ANALYTICAL REPORT

August 24, 2022

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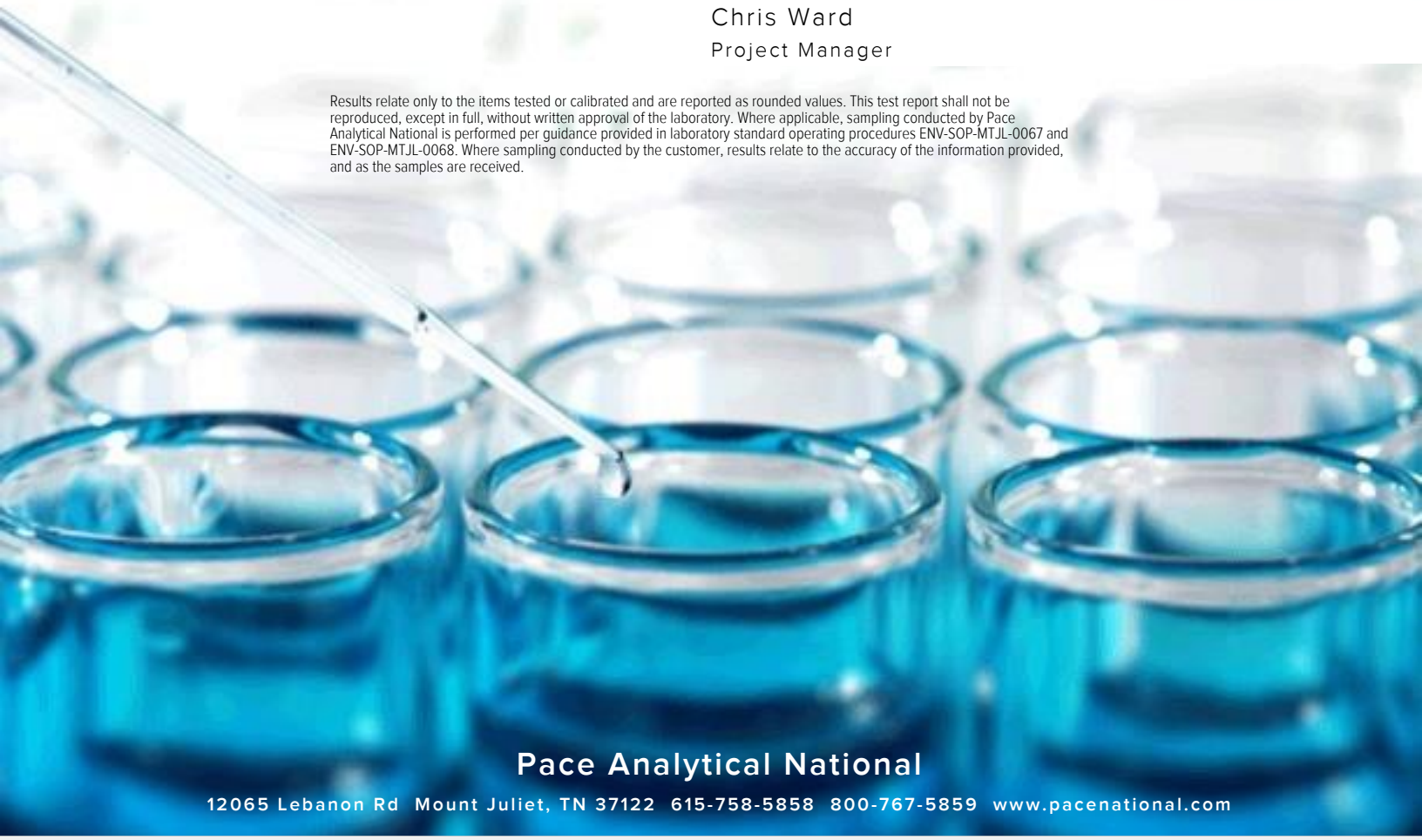
Caerus Oil and Gas

Sample Delivery Group:	L1519620
Samples Received:	07/28/2022
Project Number:	
Description:	OP15 P&A Assessment
Site:	OP15 PAD
Report To:	Brett Middleton 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward
Project Manager



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20220727_OP15_BG01 @ 1FT L1519620-01 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 07:13 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 22:44	08/09/22 22:44	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 17:35	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1903946	1	08/01/22 14:00	08/01/22 16:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:19	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 14:47	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 18:53	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1903288	1	07/29/22 21:02	07/31/22 06:11	JBE	Mt. Juliet, TN

20220727_OP15_BG02 @ 1FT L1519620-02 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 07:36 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 22:47	08/09/22 22:47	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 17:40	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1903946	1	08/01/22 14:00	08/01/22 16:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:27	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 14:50	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 19:03	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1903288	1	07/29/22 21:02	07/31/22 06:30	JBE	Mt. Juliet, TN

20220727_OP15_BG03 @ 1FT L1519620-03 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 07:55 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 22:49	08/09/22 22:49	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 17:45	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1904878	1	08/03/22 09:56	08/03/22 12:00	SDE	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 01:58	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 14:58	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 18:30	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1903288	1.01	07/29/22 21:02	07/31/22 06:50	JBE	Mt. Juliet, TN

20220727_OP15_TB @ 2FT L1519620-04 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 09:35 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 22:52	08/09/22 22:52	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 18:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1903946	1	08/01/22 14:00	08/01/22 16:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:30	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 15:01	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 19:06	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1905451	1	07/29/22 21:02	08/04/22 20:12	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1905196	1	07/29/22 21:02	08/03/22 17:32	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903899	1	08/02/22 08:11	08/02/22 15:57	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1903887	1	08/02/22 04:44	08/02/22 12:44	AMG	Mt. Juliet, TN

20220727_OP15_TB @ 3FT L1519620-05 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 09:52 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/10/22 14:05	08/10/22 14:05	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 18:11	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1904588	1	08/02/22 16:34	08/03/22 13:00	SDE	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:34	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 15:04	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 19:10	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1903614	1	07/29/22 21:02	08/01/22 15:38	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1903288	1	07/29/22 21:02	07/31/22 07:09	JBE	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903899	1	08/02/22 08:11	08/02/22 22:23	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1903887	1	08/02/22 04:44	08/02/22 13:02	AMG	Mt. Juliet, TN

20220727_OP15_SEPFL2 @ 5FT L1519620-06 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 10:15 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 23:03	08/09/22 23:03	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 18:16	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1903946	1	08/01/22 14:00	08/01/22 16:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:37	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 15:07	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 19:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1903614	1	07/29/22 21:02	08/01/22 16:01	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1903288	1	07/29/22 21:02	07/31/22 07:29	JBE	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903899	1	08/02/22 08:11	08/02/22 17:50	TJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903899	5	08/02/22 08:11	08/02/22 22:51	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1903887	1	08/02/22 04:44	08/02/22 13:19	AMG	Mt. Juliet, TN

20220727_OP15_SEPFL2 @ 6FT L1519620-07 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 10:32 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 23:06	08/09/22 23:06	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 18:21	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1903946	1	08/01/22 14:00	08/01/22 16:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:39	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 15:10	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 19:16	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1905451	1	07/29/22 21:02	08/04/22 20:35	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1905196	1	07/29/22 21:02	08/03/22 17:53	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903901	1	08/02/22 08:11	08/02/22 17:36	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1903887	1	08/02/22 04:44	08/02/22 13:37	AMG	Mt. Juliet, TN

20220727_OP15_WH @ 7FT L1519620-08 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 10:39 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 23:09	08/09/22 23:09	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 18:27	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1903736	1	08/01/22 11:00	08/01/22 13:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN

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

20220727_OP15_WH @ 7FT L1519620-08 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 10:39 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:43	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 15:13	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 19:20	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1903614	1.01	07/29/22 21:02	08/01/22 16:23	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1903289	1	07/29/22 21:02	07/31/22 11:36	JBE	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903901	1	08/02/22 08:11	08/02/22 18:18	TJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903901	5	08/02/22 08:11	08/02/22 22:37	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1903887	1	08/02/22 04:44	08/02/22 13:54	AMG	Mt. Juliet, TN

20220727_OP15_WH @ 8FT L1519620-09 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 10:51 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 23:12	08/09/22 23:12	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 18:32	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1903946	1	08/01/22 14:00	08/01/22 16:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:46	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 15:16	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 19:23	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1903614	1	07/29/22 21:02	08/01/22 16:46	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1903289	1	07/29/22 21:02	07/31/22 11:56	JBE	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903901	1	08/02/22 08:11	08/02/22 16:54	TJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903901	5	08/02/22 08:11	08/02/22 23:04	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1903887	1	08/02/22 04:44	08/02/22 14:11	AMG	Mt. Juliet, TN

20220727_OP15_WHTP_COMP L1519620-10 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 11:06 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 23:14	08/09/22 23:14	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 18:37	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1903946	1	08/01/22 14:00	08/01/22 16:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910925	1	08/15/22 09:15	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:49	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 15:19	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 19:26	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1905451	1	07/29/22 21:02	08/04/22 20:59	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1905204	1	07/29/22 21:02	08/03/22 18:35	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903901	1	08/02/22 08:11	08/02/22 18:32	TJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903901	5	08/02/22 08:11	08/02/22 23:18	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1903889	1	08/02/22 04:35	08/02/22 16:01	AMG	Mt. Juliet, TN

20220727_OP15_TP_COMP L1519620-11 Solid

Collected by: Tristan Schmalz | Collected date/time: 07/27/22 11:25 | Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1904086	1	08/09/22 23:17	08/09/22 23:17	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1906204	1	08/16/22 00:27	08/22/22 18:42	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1903736	1	08/01/22 11:00	08/01/22 13:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1910886	1	08/15/22 09:00	08/15/22 17:00	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1903346	1	08/04/22 17:33	08/06/22 02:52	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1903921	1	08/01/22 14:44	08/08/22 15:22	ABL	Mt. Juliet, TN

SAMPLE SUMMARY

20220727_OP15_TP_COMP L1519620-11 Solid

Collected by: Tristan Schmalz
Collected date/time: 07/27/22 11:25
Received date/time: 07/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG1903347	5	08/04/22 17:37	08/05/22 19:29	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1903614	1	07/29/22 21:02	08/01/22 17:09	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1903289	1	07/29/22 21:02	07/31/22 12:16	JBE	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1903901	1	08/02/22 08:11	08/02/22 18:47	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1903889	1	08/02/22 04:35	08/02/22 16:20	AMG	Mt. Juliet, TN

CASE NARRATIVE

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

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.355		1	08/09/2022 22:44	WG1904086

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	08/22/2022 17:35	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.82	T8	1	08/01/2022 16:00	WG1903946

Sample Narrative:
L1519620-01 WG1903946: 7.82 at 23.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	120		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:
L1519620-01 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	195		0.0852	0.500	1	08/06/2022 02:19	WG1903346
Cadmium	0.277	J	0.0471	0.500	1	08/06/2022 02:19	WG1903346
Copper	24.2		0.400	2.00	1	08/06/2022 02:19	WG1903346
Lead	14.0		0.208	0.500	1	08/06/2022 02:19	WG1903346
Nickel	24.5		0.132	2.00	1	08/06/2022 02:19	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:19	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:19	WG1903346
Zinc	74.4		0.832	5.00	1	08/06/2022 02:19	WG1903346

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	0.234		0.0167	0.200	1	08/08/2022 14:47	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.88		0.100	1.00	5	08/05/2022 18:53	WG1903347

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/31/2022 06:11	WG1903288
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/31/2022 06:11	WG1903288
(S) Toluene-d8	*100*			*75.0-131*		*07/31/2022 06:11*	WG1903288
(S) 4-Bromofluorobenzene	*99.4*			*67.0-138*		*07/31/2022 06:11*	WG1903288

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	*97.8*			*70.0-130*		*07/31/2022 06:11*	WG1903288

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.15		1	08/09/2022 22:47	WG1904086

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	08/22/2022 17:40	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.59	T8	1	08/01/2022 16:00	WG1903946

Sample Narrative:

L1519620-02 WG1903946: 8.59 at 23.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	428		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:

L1519620-02 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	187		0.0852	0.500	1	08/06/2022 02:27	WG1903346
Cadmium	0.252	J	0.0471	0.500	1	08/06/2022 02:27	WG1903346
Copper	15.5		0.400	2.00	1	08/06/2022 02:27	WG1903346
Lead	10.6		0.208	0.500	1	08/06/2022 02:27	WG1903346
Nickel	14.3		0.132	2.00	1	08/06/2022 02:27	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:27	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:27	WG1903346
Zinc	61.6		0.832	5.00	1	08/06/2022 02:27	WG1903346

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	0.206		0.0167	0.200	1	08/08/2022 14:50	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.42		0.100	1.00	5	08/05/2022 19:03	WG1903347

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/31/2022 06:30	WG1903288
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/31/2022 06:30	WG1903288
(S) Toluene-d8	*102*			*75.0-131*		*07/31/2022 06:30*	WG1903288
(S) 4-Bromofluorobenzene	*99.5*			*67.0-138*		*07/31/2022 06:30*	WG1903288

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
(S) 1,2-Dichloroethane-d4	*95.3*			*70.0-130*		*07/31/2022 06:30*	WG1903288

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	11.9		1	08/09/2022 22:49	WG1904086

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	08/22/2022 17:45	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.80	T8	1	08/03/2022 12:00	WG1904878

Sample Narrative:

L1519620-03 WG1904878: 8.8 at 24.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	764		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:

L1519620-03 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	202		0.0852	0.500	1	08/06/2022 01:58	WG1903346
Cadmium	0.335	J	0.0471	0.500	1	08/06/2022 01:58	WG1903346
Copper	18.9		0.400	2.00	1	08/06/2022 01:58	WG1903346
Lead	10.7		0.208	0.500	1	08/06/2022 01:58	WG1903346
Nickel	19.9		0.132	2.00	1	08/06/2022 01:58	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 01:58	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 01:58	WG1903346
Zinc	54.3	O1	0.832	5.00	1	08/06/2022 01:58	WG1903346

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	0.159	J	0.0167	0.200	1	08/08/2022 14:58	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.47		0.100	1.00	5	08/05/2022 18:30	WG1903347

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,2,4-Trimethylbenzene	U		0.00160	0.00505	1.01	07/31/2022 06:50	WG1903288
1,3,5-Trimethylbenzene	U		0.00202	0.00505	1.01	07/31/2022 06:50	WG1903288
(S) Toluene-d8	*106*			*75.0-131*		*07/31/2022 06:50*	WG1903288
(S) 4-Bromofluorobenzene	*96.6*			*67.0-138*		*07/31/2022 06:50*	WG1903288

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	*93.9*			*70.0-130*		*07/31/2022 06:50*	WG1903288

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.21		1	08/09/2022 22:52	WG1904086

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	08/22/2022 18:06	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	9.19	T8	1	08/01/2022 16:00	WG1903946

Sample Narrative:

L1519620-04 WG1903946: 9.19 at 23.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	526		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:

L1519620-04 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	250		0.0852	0.500	1	08/06/2022 02:30	WG1903346
Cadmium	0.287	J	0.0471	0.500	1	08/06/2022 02:30	WG1903346
Copper	16.5		0.400	2.00	1	08/06/2022 02:30	WG1903346
Lead	11.1		0.208	0.500	1	08/06/2022 02:30	WG1903346
Nickel	15.1		0.132	2.00	1	08/06/2022 02:30	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:30	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:30	WG1903346
Zinc	42.0		0.832	5.00	1	08/06/2022 02:30	WG1903346

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	0.242		0.0167	0.200	1	08/08/2022 15:01	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.94		0.100	1.00	5	08/05/2022 19:06	WG1903347

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	0.0703	J	0.0217	0.100	1	08/04/2022 20:12	WG1905451
(S) a,a,a-Trifluorotoluene(FID)	*96.9*			*77.0-120*		*08/04/2022 20:12*	WG1905451

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	08/03/2022 17:32	WG1905196
Toluene	0.00243	J	0.00130	0.00500	1	08/03/2022 17:32	WG1905196
Ethylbenzene	0.00275		0.000737	0.00250	1	08/03/2022 17:32	WG1905196
Xylenes, Total	0.00350	J	0.000880	0.00650	1	08/03/2022 17:32	WG1905196
1,2,4-Trimethylbenzene	0.00665		0.00158	0.00500	1	08/03/2022 17:32	WG1905196
1,3,5-Trimethylbenzene	0.00205	J	0.00200	0.00500	1	08/03/2022 17:32	WG1905196
(S) Toluene-d8	*104*			*75.0-131*		*08/03/2022 17:32*	WG1905196
(S) 4-Bromofluorobenzene	*99.9*			*67.0-138*		*08/03/2022 17:32*	WG1905196
(S) 1,2-Dichloroethane-d4	*83.4*			*70.0-130*		*08/03/2022 17:32*	WG1905196

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	16.6		1.61	4.00	1	08/02/2022 15:57	WG1903899
C28-C36 Motor Oil Range	62.7		0.274	4.00	1	08/02/2022 15:57	WG1903899
(S) o-Terphenyl	*64.9*			*18.0-148*		*08/02/2022 15:57*	WG1903899

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/02/2022 12:44	WG1903887
Anthracene	U		0.00230	0.00600	1	08/02/2022 12:44	WG1903887
Benzo(a)anthracene	U		0.00173	0.00600	1	08/02/2022 12:44	WG1903887
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/02/2022 12:44	WG1903887
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/02/2022 12:44	WG1903887
Benzo(a)pyrene	U		0.00179	0.00600	1	08/02/2022 12:44	WG1903887
Chrysene	U		0.00232	0.00600	1	08/02/2022 12:44	WG1903887
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/02/2022 12:44	WG1903887
Fluoranthene	U		0.00227	0.00600	1	08/02/2022 12:44	WG1903887
Fluorene	U		0.00205	0.00600	1	08/02/2022 12:44	WG1903887
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/02/2022 12:44	WG1903887
1-Methylnaphthalene	U		0.00449	0.0200	1	08/02/2022 12:44	WG1903887
2-Methylnaphthalene	U		0.00427	0.0200	1	08/02/2022 12:44	WG1903887
Naphthalene	U		0.00408	0.0200	1	08/02/2022 12:44	WG1903887
Pyrene	U		0.00200	0.00600	1	08/02/2022 12:44	WG1903887
(S) p-Terphenyl-d14	*108*			*23.0-120*		*08/02/2022 12:44*	WG1903887
(S) Nitrobenzene-d5	*74.2*			*14.0-149*		*08/02/2022 12:44*	WG1903887
(S) 2-Fluorobiphenyl	*84.4*			*34.0-125*		*08/02/2022 12:44*	WG1903887

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.83		1	08/10/2022 14:05	WG1904086

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	08/22/2022 18:11	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	9.24	T8	1	08/03/2022 13:00	WG1904588

Sample Narrative:

L1519620-05 WG1904588: 9.24 at 24C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	494		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:

L1519620-05 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	202		0.0852	0.500	1	08/06/2022 02:34	WG1903346
Cadmium	0.248	J	0.0471	0.500	1	08/06/2022 02:34	WG1903346
Copper	19.5		0.400	2.00	1	08/06/2022 02:34	WG1903346
Lead	11.2		0.208	0.500	1	08/06/2022 02:34	WG1903346
Nickel	17.9		0.132	2.00	1	08/06/2022 02:34	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:34	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:34	WG1903346
Zinc	49.3		0.832	5.00	1	08/06/2022 02:34	WG1903346

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	0.571		0.0167	0.200	1	08/08/2022 15:04	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.16		0.100	1.00	5	08/05/2022 19:10	WG1903347

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	0.0965	J	0.0217	0.100	1	08/01/2022 15:38	WG1903614
(S) a,a,a-Trifluorotoluene(FID)	*98.8*			*77.0-120*		*08/01/2022 15:38*	WG1903614

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	07/31/2022 07:09	WG1903288
Toluene	U		0.00130	0.00500	1	07/31/2022 07:09	WG1903288
Ethylbenzene	U		0.000737	0.00250	1	07/31/2022 07:09	WG1903288
Xylenes, Total	U		0.000880	0.00650	1	07/31/2022 07:09	WG1903288
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/31/2022 07:09	WG1903288
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/31/2022 07:09	WG1903288
(S) Toluene-d8	*103*			*75.0-131*		*07/31/2022 07:09*	WG1903288
(S) 4-Bromofluorobenzene	*101*			*67.0-138*		*07/31/2022 07:09*	WG1903288
(S) 1,2-Dichloroethane-d4	*94.4*			*70.0-130*		*07/31/2022 07:09*	WG1903288

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.82		1.61	4.00	1	08/02/2022 22:23	WG1903899
C28-C36 Motor Oil Range	25.5		0.274	4.00	1	08/02/2022 22:23	WG1903899
(S) o-Terphenyl	*84.0*			*18.0-148*		*08/02/2022 22:23*	WG1903899

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/02/2022 13:02	WG1903887
Anthracene	U		0.00230	0.00600	1	08/02/2022 13:02	WG1903887
Benzo(a)anthracene	U		0.00173	0.00600	1	08/02/2022 13:02	WG1903887
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/02/2022 13:02	WG1903887
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/02/2022 13:02	WG1903887
Benzo(a)pyrene	U		0.00179	0.00600	1	08/02/2022 13:02	WG1903887
Chrysene	U		0.00232	0.00600	1	08/02/2022 13:02	WG1903887
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/02/2022 13:02	WG1903887
Fluoranthene	U		0.00227	0.00600	1	08/02/2022 13:02	WG1903887
Fluorene	U		0.00205	0.00600	1	08/02/2022 13:02	WG1903887
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/02/2022 13:02	WG1903887
1-Methylnaphthalene	U		0.00449	0.0200	1	08/02/2022 13:02	WG1903887
2-Methylnaphthalene	0.00506	J	0.00427	0.0200	1	08/02/2022 13:02	WG1903887
Naphthalene	U		0.00408	0.0200	1	08/02/2022 13:02	WG1903887
Pyrene	U		0.00200	0.00600	1	08/02/2022 13:02	WG1903887
(S) p-Terphenyl-d14	*87.4*			*23.0-120*		*08/02/2022 13:02*	WG1903887
(S) Nitrobenzene-d5	*69.1*			*14.0-149*		*08/02/2022 13:02*	WG1903887
(S) 2-Fluorobiphenyl	*69.2*			*34.0-125*		*08/02/2022 13:02*	WG1903887

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.751		1	08/09/2022 23:03	WG1904086

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	08/22/2022 18:16	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.24	T8	1	08/01/2022 16:00	WG1903946

Sample Narrative:

L1519620-06 WG1903946: 8.24 at 23.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	131		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:

L1519620-06 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	223		0.0852	0.500	1	08/06/2022 02:37	WG1903346
Cadmium	1.18		0.0471	0.500	1	08/06/2022 02:37	WG1903346
Copper	10.8		0.400	2.00	1	08/06/2022 02:37	WG1903346
Lead	11.0		0.208	0.500	1	08/06/2022 02:37	WG1903346
Nickel	10.4		0.132	2.00	1	08/06/2022 02:37	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:37	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:37	WG1903346
Zinc	40.4		0.832	5.00	1	08/06/2022 02:37	WG1903346

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	0.0985	J	0.0167	0.200	1	08/08/2022 15:07	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.90		0.100	1.00	5	08/05/2022 19:13	WG1903347

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	0.117		0.0217	0.100	1	08/01/2022 16:01	WG1903614
(S) a,a,a-Trifluorotoluene(FID)	*98.5*			*77.0-120*		*08/01/2022 16:01*	WG1903614

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	07/31/2022 07:29	WG1903288
Toluene	U		0.00130	0.00500	1	07/31/2022 07:29	WG1903288
Ethylbenzene	U		0.000737	0.00250	1	07/31/2022 07:29	WG1903288
Xylenes, Total	U		0.000880	0.00650	1	07/31/2022 07:29	WG1903288
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/31/2022 07:29	WG1903288
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/31/2022 07:29	WG1903288
(S) Toluene-d8	*101*			*75.0-131*		*07/31/2022 07:29*	WG1903288
(S) 4-Bromofluorobenzene	*98.1*			*67.0-138*		*07/31/2022 07:29*	WG1903288
(S) 1,2-Dichloroethane-d4	*95.8*			*70.0-130*		*07/31/2022 07:29*	WG1903288

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	109		1.61	4.00	1	08/02/2022 17:50	WG1903899
C28-C36 Motor Oil Range	246		1.37	20.0	5	08/02/2022 22:51	WG1903899
(S) o-Terphenyl	*81.8*			*18.0-148*		*08/02/2022 17:50*	WG1903899
(S) o-Terphenyl	*95.9*			*18.0-148*		*08/02/2022 22:51*	WG1903899

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/02/2022 13:19	WG1903887
Anthracene	U		0.00230	0.00600	1	08/02/2022 13:19	WG1903887
Benzo(a)anthracene	U		0.00173	0.00600	1	08/02/2022 13:19	WG1903887
Benzo(b)fluoranthene	0.00260	J	0.00153	0.00600	1	08/02/2022 13:19	WG1903887
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/02/2022 13:19	WG1903887
Benzo(a)pyrene	U		0.00179	0.00600	1	08/02/2022 13:19	WG1903887
Chrysene	0.0172		0.00232	0.00600	1	08/02/2022 13:19	WG1903887
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/02/2022 13:19	WG1903887
Fluoranthene	U		0.00227	0.00600	1	08/02/2022 13:19	WG1903887
Fluorene	U		0.00205	0.00600	1	08/02/2022 13:19	WG1903887
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/02/2022 13:19	WG1903887
1-Methylnaphthalene	U		0.00449	0.0200	1	08/02/2022 13:19	WG1903887
2-Methylnaphthalene	0.00478	J	0.00427	0.0200	1	08/02/2022 13:19	WG1903887
Naphthalene	U		0.00408	0.0200	1	08/02/2022 13:19	WG1903887
Pyrene	U		0.00200	0.00600	1	08/02/2022 13:19	WG1903887
(S) p-Terphenyl-d14	*112*			*23.0-120*		*08/02/2022 13:19*	WG1903887
(S) Nitrobenzene-d5	*76.0*			*14.0-149*		*08/02/2022 13:19*	WG1903887
(S) 2-Fluorobiphenyl	*88.5*			*34.0-125*		*08/02/2022 13:19*	WG1903887

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.983		1	08/09/2022 23:06	WG1904086

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	08/22/2022 18:21	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.18	T8	1	08/01/2022 16:00	WG1903946

Sample Narrative:

L1519620-07 WG1903946: 8.18 at 22.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	168		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:

L1519620-07 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	128		0.0852	0.500	1	08/06/2022 02:39	WG1903346
Cadmium	1.14		0.0471	0.500	1	08/06/2022 02:39	WG1903346
Copper	9.29		0.400	2.00	1	08/06/2022 02:39	WG1903346
Lead	6.26		0.208	0.500	1	08/06/2022 02:39	WG1903346
Nickel	15.7		0.132	2.00	1	08/06/2022 02:39	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:39	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:39	WG1903346
Zinc	39.3		0.832	5.00	1	08/06/2022 02:39	WG1903346

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	0.207		0.0167	0.200	1	08/08/2022 15:10	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.82		0.100	1.00	5	08/05/2022 19:16	WG1903347

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	0.0743	J	0.0217	0.100	1	08/04/2022 20:35	WG1905451
(S) a,a,a-Trifluorotoluene(FID)	*97.6*			*77.0-120*		*08/04/2022 20:35*	WG1905451

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	08/03/2022 17:53	WG1905196
Toluene	U		0.00130	0.00500	1	08/03/2022 17:53	WG1905196
Ethylbenzene	U		0.000737	0.00250	1	08/03/2022 17:53	WG1905196
Xylenes, Total	U		0.000880	0.00650	1	08/03/2022 17:53	WG1905196
1,2,4-Trimethylbenzene	0.00488	J	0.00158	0.00500	1	08/03/2022 17:53	WG1905196
1,3,5-Trimethylbenzene	0.00220	J	0.00200	0.00500	1	08/03/2022 17:53	WG1905196
(S) Toluene-d8	*102*			*75.0-131*		*08/03/2022 17:53*	WG1905196
(S) 4-Bromofluorobenzene	*97.6*			*67.0-138*		*08/03/2022 17:53*	WG1905196
(S) 1,2-Dichloroethane-d4	*86.2*			*70.0-130*		*08/03/2022 17:53*	WG1905196

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	24.7		1.61	4.00	1	08/02/2022 17:36	WG1903901
C28-C36 Motor Oil Range	72.5		0.274	4.00	1	08/02/2022 17:36	WG1903901
(S) o-Terphenyl	*78.3*			*18.0-148*		*08/02/2022 17:36*	WG1903901

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/02/2022 13:37	WG1903887
Anthracene	U		0.00230	0.00600	1	08/02/2022 13:37	WG1903887
Benzo(a)anthracene	U		0.00173	0.00600	1	08/02/2022 13:37	WG1903887
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/02/2022 13:37	WG1903887
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/02/2022 13:37	WG1903887
Benzo(a)pyrene	U		0.00179	0.00600	1	08/02/2022 13:37	WG1903887
Chrysene	U		0.00232	0.00600	1	08/02/2022 13:37	WG1903887
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/02/2022 13:37	WG1903887
Fluoranthene	U		0.00227	0.00600	1	08/02/2022 13:37	WG1903887
Fluorene	U		0.00205	0.00600	1	08/02/2022 13:37	WG1903887
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/02/2022 13:37	WG1903887
1-Methylnaphthalene	U		0.00449	0.0200	1	08/02/2022 13:37	WG1903887
2-Methylnaphthalene	0.00493	J	0.00427	0.0200	1	08/02/2022 13:37	WG1903887
Naphthalene	U		0.00408	0.0200	1	08/02/2022 13:37	WG1903887
Pyrene	U		0.00200	0.00600	1	08/02/2022 13:37	WG1903887
(S) p-Terphenyl-d14	*114*			*23.0-120*		*08/02/2022 13:37*	WG1903887
(S) Nitrobenzene-d5	*78.4*			*14.0-149*		*08/02/2022 13:37*	WG1903887
(S) 2-Fluorobiphenyl	*88.8*			*34.0-125*		*08/02/2022 13:37*	WG1903887

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.30		1	08/09/2022 23:09	WG1904086

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	08/22/2022 18:27	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.87	T8	1	08/01/2022 13:00	WG1903736

Sample Narrative:

L1519620-08 WG1903736: 7.87 at 23.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2260		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:

L1519620-08 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1140		0.0852	0.500	1	08/06/2022 02:43	WG1903346
Cadmium	0.208	J	0.0471	0.500	1	08/06/2022 02:43	WG1903346
Copper	30.8		0.400	2.00	1	08/06/2022 02:43	WG1903346
Lead	13.7		0.208	0.500	1	08/06/2022 02:43	WG1903346
Nickel	15.3		0.132	2.00	1	08/06/2022 02:43	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:43	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:43	WG1903346
Zinc	55.2		0.832	5.00	1	08/06/2022 02:43	WG1903346

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	0.229		0.0167	0.200	1	08/08/2022 15:13	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.55		0.100	1.00	5	08/05/2022 19:20	WG1903347

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	0.126		0.0219	0.101	1.01	08/01/2022 16:23	WG1903614
(S) a,a,a-Trifluorotoluene(FID)	*97.7*			*77.0-120*		*08/01/2022 16:23*	WG1903614

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	07/31/2022 11:36	WG1903289
Toluene	U		0.00130	0.00500	1	07/31/2022 11:36	WG1903289
Ethylbenzene	U		0.000737	0.00250	1	07/31/2022 11:36	WG1903289
Xylenes, Total	U		0.000880	0.00650	1	07/31/2022 11:36	WG1903289
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/31/2022 11:36	WG1903289
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/31/2022 11:36	WG1903289
(S) Toluene-d8	*100*			*75.0-131*		*07/31/2022 11:36*	WG1903289
(S) 4-Bromofluorobenzene	*98.4*			*67.0-138*		*07/31/2022 11:36*	WG1903289
(S) 1,2-Dichloroethane-d4	*94.2*			*70.0-130*		*07/31/2022 11:36*	WG1903289

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	122		1.61	4.00	1	08/02/2022 18:18	WG1903901
C28-C36 Motor Oil Range	231		1.37	20.0	5	08/02/2022 22:37	WG1903901
(S) o-Terphenyl	*77.0*			*18.0-148*		*08/02/2022 22:37*	WG1903901
(S) o-Terphenyl	*73.9*			*18.0-148*		*08/02/2022 18:18*	WG1903901

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/02/2022 13:54	WG1903887
Anthracene	U		0.00230	0.00600	1	08/02/2022 13:54	WG1903887
Benzo(a)anthracene	U		0.00173	0.00600	1	08/02/2022 13:54	WG1903887
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/02/2022 13:54	WG1903887
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/02/2022 13:54	WG1903887
Benzo(a)pyrene	U		0.00179	0.00600	1	08/02/2022 13:54	WG1903887
Chrysene	U		0.00232	0.00600	1	08/02/2022 13:54	WG1903887
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/02/2022 13:54	WG1903887
Fluoranthene	U		0.00227	0.00600	1	08/02/2022 13:54	WG1903887
Fluorene	U		0.00205	0.00600	1	08/02/2022 13:54	WG1903887
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/02/2022 13:54	WG1903887
1-Methylnaphthalene	U		0.00449	0.0200	1	08/02/2022 13:54	WG1903887
2-Methylnaphthalene	U		0.00427	0.0200	1	08/02/2022 13:54	WG1903887
Naphthalene	U		0.00408	0.0200	1	08/02/2022 13:54	WG1903887
Pyrene	U		0.00200	0.00600	1	08/02/2022 13:54	WG1903887
(S) p-Terphenyl-d14	*116*			*23.0-120*		*08/02/2022 13:54*	WG1903887
(S) Nitrobenzene-d5	*78.8*			*14.0-149*		*08/02/2022 13:54*	WG1903887
(S) 2-Fluorobiphenyl	*88.8*			*34.0-125*		*08/02/2022 13:54*	WG1903887

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.38		1	08/09/2022 23:12	WG1904086

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	08/22/2022 18:32	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.60	T8	1	08/01/2022 16:00	WG1903946

Sample Narrative:
L1519620-09 WG1903946: 7.6 at 23.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2540		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:
L1519620-09 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	828		0.0852	0.500	1	08/06/2022 02:46	WG1903346
Cadmium	0.171	J	0.0471	0.500	1	08/06/2022 02:46	WG1903346
Copper	28.5		0.400	2.00	1	08/06/2022 02:46	WG1903346
Lead	12.4		0.208	0.500	1	08/06/2022 02:46	WG1903346
Nickel	15.4		0.132	2.00	1	08/06/2022 02:46	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:46	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:46	WG1903346
Zinc	60.9		0.832	5.00	1	08/06/2022 02:46	WG1903346

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	0.190	J	0.0167	0.200	1	08/08/2022 15:16	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.59		0.100	1.00	5	08/05/2022 19:23	WG1903347

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	0.143		0.0217	0.100	1	08/01/2022 16:46	WG1903614
(S) a,a,a-Trifluorotoluene(FID)	*98.2*			*77.0-120*		*08/01/2022 16:46*	WG1903614

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	07/31/2022 11:56	WG1903289
Toluene	U		0.00130	0.00500	1	07/31/2022 11:56	WG1903289
Ethylbenzene	U		0.000737	0.00250	1	07/31/2022 11:56	WG1903289
Xylenes, Total	U		0.000880	0.00650	1	07/31/2022 11:56	WG1903289
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/31/2022 11:56	WG1903289
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/31/2022 11:56	WG1903289
(S) Toluene-d8	*102*			*75.0-131*		*07/31/2022 11:56*	WG1903289
(S) 4-Bromofluorobenzene	*98.0*			*67.0-138*		*07/31/2022 11:56*	WG1903289
(S) 1,2-Dichloroethane-d4	*96.1*			*70.0-130*		*07/31/2022 11:56*	WG1903289

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	64.2		1.61	4.00	1	08/02/2022 16:54	WG1903901
C28-C36 Motor Oil Range	154		1.37	20.0	5	08/02/2022 23:04	WG1903901
(S) o-Terphenyl	*104*			*18.0-148*		*08/02/2022 23:04*	WG1903901
(S) o-Terphenyl	*92.0*			*18.0-148*		*08/02/2022 16:54*	WG1903901

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/02/2022 14:11	WG1903887
Anthracene	U		0.00230	0.00600	1	08/02/2022 14:11	WG1903887
Benzo(a)anthracene	U		0.00173	0.00600	1	08/02/2022 14:11	WG1903887
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/02/2022 14:11	WG1903887
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/02/2022 14:11	WG1903887
Benzo(a)pyrene	U		0.00179	0.00600	1	08/02/2022 14:11	WG1903887
Chrysene	U		0.00232	0.00600	1	08/02/2022 14:11	WG1903887
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/02/2022 14:11	WG1903887
Fluoranthene	U		0.00227	0.00600	1	08/02/2022 14:11	WG1903887
Fluorene	U		0.00205	0.00600	1	08/02/2022 14:11	WG1903887
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/02/2022 14:11	WG1903887
1-Methylnaphthalene	U		0.00449	0.0200	1	08/02/2022 14:11	WG1903887
2-Methylnaphthalene	U		0.00427	0.0200	1	08/02/2022 14:11	WG1903887
Naphthalene	U		0.00408	0.0200	1	08/02/2022 14:11	WG1903887
Pyrene	U		0.00200	0.00600	1	08/02/2022 14:11	WG1903887
(S) p-Terphenyl-d14	*99.4*			*23.0-120*		*08/02/2022 14:11*	WG1903887
(S) Nitrobenzene-d5	*68.8*			*14.0-149*		*08/02/2022 14:11*	WG1903887
(S) 2-Fluorobiphenyl	*80.4*			*34.0-125*		*08/02/2022 14:11*	WG1903887

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.49		1	08/09/2022 23:14	WG1904086

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	08/22/2022 18:37	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.20	T8	1	08/01/2022 16:00	WG1903946

Sample Narrative:
L1519620-10 WG1903946: 8.2 at 23.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	306		10.0	1	08/15/2022 17:00	WG1910925

Sample Narrative:
L1519620-10 WG1910925: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	442		0.0852	0.500	1	08/06/2022 02:49	WG1903346
Cadmium	0.306	J	0.0471	0.500	1	08/06/2022 02:49	WG1903346
Copper	27.4		0.400	2.00	1	08/06/2022 02:49	WG1903346
Lead	12.1		0.208	0.500	1	08/06/2022 02:49	WG1903346
Nickel	12.4		0.132	2.00	1	08/06/2022 02:49	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:49	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:49	WG1903346
Zinc	50.3		0.832	5.00	1	08/06/2022 02:49	WG1903346

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	0.200	J	0.0167	0.200	1	08/08/2022 15:19	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.25		0.100	1.00	5	08/05/2022 19:26	WG1903347

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	0.0621	J	0.0217	0.100	1	08/04/2022 20:59	WG1905451
(S) a,a,a-Trifluorotoluene(FID)	*96.7*			*77.0-120*		*08/04/2022 20:59*	WG1905451

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	0.00308		0.000467	0.00100	1	08/03/2022 18:35	WG1905204
Toluene	0.00453	J	0.00130	0.00500	1	08/03/2022 18:35	WG1905204
Ethylbenzene	0.00235	J	0.000737	0.00250	1	08/03/2022 18:35	WG1905204
Xylenes, Total	0.00990		0.000880	0.00650	1	08/03/2022 18:35	WG1905204
1,2,4-Trimethylbenzene	0.00488	J	0.00158	0.00500	1	08/03/2022 18:35	WG1905204
1,3,5-Trimethylbenzene	0.00235	J	0.00200	0.00500	1	08/03/2022 18:35	WG1905204
(S) Toluene-d8	*104*			*75.0-131*		*08/03/2022 18:35*	WG1905204
(S) 4-Bromofluorobenzene	*98.3*			*67.0-138*		*08/03/2022 18:35*	WG1905204
(S) 1,2-Dichloroethane-d4	*86.7*			*70.0-130*		*08/03/2022 18:35*	WG1905204

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	163		1.61	4.00	1	08/02/2022 18:32	WG1903901
C28-C36 Motor Oil Range	311		1.37	20.0	5	08/02/2022 23:18	WG1903901
(S) o-Terphenyl	*93.1*			*18.0-148*		*08/02/2022 18:32*	WG1903901
(S) o-Terphenyl	*92.5*			*18.0-148*		*08/02/2022 23:18*	WG1903901

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/02/2022 16:01	WG1903889
Anthracene	U		0.00230	0.00600	1	08/02/2022 16:01	WG1903889
Benzo(a)anthracene	U		0.00173	0.00600	1	08/02/2022 16:01	WG1903889
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/02/2022 16:01	WG1903889
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/02/2022 16:01	WG1903889
Benzo(a)pyrene	U		0.00179	0.00600	1	08/02/2022 16:01	WG1903889
Chrysene	U		0.00232	0.00600	1	08/02/2022 16:01	WG1903889
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/02/2022 16:01	WG1903889
Fluoranthene	U		0.00227	0.00600	1	08/02/2022 16:01	WG1903889
Fluorene	U		0.00205	0.00600	1	08/02/2022 16:01	WG1903889
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/02/2022 16:01	WG1903889
1-Methylnaphthalene	U		0.00449	0.0200	1	08/02/2022 16:01	WG1903889
2-Methylnaphthalene	0.00635	J	0.00427	0.0200	1	08/02/2022 16:01	WG1903889
Naphthalene	U		0.00408	0.0200	1	08/02/2022 16:01	WG1903889
Pyrene	0.00249	J	0.00200	0.00600	1	08/02/2022 16:01	WG1903889
(S) p-Terphenyl-d14	*80.2*			*23.0-120*		*08/02/2022 16:01*	WG1903889
(S) Nitrobenzene-d5	*79.3*			*14.0-149*		*08/02/2022 16:01*	WG1903889
(S) 2-Fluorobiphenyl	*82.6*			*34.0-125*		*08/02/2022 16:01*	WG1903889

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.43		1	08/09/2022 23:17	WG1904086

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	08/22/2022 18:42	WG1906204

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.22	T8	1	08/01/2022 13:00	WG1903736

Sample Narrative:

L1519620-11 WG1903736: 8.22 at 22.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	449		10.0	1	08/15/2022 17:00	WG1910886

Sample Narrative:

L1519620-11 WG1910886: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	337		0.0852	0.500	1	08/06/2022 02:52	WG1903346
Cadmium	0.273	J	0.0471	0.500	1	08/06/2022 02:52	WG1903346
Copper	17.7		0.400	2.00	1	08/06/2022 02:52	WG1903346
Lead	12.0		0.208	0.500	1	08/06/2022 02:52	WG1903346
Nickel	12.6		0.132	2.00	1	08/06/2022 02:52	WG1903346
Selenium	U		0.764	2.00	1	08/06/2022 02:52	WG1903346
Silver	U		0.127	1.00	1	08/06/2022 02:52	WG1903346
Zinc	40.6		0.832	5.00	1	08/06/2022 02:52	WG1903346

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	0.154	J	0.0167	0.200	1	08/08/2022 15:22	WG1903921

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.25		0.100	1.00	5	08/05/2022 19:29	WG1903347

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	0.130		0.0217	0.100	1	08/01/2022 17:09	WG1903614
(S) a,a,a-Trifluorotoluene(FID)	*98.1*			*77.0-120*		*08/01/2022 17:09*	WG1903614

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	07/31/2022 12:16	WG1903289
Toluene	U		0.00130	0.00500	1	07/31/2022 12:16	WG1903289
Ethylbenzene	U		0.000737	0.00250	1	07/31/2022 12:16	WG1903289
Xylenes, Total	U		0.000880	0.00650	1	07/31/2022 12:16	WG1903289
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/31/2022 12:16	WG1903289
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/31/2022 12:16	WG1903289
(S) Toluene-d8	*99.6*			*75.0-131*		*07/31/2022 12:16*	WG1903289
(S) 4-Bromofluorobenzene	*101*			*67.0-138*		*07/31/2022 12:16*	WG1903289
(S) 1,2-Dichloroethane-d4	*95.7*			*70.0-130*		*07/31/2022 12:16*	WG1903289

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	08/02/2022 18:47	WG1903901
C28-C36 Motor Oil Range	154		0.274	4.00	1	08/02/2022 18:47	WG1903901
(S) o-Terphenyl	*89.7*			*18.0-148*		*08/02/2022 18:47*	WG1903901

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/02/2022 16:20	WG1903889
Anthracene	U		0.00230	0.00600	1	08/02/2022 16:20	WG1903889
Benzo(a)anthracene	U		0.00173	0.00600	1	08/02/2022 16:20	WG1903889
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/02/2022 16:20	WG1903889
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/02/2022 16:20	WG1903889
Benzo(a)pyrene	U		0.00179	0.00600	1	08/02/2022 16:20	WG1903889
Chrysene	U		0.00232	0.00600	1	08/02/2022 16:20	WG1903889
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/02/2022 16:20	WG1903889
Fluoranthene	U		0.00227	0.00600	1	08/02/2022 16:20	WG1903889
Fluorene	U		0.00205	0.00600	1	08/02/2022 16:20	WG1903889
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/02/2022 16:20	WG1903889
1-Methylnaphthalene	U		0.00449	0.0200	1	08/02/2022 16:20	WG1903889
2-Methylnaphthalene	U		0.00427	0.0200	1	08/02/2022 16:20	WG1903889
Naphthalene	U		0.00408	0.0200	1	08/02/2022 16:20	WG1903889
Pyrene	U		0.00200	0.00600	1	08/02/2022 16:20	WG1903889
(S) p-Terphenyl-d14	*77.3*			*23.0-120*		*08/02/2022 16:20*	WG1903889
(S) Nitrobenzene-d5	*71.9*			*14.0-149*		*08/02/2022 16:20*	WG1903889
(S) 2-Fluorobiphenyl	*75.3*			*34.0-125*		*08/02/2022 16:20*	WG1903889

Method Blank (MB)

(MB) R3829376-1 08/22/22 15:40

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

L1519125-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1519125-06 08/22/22 16:38 • (DUP) R3829376-3 08/22/22 16:43

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

L1519620-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1519620-03 08/22/22 17:45 • (DUP) R3829376-8 08/22/22 17:50

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

Laboratory Control Sample (LCS)

(LCS) R3829376-2 08/22/22 15:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.9	109	80.0-120	

L1519139-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1519139-01 08/22/22 17:04 • (MS) R3829376-4 08/22/22 17:09 • (MSD) R3829376-5 08/22/22 17:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	21.2	21.7	106	109	1	75.0-125			2.48	20

L1519139-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1519139-01 08/22/22 17:04 • (MS) R3829376-7 08/22/22 17:24

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	654	U	692	106	50	75.0-125	

L1519613-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1519613-05 08/01/22 13:00 • (DUP) R3821296-2 08/01/22 13:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.08	8.04	1	0.496		1

Sample Narrative:

OS: 8.08 at 23.3C

DUP: 8.04 at 23.4C

L1519700-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1519700-01 08/01/22 13:00 • (DUP) R3821296-3 08/01/22 13:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.61	7.62	1	0.131		1

Sample Narrative:

OS: 7.61 at 23.4C

DUP: 7.62 at 23.5C

Laboratory Control Sample (LCS)

(LCS) R3821296-1 08/01/22 13:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.91	99.1	99.0-101	

Sample Narrative:

LCS: 9.91 at 23.9C

L1519603-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1519603-03 08/01/22 16:00 • (DUP) R3821459-2 08/01/22 16:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.18	8.19	1	0.122		1

Sample Narrative:

OS: 8.18 at 23.5C

DUP: 8.19 at 23.6C

L1519861-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1519861-03 08/01/22 16:00 • (DUP) R3821459-3 08/01/22 16:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.95	7.96	1	0.126		1

Sample Narrative:

OS: 7.95 at 23.1C

DUP: 7.96 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R3821459-1 08/01/22 16:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.90	99.0	99.0-101	

Sample Narrative:

LCS: 9.9 at 24.9C

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

L1519613-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1519613-10 08/03/22 13:00 • (DUP) R3822121-2 08/03/22 13:00

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
pH	7.19	7.17	1	0.279		1

Sample Narrative:

OS: 7.19 at 24.2C

DUP: 7.17 at 24.3C

L1519620-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1519620-05 08/03/22 13:00 • (DUP) R3822121-3 08/03/22 13:00

Analyte	Original Result pH	DUP Result su	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
pH	9.24	9.24	1	0.000		1

Sample Narrative:

OS: 9.24 at 24C

DUP: 9.24 at 24.1C

Laboratory Control Sample (LCS)

(LCS) R3822121-1 08/03/22 13:00

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

Sample Narrative:

LCS: 9.99 at 23.8C

L1520009-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1520009-05 08/03/22 12:00 • (DUP) R3822204-2 08/03/22 12:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.77	7.74	1	0.387		1

Sample Narrative:

OS: 7.77 at 23.9C

DUP: 7.74 at 24C

L1520326-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1520326-05 08/03/22 12:00 • (DUP) R3822204-3 08/03/22 12:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	7.44	7.41	1	0.404		1

Sample Narrative:

OS: 7.44 at 23.9C

DUP: 7.41 at 24C

Laboratory Control Sample (LCS)

(LCS) R3822204-1 08/03/22 12:00

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

Sample Narrative:

LCS: 9.99 at 23.5C

Method Blank (MB)

(MB) R3826510-2 08/15/22 17:00

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

Sample Narrative:
BLANK: at 25C

L1519990-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1519990-01 08/15/22 17:00 • (DUP) R3826510-4 08/15/22 17:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2770	2640	1	4.95		20

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

L1519994-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1519994-03 08/15/22 17:00 • (DUP) R3826510-5 08/15/22 17:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	12100	13300	1	9.84		20

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

Laboratory Control Sample (LCS)

(LCS) R3826510-3 08/15/22 17:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	286	281	98.1	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3826485-2 08/15/22 17:00

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

Sample Narrative:
BLANK: at 25C

L1519611-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1519611-03 08/15/22 17:00 • (DUP) R3826485-4 08/15/22 17:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	327	333	1	1.82		20

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

L1519620-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1519620-08 08/15/22 17:00 • (DUP) R3826485-5 08/15/22 17:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2260	2020	1	11.2		20

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

Laboratory Control Sample (LCS)

(LCS) R3826485-3 08/15/22 17:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	286	283	99.1	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3823371-1 08/06/22 01:52

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) R3823371-2 08/06/22 01:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	99.0	99.0	80.0-120	
Cadmium	100	94.8	94.8	80.0-120	
Copper	100	95.8	95.8	80.0-120	
Lead	100	96.0	96.0	80.0-120	
Nickel	100	95.2	95.2	80.0-120	
Selenium	100	97.2	97.2	80.0-120	
Silver	20.0	17.0	84.8	80.0-120	
Zinc	100	91.8	91.8	80.0-120	

L1519620-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1519620-03 08/06/22 01:58 • (MS) R3823371-5 08/06/22 02:07 • (MSD) R3823371-6 08/06/22 02:10

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	202	308	294	105	91.6	1	75.0-125			4.60	20
Cadmium	100	0.335	95.1	92.3	94.8	91.9	1	75.0-125			3.07	20
Copper	100	18.9	116	113	97.4	94.2	1	75.0-125			2.77	20
Lead	100	10.7	107	103	95.8	92.5	1	75.0-125			3.21	20
Nickel	100	19.9	115	111	94.7	90.9	1	75.0-125			3.43	20
Selenium	100	U	94.9	91.1	94.9	91.1	1	75.0-125			4.05	20
Silver	20.0	U	17.4	16.8	86.8	84.2	1	75.0-125			3.02	20
Zinc	100	54.3	138	134	83.9	80.2	1	75.0-125			2.75	20

Method Blank (MB)

(MB) R3823944-1 08/08/22 14:24

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) R3823944-2 08/08/22 14:27 • (LCSD) R3823944-3 08/08/22 14:30

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	0.867	0.869	86.7	86.9	80.0-120			0.259	20

QUALITY CONTROL SUMMARY

L1519620-01,02,03,04,05,06,07,08,09,10,11

Method Blank (MB)

(MB) R3823257-1 08/05/22 18:24

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

Laboratory Control Sample (LCS)

(LCS) R3823257-2 08/05/22 18:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	84.2	84.2	80.0-120	

L1519620-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1519620-03 08/05/22 18:30 • (MS) R3823257-5 08/05/22 18:40 • (MSD) R3823257-6 08/05/22 18:43

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	8.47	86.2	88.9	77.7	80.4	5	75.0-125			3.09	20

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

Method Blank (MB)

(MB) R3822946-2 08/01/22 11:04

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

Laboratory Control Sample (LCS)

(LCS) R3822946-1 08/01/22 09:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.33	115	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*109*	*77.0-120*	

Method Blank (MB)

(MB) R3824234-2 08/04/22 17:06

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*99.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3824234-1 08/04/22 15:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.31	115	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	

Method Blank (MB)

(MB) R3822291-3 07/31/22 00:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*101*			*75.0-131*
(S) 4-Bromofluorobenzene	*99.5*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*97.3*			*70.0-130*

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

(LCS) R3822291-1 07/30/22 23:19 • (LCSD) R3822291-2 07/30/22 23:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.115	0.118	92.0	94.4	70.0-123			2.58	20
Toluene	0.125	0.118	0.119	94.4	95.2	75.0-121			0.844	20
Ethylbenzene	0.125	0.118	0.119	94.4	95.2	74.0-126			0.844	20
Xylenes, Total	0.375	0.343	0.362	91.5	96.5	72.0-127			5.39	20
1,2,4-Trimethylbenzene	0.125	0.123	0.131	98.4	105	70.0-126			6.30	20
1,3,5-Trimethylbenzene	0.125	0.119	0.119	95.2	95.2	73.0-127			0.000	20
(S) Toluene-d8				*102*	*101*	*75.0-131*				
(S) 4-Bromofluorobenzene				*100*	*101*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*102*	*97.8*	*70.0-130*				

Method Blank (MB)

(MB) R3821954-3 07/31/22 10:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*107*			*75.0-131*
(S) 4-Bromofluorobenzene	*105*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*96.3*			*70.0-130*

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

(LCS) R3821954-1 07/31/22 09:27 • (LCSD) R3821954-2 07/31/22 09:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.118	0.136	94.4	109	70.0-123			14.2	20
Toluene	0.125	0.111	0.130	88.8	104	75.0-121			15.8	20
Ethylbenzene	0.125	0.110	0.129	88.0	103	74.0-126			15.9	20
Xylenes, Total	0.375	0.325	0.372	86.7	99.2	72.0-127			13.5	20
1,2,4-Trimethylbenzene	0.125	0.123	0.139	98.4	111	70.0-126			12.2	20
1,3,5-Trimethylbenzene	0.125	0.114	0.130	91.2	104	73.0-127			13.1	20
(S) Toluene-d8				*101*	*100*	*75.0-131*				
(S) 4-Bromofluorobenzene				*101*	*103*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*102*	*105*	*70.0-130*				

Method Blank (MB)

(MB) R3822717-3 08/03/22 11:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*101*			*75.0-131*
(S) 4-Bromofluorobenzene	*95.5*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*90.0*			*70.0-130*

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

(LCS) R3822717-1 08/03/22 10:09 • (LCSD) R3822717-2 08/03/22 10:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.126	0.132	101	106	70.0-123			4.65	20
Toluene	0.125	0.115	0.124	92.0	99.2	75.0-121			7.53	20
Ethylbenzene	0.125	0.117	0.129	93.6	103	74.0-126			9.76	20
Xylenes, Total	0.375	0.379	0.402	101	107	72.0-127			5.89	20
1,2,4-Trimethylbenzene	0.125	0.134	0.138	107	110	70.0-126			2.94	20
1,3,5-Trimethylbenzene	0.125	0.129	0.131	103	105	73.0-127			1.54	20
(S) Toluene-d8				*94.6*	*95.2*	*75.0-131*				
(S) 4-Bromofluorobenzene				*99.9*	*102*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*108*	*106*	*70.0-130*				

Method Blank (MB)

(MB) R3822718-3 08/03/22 11:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*101*			*75.0-131*
(S) 4-Bromofluorobenzene	*95.5*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*90.0*			*70.0-130*

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

(LCS) R3822718-1 08/03/22 10:09 • (LCSD) R3822718-2 08/03/22 10:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.126	0.132	101	106	70.0-123			4.65	20
Toluene	0.125	0.115	0.124	92.0	99.2	75.0-121			7.53	20
Ethylbenzene	0.125	0.117	0.129	93.6	103	74.0-126			9.76	20
Xylenes, Total	0.375	0.379	0.402	101	107	72.0-127			5.89	20
1,2,4-Trimethylbenzene	0.125	0.134	0.138	107	110	70.0-126			2.94	20
1,3,5-Trimethylbenzene	0.125	0.129	0.131	103	105	73.0-127			1.54	20
(S) Toluene-d8				*94.6*	*95.2*	*75.0-131*				
(S) 4-Bromofluorobenzene				*99.9*	*102*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*108*	*106*	*70.0-130*				

Method Blank (MB)

(MB) R3821908-1 08/02/22 12:42

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	*79.6*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3821908-2 08/02/22 12:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	45.1	90.2	50.0-150	
(S) o-Terphenyl			*113*	*18.0-148*	

L1519620-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1519620-04 08/02/22 15:57 • (MS) R3821908-3 08/02/22 16:11 • (MSD) R3821908-4 08/02/22 16:25

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	49.2	16.6	68.5	65.1	105	98.6	1	50.0-150			5.09	20
(S) o-Terphenyl					*82.9*	*75.8*		*18.0-148*				

Method Blank (MB)

(MB) R3821909-1 08/02/22 13:10

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	*77.5*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3821909-2 08/02/22 13:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	41.7	83.4	50.0-150	
(S) o-Terphenyl			*120*	*18.0-148*	

L1520319-19 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1520319-19 08/02/22 14:39 • (MS) R3822002-1 08/02/22 14:52 • (MSD) R3822002-2 08/02/22 15:04

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.5	80.8	165	375	170	602	5	50.0-150	J5	J3 J5	77.8	20
(S) o-Terphenyl					*63.8*	*60.7*		*18.0-148*				

Method Blank (MB)

(MB) R3822018-2 08/02/22 09:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	*122*	J1		*23.0-120*
(S) Nitrobenzene-d5	*83.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*93.0*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3822018-1 08/02/22 08:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0700	87.5	50.0-120	
Anthracene	0.0800	0.0669	83.6	50.0-126	
Benzo(a)anthracene	0.0800	0.0705	88.1	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0770	96.3	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0765	95.6	49.0-125	
Benzo(a)pyrene	0.0800	0.0624	78.0	42.0-120	
Chrysene	0.0800	0.0750	93.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0665	83.1	47.0-125	
Fluoranthene	0.0800	0.0683	85.4	49.0-129	
Fluorene	0.0800	0.0722	90.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0661	82.6	46.0-125	
1-Methylnaphthalene	0.0800	0.0704	88.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0676	84.5	50.0-120	
Naphthalene	0.0800	0.0681	85.1	50.0-120	
Pyrene	0.0800	0.0823	103	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3822018-1 08/02/22 08:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*121*	*23.0-120*	J1
(S) Nitrobenzene-d5			*81.3*	*14.0-149*	
(S) 2-Fluorobiphenyl			*93.5*	*34.0-125*	

L1519575-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1519575-01 08/02/22 14:46 • (MS) R3822018-3 08/02/22 15:04 • (MSD) R3822018-4 08/02/22 15:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0784	U	0.0668	0.0598	85.2	77.5	1	14.0-127			11.1	27
Anthracene	0.0784	0.00970	0.0694	0.0599	76.1	65.0	1	10.0-145			14.7	30
Benzo(a)anthracene	0.0784	0.0476	0.0922	0.0707	56.9	29.9	1	10.0-139			26.4	30
Benzo(b)fluoranthene	0.0784	0.0679	0.102	0.0742	43.5	8.16	1	10.0-140		J6	31.6	36
Benzo(k)fluoranthene	0.0784	0.0247	0.0828	0.0676	74.1	55.6	1	10.0-137			20.2	31
Benzo(a)pyrene	0.0784	0.0506	0.0936	0.0699	54.8	25.0	1	10.0-141			29.0	31
Chrysene	0.0784	0.0654	0.104	0.0746	49.2	11.9	1	10.0-145		J3	32.9	30
Dibenz(a,h)anthracene	0.0784	0.00877	0.0691	0.0609	77.0	67.5	1	10.0-132			12.6	31
Fluoranthene	0.0784	0.0708	0.107	0.0764	46.2	7.25	1	10.0-153		J3 J6	33.4	33
Fluorene	0.0784	0.00266	0.0674	0.0618	82.6	76.6	1	11.0-130			8.67	29
Indeno(1,2,3-cd)pyrene	0.0784	0.0427	0.0944	0.0706	65.9	36.1	1	10.0-137			28.8	32
1-Methylnaphthalene	0.0784	0.00565	0.0696	0.0630	81.6	74.3	1	10.0-142			9.95	28
2-Methylnaphthalene	0.0784	0.00633	0.0665	0.0594	76.7	68.7	1	10.0-137			11.3	28
Naphthalene	0.0784	0.00664	0.0671	0.0606	77.1	69.9	1	10.0-135			10.2	27
Pyrene	0.0784	0.0863	0.131	0.0900	57.0	4.79	1	10.0-148		J3 J6	37.1	35
(S) p-Terphenyl-d14					*112*	*106*		*23.0-120*				
(S) Nitrobenzene-d5					*79.4*	*75.5*		*14.0-149*				
(S) 2-Fluorobiphenyl					*89.6*	*84.0*		*34.0-125*				

Method Blank (MB)

(MB) R3822016-2 08/02/22 09:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	*89.6*			*23.0-120*
(S) Nitrobenzene-d5	*89.9*			*14.0-149*
(S) 2-Fluorobiphenyl	*90.3*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3822016-1 08/02/22 09:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0728	91.0	50.0-120	
Anthracene	0.0800	0.0754	94.3	50.0-126	
Benzo(a)anthracene	0.0800	0.0774	96.8	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0690	86.3	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0667	83.4	49.0-125	
Benzo(a)pyrene	0.0800	0.0666	83.3	42.0-120	
Chrysene	0.0800	0.0722	90.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0669	83.6	47.0-125	
Fluoranthene	0.0800	0.0757	94.6	49.0-129	
Fluorene	0.0800	0.0747	93.4	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0743	92.9	46.0-125	
1-Methylnaphthalene	0.0800	0.0707	88.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0747	93.4	50.0-120	
Naphthalene	0.0800	0.0691	86.4	50.0-120	
Pyrene	0.0800	0.0678	84.8	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3822016-1 08/02/22 09:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*88.2*	*23.0-120*	
(S) Nitrobenzene-d5			*87.6*	*14.0-149*	
(S) 2-Fluorobiphenyl			*91.1*	*34.0-125*	

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: SAME AS LEFT

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

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

Report to: Blair Rollins

Email To: brollins@caerusoilandgas.com

Project Description: OPIS PxA Assessment

City/State Collected: Piceance Crk, CO

Please Circle: PT (MT) CT ET

Phone: (970) 640-6919

Client Project #

Lab Project # CAERUSPCO_KLEEN

SDG # L1519620

D117

Collected by (print): Tristan Schmalz

Site/Facility ID # OPIS Pad

P.O. #

Collected by (signature): Tristan Schmalz

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed: Standard TAT

Acctnum:
Template:
Prelogin:
PM:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	EC, pH, SAR	Arsenic, Boron	COGCC Table 910-1	COGCC Table 916-1 MINUS TPH, BTEX, + PAH's	Remarks	Sample # (lab only)
20220727_OPIS_BG01@1ft	Grab	SS	1 ft	7/27/2022	7:13	2					X		-01
20220727_OPIS_BG02@1ft	Grab	SS	1ft	7/27/2022	7:36	2					X		-02
20220727_OPIS_BG03@1ft	Grab	SS	1ft	7/27/2022	7:55	2					X		-03
20220727_OPIS_TB@2 ft	Grab	SS	2 ft	7/27/2022	9:35	2	X						-04
20220727_OPIS_TB@3ft	Grab	SS	3ft	7/27/2022	9:52	2	X						-05
20220727_OPIS_SEPFL2@5ft	Grab	SS	5 ft	7/27/2022	10:15	2	X						-06
20220727_OPIS_SEPFL2@6ft	Grab	SS	6ft	7/27/2022	10:32	2	X						-07
20220727_OPIS_WH@7ft	Grab	SS	7ft	7/27/2022	10:39	2	X						-08
20220727_OPIS_WH@8ft	Grab	SS	8ft	7/27/2022	10:51	2	X						-09
20220727_OPIS_WHTP_COMP	Comp	SS	0ft	7/27/2022	11:06	2	X						-10

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # 5755 8084 7448

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes (No) HCL / MeoH TBR
Tristan Schmalz	7/27/2022	13:00		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4°C Bottles Received: .9 to=.9 22
	7/27/22	1500		
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7-28-22 Time: 0900
			Matt	

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: SAME AS LEFT

Report to: Blair Rollins

Email To: brollins@caerusoilandgas.com

Project Description: OP 16 P+A Assessment

City/State Collected: Piceance Crk, CO

Please Circle: PT (MT) CT ET

Phone: (970) 640-6919

Client Project #

Lab Project # CAERUSPCO_KLEEN

Collected by (print): Tristan Schmalz

Site/Facility ID # OP16 Pad

P.O. #

Collected by (signature): Tristan Schmalz

Immediately Packed on Ice N ____ Y X

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed: Standard TAT

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Chain of Custody Page ___ of ___

SDG # L1519620

Table #

Acctnum:

Template:

Prelogin:

PM:

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Pres Chk	COGCC Table 915-1	EC, pH, SAR	Arsenic, Boron	COGCC Table 910-1	Remarks	Sample # (lab only)
20220727_OP15_TP_COMP	Comp	SS	0 ft	7/27/2022	11:25	2		X					-11

Analysis / Container / Preservative

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # 5755 8084 7448

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: X N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Tristan Schmalz	7/27/2022	13:00		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4+0=.9 °C Bottles Received: 22
	7/27/22	1500		If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time: Hold: Condition: NCF / OK
				7-28-22 0900