

Site Diagram

Caerus Oil and Gas LLC

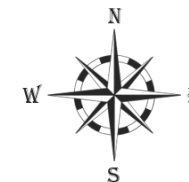
A33NW Pad

(GRASS MESARANCH-66S93W
/33NENE)




COGCC Location ID: 323850

Garfield County

NENE Sec. 33 T6S-R93W

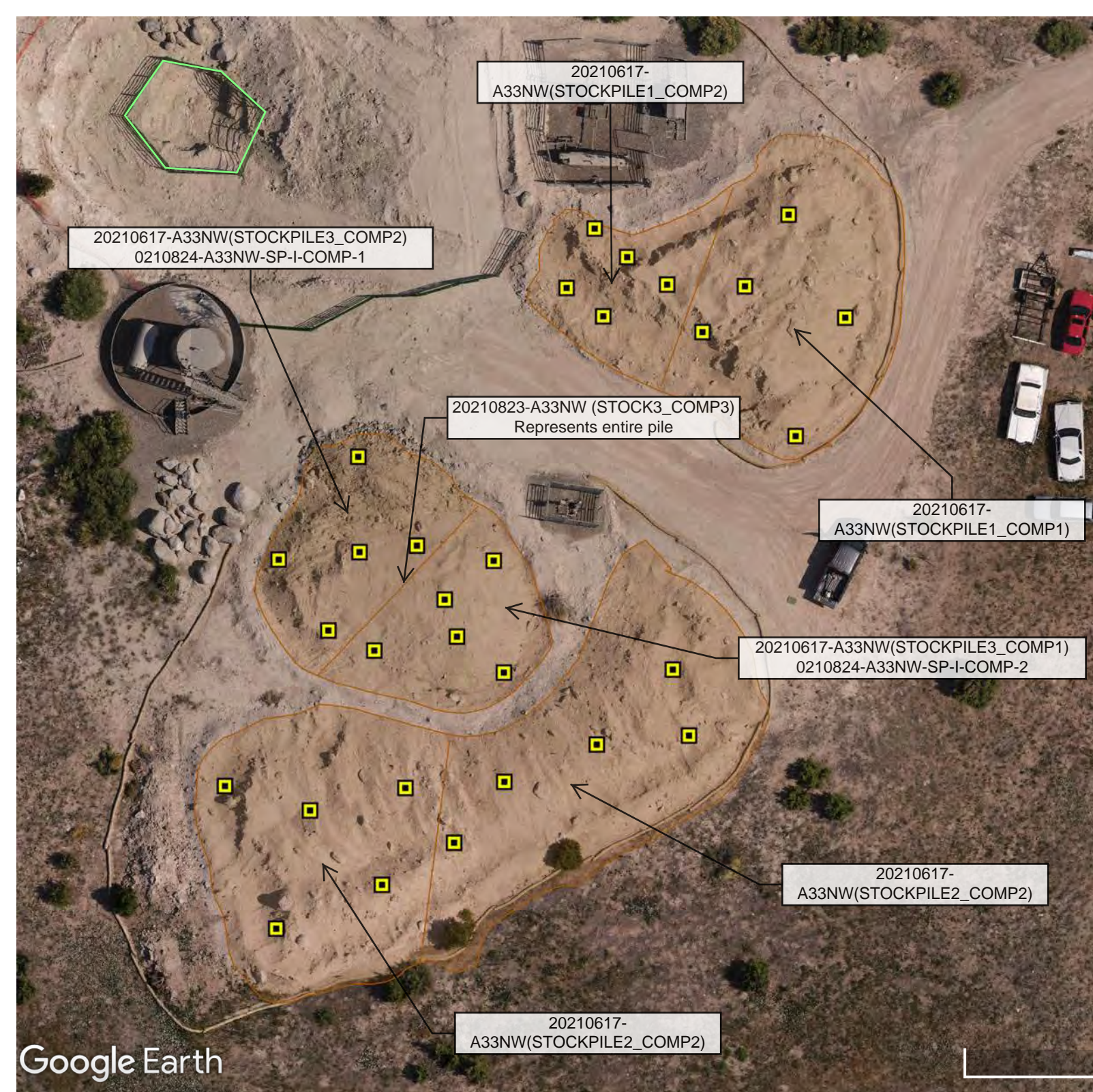


Legend

-  Composite Sample Aliquot
-  Stockpile
-  Excavation boundary – 06/17/2021

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

Map created by: Chris McKisson on 06/28/2021.



Soil Screening and Remediation Limits			Organic Compounds (mg/kg [ppm])																		
COGCC Table 910-1 Allowable Concentration -->			500	NA	NA	NA	0.17	85	100	175	1000	1000	0.22	0.022	0.22	2.2	22	0.022	1000	1000	0.22
Location	Sample Date	Sample ID	TPH (total volatile and extractable petroleum hydrocarbons) (GRO+DRO+ORO)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-ORO (C28-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total (sum of o-, m-, p- isomers)	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(A)pyrene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,C,D)pyrene
A33NW	6/17/2021	20210617-A33NW (STOCKPILE1_COMP1)	29.2	<0.100	13.2	16	<0.00100	0.00138	<0.00250	0.00520	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
A33NW	6/17/2021	20210617-A33NW (STOCKPILE1_COMP2)	14.94	<0.100	6.84	8.1	<0.00100	<0.00500	<0.00250	<0.00650	0.00301	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00244	<0.00600
A33NW	6/17/2021	20210617-A33NW (STOCKPILE2_COMP1)	24.5	<0.100	10.3	14.2	<0.00100	<0.00500	<0.00250	<0.00650	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
A33NW	6/17/2021	20210617-A33NW (STOCKPILE2_COMP2)	29.7	<0.100	12.2	17.5	<0.00100	<0.00500	<0.00250	<0.00650	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
A33NW	6/17/2021	20210617-A33NW (STOCKPILE3_COMP1)	2338.749	0.749	1780	558	<0.00100	<0.00500	<0.00250	<0.00650	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00308	<0.00600	0.00319	0.00492	<0.00600
A33NW	6/17/2021	20210617-A33NW (STOCKPILE3_COMP2)	281.728	0.328	220	61.4	<0.00100	<0.00500	<0.00250	<0.00650	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00245	<0.00600	<0.00600
A33NW	6/17/2021	20210617-A33NW (STOCKPILE1_BLEND)	104	<0.100	68.7	34.9	<0.00100	<0.00500	<0.00250	<0.00650	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
A33NW	8/23/2021	20210823-A33NW (STOCK3_COMP3)	121.900	<0.100	88.4	33.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A33NW	8/24/2021	20210824-A33NW-SP-I-COMP-1	70.20	<0.100	56.3	13.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A33NW	8/24/2021	20210824-A33NW-SP-I-COMP-2	93.30	<0.100	74.3	19.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Soil Screening and Remediation Limits					Soil Suitability for Reclamation				Metals (mg/kg [ppm])									
COGCC Table 910-1 Allowable Concentration -->			23	1000	4	12	6-9	2	0.39	15000	70	23	3100	400	1600	390	390	23000
Location	Sample Date	Sample ID	Naphthalene	Pyrene	EC (Specific Conductance) (millimhos/centimeter) (by saturated paste method)	SAR (Sodium Adsorption Ratio) (calculation) (by saturated paste method)	pH (pH Units) (by saturated paste method)	Boron - Hot Water Soluble (mg/L)	Arsenic	Barium	Cadmium (mg/kg)	Chromium (VI)	Copper	Lead	Nickel	Selenium	Silver	Zinc
A33NW	6/17/2021	20210617-A33NW (STOCKPILE1_COMP1)	<0.0200	<0.00600	0.419	0.431	8.57	0.367	8.99	368	0.182	<1.00	11.3	5.71	16.5	1.31	<1.00	27.7
A33NW	6/17/2021	20210617-A33NW (STOCKPILE1_COMP2)	0.00994	<0.00600	0.273	0.809	8.46	0.363	7.60	290	0.116	<1.00	7.24	3.70	10.4	<2.00	<1.00	15.2
A33NW	6/17/2021	20210617-A33NW (STOCKPILE2_COMP1)	<0.0200	<0.00600	0.279	0.708	8.55	0.362	9.69	302	0.156	<1.00	9.36	5.37	14.1	0.921	<1.00	21.0
A33NW	6/17/2021	20210617-A33NW (STOCKPILE2_COMP2)	<0.0200	<0.00600	0.324	0.891	8.54	NA	8.98	332	0.177	<1.00	9.55	4.92	14.0	<2.00	<1.00	22.5
A33NW	6/17/2021	20210617-A33NW (STOCKPILE3_COMP1)	0.00664	0.00767	0.381	2.10	8.52	NA	8.15	284	0.191	<1.00	10.7	6.15	15.0	<2.00	<1.00	27.2
A33NW	6/17/2021	20210617-A33NW (STOCKPILE3_COMP2)	0.00516	0.00601	0.335	2.11	8.70	NA	10.2	298	0.238	<1.00	15.4	8.37	20.4	<2.00	<1.00	36.3
A33NW	6/17/2021	20210617-A33NW (STOCKPILE1_BLEND)	<0.0200	0.00227	0.358	1.54	8.57	0.294	10.8	308	0.128	<1.00	11.3	6.13	15.5	1.28	<1.00	27.3
A33NW	8/23/2021	20210823-A33NW (STOCK3_COMP3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A33NW	8/24/2021	20210824-A33NW-SP-I-COMP-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A33NW	8/24/2021	20210824-A33NW-SP-I-COMP-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Caerus Oil and Gas

Sample Delivery Group: L1368701
Samples Received: 06/19/2021
Project Number:
Description: A33NW Tank Overflow

Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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

Pace Analytical National

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

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	6
Sr: Sample Results	7
20210617-A33NW (STOCKPILE1_COMP1) L1368701-01	7
20210617-A33NW (STOCKPILE1_COMP2) L1368701-02	9
20210617-A33NW (STOCKPILE2_COMP1) L1368701-03	11
20210617-A33NW (STOCKPILE2_COMP2) L1368701-04	13
20210617-A33NW (STOCKPILE3_COMP1) L1368701-05	15
20210617-A33NW (STOCKPILE3_COMP2) L1368701-06	17
20210617-A33NW (STOCKPILE1_BLEND) L1368701-07	19
Qc: Quality Control Summary	21
Wet Chemistry by Method 7199	21
Wet Chemistry by Method 9045D	22
Wet Chemistry by Method 9050AMod	25
Metals (ICP) by Method 6010B	26
Metals (ICP) by Method 6010B-NE493 Ch 2	27
Metals (ICPMS) by Method 6020	28
Volatile Organic Compounds (GC) by Method 8015D/GRO	29
Volatile Organic Compounds (GC/MS) by Method 8260B	30
Semi-Volatile Organic Compounds (GC) by Method 8015M	31
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	32
Gl: Glossary of Terms	34
Al: Accreditations & Locations	35
Sc: Sample Chain of Custody	36

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

SAMPLE SUMMARY

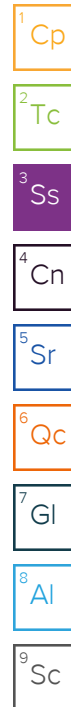
20210617-A33NW (STOCKPILE1_COMP1) L1368701-01 Solid

Collected by
Andrew Smith

Collected date/time
06/17/21 11:00

Received date/time
06/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1693089	1	06/28/21 11:20	06/28/21 11:20	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1698235	1	07/01/21 10:00	07/02/21 11:27	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1694077	1	06/24/21 08:00	06/24/21 11:30	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1693372	1	06/23/21 02:00	06/23/21 07:40	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1693487	1	06/27/21 07:53	07/02/21 03:37	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1693081	1	06/26/21 10:53	06/30/21 22:35	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1693485	5	06/27/21 07:49	06/27/21 22:56	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1696891	1	06/24/21 08:32	06/30/21 05:39	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1694472	1	06/24/21 08:32	06/24/21 12:55	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1696034	1	06/29/21 15:17	06/30/21 18:15	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1696028	1	06/29/21 04:02	06/29/21 11:28	LEA	Mt. Juliet, TN



20210617-A33NW (STOCKPILE1_COMP2) L1368701-02 Solid

Collected by
Andrew Smith

Collected date/time
06/17/21 11:25

Received date/time
06/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1693089	1	06/28/21 11:23	06/28/21 11:23	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1698235	1	07/01/21 10:00	07/02/21 11:53	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1693923	1	06/25/21 08:00	06/25/21 12:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1693372	1	06/23/21 02:00	06/23/21 07:40	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1693487	1	06/27/21 07:53	07/02/21 03:40	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1693081	1	06/26/21 10:53	06/30/21 22:38	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1693485	5	06/27/21 07:49	06/27/21 23:00	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1696891	1	06/24/21 08:32	06/30/21 06:01	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1694472	1	06/24/21 08:32	06/24/21 13:16	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1696034	1	06/29/21 15:17	06/30/21 17:49	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1696028	1	06/29/21 04:02	06/29/21 11:48	LEA	Mt. Juliet, TN

20210617-A33NW (STOCKPILE2_COMP1) L1368701-03 Solid

Collected by
Andrew Smith

Collected date/time
06/17/21 12:00

Received date/time
06/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1693089	1	06/28/21 11:25	06/28/21 11:25	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1698235	1	07/01/21 10:00	07/02/21 12:03	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1694384	1	06/24/21 14:06	06/24/21 17:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1693372	1	06/23/21 02:00	06/23/21 07:40	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1693487	1	06/27/21 07:53	07/02/21 03:43	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1693081	1	06/26/21 10:53	06/30/21 22:41	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1693485	5	06/27/21 07:49	06/27/21 23:03	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1696891	1	06/24/21 08:32	06/30/21 06:23	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1694472	1	06/24/21 08:32	06/24/21 13:37	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1696034	1	06/29/21 15:17	06/30/21 18:02	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1696028	1	06/29/21 04:02	06/29/21 12:08	LEA	Mt. Juliet, TN

20210617-A33NW (STOCKPILE2_COMP2) L1368701-04 Solid

Collected by
Andrew Smith

Collected date/time
06/17/21 12:20

Received date/time
06/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1693089	1	06/28/21 11:28	06/28/21 11:28	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1698235	1	07/01/21 10:00	07/02/21 12:08	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1694384	1	06/24/21 14:06	06/24/21 17:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1693372	1	06/23/21 02:00	06/23/21 07:40	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1693487	1	06/27/21 07:53	07/02/21 03:52	CCE	Mt. Juliet, TN

SAMPLE SUMMARY

20210617-A33NW (STOCKPILE2_COMP2) L1368701-04 Solid

Collected by
Andrew Smith

Collected date/time
06/17/21 12:20

Received date/time
06/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1693081	1	06/26/21 10:53	06/30/21 22:44	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1693485	5	06/27/21 07:49	06/27/21 23:13	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1696891	1	06/24/21 08:32	06/30/21 06:45	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1694472	1	06/24/21 08:32	06/24/21 13:58	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1696034	1	06/29/21 15:17	06/29/21 23:33	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1696028	1	06/29/21 04:02	06/29/21 12:28	LEA	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

20210617-A33NW (STOCKPILE3_COMP1) L1368701-05 Solid

Collected by
Andrew Smith

Collected date/time
06/17/21 12:30

Received date/time
06/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1693089	1	06/28/21 11:31	06/28/21 11:31	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1698235	1	07/01/21 10:00	07/02/21 12:13	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1694384	1	06/24/21 14:06	06/24/21 17:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1693372	1	06/23/21 02:00	06/23/21 07:40	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1693487	1	06/27/21 07:53	07/02/21 03:55	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1693081	1	06/26/21 10:53	06/30/21 22:47	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1693485	5	06/27/21 07:49	06/27/21 23:16	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1696891	1	06/24/21 08:32	06/30/21 07:07	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1694472	1	06/24/21 08:32	06/24/21 14:19	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1696034	10	06/29/21 15:17	06/30/21 18:40	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1696028	1	06/29/21 04:02	06/29/21 12:48	LEA	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

20210617-A33NW (STOCKPILE3_COMP2) L1368701-06 Solid

Collected by
Andrew Smith

Collected date/time
06/17/21 12:50

Received date/time
06/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1693089	1	06/28/21 11:39	06/28/21 11:39	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1698235	1	07/01/21 10:00	07/02/21 12:29	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1694384	1	06/24/21 14:06	06/24/21 17:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1693372	1	06/23/21 02:00	06/23/21 07:40	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1693487	1	06/27/21 07:53	07/02/21 03:59	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1693081	1	06/26/21 10:53	06/30/21 22:49	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1693485	5	06/27/21 07:49	06/27/21 23:19	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1696891	1	06/24/21 08:32	06/30/21 07:29	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1694472	1	06/24/21 08:32	06/24/21 14:40	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1696034	1	06/29/21 15:17	06/29/21 23:58	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1696028	1	06/29/21 04:02	06/29/21 13:07	LEA	Mt. Juliet, TN

20210617-A33NW (STOCKPILE1_BLEND) L1368701-07 Solid

Collected by
Andrew Smith

Collected date/time
06/17/21 13:00

Received date/time
06/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1693089	1	06/28/21 11:41	06/28/21 11:41	EL	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1698235	1	07/01/21 10:00	07/02/21 12:34	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1694384	1	06/24/21 14:06	06/24/21 17:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1693372	1	06/23/21 02:00	06/23/21 07:40	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1693487	1	06/27/21 07:53	07/02/21 03:22	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1693081	1	06/26/21 10:53	06/30/21 22:52	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1693485	5	06/27/21 07:49	06/27/21 22:40	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1696891	1	06/24/21 08:32	06/30/21 07:51	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1694472	1	06/24/21 08:32	06/24/21 15:01	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1696034	1	06/29/21 15:17	06/29/21 22:55	CAG	Mt. Juliet, TN

SAMPLE SUMMARY

20210617-A33NW (STOCKPILE1_BLEND) L1368701-07 Solid

Collected by
Andrew Smith

Collected date/time
06/17/21 13:00

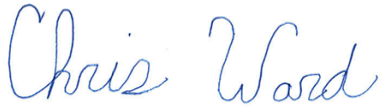
Received date/time
06/19/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1696028	1	06/29/21 04:02	06/29/21 13:27	LEA	Mt. Juliet, TN

¹Cp ${}^2\text{Tc}$ 3S_1 ${}^4\text{Cn}$ ^5Sr ${}^6\text{Qc}$ ${}^7\text{Gf}$ ${}^8\text{Al}$ ${}^9\text{Sc}$

CASE NARRATIVE

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



Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.431		1	06/28/2021 11:20	WG1693089

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U	J6	0.255	1.00	1	07/02/2021 11:27	WG1698235

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.57	T8	1	06/24/2021 11:30	WG1694077

Sample Narrative:
L1368701-01 WG1694077: 8.57 at 21.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	419		10.0	1	06/23/2021 07:40	WG1693372

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	368		0.0852	0.500	1	07/02/2021 03:37	WG1693487
Cadmium	0.182	J	0.0471	0.500	1	07/02/2021 03:37	WG1693487
Copper	11.3		0.400	2.00	1	07/02/2021 03:37	WG1693487
Lead	5.71		0.208	0.500	1	07/02/2021 03:37	WG1693487
Nickel	16.5		0.132	2.00	1	07/02/2021 03:37	WG1693487
Selenium	1.31	J	0.764	2.00	1	07/02/2021 03:37	WG1693487
Silver	U		0.127	1.00	1	07/02/2021 03:37	WG1693487
Zinc	27.7		0.832	5.00	1	07/02/2021 03:37	WG1693487

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	0.367		0.0167	0.200	1	06/30/2021 22:35	WG1693081

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.99		0.100	1.00	5	06/27/2021 22:56	WG1693485

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	06/30/2021 05:39	WG1696891
(S) a,a,a-Trifluorotoluene(FID)	89.4			77.0-120		06/30/2021 05:39	WG1696891

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/24/2021 12:55	WG1694472
Toluene	0.00138	U	0.00130	0.00500	1	06/24/2021 12:55	WG1694472
Ethylbenzene	U		0.000737	0.00250	1	06/24/2021 12:55	WG1694472
Xylenes, Total	0.00520	U	0.000880	0.00650	1	06/24/2021 12:55	WG1694472
1,2,4-Trimethylbenzene	0.00400	U	0.00158	0.00500	1	06/24/2021 12:55	WG1694472
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/24/2021 12:55	WG1694472
(S) Toluene-d8	94.1			75.0-131		06/24/2021 12:55	WG1694472
(S) 4-Bromofluorobenzene	89.3			67.0-138		06/24/2021 12:55	WG1694472
(S) 1,2-Dichloroethane-d4	92.1			70.0-130		06/24/2021 12:55	WG1694472

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	13.2		1.61	4.00	1	06/30/2021 18:15	WG1696034
C28-C36 Motor Oil Range	16.0		0.274	4.00	1	06/30/2021 18:15	WG1696034
(S) o-Terphenyl	54.8			18.0-148		06/30/2021 18:15	WG1696034

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	06/29/2021 11:28	WG1696028
Acenaphthene	U		0.00209	0.00600	1	06/29/2021 11:28	WG1696028
Acenaphthylene	U		0.00216	0.00600	1	06/29/2021 11:28	WG1696028
Benzo(a)anthracene	U		0.00173	0.00600	1	06/29/2021 11:28	WG1696028
Benzo(a)pyrene	U		0.00179	0.00600	1	06/29/2021 11:28	WG1696028
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/29/2021 11:28	WG1696028
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/29/2021 11:28	WG1696028
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/29/2021 11:28	WG1696028
Chrysene	U		0.00232	0.00600	1	06/29/2021 11:28	WG1696028
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/29/2021 11:28	WG1696028
Fluoranthene	U		0.00227	0.00600	1	06/29/2021 11:28	WG1696028
Fluorene	U		0.00205	0.00600	1	06/29/2021 11:28	WG1696028
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/29/2021 11:28	WG1696028
Naphthalene	U		0.00408	0.0200	1	06/29/2021 11:28	WG1696028
Phenanthrene	U		0.00231	0.00600	1	06/29/2021 11:28	WG1696028
Pyrene	U		0.00200	0.00600	1	06/29/2021 11:28	WG1696028
1-Methylnaphthalene	U		0.00449	0.0200	1	06/29/2021 11:28	WG1696028
2-Methylnaphthalene	U		0.00427	0.0200	1	06/29/2021 11:28	WG1696028
2-Chloronaphthalene	U		0.00466	0.0200	1	06/29/2021 11:28	WG1696028
(S) p-Terphenyl-d14	65.8			23.0-120		06/29/2021 11:28	WG1696028
(S) Nitrobenzene-d5	57.5			14.0-149		06/29/2021 11:28	WG1696028
(S) 2-Fluorobiphenyl	60.7			34.0-125		06/29/2021 11:28	WG1696028

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	0.809		1	06/28/2021 11:23	WG1693089

Wet Chemistry by Method 7199

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Hexavalent Chromium	U		0.255	1.00	1	07/02/2021 11:53	WG1698235

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	8.46	T8	1	06/25/2021 12:00	WG1693923

Sample Narrative:

L1368701-02 WG1693923: 8.46 at 26.1C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	273		10.0	1	06/23/2021 07:40	WG1693372

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	290		0.0852	0.500	1	07/02/2021 03:40	WG1693487
Cadmium	0.116	J	0.0471	0.500	1	07/02/2021 03:40	WG1693487
Copper	7.24		0.400	2.00	1	07/02/2021 03:40	WG1693487
Lead	3.70		0.208	0.500	1	07/02/2021 03:40	WG1693487
Nickel	10.4		0.132	2.00	1	07/02/2021 03:40	WG1693487
Selenium	U		0.764	2.00	1	07/02/2021 03:40	WG1693487
Silver	U		0.127	1.00	1	07/02/2021 03:40	WG1693487
Zinc	15.2		0.832	5.00	1	07/02/2021 03:40	WG1693487

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

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Hot Water Sol. Boron	0.363		0.0167	0.200	1	06/30/2021 22:38	WG1693081

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	7.60		0.100	1.00	5	06/27/2021 23:00	WG1693485

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

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	06/30/2021 06:01	WG1696891
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	89.2			77.0-120		06/30/2021 06:01	WG1696891

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/24/2021 13:16	WG1694472
Toluene	U		0.00130	0.00500	1	06/24/2021 13:16	WG1694472
Ethylbenzene	U		0.000737	0.00250	1	06/24/2021 13:16	WG1694472
Xylenes, Total	U		0.000880	0.00650	1	06/24/2021 13:16	WG1694472
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/24/2021 13:16	WG1694472
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/24/2021 13:16	WG1694472
(S) Toluene-d8	106			75.0-131		06/24/2021 13:16	WG1694472
(S) 4-Bromofluorobenzene	86.5			67.0-138		06/24/2021 13:16	WG1694472
(S) 1,2-Dichloroethane-d4	86.8			70.0-130		06/24/2021 13:16	WG1694472

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	6.84		1.61	4.00	1	06/30/2021 17:49	WG1696034
C28-C36 Motor Oil Range	8.11		0.274	4.00	1	06/30/2021 17:49	WG1696034
(S) o-Terphenyl	51.8			18.0-148		06/30/2021 17:49	WG1696034

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	06/29/2021 11:48	WG1696028
Acenaphthene	0.00301	U	0.00209	0.00600	1	06/29/2021 11:48	WG1696028
Acenaphthylene	U		0.00216	0.00600	1	06/29/2021 11:48	WG1696028
Benzo(a)anthracene	U		0.00173	0.00600	1	06/29/2021 11:48	WG1696028
Benzo(a)pyrene	U		0.00179	0.00600	1	06/29/2021 11:48	WG1696028
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/29/2021 11:48	WG1696028
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/29/2021 11:48	WG1696028
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/29/2021 11:48	WG1696028
Chrysene	U		0.00232	0.00600	1	06/29/2021 11:48	WG1696028
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/29/2021 11:48	WG1696028
Fluoranthene	U		0.00227	0.00600	1	06/29/2021 11:48	WG1696028
Fluorene	0.00244	U	0.00205	0.00600	1	06/29/2021 11:48	WG1696028
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/29/2021 11:48	WG1696028
Naphthalene	0.00994	U	0.00408	0.0200	1	06/29/2021 11:48	WG1696028
Phenanthrene	0.00296	U	0.00231	0.00600	1	06/29/2021 11:48	WG1696028
Pyrene	U		0.00200	0.00600	1	06/29/2021 11:48	WG1696028
1-Methylnaphthalene	U		0.00449	0.0200	1	06/29/2021 11:48	WG1696028
2-Methylnaphthalene	0.00604	U	0.00427	0.0200	1	06/29/2021 11:48	WG1696028
2-Chloronaphthalene	U		0.00466	0.0200	1	06/29/2021 11:48	WG1696028
(S) p-Terphenyl-d14	71.6			23.0-120		06/29/2021 11:48	WG1696028
(S) Nitrobenzene-d5	61.6			14.0-149		06/29/2021 11:48	WG1696028
(S) 2-Fluorobiphenyl	67.3			34.0-125		06/29/2021 11:48	WG1696028

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	0.708		1	06/28/2021 11:25	WG1693089

Wet Chemistry by Method 7199

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Hexavalent Chromium	U		0.255	1.00	1	07/02/2021 12:03	WG1698235

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	8.55	T8	1	06/24/2021 17:00	WG1694384

Sample Narrative:
L1368701-03 WG1694384: 8.55 at 25.1C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	279		10.0	1	06/23/2021 07:40	WG1693372

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	302		0.0852	0.500	1	07/02/2021 03:43	WG1693487
Cadmium	0.156	J	0.0471	0.500	1	07/02/2021 03:43	WG1693487
Copper	9.36		0.400	2.00	1	07/02/2021 03:43	WG1693487
Lead	5.37		0.208	0.500	1	07/02/2021 03:43	WG1693487
Nickel	14.1		0.132	2.00	1	07/02/2021 03:43	WG1693487
Selenium	0.921	J	0.764	2.00	1	07/02/2021 03:43	WG1693487
Silver	U		0.127	1.00	1	07/02/2021 03:43	WG1693487
Zinc	21.0		0.832	5.00	1	07/02/2021 03:43	WG1693487

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

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Hot Water Sol. Boron	0.362		0.0167	0.200	1	06/30/2021 22:41	WG1693081

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	9.69		0.100	1.00	5	06/27/2021 23:03	WG1693485

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

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	06/30/2021 06:23	WG1696891
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	89.2			77.0-120		06/30/2021 06:23	WG1696891

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/24/2021 13:37	WG1694472
Toluene	U		0.00130	0.00500	1	06/24/2021 13:37	WG1694472
Ethylbenzene	U		0.000737	0.00250	1	06/24/2021 13:37	WG1694472
Xylenes, Total	U		0.000880	0.00650	1	06/24/2021 13:37	WG1694472
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/24/2021 13:37	WG1694472
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/24/2021 13:37	WG1694472
(S) Toluene-d8	102			75.0-131		06/24/2021 13:37	WG1694472
(S) 4-Bromofluorobenzene	87.5			67.0-138		06/24/2021 13:37	WG1694472
(S) 1,2-Dichloroethane-d4	82.2			70.0-130		06/24/2021 13:37	WG1694472

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	10.3		1.61	4.00	1	06/30/2021 18:02	WG1696034
C28-C36 Motor Oil Range	14.2		0.274	4.00	1	06/30/2021 18:02	WG1696034
(S) o-Terphenyl	75.8			18.0-148		06/30/2021 18:02	WG1696034

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	06/29/2021 12:08	WG1696028
Acenaphthene	U		0.00209	0.00600	1	06/29/2021 12:08	WG1696028
Acenaphthylene	U		0.00216	0.00600	1	06/29/2021 12:08	WG1696028
Benzo(a)anthracene	U		0.00173	0.00600	1	06/29/2021 12:08	WG1696028
Benzo(a)pyrene	U		0.00179	0.00600	1	06/29/2021 12:08	WG1696028
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/29/2021 12:08	WG1696028
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/29/2021 12:08	WG1696028
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/29/2021 12:08	WG1696028
Chrysene	U		0.00232	0.00600	1	06/29/2021 12:08	WG1696028
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/29/2021 12:08	WG1696028
Fluoranthene	U		0.00227	0.00600	1	06/29/2021 12:08	WG1696028
Fluorene	U		0.00205	0.00600	1	06/29/2021 12:08	WG1696028
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/29/2021 12:08	WG1696028
Naphthalene	U		0.00408	0.0200	1	06/29/2021 12:08	WG1696028
Phenanthrene	U		0.00231	0.00600	1	06/29/2021 12:08	WG1696028
Pyrene	U		0.00200	0.00600	1	06/29/2021 12:08	WG1696028
1-Methylnaphthalene	U		0.00449	0.0200	1	06/29/2021 12:08	WG1696028
2-Methylnaphthalene	U		0.00427	0.0200	1	06/29/2021 12:08	WG1696028
2-Chloronaphthalene	U		0.00466	0.0200	1	06/29/2021 12:08	WG1696028
(S) p-Terphenyl-d14	85.5			23.0-120		06/29/2021 12:08	WG1696028
(S) Nitrobenzene-d5	72.7			14.0-149		06/29/2021 12:08	WG1696028
(S) 2-Fluorobiphenyl	78.5			34.0-125		06/29/2021 12:08	WG1696028

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.891		1	06/28/2021 11:28	WG1693089

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	07/02/2021 12:08	WG1698235

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.54	T8	1	06/24/2021 17:00	WG1694384

Sample Narrative:

L1368701-04 WG1694384: 8.54 at 25C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	324		10.0	1	06/23/2021 07:40	WG1693372

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	332		0.0852	0.500	1	07/02/2021 03:52	WG1693487
Cadmium	0.177	J	0.0471	0.500	1	07/02/2021 03:52	WG1693487
Copper	9.55		0.400	2.00	1	07/02/2021 03:52	WG1693487
Lead	4.92		0.208	0.500	1	07/02/2021 03:52	WG1693487
Nickel	14.0		0.132	2.00	1	07/02/2021 03:52	WG1693487
Selenium	U		0.764	2.00	1	07/02/2021 03:52	WG1693487
Silver	U		0.127	1.00	1	07/02/2021 03:52	WG1693487
Zinc	22.5		0.832	5.00	1	07/02/2021 03:52	WG1693487

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	0.428		0.0167	0.200	1	06/30/2021 22:44	WG1693081

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.98		0.100	1.00	5	06/27/2021 23:13	WG1693485

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	06/30/2021 06:45	WG1696891
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	89.3			77.0-120		06/30/2021 06:45	WG1696891

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/24/2021 13:58	WG1694472
Toluene	U		0.00130	0.00500	1	06/24/2021 13:58	WG1694472
Ethylbenzene	U		0.000737	0.00250	1	06/24/2021 13:58	WG1694472
Xylenes, Total	U		0.000880	0.00650	1	06/24/2021 13:58	WG1694472
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/24/2021 13:58	WG1694472
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/24/2021 13:58	WG1694472
(S) Toluene-d8	101			75.0-131		06/24/2021 13:58	WG1694472
(S) 4-Bromofluorobenzene	92.2			67.0-138		06/24/2021 13:58	WG1694472
(S) 1,2-Dichloroethane-d4	83.7			70.0-130		06/24/2021 13:58	WG1694472

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	12.2		1.61	4.00	1	06/29/2021 23:33	WG1696034
C28-C36 Motor Oil Range	17.5		0.274	4.00	1	06/29/2021 23:33	WG1696034
(S) o-Terphenyl	52.8			18.0-148		06/29/2021 23:33	WG1696034

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	06/29/2021 12:28	WG1696028
Acenaphthene	U		0.00209	0.00600	1	06/29/2021 12:28	WG1696028
Acenaphthylene	U		0.00216	0.00600	1	06/29/2021 12:28	WG1696028
Benzo(a)anthracene	U		0.00173	0.00600	1	06/29/2021 12:28	WG1696028
Benzo(a)pyrene	U		0.00179	0.00600	1	06/29/2021 12:28	WG1696028
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/29/2021 12:28	WG1696028
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/29/2021 12:28	WG1696028
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/29/2021 12:28	WG1696028
Chrysene	U		0.00232	0.00600	1	06/29/2021 12:28	WG1696028
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/29/2021 12:28	WG1696028
Fluoranthene	U		0.00227	0.00600	1	06/29/2021 12:28	WG1696028
Fluorene	U		0.00205	0.00600	1	06/29/2021 12:28	WG1696028
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/29/2021 12:28	WG1696028
Naphthalene	U		0.00408	0.0200	1	06/29/2021 12:28	WG1696028
Phenanthrene	U		0.00231	0.00600	1	06/29/2021 12:28	WG1696028
Pyrene	U		0.00200	0.00600	1	06/29/2021 12:28	WG1696028
1-Methylnaphthalene	U		0.00449	0.0200	1	06/29/2021 12:28	WG1696028
2-Methylnaphthalene	U		0.00427	0.0200	1	06/29/2021 12:28	WG1696028
2-Chloronaphthalene	U		0.00466	0.0200	1	06/29/2021 12:28	WG1696028
(S) p-Terphenyl-d14	57.2			23.0-120		06/29/2021 12:28	WG1696028
(S) Nitrobenzene-d5	61.2			14.0-149		06/29/2021 12:28	WG1696028
(S) 2-Fluorobiphenyl	67.8			34.0-125		06/29/2021 12:28	WG1696028

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.10		1	06/28/2021 11:31	WG1693089

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	07/02/2021 12:13	WG1698235

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.52	T8	1	06/24/2021 17:00	WG1694384

Sample Narrative:

L1368701-05 WG1694384: 8.52 at 24.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	381		10.0	1	06/23/2021 07:40	WG1693372

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	284		0.0852	0.500	1	07/02/2021 03:55	WG1693487
Cadmium	0.191	J	0.0471	0.500	1	07/02/2021 03:55	WG1693487
Copper	10.7		0.400	2.00	1	07/02/2021 03:55	WG1693487
Lead	6.15		0.208	0.500	1	07/02/2021 03:55	WG1693487
Nickel	15.0		0.132	2.00	1	07/02/2021 03:55	WG1693487
Selenium	U		0.764	2.00	1	07/02/2021 03:55	WG1693487
Silver	U		0.127	1.00	1	07/02/2021 03:55	WG1693487
Zinc	27.2		0.832	5.00	1	07/02/2021 03:55	WG1693487

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	0.425		0.0167	0.200	1	06/30/2021 22:47	WG1693081

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.15		0.100	1.00	5	06/27/2021 23:16	WG1693485

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	0.749		0.0217	0.100	1	06/30/2021 07:07	WG1696891
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	94.2			77.0-120		06/30/2021 07:07	WG1696891



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	06/24/2021 14:19	WG1694472
Toluene	U		0.00130	0.00500	1	06/24/2021 14:19	WG1694472
Ethylbenzene	U		0.000737	0.00250	1	06/24/2021 14:19	WG1694472
Xylenes, Total	U		0.000880	0.00650	1	06/24/2021 14:19	WG1694472
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/24/2021 14:19	WG1694472
1,3,5-Trimethylbenzene	0.00488	J	0.00200	0.00500	1	06/24/2021 14:19	WG1694472
(S) Toluene-d8	103			75.0-131		06/24/2021 14:19	WG1694472
(S) 4-Bromofluorobenzene	114			67.0-138		06/24/2021 14:19	WG1694472
(S) 1,2-Dichloroethane-d4	82.4			70.0-130		06/24/2021 14:19	WG1694472

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	1780		16.1	40.0	10	06/30/2021 18:40	WG1696034
C28-C36 Motor Oil Range	558		2.74	40.0	10	06/30/2021 18:40	WG1696034
(S) o-Terphenyl	387	J1		18.0-148		06/30/2021 18:40	WG1696034

Sample Narrative:

L1368701-05 WG1696034: Surrogate failure due to matrix interference

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	06/29/2021 12:48	WG1696028
Acenaphthene	U		0.00209	0.00600	1	06/29/2021 12:48	WG1696028
Acenaphthylene	U		0.00216	0.00600	1	06/29/2021 12:48	WG1696028
Benzo(a)anthracene	U		0.00173	0.00600	1	06/29/2021 12:48	WG1696028
Benzo(a)pyrene	U		0.00179	0.00600	1	06/29/2021 12:48	WG1696028
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/29/2021 12:48	WG1696028
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/29/2021 12:48	WG1696028
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/29/2021 12:48	WG1696028
Chrysene	0.00308	J	0.00232	0.00600	1	06/29/2021 12:48	WG1696028
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/29/2021 12:48	WG1696028
Fluoranthene	0.00319	J	0.00227	0.00600	1	06/29/2021 12:48	WG1696028
Fluorene	0.00492	J	0.00205	0.00600	1	06/29/2021 12:48	WG1696028
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/29/2021 12:48	WG1696028
Naphthalene	0.00664	J	0.00408	0.0200	1	06/29/2021 12:48	WG1696028
Phenanthrene	U		0.00231	0.00600	1	06/29/2021 12:48	WG1696028
Pyrene	0.00767		0.00200	0.00600	1	06/29/2021 12:48	WG1696028
1-Methylnaphthalene	U		0.00449	0.0200	1	06/29/2021 12:48	WG1696028
2-Methylnaphthalene	U		0.00427	0.0200	1	06/29/2021 12:48	WG1696028
2-Chloronaphthalene	U		0.00466	0.0200	1	06/29/2021 12:48	WG1696028
(S) p-Terphenyl-d14	77.2			23.0-120		06/29/2021 12:48	WG1696028
(S) Nitrobenzene-d5	75.4			14.0-149		06/29/2021 12:48	WG1696028
(S) 2-Fluorobiphenyl	72.0			34.0-125		06/29/2021 12:48	WG1696028

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.11		1	06/28/2021 11:39	WG1693089

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	07/02/2021 12:29	WG1698235

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.70	T8	1	06/24/2021 17:00	WG1694384

Sample Narrative:

L1368701-06 WG1694384: 8.7 at 24.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	335		10.0	1	06/23/2021 07:40	WG1693372

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	298		0.0852	0.500	1	07/02/2021 03:59	WG1693487
Cadmium	0.238	J	0.0471	0.500	1	07/02/2021 03:59	WG1693487
Copper	15.4		0.400	2.00	1	07/02/2021 03:59	WG1693487
Lead	8.37		0.208	0.500	1	07/02/2021 03:59	WG1693487
Nickel	20.4		0.132	2.00	1	07/02/2021 03:59	WG1693487
Selenium	U		0.764	2.00	1	07/02/2021 03:59	WG1693487
Silver	U		0.127	1.00	1	07/02/2021 03:59	WG1693487
Zinc	36.3		0.832	5.00	1	07/02/2021 03:59	WG1693487

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	0.306		0.0167	0.200	1	06/30/2021 22:49	WG1693081

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	10.2		0.100	1.00	5	06/27/2021 23:19	WG1693485

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	0.328		0.0217	0.100	1	06/30/2021 07:29	WG1696891
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	92.9			77.0-120		06/30/2021 07:29	WG1696891

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/24/2021 14:40	WG1694472
Toluene	U		0.00130	0.00500	1	06/24/2021 14:40	WG1694472
Ethylbenzene	U		0.000737	0.00250	1	06/24/2021 14:40	WG1694472
Xylenes, Total	U		0.000880	0.00650	1	06/24/2021 14:40	WG1694472
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/24/2021 14:40	WG1694472
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/24/2021 14:40	WG1694472
(S) Toluene-d8	106			75.0-131		06/24/2021 14:40	WG1694472
(S) 4-Bromofluorobenzene	103			67.0-138		06/24/2021 14:40	WG1694472
(S) 1,2-Dichloroethane-d4	79.7			70.0-130		06/24/2021 14:40	WG1694472

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	220		1.61	4.00	1	06/29/2021 23:58	WG1696034
C28-C36 Motor Oil Range	61.4		0.274	4.00	1	06/29/2021 23:58	WG1696034
(S) o-Terphenyl	49.7			18.0-148		06/29/2021 23:58	WG1696034

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	06/29/2021 13:07	WG1696028
Acenaphthene	U		0.00209	0.00600	1	06/29/2021 13:07	WG1696028
Acenaphthylene	U		0.00216	0.00600	1	06/29/2021 13:07	WG1696028
Benzo(a)anthracene	U		0.00173	0.00600	1	06/29/2021 13:07	WG1696028
Benzo(a)pyrene	U		0.00179	0.00600	1	06/29/2021 13:07	WG1696028
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/29/2021 13:07	WG1696028
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/29/2021 13:07	WG1696028
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/29/2021 13:07	WG1696028
Chrysene	U		0.00232	0.00600	1	06/29/2021 13:07	WG1696028
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/29/2021 13:07	WG1696028
Fluoranthene	0.00245	U	0.00227	0.00600	1	06/29/2021 13:07	WG1696028
Fluorene	U		0.00205	0.00600	1	06/29/2021 13:07	WG1696028
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/29/2021 13:07	WG1696028
Naphthalene	0.00516	U	0.00408	0.0200	1	06/29/2021 13:07	WG1696028
Phenanthrene	U		0.00231	0.00600	1	06/29/2021 13:07	WG1696028
Pyrene	0.00601		0.00200	0.00600	1	06/29/2021 13:07	WG1696028
1-Methylnaphthalene	U		0.00449	0.0200	1	06/29/2021 13:07	WG1696028
2-Methylnaphthalene	U		0.00427	0.0200	1	06/29/2021 13:07	WG1696028
2-Chloronaphthalene	U		0.00466	0.0200	1	06/29/2021 13:07	WG1696028
(S) p-Terphenyl-d14	91.0			23.0-120		06/29/2021 13:07	WG1696028
(S) Nitrobenzene-d5	103			14.0-149		06/29/2021 13:07	WG1696028
(S) 2-Fluorobiphenyl	82.0			34.0-125		06/29/2021 13:07	WG1696028

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.54		1	06/28/2021 11:41	WG1693089

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	07/02/2021 12:34	WG1698235

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.57	T8	1	06/24/2021 17:00	WG1694384

Sample Narrative:

L1368701-07 WG1694384: 8.57 at 24.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	358		10.0	1	06/23/2021 07:40	WG1693372

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	308	Q1	0.0852	0.500	1	07/02/2021 03:22	WG1693487
Cadmium	0.128	J	0.0471	0.500	1	07/02/2021 03:22	WG1693487
Copper	11.3		0.400	2.00	1	07/02/2021 03:22	WG1693487
Lead	6.13		0.208	0.500	1	07/02/2021 03:22	WG1693487
Nickel	15.5		0.132	2.00	1	07/02/2021 03:22	WG1693487
Selenium	1.28	J	0.764	2.00	1	07/02/2021 03:22	WG1693487
Silver	U		0.127	1.00	1	07/02/2021 03:22	WG1693487
Zinc	27.3		0.832	5.00	1	07/02/2021 03:22	WG1693487

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	0.294		0.0167	0.200	1	06/30/2021 22:52	WG1693081

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	10.8		0.100	1.00	5	06/27/2021 22:40	WG1693485

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	06/30/2021 07:51	WG1696891
(S) a,a,a-Trifluorotoluene(FID)	92.0			77.0-120		06/30/2021 07:51	WG1696891

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/24/2021 15:01	WG1694472
Toluene	U		0.00130	0.00500	1	06/24/2021 15:01	WG1694472
Ethylbenzene	U		0.000737	0.00250	1	06/24/2021 15:01	WG1694472
Xylenes, Total	U		0.000880	0.00650	1	06/24/2021 15:01	WG1694472
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/24/2021 15:01	WG1694472
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/24/2021 15:01	WG1694472
(S) Toluene-d8	102			75.0-131		06/24/2021 15:01	WG1694472
(S) 4-Bromofluorobenzene	94.7			67.0-138		06/24/2021 15:01	WG1694472
(S) 1,2-Dichloroethane-d4	87.3			70.0-130		06/24/2021 15:01	WG1694472

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	68.7		1.61	4.00	1	06/29/2021 22:55	WG1696034
C28-C36 Motor Oil Range	34.9		0.274	4.00	1	06/29/2021 22:55	WG1696034
(S) o-Terphenyl	56.1			18.0-148		06/29/2021 22:55	WG1696034

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	06/29/2021 13:27	WG1696028
Acenaphthene	U		0.00209	0.00600	1	06/29/2021 13:27	WG1696028
Acenaphthylene	U		0.00216	0.00600	1	06/29/2021 13:27	WG1696028
Benzo(a)anthracene	U		0.00173	0.00600	1	06/29/2021 13:27	WG1696028
Benzo(a)pyrene	U		0.00179	0.00600	1	06/29/2021 13:27	WG1696028
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/29/2021 13:27	WG1696028
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/29/2021 13:27	WG1696028
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/29/2021 13:27	WG1696028
Chrysene	U		0.00232	0.00600	1	06/29/2021 13:27	WG1696028
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/29/2021 13:27	WG1696028
Fluoranthene	U		0.00227	0.00600	1	06/29/2021 13:27	WG1696028
Fluorene	U		0.00205	0.00600	1	06/29/2021 13:27	WG1696028
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/29/2021 13:27	WG1696028
Naphthalene	U		0.00408	0.0200	1	06/29/2021 13:27	WG1696028
Phenanthrene	U		0.00231	0.00600	1	06/29/2021 13:27	WG1696028
Pyrene	0.00227	U	0.00200	0.00600	1	06/29/2021 13:27	WG1696028
1-Methylnaphthalene	U		0.00449	0.0200	1	06/29/2021 13:27	WG1696028
2-Methylnaphthalene	U		0.00427	0.0200	1	06/29/2021 13:27	WG1696028
2-Chloronaphthalene	U		0.00466	0.0200	1	06/29/2021 13:27	WG1696028
(S) p-Terphenyl-d14	72.0			23.0-120		06/29/2021 13:27	WG1696028
(S) Nitrobenzene-d5	61.0			14.0-149		06/29/2021 13:27	WG1696028
(S) 2-Fluorobiphenyl	65.5			34.0-125		06/29/2021 13:27	WG1696028

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3675023-1 07/02/21 10:43

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

L1368701-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1368701-02 07/02/21 11:53 • (DUP) R3675023-7 07/02/21 11:58

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

L1368709-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1368709-06 07/02/21 13:05 • (DUP) R3675023-8 07/02/21 13:10

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

Laboratory Control Sample (LCS)

(LCS) R3675023-2 07/02/21 10:50

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.34	93.4	80.0-120	

L1368701-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1368701-01 07/02/21 11:27 • (MS) R3675023-3 07/02/21 11:32 • (MSD) R3675023-4 07/02/21 11:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	13.3	14.9	66.7	74.3	1	75.0-125	J6	J6	10.8	20

L1368701-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1368701-01 07/02/21 11:27 • (MS) R3675023-5 07/02/21 11:42

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	701	U	448	64.0	50	75.0-125	J6

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1368421-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1368421-02 06/25/21 12:00 • (DUP) R3672172-2 06/25/21 12:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.10	7.07	1	0.423		1

Sample Narrative:

OS: 7.1 at 26.7C

DUP: 7.07 at 26.6C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1368439-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1368439-03 06/25/21 12:00 • (DUP) R3672172-3 06/25/21 12:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.16	8.14	1	0.245		1

Sample Narrative:

OS: 8.16 at 26.3C

DUP: 8.14 at 25.9C

Laboratory Control Sample (LCS)

(LCS) R3672172-1 06/25/21 12:00

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

Sample Narrative:

LCS: 10.04 at 25.4C

L1367826-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1367826-07 06/24/21 11:30 • (DUP) R3671483-2 06/24/21 11:30

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	12.3	12.3	1	0.0811		1

Sample Narrative:

OS: 12.33 at 28.1C

DUP: 12.34 at 27.4C



L1368701-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1368701-01 06/24/21 11:30 • (DUP) R3671483-3 06/24/21 11:30

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.57	8.58	1	0.117		1

Sample Narrative:

OS: 8.57 at 21.9C

DUP: 8.58 at 22C

Laboratory Control Sample (LCS)

(LCS) R3671483-1 06/24/21 11:30

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.05 at 22C

L1368709-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1368709-03 06/24/21 17:00 • (DUP) R3671674-2 06/24/21 17:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.48	8.49	1	0.118		1

Sample Narrative:

OS: 8.48 at 25C

DUP: 8.49 at 24.8C

L1368716-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1368716-04 06/24/21 17:00 • (DUP) R3671674-3 06/24/21 17:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.25	8.24	1	0.121		1

Sample Narrative:

OS: 8.25 at 24C

DUP: 8.24 at 24C

Laboratory Control Sample (LCS)

(LCS) R3671674-1 06/24/21 17:00

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

Sample Narrative:

LCS: 10.03 at 24.6C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3670661-1 06/23/21 07:40

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

L1368709-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1368709-04 06/23/21 07:40 • (DUP) R3670661-3 06/23/21 07:40

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2030	2010	1	1.24		20

L1368716-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1368716-04 06/23/21 07:40 • (DUP) R3670661-4 06/23/21 07:40

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	312	317	1	1.59		20

Laboratory Control Sample (LCS)

(LCS) R3670661-2 06/23/21 07:40

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	275	102	85.0-115	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3674927-1 07/02/21 03:16

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

Laboratory Control Sample (LCS)

(LCS) R3674927-2 07/02/21 03:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	106	106	80.0-120	
Cadmium	100	101	101	80.0-120	
Copper	100	103	103	80.0-120	
Lead	100	100	100	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	102	102	80.0-120	
Silver	20.0	18.1	90.4	80.0-120	
Zinc	100	100	100	80.0-120	

L1368701-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1368701-07 07/02/21 03:22 • (MS) R3674927-5 07/02/21 03:31 • (MSD) R3674927-6 07/02/21 03:34

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	308	420	384	112	76.4	1	75.0-125			8.89	20
Cadmium	100	0.128	97.4	94.7	97.3	94.6	1	75.0-125			2.84	20
Copper	100	11.3	110	107	98.3	96.0	1	75.0-125			2.06	20
Lead	100	6.13	99.6	97.6	93.4	91.5	1	75.0-125			2.00	20
Nickel	100	15.5	111	110	95.6	94.2	1	75.0-125			1.31	20
Selenium	100	1.28	98.5	96.3	97.2	95.0	1	75.0-125			2.28	20
Silver	20.0	U	18.2	17.8	91.2	88.8	1	75.0-125			2.64	20
Zinc	100	27.3	110	108	82.6	81.1	1	75.0-125			1.40	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3674357-1 06/30/21 22:27

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) R3674357-2 06/30/21 22:30 • (LCSD) R3674357-3 06/30/21 22:32

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.973	0.973	97.3	97.3	80.0-120			0.0507	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3672650-1 06/27/21 22:34

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

Laboratory Control Sample (LCS)

(LCS) R3672650-2 06/27/21 22:37

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	94.9	94.9	80.0-120	

L1368701-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1368701-07 06/27/21 22:40 • (MS) R3672650-5 06/27/21 22:50 • (MSD) R3672650-6 06/27/21 22:53

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	100	10.8	96.5	91.2	85.7	80.5	5	75.0-125			5.60	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3673882-2 06/30/21 02:20

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)	96.4			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3673882-1 06/30/21 01:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.72	104	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			115	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3672231-2 06/24/21 10:58

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
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	97.1			75.0-131
(S) 4-Bromofluorobenzene	86.5			67.0-138
(S) 1,2-Dichloroethane-d4	99.9			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3672231-1 06/24/21 09:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.103	82.4	70.0-123	
Ethylbenzene	0.125	0.124	99.2	74.0-126	
Toluene	0.125	0.118	94.4	75.0-121	
1,2,4-Trimethylbenzene	0.125	0.118	94.4	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.115	92.0	73.0-127	
Xylenes, Total	0.375	0.380	101	72.0-127	
(S) Toluene-d8			98.6	75.0-131	
(S) 4-Bromofluorobenzene			91.5	67.0-138	
(S) 1,2-Dichloroethane-d4			89.3	70.0-130	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3673862-1 06/29/21 20:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	58.7			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3673862-2 06/29/21 21:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	34.5	69.0	50.0-150	
(S) o-Terphenyl			58.7	18.0-148	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3673619-2 06/29/21 08:10

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	83.0			14.0-149
(S) 2-Fluorobiphenyl	89.0			34.0-125
(S) p-Terphenyl-d14	97.6			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3673619-1 06/29/21 07:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0773	96.6	50.0-126	
Acenaphthene	0.0800	0.0724	90.5	50.0-120	
Acenaphthylene	0.0800	0.0768	96.0	50.0-120	
Benzo(a)anthracene	0.0800	0.0797	99.6	45.0-120	
Benzo(a)pyrene	0.0800	0.0735	91.9	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0752	94.0	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0718	89.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0745	93.1	49.0-125	
Chrysene	0.0800	0.0777	97.1	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0721	90.1	47.0-125	
Fluoranthene	0.0800	0.0817	102	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3673619-1 06/29/21 07:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluorene	0.0800	0.0773	96.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0748	93.5	46.0-125	
Naphthalene	0.0800	0.0706	88.3	50.0-120	
Phenanthrene	0.0800	0.0748	93.5	47.0-120	
Pyrene	0.0800	0.0741	92.6	43.0-123	
1-Methylnaphthalene	0.0800	0.0763	95.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0733	91.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0744	93.0	50.0-120	
(S) Nitrobenzene-d5			83.0	14.0-149	
(S) 2-Fluorobiphenyl			86.8	34.0-125	
(S) p-Terphenyl-d14			95.6	23.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

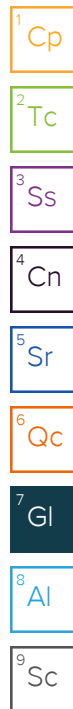
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



[illegible]

Caerus Oil and Gas

Sample Delivery Group: L1396506
Samples Received: 08/28/2021
Project Number: A33NW
Description: A33NW Stockpile
Site: A33NW
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
20210823-A33NW (STOCK3_COMP3) L1396506-01	5
Qc: Quality Control Summary	6
Volatile Organic Compounds (GC) by Method 8015D/GRO	6
Semi-Volatile Organic Compounds (GC) by Method 8015M	7
Gl: Glossary of Terms	8
Al: Accreditations & Locations	9
Sc: Sample Chain of Custody	10

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

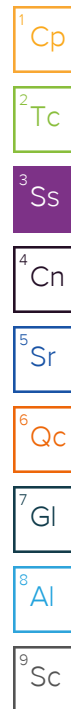
20210823-A33NW (STOCK3_COMP3) L1396506-01 Solid

Collected by
Andrew Smith

Collected date/time
08/23/21 15:10

Received date/time
08/28/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1733715	1	09/01/21 08:53	09/02/21 16:12	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1735752	1	09/06/21 15:10	09/07/21 10:07	TJD	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



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	09/02/2021 16:12	WG1733715
(S) a,a,a-Trifluorotoluene(FID)	96.4			77.0-120		09/02/2021 16:12	WG1733715

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	88.4		1.61	4.00	1	09/07/2021 10:07	WG1735752
C28-C36 Motor Oil Range	33.5		0.274	4.00	1	09/07/2021 10:07	WG1735752
(S) o-Terphenyl	53.6			18.0-148		09/07/2021 10:07	WG1735752

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3699983-2 09/02/21 07:57

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)	98.8			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3699983-1 09/02/21 07:10

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.04	73.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			101	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3701386-1 09/07/21 07:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	61.1			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3701386-2 09/07/21 07:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	39.2	78.4	50.0-150	
(S) o-Terphenyl			57.4	18.0-148	

L1396506-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1396506-01 09/07/21 10:07 • (MS) R3701386-3 09/07/21 10:21 • (MSD) R3701386-4 09/07/21 10:35

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 %
C10-C28 Diesel Range	49.5	88.4	129	127	82.0	79.1	1	50.0-150			1.56	20
(S) o-Terphenyl					24.1	28.2		18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

MDL	Method Detection Limit.
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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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.



of:

Caerus Oil and Gas

Sample Delivery Group: L1395512

Samples Received: 08/26/2021

Project Number: A33NW

Description: A33NW

Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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

Pace Analytical National

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

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
20210824-A33NW-SP-I-COMP-1 L1395512-01	5
20210824-A33NW-SP-I-COMP-2 L1395512-02	6
Qc: Quality Control Summary	7
Volatile Organic Compounds (GC) by Method 8015D/GRO	7
Semi-Volatile Organic Compounds (GC) by Method 8015M	8
Gl: Glossary of Terms	9
Al: Accreditations & Locations	10
Sc: Sample Chain of Custody	11

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

SAMPLE SUMMARY

20210824-A33NW-SP-I-COMP-1 L1395512-01 Solid

Collected by
Adam Roll

Collected date/time
08/24/21 11:49

Received date/time
08/26/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1732098	1	08/29/21 10:27	08/31/21 21:19	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1733105	1	08/31/21 21:17	09/01/21 18:27	CAG	Mt. Juliet, TN

20210824-A33NW-SP-I-COMP-2 L1395512-02 Solid

Collected by
Adam Roll

Collected date/time
08/24/21 11:49

Received date/time
08/26/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1732098	1	08/29/21 10:27	08/31/21 21:42	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1733105	1	08/31/21 21:17	09/01/21 18:40	CAG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

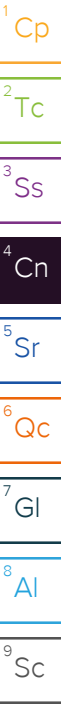
⁹Sc

CASE NARRATIVE

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



Chris Ward
Project Manager



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	08/31/2021 21:19	WG1732098
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.3		77.0-120		08/31/2021 21:19	WG1732098

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	56.3		4.00	1	09/01/2021 18:27	WG1733105
C28-C36 Motor Oil Range	13.9		4.00	1	09/01/2021 18:27	WG1733105
(S) <i>o</i> -Terphenyl	75.1		18.0-148		09/01/2021 18:27	WG1733105

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

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	08/31/2021 21:42	WG1732098
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.5		77.0-120		08/31/2021 21:42	WG1732098

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	74.3		4.00	1	09/01/2021 18:40	WG1733105
C28-C36 Motor Oil Range	19.0		4.00	1	09/01/2021 18:40	WG1733105
(S) <i>o</i> -Terphenyl	81.0		18.0-148		09/01/2021 18:40	WG1733105

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3698670-2 08/31/21 14:19

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)	98.6			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3698670-1 08/31/21 13:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.53	101	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			95.8	77.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3699214-1 09/01/21 11:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	73.1			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3699214-2 09/01/21 12:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	40.8	81.6	50.0-150	
(S) o-Terphenyl			76.6	18.0-148	

L1394939-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1394939-02 09/01/21 12:23 • (MS) R3699214-3 09/01/21 12:36 • (MSD) R3699214-4 09/01/21 12:50

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.8	ND	40.9	40.1	82.1	80.2	1	50.0-150			1.98	20
(S) o-Terphenyl					72.6	68.6		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

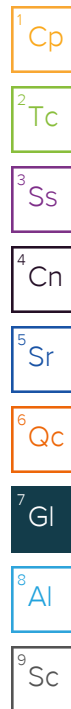
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

Abbreviations and Definitions

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

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



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.



Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

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

Company: Caerus Oil and Gas LLC	Billing Information: Info on file						
Address: Info on file	Info on file						
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: Info on file						
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address: A33NW						
Customer Project Name/Number: A33NW	State: CO County/City: Garfield Time Zone Collected: [] PT [X] MT [] CT [] ET						
Phone:	Site/Facility ID #:						
Email:	Compliance Monitoring? [] Yes [X] No						
Collected By (print): Adam Roll	Purchase Order #: DW PWS ID #:						
Collected By (signature): [Signature]	Quote #: DW Location Code:						
Sample Disposal: <input checked="" type="checkbox"/> Dispose as appropriate <input type="checkbox"/> Return <input type="checkbox"/> Archive: <input type="checkbox"/> Hold:	Turnaround Date Required: 8/30/21 Rush: (Expedite Charges Apply) [] Same Day [] Next Day [] 2 Day X 4 Day [] 4 Day X 5 Day Immediately Packed on Ice: <input checked="" type="checkbox"/> Yes [] No Field Filtered (if applicable): [] Yes [] No Analysis:						
* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)							
Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date Time	Composite End Date Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)
20210824-A33NW-SP-I-Comp-1	SL	Comp	8/24/21 1149			2	
20210824-A33NW-SP-I-Comp-2	SL	Comp	8/24/21 1149			2	
Customer Remarks / Special Conditions / Possible Hazards:							
Type of Ice Used: Wet Blue Dry None							
Packing Material Used:							
Radchem sample(s) screened (<500 cpm): Y N NA							
Relinquished by/Company: (Signature) Adam Roll / Confluence: [Signature] Date/Time: 8/24/21 - 1430							
Relinquished by/Company: (Signature) [Signature] Date/Time: 8/24/21 1500							
Relinquished by/Company: (Signature) [Signature] Date/Time: [Signature]							

D216

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

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Container Preservative Type **		Lab Project Manager:
** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other		
Analyses		Lab Profile/Line:
BTEX naphthalene 1,2,4-trimethylbenzene 1,3,5-trimethylbenzene TDS chloride-sulfate TPH		Lab Sample Receipt Checklist: Custody Seals Present/Intact Y N NA Custody Signatures Present Y N NA Collector Signature Present Y N NA Bottles Intact Y N NA Correct Bottles Y N NA Sufficient Volume Y N NA Samples Received on Ice Y N NA VOA - Headspace Acceptable Y N NA USDA Regulated Soils Y N NA Samples in Holding Time Y N NA Residual Chlorine Present Y N NA Cl Strips: Y N NA Sample pH Acceptable Y N NA pH Strips: Y N NA Sulfide Present Y N NA Lead Acetate Strips: Y N NA
LAB USE ONLY: Lab Sample # / Comments: L1395512 -01 -02		
Customer Remarks / Special Conditions / Possible Hazards:		
Type of Ice Used: Wet Blue Dry None		
Packing Material Used:		
Radchem sample(s) screened (<500 cpm): Y N NA		
Relinquished by/Company: (Signature) Adam Roll / Confluence: [Signature] Date/Time: 8/24/21 - 1430		
Relinquished by/Company: (Signature) [Signature] Date/Time: 8/24/21 1500		
Relinquished by/Company: (Signature) [Signature] Date/Time: [Signature]		

8/26-NCF-CAERUSPCO L1395512

R5

Time estimate: 0h

Time spent: 0h

Members

HM Hailey Melson (responsible) Chris Ward JZ Jordan Zito

Due on 28 August 2021 8:00 AM for target Done

☒ Login Clarification needed

☐ Chain of custody is incomplete

☐ Please specify Metals requested

☐ Please specify TCLP requested

☐ Received additional samples not listed on COC

☐ Sample IDs on containers do not match IDs on COC

☐ Client did not "X" analysis

☐ Chain of Custody is missing

☐ If no COC: Received by: _____

☐ If no COC: Date/Time: _____

☐ If no COC: Temp./Cont.Rec./pH: _____

☐ If no COC: Carrier: _____

☐ If no COC: Tracking #: _____

☐ Client informed by call

☐ Client informed by Email

☐ Client informed by Voicemail

☐ Date/Time: _____

☐ PM initials: _____

☐ Client Contact: _____

Comments

Hailey Melson 26 August 2021 11:54 AM

What TPH?

Jordan Zito 26 August 2021 12:22 PM

GRO, DROMM