20211013-D24-BOT-11'-1055 L1418048-05 Solid

Collected by: Chance Holder
Collected date/time: 10/13/21 10:55
Received date/time: 10/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759167	1	10/21/21 12:41	10/21/21 12:41	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1760652	1	10/20/21 17:40	10/21/21 12:20	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759752	1	10/22/21 13:00	10/22/21 15:25	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759140	1	10/19/21 06:41	10/19/21 19:05	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1760208	1	10/20/21 10:31	10/20/21 17:51	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1759161	1	10/20/21 08:30	10/26/21 17:17	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760211	5	10/20/21 10:34	10/20/21 15:14	JDG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1760802	1	10/19/21 16:47	10/21/21 18:50	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1762260	1	10/19/21 16:47	10/23/21 12:56	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1762932	1	10/25/21 17:06	10/26/21 01:02	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1761260	1	10/24/21 10:06	10/25/21 09:22	AAT	Mt. Juliet, TN

CASE NARRATIVE

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	8.84		1	10/21/2021 12:23	WG1759167

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/21/2021 11:59	WG1760652

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.79	T8	1	10/22/2021 15:25	WG1759752

Sample Narrative:
L1418048-01 WG1759752: 7.79 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	8030		10.0	1	10/19/2021 19:05	WG1759140

Sample Narrative:
L1418048-01 WG1759140: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	111		0.0852	0.500	1	10/20/2021 17:34	WG1760208
Cadmium	0.521		0.0471	0.500	1	10/20/2021 17:34	WG1760208
Copper	19.1		0.400	2.00	1	10/20/2021 17:34	WG1760208
Lead	10.9		0.208	0.500	1	10/20/2021 17:34	WG1760208
Nickel	19.9		0.132	2.00	1	10/20/2021 17:34	WG1760208
Selenium	U		0.764	2.00	1	10/20/2021 17:34	WG1760208
Silver	U		0.127	1.00	1	10/20/2021 17:34	WG1760208
Zinc	66.5		0.832	5.00	1	10/20/2021 17:34	WG1760208

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	0.865		0.0167	0.200	1	10/26/2021 17:01	WG1759161

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.12		0.100	1.00	5	10/20/2021 15:01	WG1760211

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	0.258		0.0217	0.100	1	10/21/2021 17:23	WG1760802
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*10/21/2021 17:23*	WG1760802

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/23/2021 11:40	WG1762260
Toluene	0.00145	J	0.00130	0.00500	1	10/23/2021 11:40	WG1762260
Ethylbenzene	U		0.000737	0.00250	1	10/23/2021 11:40	WG1762260
Xylenes, Total	0.00358	J	0.000880	0.00650	1	10/23/2021 11:40	WG1762260
Naphthalene	U		0.00488	0.0125	1	10/23/2021 11:40	WG1762260
1,2,4-Trimethylbenzene	0.00510	B	0.00158	0.00500	1	10/23/2021 11:40	WG1762260
1,3,5-Trimethylbenzene	0.00263	J	0.00200	0.00500	1	10/23/2021 11:40	WG1762260
(S) Toluene-d8	*108*			*80.0-120*		*10/23/2021 11:40*	WG1762260
(S) 4-Bromofluorobenzene	*98.1*			*80.0-120*		*10/23/2021 11:40*	WG1762260
(S) 1,2-Dichloroethane-d4	*83.7*			*80.0-120*		*10/23/2021 11:40*	WG1762260

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	10/26/2021 00:08	WG1762932
C28-C36 Motor Oil Range	2.26	B J	0.274	4.00	1	10/26/2021 00:08	WG1762932
(S) o-Terphenyl	*70.7*			*18.0-148*		*10/26/2021 00:08*	WG1762932

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/25/2021 08:03	WG1761260
Acenaphthene	U		0.00209	0.00600	1	10/25/2021 08:03	WG1761260
Acenaphthylene	U		0.00216	0.00600	1	10/25/2021 08:03	WG1761260
Benzo(a)anthracene	U		0.00173	0.00600	1	10/25/2021 08:03	WG1761260
Benzo(a)pyrene	U		0.00179	0.00600	1	10/25/2021 08:03	WG1761260
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/25/2021 08:03	WG1761260
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/25/2021 08:03	WG1761260
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/25/2021 08:03	WG1761260
Chrysene	U		0.00232	0.00600	1	10/25/2021 08:03	WG1761260
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/25/2021 08:03	WG1761260
Fluoranthene	U		0.00227	0.00600	1	10/25/2021 08:03	WG1761260
Fluorene	U		0.00205	0.00600	1	10/25/2021 08:03	WG1761260
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/25/2021 08:03	WG1761260
Naphthalene	U		0.00408	0.0200	1	10/25/2021 08:03	WG1761260
Phenanthrene	U		0.00231	0.00600	1	10/25/2021 08:03	WG1761260
Pyrene	U		0.00200	0.00600	1	10/25/2021 08:03	WG1761260
1-Methylnaphthalene	U		0.00449	0.0200	1	10/25/2021 08:03	WG1761260
2-Methylnaphthalene	U		0.00427	0.0200	1	10/25/2021 08:03	WG1761260
2-Chloronaphthalene	U		0.00466	0.0200	1	10/25/2021 08:03	WG1761260
(S) p-Terphenyl-d14	*95.9*			*23.0-120*		*10/25/2021 08:03*	WG1761260
(S) Nitrobenzene-d5	*80.8*			*14.0-149*		*10/25/2021 08:03*	WG1761260
(S) 2-Fluorobiphenyl	*78.6*			*34.0-125*		*10/25/2021 08:03*	WG1761260

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	9.71		1	10/21/2021 12:26	WG1759167

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/21/2021 12:04	WG1760652

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.03	T8	1	10/22/2021 15:25	WG1759752

Sample Narrative:

L1418048-02 WG1759752: 8.03 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	7660		10.0	1	10/19/2021 19:05	WG1759140

Sample Narrative:

L1418048-02 WG1759140: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	144		0.0852	0.500	1	10/20/2021 17:42	WG1760208
Cadmium	0.634		0.0471	0.500	1	10/20/2021 17:42	WG1760208
Copper	14.9		0.400	2.00	1	10/20/2021 17:42	WG1760208
Lead	10.5		0.208	0.500	1	10/20/2021 17:42	WG1760208
Nickel	16.7		0.132	2.00	1	10/20/2021 17:42	WG1760208
Selenium	U		0.764	2.00	1	10/20/2021 17:42	WG1760208
Silver	U		0.127	1.00	1	10/20/2021 17:42	WG1760208
Zinc	52.0		0.832	5.00	1	10/20/2021 17:42	WG1760208

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	0.834		0.0167	0.200	1	10/26/2021 17:04	WG1759161

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.33		0.100	1.00	5	10/20/2021 15:05	WG1760211

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	0.107		0.0217	0.100	1	10/21/2021 17:45	WG1760802
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*10/21/2021 17:45*	WG1760802

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/23/2021 11:59	WG1762260
Toluene	U		0.00130	0.00500	1	10/23/2021 11:59	WG1762260
Ethylbenzene	U		0.000737	0.00250	1	10/23/2021 11:59	WG1762260
Xylenes, Total	0.00155	J	0.000880	0.00650	1	10/23/2021 11:59	WG1762260
Naphthalene	U		0.00488	0.0125	1	10/23/2021 11:59	WG1762260
1,2,4-Trimethylbenzene	0.00313	B J	0.00158	0.00500	1	10/23/2021 11:59	WG1762260
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/23/2021 11:59	WG1762260
(S) Toluene-d8	*110*			*80.0-120*		*10/23/2021 11:59*	WG1762260
(S) 4-Bromofluorobenzene	*98.5*			*80.0-120*		*10/23/2021 11:59*	WG1762260
(S) 1,2-Dichloroethane-d4	*86.8*			*80.0-120*		*10/23/2021 11:59*	WG1762260

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	10/26/2021 00:21	WG1762932
C28-C36 Motor Oil Range	1.84	B J	0.274	4.00	1	10/26/2021 00:21	WG1762932
(S) o-Terphenyl	*60.7*			*18.0-148*		*10/26/2021 00:21*	WG1762932

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/25/2021 08:23	WG1761260
Acenaphthene	U		0.00209	0.00600	1	10/25/2021 08:23	WG1761260
Acenaphthylene	U		0.00216	0.00600	1	10/25/2021 08:23	WG1761260
Benzo(a)anthracene	U		0.00173	0.00600	1	10/25/2021 08:23	WG1761260
Benzo(a)pyrene	U		0.00179	0.00600	1	10/25/2021 08:23	WG1761260
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/25/2021 08:23	WG1761260
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/25/2021 08:23	WG1761260
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/25/2021 08:23	WG1761260
Chrysene	U		0.00232	0.00600	1	10/25/2021 08:23	WG1761260
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/25/2021 08:23	WG1761260
Fluoranthene	U		0.00227	0.00600	1	10/25/2021 08:23	WG1761260
Fluorene	U		0.00205	0.00600	1	10/25/2021 08:23	WG1761260
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/25/2021 08:23	WG1761260
Naphthalene	U		0.00408	0.0200	1	10/25/2021 08:23	WG1761260
Phenanthrene	U		0.00231	0.00600	1	10/25/2021 08:23	WG1761260
Pyrene	U		0.00200	0.00600	1	10/25/2021 08:23	WG1761260
1-Methylnaphthalene	U		0.00449	0.0200	1	10/25/2021 08:23	WG1761260
2-Methylnaphthalene	U		0.00427	0.0200	1	10/25/2021 08:23	WG1761260
2-Chloronaphthalene	U		0.00466	0.0200	1	10/25/2021 08:23	WG1761260
(S) p-Terphenyl-d14	*93.2*			*23.0-120*		*10/25/2021 08:23*	WG1761260
(S) Nitrobenzene-d5	*75.9*			*14.0-149*		*10/25/2021 08:23*	WG1761260
(S) 2-Fluorobiphenyl	*72.5*			*34.0-125*		*10/25/2021 08:23*	WG1761260

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.28		1	10/21/2021 12:29	WG1759167

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/21/2021 12:09	WG1760652

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.82	T8	1	10/22/2021 15:25	WG1759752

Sample Narrative:

L1418048-03 WG1759752: 7.82 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	5650		10.0	1	10/19/2021 19:05	WG1759140

Sample Narrative:

L1418048-03 WG1759140: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	183		0.0852	0.500	1	10/20/2021 17:45	WG1760208
Cadmium	0.535		0.0471	0.500	1	10/20/2021 17:45	WG1760208
Copper	13.3		0.400	2.00	1	10/20/2021 17:45	WG1760208
Lead	9.37		0.208	0.500	1	10/20/2021 17:45	WG1760208
Nickel	14.8		0.132	2.00	1	10/20/2021 17:45	WG1760208
Selenium	U		0.764	2.00	1	10/20/2021 17:45	WG1760208
Silver	U		0.127	1.00	1	10/20/2021 17:45	WG1760208
Zinc	43.2		0.832	5.00	1	10/20/2021 17:45	WG1760208

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	0.351		0.0167	0.200	1	10/26/2021 17:12	WG1759161

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.29		0.100	1.00	5	10/20/2021 15:08	WG1760211

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	0.207		0.0217	0.100	1	10/22/2021 15:08	WG1761792
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*10/22/2021 15:08*	WG1761792

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/23/2021 12:18	WG1762260
Toluene	0.00285	J	0.00130	0.00500	1	10/23/2021 12:18	WG1762260
Ethylbenzene	U		0.000737	0.00250	1	10/23/2021 12:18	WG1762260
Xylenes, Total	0.0280		0.000880	0.00650	1	10/23/2021 12:18	WG1762260
Naphthalene	U		0.00488	0.0125	1	10/23/2021 12:18	WG1762260
1,2,4-Trimethylbenzene	0.0149	B	0.00158	0.00500	1	10/23/2021 12:18	WG1762260
1,3,5-Trimethylbenzene	0.0110		0.00200	0.00500	1	10/23/2021 12:18	WG1762260
(S) Toluene-d8	*108*			*80.0-120*		*10/23/2021 12:18*	WG1762260
(S) 4-Bromofluorobenzene	*95.1*			*80.0-120*		*10/23/2021 12:18*	WG1762260
(S) 1,2-Dichloroethane-d4	*85.5*			*80.0-120*		*10/23/2021 12:18*	WG1762260

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	5.29	B	1.61	4.00	1	10/26/2021 00:35	WG1762932
C28-C36 Motor Oil Range	9.78		0.274	4.00	1	10/26/2021 00:35	WG1762932
(S) o-Terphenyl	*70.4*			*18.0-148*		*10/26/2021 00:35*	WG1762932

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/25/2021 08:43	WG1761260
Acenaphthene	U		0.00209	0.00600	1	10/25/2021 08:43	WG1761260
Acenaphthylene	U		0.00216	0.00600	1	10/25/2021 08:43	WG1761260
Benzo(a)anthracene	U		0.00173	0.00600	1	10/25/2021 08:43	WG1761260
Benzo(a)pyrene	U		0.00179	0.00600	1	10/25/2021 08:43	WG1761260
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/25/2021 08:43	WG1761260
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/25/2021 08:43	WG1761260
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/25/2021 08:43	WG1761260
Chrysene	U		0.00232	0.00600	1	10/25/2021 08:43	WG1761260
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/25/2021 08:43	WG1761260
Fluoranthene	U		0.00227	0.00600	1	10/25/2021 08:43	WG1761260
Fluorene	U		0.00205	0.00600	1	10/25/2021 08:43	WG1761260
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/25/2021 08:43	WG1761260
Naphthalene	0.00763	J	0.00408	0.0200	1	10/25/2021 08:43	WG1761260
Phenanthrene	U		0.00231	0.00600	1	10/25/2021 08:43	WG1761260
Pyrene	U		0.00200	0.00600	1	10/25/2021 08:43	WG1761260
1-Methylnaphthalene	U		0.00449	0.0200	1	10/25/2021 08:43	WG1761260
2-Methylnaphthalene	0.00812	J	0.00427	0.0200	1	10/25/2021 08:43	WG1761260
2-Chloronaphthalene	U		0.00466	0.0200	1	10/25/2021 08:43	WG1761260
(S) p-Terphenyl-d14	*96.6*			*23.0-120*		*10/25/2021 08:43*	WG1761260
(S) Nitrobenzene-d5	*73.9*			*14.0-149*		*10/25/2021 08:43*	WG1761260
(S) 2-Fluorobiphenyl	*75.9*			*34.0-125*		*10/25/2021 08:43*	WG1761260

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.84		1	10/21/2021 12:32	WG1759167

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/21/2021 12:14	WG1760652

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.74	T8	1	10/24/2021 17:00	WG1761977

Sample Narrative:
L1418048-04 WG1761977: 7.74 at 20C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2080		10.0	1	10/19/2021 19:05	WG1759140

Sample Narrative:
L1418048-04 WG1759140: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	185		0.0852	0.500	1	10/20/2021 17:48	WG1760208
Cadmium	0.565		0.0471	0.500	1	10/20/2021 17:48	WG1760208
Copper	13.2		0.400	2.00	1	10/20/2021 17:48	WG1760208
Lead	9.19		0.208	0.500	1	10/20/2021 17:48	WG1760208
Nickel	17.1		0.132	2.00	1	10/20/2021 17:48	WG1760208
Selenium	U		0.764	2.00	1	10/20/2021 17:48	WG1760208
Silver	U		0.127	1.00	1	10/20/2021 17:48	WG1760208
Zinc	47.8		0.832	5.00	1	10/20/2021 17:48	WG1760208

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	0.475		0.0167	0.200	1	10/26/2021 17:15	WG1759161

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.81		0.100	1.00	5	10/20/2021 15:11	WG1760211

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	0.248		0.0217	0.100	1	10/21/2021 18:28	WG1760802
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*10/21/2021 18:28*	WG1760802

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/23/2021 12:37	WG1762260
Toluene	0.00223	J	0.00130	0.00500	1	10/23/2021 12:37	WG1762260
Ethylbenzene	0.00121	J	0.000737	0.00250	1	10/23/2021 12:37	WG1762260
Xylenes, Total	0.0325		0.000880	0.00650	1	10/23/2021 12:37	WG1762260
Naphthalene	U		0.00488	0.0125	1	10/23/2021 12:37	WG1762260
1,2,4-Trimethylbenzene	0.0191	B	0.00158	0.00500	1	10/23/2021 12:37	WG1762260
1,3,5-Trimethylbenzene	0.0131		0.00200	0.00500	1	10/23/2021 12:37	WG1762260
(S) Toluene-d8	*108*			*80.0-120*		*10/23/2021 12:37*	WG1762260
(S) 4-Bromofluorobenzene	*98.1*			*80.0-120*		*10/23/2021 12:37*	WG1762260
(S) 1,2-Dichloroethane-d4	*92.3*			*80.0-120*		*10/23/2021 12:37*	WG1762260

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.81	B J	1.61	4.00	1	10/26/2021 00:48	WG1762932
C28-C36 Motor Oil Range	5.55	B	0.274	4.00	1	10/26/2021 00:48	WG1762932
(S) o-Terphenyl	*75.7*			*18.0-148*		*10/26/2021 00:48*	WG1762932

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/25/2021 09:02	WG1761260
Acenaphthene	U		0.00209	0.00600	1	10/25/2021 09:02	WG1761260
Acenaphthylene	U		0.00216	0.00600	1	10/25/2021 09:02	WG1761260
Benzo(a)anthracene	U		0.00173	0.00600	1	10/25/2021 09:02	WG1761260
Benzo(a)pyrene	U		0.00179	0.00600	1	10/25/2021 09:02	WG1761260
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/25/2021 09:02	WG1761260
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/25/2021 09:02	WG1761260
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/25/2021 09:02	WG1761260
Chrysene	U		0.00232	0.00600	1	10/25/2021 09:02	WG1761260
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/25/2021 09:02	WG1761260
Fluoranthene	U		0.00227	0.00600	1	10/25/2021 09:02	WG1761260
Fluorene	U		0.00205	0.00600	1	10/25/2021 09:02	WG1761260
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/25/2021 09:02	WG1761260
Naphthalene	0.00901	J	0.00408	0.0200	1	10/25/2021 09:02	WG1761260
Phenanthrene	U		0.00231	0.00600	1	10/25/2021 09:02	WG1761260
Pyrene	U		0.00200	0.00600	1	10/25/2021 09:02	WG1761260
1-Methylnaphthalene	0.00723	J	0.00449	0.0200	1	10/25/2021 09:02	WG1761260
2-Methylnaphthalene	0.0179	J	0.00427	0.0200	1	10/25/2021 09:02	WG1761260
2-Chloronaphthalene	U		0.00466	0.0200	1	10/25/2021 09:02	WG1761260
(S) p-Terphenyl-d14	*118*			*23.0-120*		*10/25/2021 09:02*	WG1761260
(S) Nitrobenzene-d5	*84.2*			*14.0-149*		*10/25/2021 09:02*	WG1761260
(S) 2-Fluorobiphenyl	*90.6*			*34.0-125*		*10/25/2021 09:02*	WG1761260

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	9.99		1	10/21/2021 12:41	WG1759167

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/21/2021 12:20	WG1760652

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.07	T8	1	10/22/2021 15:25	WG1759752

Sample Narrative:

L1418048-05 WG1759752: 8.07 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	5230		10.0	1	10/19/2021 19:05	WG1759140

Sample Narrative:

L1418048-05 WG1759140: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	159		0.0852	0.500	1	10/20/2021 17:51	WG1760208
Cadmium	0.508		0.0471	0.500	1	10/20/2021 17:51	WG1760208
Copper	11.9		0.400	2.00	1	10/20/2021 17:51	WG1760208
Lead	8.34		0.208	0.500	1	10/20/2021 17:51	WG1760208
Nickel	13.3		0.132	2.00	1	10/20/2021 17:51	WG1760208
Selenium	U		0.764	2.00	1	10/20/2021 17:51	WG1760208
Silver	U		0.127	1.00	1	10/20/2021 17:51	WG1760208
Zinc	40.7		0.832	5.00	1	10/20/2021 17:51	WG1760208

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	0.237		0.0167	0.200	1	10/26/2021 17:17	WG1759161

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.47		0.100	1.00	5	10/20/2021 15:14	WG1760211

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	0.644		0.0217	0.100	1	10/21/2021 18:50	WG1760802
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*10/21/2021 18:50*	WG1760802

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/23/2021 12:56	WG1762260
Toluene	0.00631		0.00130	0.00500	1	10/23/2021 12:56	WG1762260
Ethylbenzene	0.00309		0.000737	0.00250	1	10/23/2021 12:56	WG1762260
Xylenes, Total	0.0611		0.000880	0.00650	1	10/23/2021 12:56	WG1762260
Naphthalene	U		0.00488	0.0125	1	10/23/2021 12:56	WG1762260
1,2,4-Trimethylbenzene	0.0250	B	0.00158	0.00500	1	10/23/2021 12:56	WG1762260
1,3,5-Trimethylbenzene	0.0186		0.00200	0.00500	1	10/23/2021 12:56	WG1762260
(S) Toluene-d8	*106*			*80.0-120*		*10/23/2021 12:56*	WG1762260
(S) 4-Bromofluorobenzene	*97.6*			*80.0-120*		*10/23/2021 12:56*	WG1762260
(S) 1,2-Dichloroethane-d4	*89.2*			*80.0-120*		*10/23/2021 12:56*	WG1762260

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	10/26/2021 01:02	WG1762932
C28-C36 Motor Oil Range	2.22	B J	0.274	4.00	1	10/26/2021 01:02	WG1762932
(S) o-Terphenyl	*67.0*			*18.0-148*		*10/26/2021 01:02*	WG1762932

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/25/2021 09:22	WG1761260
Acenaphthene	U		0.00209	0.00600	1	10/25/2021 09:22	WG1761260
Acenaphthylene	U		0.00216	0.00600	1	10/25/2021 09:22	WG1761260
Benzo(a)anthracene	U		0.00173	0.00600	1	10/25/2021 09:22	WG1761260
Benzo(a)pyrene	U		0.00179	0.00600	1	10/25/2021 09:22	WG1761260
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/25/2021 09:22	WG1761260
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/25/2021 09:22	WG1761260
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/25/2021 09:22	WG1761260
Chrysene	U		0.00232	0.00600	1	10/25/2021 09:22	WG1761260
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/25/2021 09:22	WG1761260
Fluoranthene	U		0.00227	0.00600	1	10/25/2021 09:22	WG1761260
Fluorene	U		0.00205	0.00600	1	10/25/2021 09:22	WG1761260
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/25/2021 09:22	WG1761260
Naphthalene	0.00945	J	0.00408	0.0200	1	10/25/2021 09:22	WG1761260
Phenanthrene	U		0.00231	0.00600	1	10/25/2021 09:22	WG1761260
Pyrene	U		0.00200	0.00600	1	10/25/2021 09:22	WG1761260
1-Methylnaphthalene	0.00542	J	0.00449	0.0200	1	10/25/2021 09:22	WG1761260
2-Methylnaphthalene	0.0140	J	0.00427	0.0200	1	10/25/2021 09:22	WG1761260
2-Chloronaphthalene	U		0.00466	0.0200	1	10/25/2021 09:22	WG1761260
(S) p-Terphenyl-d14	*119*			*23.0-120*		*10/25/2021 09:22*	WG1761260
(S) Nitrobenzene-d5	*85.5*			*14.0-149*		*10/25/2021 09:22*	WG1761260
(S) 2-Fluorobiphenyl	*88.2*			*34.0-125*		*10/25/2021 09:22*	WG1761260

Method Blank (MB)

(MB) R3719702-1 10/21/21 10:37

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

L1418048-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1418048-05 10/21/21 12:20 • (DUP) R3719702-7 10/21/21 12:25

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

L1418667-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1418667-01 10/21/21 13:12 • (DUP) R3719702-8 10/21/21 13:17

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

Laboratory Control Sample (LCS)

(LCS) R3719702-2 10/21/21 10:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.7	107	80.0-120	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3719702-3 10/21/21 11:23 • (MSD) R3719702-4 10/21/21 11:28

Analyte	Spike Amount mg/kg	Original Result	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		18.5	16.4	92.7	82.0	1	75.0-125			12.2	20

L1418263-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1418263-03 10/22/21 15:25 • (DUP) R3720207-3 10/22/21 15:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.32	8.33	1	0.120		1

Sample Narrative:

OS: 8.32 at 19.6C

DUP: 8.33 at 19.8C

Laboratory Control Sample (LCS)

(LCS) R3720207-1 10/22/21 15:25

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.97	99.7	99.0-101	

Sample Narrative:

LCS: 9.97 at 19.8C

L1418177-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1418177-09 10/24/21 17:00 • (DUP) R3720629-2 10/24/21 17:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.72	7.75	1	0.388		1

Sample Narrative:

OS: 7.72 at 19.7C

DUP: 7.75 at 19.8C

Laboratory Control Sample (LCS)

(LCS) R3720629-1 10/24/21 17:00

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 at 19.8C

Method Blank (MB)

(MB) R3718559-1 10/19/21 19:05

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

L1418066-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1418066-01 10/19/21 19:05 • (DUP) R3718559-3 10/19/21 19:05

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	283	288	1	1.65		20

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

L1418079-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1418079-03 10/19/21 19:05 • (DUP) R3718559-4 10/19/21 19:05

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	159	159	1	0.566		20

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

Laboratory Control Sample (LCS)

(LCS) R3718559-2 10/19/21 19:05

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	269	100	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3719212-1 10/20/21 17:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	0.139	J	0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3719212-2 10/20/21 17:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	102	102	80.0-120	
Cadmium	100	98.7	98.7	80.0-120	
Copper	100	103	103	80.0-120	
Lead	100	99.0	99.0	80.0-120	
Nickel	100	99.1	99.1	80.0-120	
Selenium	100	98.3	98.3	80.0-120	
Silver	20.0	19.5	97.4	80.0-120	
Zinc	100	95.5	95.5	80.0-120	

L1418083-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418083-01 10/20/21 17:15 • (MS) R3719212-5 10/20/21 17:23 • (MSD) R3719212-6 10/20/21 17:26

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	351	337	488	0.000	137	1	75.0-125	J6	J3 J5	36.6	20
Cadmium	100	0.422	91.1	92.3	90.7	91.9	1	75.0-125			1.32	20
Copper	100	14.6	101	113	86.6	98.1	1	75.0-125			10.7	20
Lead	100	8.82	96.7	104	87.9	95.2	1	75.0-125			7.35	20
Nickel	100	12.7	99.4	108	86.7	94.9	1	75.0-125			7.84	20
Selenium	100	U	92.3	93.2	92.3	93.2	1	75.0-125			0.953	20
Silver	20.0	U	18.4	18.8	92.2	94.1	1	75.0-125			2.10	20
Zinc	100	42.0	103	124	61.4	81.8	1	75.0-125	J6		17.9	20

Method Blank (MB)

(MB) R3721722-1 10/26/21 16:39

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) R3721722-2 10/26/21 16:42 • (LCSD) R3721722-3 10/26/21 16:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.00	1.00	100	100	80.0-120			0.214	20

Method Blank (MB)

(MB) R3719041-1 10/20/21 14:26

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) R3719041-2 10/20/21 14:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	99.7	99.7	80.0-120	

L1418083-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418083-01 10/20/21 14:32 • (MS) R3719041-5 10/20/21 14:42 • (MSD) R3719041-6 10/20/21 14:45

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	8.30	95.9	98.9	87.6	90.6	5	75.0-125			3.08	20

Method Blank (MB)

(MB) R3719963-2 10/21/21 13:47

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)	*108*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3719963-1 10/21/21 12:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.79	87.1	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*96.3*	*77.0-120*	

L1418048-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418048-01 10/21/21 17:23 • (MS) R3719963-3 10/21/21 21:42 • (MSD) R3719963-4 10/21/21 22:04

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	0.258	3.09	3.23	51.5	54.0	1	10.0-151			4.43	28
(S) a,a,a-Trifluorotoluene(FID)					*96.3*	*97.8*		*77.0-120*				

Method Blank (MB)

(MB) R3720226-2 10/22/21 13:52

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

Laboratory Control Sample (LCS)

(LCS) R3720226-1 10/22/21 12:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.26	95.6	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*96.0*	*77.0-120*	

Method Blank (MB)

(MB) R3720905-3 10/23/21 07:38

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
Naphthalene	U		0.00488	0.0125
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	0.00253	J	0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*108*			*75.0-131*
(S) 4-Bromofluorobenzene	*94.8*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*86.5*			*70.0-130*

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

(LCS) R3720905-1 10/23/21 06:22 • (LCSD) R3720905-2 10/23/21 06:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.119	0.116	95.2	92.8	70.0-123			2.55	20
Ethylbenzene	0.125	0.117	0.116	93.6	92.8	74.0-126			0.858	20
Naphthalene	0.125	0.0832	0.0804	66.6	64.3	59.0-130			3.42	20
Toluene	0.125	0.120	0.116	96.0	92.8	75.0-121			3.39	20
1,2,4-Trimethylbenzene	0.125	0.125	0.118	100	94.4	70.0-126			5.76	20
1,3,5-Trimethylbenzene	0.125	0.108	0.107	86.4	85.6	73.0-127			0.930	20
Xylenes, Total	0.375	0.375	0.347	100	92.5	72.0-127			7.76	20
(S) Toluene-d8				*101*	*102*	*75.0-131*				
(S) 4-Bromofluorobenzene				*103*	*104*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*94.2*	*92.6*	*70.0-130*				

Method Blank (MB)

(MB) R3721249-1 10/25/21 23:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	1.61	J	1.61	4.00
C28-C36 Motor Oil Range	0.724	J	0.274	4.00
(S) o-Terphenyl	*64.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3721249-2 10/25/21 23:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	40.5	81.0	50.0-150	
(S) o-Terphenyl			*71.8*	*18.0-148*	

L1419170-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1419170-07 10/26/21 03:17 • (MS) R3721249-3 10/26/21 03:30 • (MSD) R3721249-4 10/26/21 03:44

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.9	10.3	52.1	59.1	82.1	96.8	1.02	50.0-150			12.6	20
(S) o-Terphenyl					*63.0*	*67.4*		*18.0-148*				

Method Blank (MB)

(MB) R3720752-2 10/25/21 07:23

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	*74.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*78.4*			*34.0-125*
(S) p-Terphenyl-d14	*104*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3720752-1 10/25/21 07:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0569	71.1	50.0-126	
Acenaphthene	0.0800	0.0633	79.1	50.0-120	
Acenaphthylene	0.0800	0.0656	82.0	50.0-120	
Benzo(a)anthracene	0.0800	0.0565	70.6	45.0-120	
Benzo(a)pyrene	0.0800	0.0535	66.9	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0583	72.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0591	73.9	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0630	78.8	49.0-125	
Chrysene	0.0800	0.0618	77.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0542	67.8	47.0-125	
Fluoranthene	0.0800	0.0625	78.1	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3720752-1 10/25/21 07:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0623	77.9	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0540	67.5	46.0-125	
Naphthalene	0.0800	0.0618	77.3	50.0-120	
Phenanthrene	0.0800	0.0602	75.3	47.0-120	
Pyrene	0.0800	0.0672	84.0	43.0-123	
1-Methylnaphthalene	0.0800	0.0629	78.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0597	74.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0607	75.9	50.0-120	
(S) Nitrobenzene-d5			*92.1*	*14.0-149*	
(S) 2-Fluorobiphenyl			*94.2*	*34.0-125*	
(S) p-Terphenyl-d14			*116*	*23.0-120*	

L1418117-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418117-06 10/25/21 13:39 • (MS) R3720752-3 10/25/21 13:59 • (MSD) R3720752-4 10/25/21 14:18

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0776	U	0.0594	0.0612	76.5	80.1	1	10.0-145			2.99	30
Acenaphthene	0.0776	U	0.0568	0.0588	73.2	77.0	1	14.0-127			3.46	27
Acenaphthylene	0.0776	0.00360	0.0690	0.0712	84.3	88.5	1	21.0-124			3.14	25
Benzo(a)anthracene	0.0776	0.00291	0.0639	0.0677	78.6	84.8	1	10.0-139			5.78	30
Benzo(a)pyrene	0.0776	0.00593	0.0573	0.0601	66.2	70.9	1	10.0-141			4.77	31
Benzo(b)fluoranthene	0.0776	0.00788	0.0514	0.0540	56.1	60.4	1	10.0-140			4.93	36
Benzo(g,h,i)perylene	0.0776	0.0126	0.0508	0.0503	49.2	49.3	1	10.0-140			0.989	33
Benzo(k)fluoranthene	0.0776	U	0.0484	0.0499	62.4	65.3	1	10.0-137			3.05	31
Chrysene	0.0776	0.00372	0.0639	0.0673	77.6	83.2	1	10.0-145			5.18	30
Dibenz(a,h)anthracene	0.0776	0.00275	0.0444	0.0454	53.7	55.8	1	10.0-132			2.23	31
Fluoranthene	0.0776	0.00629	0.0646	0.0669	75.1	79.3	1	10.0-153			3.50	33
Fluorene	0.0776	U	0.0581	0.0599	74.9	78.4	1	11.0-130			3.05	29
Indeno(1,2,3-cd)pyrene	0.0776	0.00575	0.0477	0.0495	54.1	57.3	1	10.0-137			3.70	32
Naphthalene	0.0776	0.00876	0.0613	0.0638	67.7	72.0	1	10.0-135			4.00	27
Phenanthrene	0.0776	0.00550	0.0596	0.0626	69.7	74.7	1	10.0-144			4.91	31
Pyrene	0.0776	0.0119	0.0661	0.0664	69.8	71.3	1	10.0-148			0.453	35
1-Methylnaphthalene	0.0776	U	0.0578	0.0607	74.5	79.5	1	10.0-142			4.89	28
2-Methylnaphthalene	0.0776	0.00682	0.0564	0.0590	63.9	68.3	1	10.0-137			4.51	28
2-Chloronaphthalene	0.0776	U	0.0544	0.0565	70.1	74.0	1	29.0-120			3.79	24
(S) Nitrobenzene-d5					*92.8*	*98.0*		*14.0-149*				
(S) 2-Fluorobiphenyl					*85.5*	*88.3*		*34.0-125*				
(S) p-Terphenyl-d14					*97.3*	*101*		*23.0-120*				

L1418072-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418072-01 10/25/21 14:38 • (MS) R3720752-5 10/25/21 14:58 • (MSD) R3720752-6 10/25/21 15:18

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	0.0796	0.0579	0.510	0.118	568	75.1	1	10.0-145	J5	J3	125	30
Acenaphthene	0.0796	0.0386	0.464	0.0857	534	58.9	1	14.0-127	J5	J3	138	27
Acenaphthylene	0.0796	U	0.0737	0.0667	92.6	83.4	1	21.0-124			9.97	25
Benzo(a)anthracene	0.0796	0.153	1.43	0.379	1600	283	1	10.0-139	J5	J3 J5	116	30
Benzo(a)pyrene	0.0796	0.108	1.25	0.254	1430	183	1	10.0-141	J5	J3 J5	132	31
Benzo(b)fluoranthene	0.0796	0.259	1.52	0.436	1580	221	1	10.0-140	J5	J3 J5	111	36
Benzo(g,h,i)perylene	0.0796	0.0675	0.476	0.140	513	90.6	1	10.0-140	J5	J3	109	33
Benzo(k)fluoranthene	0.0796	0.116	0.578	0.227	580	139	1	10.0-137	J5	J3 J5	87.2	31
Chrysene	0.0796	0.165	1.24	0.521	1350	445	1	10.0-145	J5	J3 J5	81.7	30
Dibenz(a,h)anthracene	0.0796	U	0.164	0.0943	206	118	1	10.0-132	J5	J3	54.0	31
Fluoranthene	0.0796	0.418	2.32	0.737	2390	399	1	10.0-153	V	J3 V	104	33
Fluorene	0.0796	0.0498	0.303	0.109	318	74.0	1	11.0-130	J5	J3	94.2	29
Indeno(1,2,3-cd)pyrene	0.0796	0.0548	0.662	0.140	763	107	1	10.0-137	J5	J3	130	32
Naphthalene	0.0796	0.151	0.411	0.135	327	0.000	1	10.0-135	J5	J3 J6	101	27
Phenanthrene	0.0796	0.396	1.78	0.569	1740	216	1	10.0-144	V	J3 V	103	31
Pyrene	0.0796	0.624	2.33	1.15	2140	657	1	10.0-148	V	J3 V	67.8	35
1-Methylnaphthalene	0.0796	0.163	0.214	0.198	64.1	43.7	1	10.0-142			7.77	28
2-Methylnaphthalene	0.0796	0.290	0.327	0.295	46.5	6.25	1	10.0-137		J6	10.3	28
2-Chloronaphthalene	0.0796	U	0.0523	0.0452	65.7	56.5	1	29.0-120			14.6	24
(S) Nitrobenzene-d5					*171*	*200*		*14.0-149*	J1	J1		
(S) 2-Fluorobiphenyl					*79.4*	*67.5*		*34.0-125*				
(S) p-Terphenyl-d14					*115*	*122*		*23.0-120*		J1		

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

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.

Company Name/Address: ENTRADA CONSULTING GROUP ~~2143 MESA AVE~~ 330 GRAND AVE. SUITE C GRAND JUNCTION, CO 81501

Billing Information: STUART HALL ~~2143 MESA AVE~~ 330 GRAND AVE SUITE C GRAND JUNCTION, CO 81501

Report to: STUART HALL

Email To: shall@entradainc.com

Project Description: D24

City/State Collected:

Phone: 970-640-0568 Fax:

Client Project # D24

Lab Project # ENTCONGJCO-915

Collected by (print): CHANCE HOLDER

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ✓Yes
FAX? ✓No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Table 915 GRO/DRO/ORO	Table 915 Metals	Table 915 PAH's	Table 915 VOCs	Table 915 pH, SPCON, SAR	Rem./Contaminant	Sample # (lab only)
202/1013-D24-NWALL-8'-1040	GRAB	SS	8'	10/13/21	1040	3	X	X	X	X	X		-01
202/1013-D24-EWALL-8'-1200			8'		1200	3	X	X	X	X	X		02
202/1013-D24-SWALL-8'-1210			8'		1210	3	X	X	X	X	X		03
202/1013-D24-WWALL-8'-1220			8'		1220	3	X	X	X	X	X		04
202/1013-D24-BOT-11'-1055			11'		1055	3	X	X	X	X	X		05

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:

pH _____ Temp _____ TB=0

Flow _____ Other _____

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/13/21	1800	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/13/21	1700	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			T. Robertson

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: Wet 4.3°C Dry 1.4-1-1.3 Bottles Received: 15

Date: 10/14/21 Time: 900

Hold #

Condition: (lab use only) OK

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

5016 1232 2367

Chain of Custody Page 1 of 1

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
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L# L1418048

Tab J195

Acctnum:

Template:

Prelogin: P822085

TSR:

Cooler:

Shipped Via:

ANALYTICAL REPORT

October 27, 2021

Entrada Consulting Group

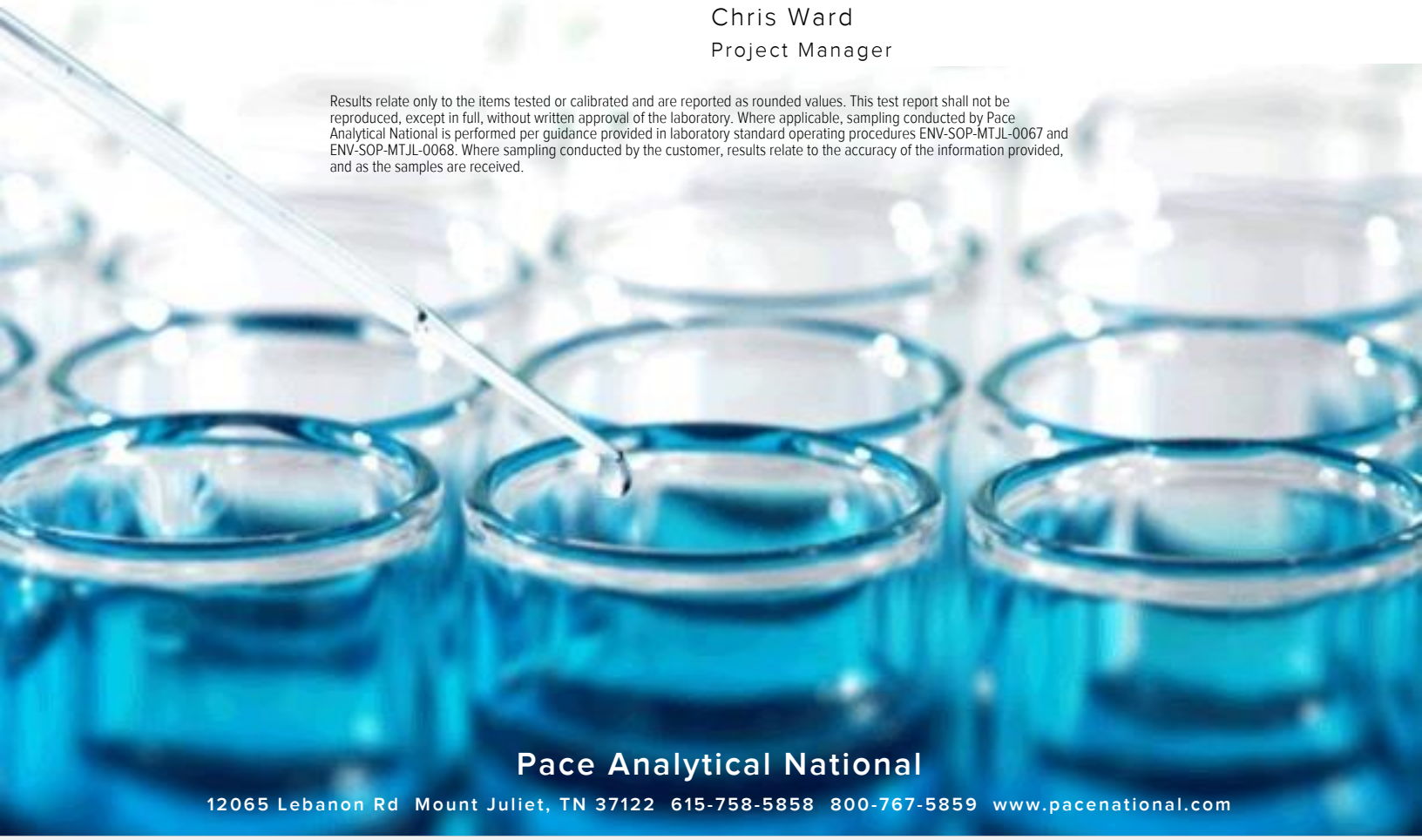
Sample Delivery Group:	L1418066
Samples Received:	10/14/2021
Project Number:	D24
Description:	D24

Report To: Stuart Hall
240 Mesa Avenue
Grand Junction, CO 81501

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

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



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

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SAMPLE SUMMARY

20211013-D24-NBG-12'-1230 L1418066-01 Solid

Collected by: Chance Holder
Collected date/time: 10/13/21 12:30
Received date/time: 10/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759171	1	10/21/21 21:12	10/21/21 21:12	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1764023	1	10/27/21 03:15	10/27/21 06:32	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759140	1	10/19/21 06:41	10/19/21 19:05	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760927	5	10/21/21 10:13	10/21/21 13:43	JDG	Mt. Juliet, TN

20211013-D24-EBG-12'-1240 L1418066-02 Solid

Collected by: Chance Holder
Collected date/time: 10/13/21 12:30
Received date/time: 10/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1759171	1	10/21/21 21:15	10/21/21 21:15	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1759752	1	10/22/21 13:00	10/22/21 15:25	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1759140	1	10/19/21 06:41	10/19/21 19:05	AMH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1760927	5	10/21/21 10:13	10/21/21 14:08	JDG	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	0.172		1	10/21/2021 21:12	WG1759171

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.39	T8	1	10/27/2021 06:32	WG1764023

Sample Narrative:
L1418066-01 WG1764023: 8.39 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	283		10.0	1	10/19/2021 19:05	WG1759140

Sample Narrative:
L1418066-01 WG1759140: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.91		0.100	1.00	5	10/21/2021 13:43	WG1760927

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.96		1	10/21/2021 21:15	WG1759171

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.53	T8	1	10/22/2021 15:25	WG1759752

Sample Narrative:
L1418066-02 WG1759752: 8.53 at 19.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	812		10.0	1	10/19/2021 19:05	WG1759140

Sample Narrative:
L1418066-02 WG1759140: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.07		0.100	1.00	5	10/21/2021 14:08	WG1760927

L1418263-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1418263-03 10/22/21 15:25 • (DUP) R3720207-3 10/22/21 15:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.32	8.33	1	0.120		1

Sample Narrative:

OS: 8.32 at 19.6C

DUP: 8.33 at 19.8C

Laboratory Control Sample (LCS)

(LCS) R3720207-1 10/22/21 15:25

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.97	99.7	99.0-101	

Sample Narrative:

LCS: 9.97 at 19.8C

L1418066-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1418066-01 10/27/21 06:32 • (DUP) R3721884-3 10/27/21 06:32

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
pH	8.39	8.41	1	0.238		1

Sample Narrative:

OS: 8.39 at 20.5C

DUP: 8.41 at 20C

Laboratory Control Sample (LCS)

(LCS) R3721884-1 10/27/21 06:32

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

Sample Narrative:

LCS: 9.99 at 20.1C

QUALITY CONTROL SUMMARY

L1418066-01,02

Method Blank (MB)

(MB) R3718559-1 10/19/21 19:05

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

L1418066-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1418066-01 10/19/21 19:05 • (DUP) R3718559-3 10/19/21 19:05

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	283	288	1	1.65		20

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

L1418079-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1418079-03 10/19/21 19:05 • (DUP) R3718559-4 10/19/21 19:05

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	159	159	1	0.566		20

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

Laboratory Control Sample (LCS)

(LCS) R3718559-2 10/19/21 19:05

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	269	100	85.0-115	

Sample Narrative:
LCS: at 25C

QUALITY CONTROL SUMMARY

L1418066-01,02

Method Blank (MB)

(MB) R3719634-1 10/21/21 13:37

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) R3719634-2 10/21/21 13:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	91.4	91.4	80.0-120	

L1418066-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418066-01 10/21/21 13:43 • (MS) R3719634-5 10/21/21 13:54 • (MSD) R3719634-6 10/21/21 13:57

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	6.91	102	104	95.5	97.0	5	75.0-125			1.37	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.
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.

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.

Company Name/Address: ENTRADA CONSULTING GROUP [redacted] 330 GRAND AVE SUITE C GRAND JUNCTION, CO 81501

Billing Information: STUART HALL [redacted] 330 GRAND AVE SUITE C GRAND JUNCTION, CO 81501

Report to: STUART HALL

Email To: shall@entradainc.com

Project Description: DZ4

City/State Collected:

Phone: Fax:

Client Project # DZ4

Lab Project # ENTCONGJCO-915

Collected by (print): CHANCE HOLDER

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ✓Yes
FAX? ✓No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Table 915 GRO/DRO/ORO	Table 915 Metals	Table 915 PAH's	Table 915 VOCs	Table 915 pH, SPCON, SAR	EC	SAR	PH	ARSENIC		Rem./Contaminant	Sample # (lab only)
20211013-DZ4-NBG-12"-1330	GRAB	SS	12"	10/13/21	1330	1						X	X	X	X			-01
20211013-DZ4-EBG-12"-1240			12"	"	1240	1						X	X	X	X			-02

Chain of Custody Page 1 of 1

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L# 148066

Tab J194

Acctnum:

Template:

Prelogin: P822085

TSR:

Cooler:

Shipped Via:

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks: TB=0

pH _____ Temp _____

Flow _____ Other _____

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/13/21	1800	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/13/21	1700	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			T. Robertson

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 1.3 °C Bottles Received: 2

1.4-.1=1.3

Date: 10/14/21 Time: 800

Condition: (lab use only)

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

5016 1232 2367