

Caerus Oil and Gas

Sample Delivery Group: L1707915
Samples Received: 02/21/2024
Project Number:
Description: NPR C04 696 Flowline Release

Report To: Jake J. / Brett M. / Blair R. / Andy V.
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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SAMPLE SUMMARY

20240219-C04 696-(POR)@10 L1707915-01 Solid

Collected by B. Abeyta
Collected date/time 02/19/24 11:20
Received date/time 02/21/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2233441	1	02/27/24 09:56	02/27/24 09:56	JTM	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2231642	1	02/22/24 11:02	02/26/24 07:03	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2231495	1	02/22/24 09:30	02/22/24 10:50	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2231552	1	02/22/24 09:40	02/23/24 11:00	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2233445	1	02/25/24 11:15	02/25/24 17:36	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2231573	5	02/22/24 10:35	02/22/24 18:06	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2234053	1	02/23/24 08:26	02/26/24 13:43	CDD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2233387	1	02/23/24 08:26	02/24/24 16:25	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2231876	1	02/22/24 14:57	02/23/24 01:13	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2231346	1	02/22/24 07:28	02/22/24 16:23	LS	Mt. Juliet, TN

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

20240219-C04 696-(NW)@4 L1707915-02 Solid

Collected by B. Abeyta
Collected date/time 02/19/24 11:45
Received date/time 02/21/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2233441	1	02/27/24 09:58	02/27/24 09:58	JTM	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2231642	1	02/22/24 11:02	02/26/24 07:09	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2231495	1	02/22/24 09:30	02/22/24 10:50	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2231552	1	02/22/24 09:40	02/23/24 11:00	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2233445	1	02/25/24 11:15	02/25/24 17:39	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2231573	5	02/22/24 10:35	02/22/24 18:09	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2234053	1	02/23/24 08:26	02/26/24 14:03	CDD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2233387	1	02/23/24 08:26	02/24/24 16:48	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2231876	1	02/22/24 14:57	02/23/24 01:26	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2231346	1	02/22/24 07:28	02/22/24 16:40	LS	Mt. Juliet, TN

7Gl

8Al

9Sc

20240219-C04 696-(EW)@4 L1707915-03 Solid

Collected by B. Abeyta
Collected date/time 02/19/24 12:05
Received date/time 02/21/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2233441	1	02/27/24 09:54	02/27/24 09:54	JTM	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2231642	1	02/22/24 11:02	02/26/24 07:52	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2231495	1	02/22/24 09:30	02/22/24 10:50	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2231552	1	02/22/24 09:40	02/23/24 11:00	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2233445	1	02/25/24 11:15	02/25/24 17:42	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2231573	5	02/22/24 10:35	02/22/24 18:12	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2234053	1	02/23/24 08:26	02/26/24 14:22	CDD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2233120	1	02/23/24 08:26	02/24/24 23:33	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2231876	1	02/22/24 14:57	02/23/24 01:39	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2231346	1	02/22/24 07:28	02/22/24 16:58	LS	Mt. Juliet, TN

20240219-C04 696-(SW)@5 L1707915-04 Solid

Collected by B. Abeyta
Collected date/time 02/19/24 12:00
Received date/time 02/21/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2233441	1	02/27/24 09:59	02/27/24 09:59	JTM	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2231642	1	02/22/24 11:02	02/26/24 07:58	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2231495	1	02/22/24 09:30	02/22/24 10:50	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2231552	1	02/22/24 09:40	02/23/24 11:00	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2233445	1	02/25/24 11:15	02/25/24 17:45	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2231573	5	02/22/24 10:35	02/22/24 18:15	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2234053	1	02/23/24 08:26	02/26/24 14:41	CDD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2233120	1	02/23/24 08:26	02/24/24 23:52	JHH	Mt. Juliet, TN

SAMPLE SUMMARY

20240219-C04 696-(SW)@5 L1707915-04 Solid

Collected by
B. Abeyta

Collected date/time
02/19/24 12:00

Received date/time
02/21/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2231876	1	02/22/24 14:57	02/23/24 10:26	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2231346	1	02/22/24 07:28	02/22/24 17:15	LS	Mt. Juliet, TN

20240219-C04 696-(WW)@4 L1707915-05 Solid

Collected by
B. Abeyta

Collected date/time
02/19/24 11:55

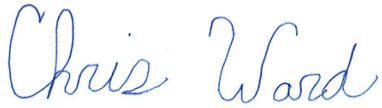
Received date/time
02/21/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2233441	1	02/27/24 09:53	02/27/24 09:53	JTM	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2231642	1	02/22/24 11:02	02/26/24 08:05	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2231495	1	02/22/24 09:30	02/22/24 10:50	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2231552	1	02/22/24 09:40	02/23/24 11:00	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2233445	1	02/25/24 11:15	02/25/24 17:48	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2231573	5	02/22/24 10:35	02/22/24 18:19	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2234053	1	02/23/24 08:26	02/26/24 15:01	CDD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2233120	1	02/23/24 08:26	02/25/24 00:12	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2231876	1	02/22/24 14:57	02/23/24 01:53	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2231346	1	02/22/24 07:28	02/22/24 17:32	LS	Mt. Juliet, TN



CASE NARRATIVE

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



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	8.58		1	02/27/2024 09:56	WG2233441

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	02/26/2024 07:03	WG2231642

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.32	T8	1	02/22/2024 10:50	WG2231495

Sample Narrative:

L1707915-01 WG2231495: 8.32 at 21.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	2920		10.0	1	02/23/2024 11:00	WG2231552

Sample Narrative:

L1707915-01 WG2231552: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.30		0.200	1	02/25/2024 17:36	WG2233445

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	8.93		1.00	5	02/22/2024 18:06	WG2231573
Barium	214		2.50	5	02/22/2024 18:06	WG2231573
Cadmium	ND		1.00	5	02/22/2024 18:06	WG2231573
Copper	14.8		5.00	5	02/22/2024 18:06	WG2231573
Lead	9.95		2.00	5	02/22/2024 18:06	WG2231573
Nickel	12.7		2.50	5	02/22/2024 18:06	WG2231573
Selenium	ND		2.50	5	02/22/2024 18:06	WG2231573
Silver	ND		0.500	5	02/22/2024 18:06	WG2231573
Zinc	50.8		25.0	5	02/22/2024 18:06	WG2231573

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	2.46		0.100	1	02/26/2024 13:43	WG2234053
(S) a,a,a-Trifluorotoluene(FID)	86.9		77.0-120		02/26/2024 13:43	WG2234053

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00823		0.00100	1	02/24/2024 16:25	WG2233387
Toluene	0.0998		0.00500	1	02/24/2024 16:25	WG2233387
Ethylbenzene	0.0310		0.00250	1	02/24/2024 16:25	WG2233387
Xylenes, Total	0.393		0.00650	1	02/24/2024 16:25	WG2233387
1,2,4-Trimethylbenzene	0.210		0.00500	1	02/24/2024 16:25	WG2233387
1,3,5-Trimethylbenzene	0.256		0.00500	1	02/24/2024 16:25	WG2233387
(S) Toluene-d8	92.4		75.0-131		02/24/2024 16:25	WG2233387
(S) 4-Bromofluorobenzene	110		67.0-138		02/24/2024 16:25	WG2233387
(S) 1,2-Dichloroethane-d4	79.2		70.0-130		02/24/2024 16:25	WG2233387

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	8.73		4.00	1	02/23/2024 01:13	WG2231876
C28-C36 Motor Oil Range	18.9		4.00	1	02/23/2024 01:13	WG2231876
(S) o-Terphenyl	37.6		18.0-148		02/23/2024 01:13	WG2231876

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Anthracene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Benzo(a)anthracene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Benzo(b)fluoranthene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Benzo(k)fluoranthene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Benzo(a)pyrene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Chrysene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Dibenz(a,h)anthracene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Fluoranthene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Fluorene	ND		0.00600	1	02/22/2024 16:23	WG2231346
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	02/22/2024 16:23	WG2231346
1-Methylnaphthalene	ND		0.0200	1	02/22/2024 16:23	WG2231346
2-Methylnaphthalene	ND		0.0200	1	02/22/2024 16:23	WG2231346
Naphthalene	ND		0.0200	1	02/22/2024 16:23	WG2231346
Pyrene	ND		0.00600	1	02/22/2024 16:23	WG2231346
(S) p-Terphenyl-d14	65.1		23.0-120		02/22/2024 16:23	WG2231346
(S) Nitrobenzene-d5	71.4		14.0-149		02/22/2024 16:23	WG2231346
(S) 2-Fluorobiphenyl	55.1		34.0-125		02/22/2024 16:23	WG2231346

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.641		1	02/27/2024 09:58	WG2233441

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND	J3 J6	1.00	1	02/26/2024 07:09	WG2231642

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.62	T8	1	02/22/2024 10:50	WG2231495

Sample Narrative:
L1707915-02 WG2231495: 8.62 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	284		10.0	1	02/23/2024 11:00	WG2231552

Sample Narrative:
L1707915-02 WG2231552: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.630		0.200	1	02/25/2024 17:39	WG2233445

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	20.5		1.00	5	02/22/2024 18:09	WG2231573
Barium	553		2.50	5	02/22/2024 18:09	WG2231573
Cadmium	ND		1.00	5	02/22/2024 18:09	WG2231573
Copper	22.3		5.00	5	02/22/2024 18:09	WG2231573
Lead	14.7		2.00	5	02/22/2024 18:09	WG2231573
Nickel	15.9		2.50	5	02/22/2024 18:09	WG2231573
Selenium	ND		2.50	5	02/22/2024 18:09	WG2231573
Silver	ND		0.500	5	02/22/2024 18:09	WG2231573
Zinc	53.4		25.0	5	02/22/2024 18:09	WG2231573

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.280	B	0.100	1	02/26/2024 14:03	WG2234053
(S) a,a,a-Trifluorotoluene(FID)	88.7		77.0-120		02/26/2024 14:03	WG2234053

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	02/24/2024 16:48	WG2233387
Toluene	ND		0.00500	1	02/24/2024 16:48	WG2233387
Ethylbenzene	ND		0.00250	1	02/24/2024 16:48	WG2233387
Xylenes, Total	ND		0.00650	1	02/24/2024 16:48	WG2233387
1,2,4-Trimethylbenzene	ND		0.00500	1	02/24/2024 16:48	WG2233387
1,3,5-Trimethylbenzene	ND		0.00500	1	02/24/2024 16:48	WG2233387
(S) Toluene-d8	97.2		75.0-131		02/24/2024 16:48	WG2233387
(S) 4-Bromofluorobenzene	98.2		67.0-138		02/24/2024 16:48	WG2233387
(S) 1,2-Dichloroethane-d4	79.1		70.0-130		02/24/2024 16:48	WG2233387

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	29.0		4.00	1	02/23/2024 01:26	WG2231876
C28-C36 Motor Oil Range	103		4.00	1	02/23/2024 01:26	WG2231876
(S) o-Terphenyl	36.5		18.0-148		02/23/2024 01:26	WG2231876

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Anthracene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Benzo(a)anthracene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Benzo(b)fluoranthene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Benzo(k)fluoranthene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Benzo(a)pyrene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Chrysene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Dibenz(a,h)anthracene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Fluoranthene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Fluorene	ND		0.00600	1	02/22/2024 16:40	WG2231346
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	02/22/2024 16:40	WG2231346
1-Methylnaphthalene	ND		0.0200	1	02/22/2024 16:40	WG2231346
2-Methylnaphthalene	ND		0.0200	1	02/22/2024 16:40	WG2231346
Naphthalene	ND		0.0200	1	02/22/2024 16:40	WG2231346
Pyrene	ND		0.00600	1	02/22/2024 16:40	WG2231346
(S) p-Terphenyl-d14	72.9		23.0-120		02/22/2024 16:40	WG2231346
(S) Nitrobenzene-d5	67.7		14.0-149		02/22/2024 16:40	WG2231346
(S) 2-Fluorobiphenyl	66.9		34.0-125		02/22/2024 16:40	WG2231346

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.593		1	02/27/2024 09:54	WG2233441

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	02/26/2024 07:52	WG2231642

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.60	T8	1	02/22/2024 10:50	WG2231495

Sample Narrative:

L1707915-03 WG2231495: 8.6 at 21.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	282		10.0	1	02/23/2024 11:00	WG2231552

Sample Narrative:

L1707915-03 WG2231552: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.310		0.200	1	02/25/2024 17:42	WG2233445

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	12.3		1.00	5	02/22/2024 18:12	WG2231573
Barium	1500		2.50	5	02/22/2024 18:12	WG2231573
Cadmium	ND		1.00	5	02/22/2024 18:12	WG2231573
Copper	16.6		5.00	5	02/22/2024 18:12	WG2231573
Lead	11.1		2.00	5	02/22/2024 18:12	WG2231573
Nickel	12.3		2.50	5	02/22/2024 18:12	WG2231573
Selenium	ND		2.50	5	02/22/2024 18:12	WG2231573
Silver	ND		0.500	5	02/22/2024 18:12	WG2231573
Zinc	46.1		25.0	5	02/22/2024 18:12	WG2231573

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.381		0.100	1	02/26/2024 14:22	WG2234053
(S) a,a,a-Trifluorotoluene(FID)	87.8		77.0-120		02/26/2024 14:22	WG2234053

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00492		0.00100	1	02/24/2024 23:33	WG2233120
Toluene	0.0211		0.00500	1	02/24/2024 23:33	WG2233120
Ethylbenzene	ND		0.00250	1	02/24/2024 23:33	WG2233120
Xylenes, Total	0.0187		0.00650	1	02/24/2024 23:33	WG2233120
1,2,4-Trimethylbenzene	ND		0.00500	1	02/24/2024 23:33	WG2233120
1,3,5-Trimethylbenzene	0.00742		0.00500	1	02/24/2024 23:33	WG2233120
(S) Toluene-d8	99.9		75.0-131		02/24/2024 23:33	WG2233120
(S) 4-Bromofluorobenzene	108		67.0-138		02/24/2024 23:33	WG2233120
(S) 1,2-Dichloroethane-d4	99.9		70.0-130		02/24/2024 23:33	WG2233120

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	37.9		4.00	1	02/23/2024 01:39	WG2231876
C28-C36 Motor Oil Range	92.6		4.00	1	02/23/2024 01:39	WG2231876
(S) o-Terphenyl	43.0		18.0-148		02/23/2024 01:39	WG2231876

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	02/22/2024 16:58	WG2231346
Anthracene	ND		0.00600	1	02/22/2024 16:58	WG2231346
Benzo(a)anthracene	ND		0.00600	1	02/22/2024 16:58	WG2231346
Benzo(b)fluoranthene	0.0176		0.00600	1	02/22/2024 16:58	WG2231346
Benzo(k)fluoranthene	ND		0.00600	1	02/22/2024 16:58	WG2231346
Benzo(a)pyrene	ND		0.00600	1	02/22/2024 16:58	WG2231346
Chrysene	0.00747		0.00600	1	02/22/2024 16:58	WG2231346
Dibenz(a,h)anthracene	ND		0.00600	1	02/22/2024 16:58	WG2231346
Fluoranthene	0.00613		0.00600	1	02/22/2024 16:58	WG2231346
Fluorene	ND		0.00600	1	02/22/2024 16:58	WG2231346
Indeno(1,2,3-cd)pyrene	0.00637		0.00600	1	02/22/2024 16:58	WG2231346
1-Methylnaphthalene	ND		0.0200	1	02/22/2024 16:58	WG2231346
2-Methylnaphthalene	0.0296		0.0200	1	02/22/2024 16:58	WG2231346
Naphthalene	ND		0.0200	1	02/22/2024 16:58	WG2231346
Pyrene	ND		0.00600	1	02/22/2024 16:58	WG2231346
(S) p-Terphenyl-d14	78.6		23.0-120		02/22/2024 16:58	WG2231346
(S) Nitrobenzene-d5	75.8		14.0-149		02/22/2024 16:58	WG2231346
(S) 2-Fluorobiphenyl	74.2		34.0-125		02/22/2024 16:58	WG2231346

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.540		1	02/27/2024 09:59	WG2233441

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	02/26/2024 07:58	WG2231642

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.63	T8	1	02/22/2024 10:50	WG2231495

Sample Narrative:
L1707915-04 WG2231495: 8.63 at 20.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	246		10.0	1	02/23/2024 11:00	WG2231552

Sample Narrative:
L1707915-04 WG2231552: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.745		0.200	1	02/25/2024 17:45	WG2233445

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	12.1		1.00	5	02/22/2024 18:15	WG2231573
Barium	1990		2.50	5	02/22/2024 18:15	WG2231573
Cadmium	ND		1.00	5	02/22/2024 18:15	WG2231573
Copper	18.4		5.00	5	02/22/2024 18:15	WG2231573
Lead	10.6		2.00	5	02/22/2024 18:15	WG2231573
Nickel	12.6		2.50	5	02/22/2024 18:15	WG2231573
Selenium	ND		2.50	5	02/22/2024 18:15	WG2231573
Silver	ND		0.500	5	02/22/2024 18:15	WG2231573
Zinc	43.5		25.0	5	02/22/2024 18:15	WG2231573

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.563		0.100	1	02/26/2024 14:41	WG2234053
(S) a,a,a-Trifluorotoluene(FID)	84.8		77.0-120		02/26/2024 14:41	WG2234053

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00448		0.00100	1	02/24/2024 23:52	WG2233120
Toluene	0.0354		0.00500	1	02/24/2024 23:52	WG2233120
Ethylbenzene	0.00650		0.00250	1	02/24/2024 23:52	WG2233120
Xylenes, Total	0.260		0.00650	1	02/24/2024 23:52	WG2233120
1,2,4-Trimethylbenzene	0.0394		0.00500	1	02/24/2024 23:52	WG2233120
1,3,5-Trimethylbenzene	0.107		0.00500	1	02/24/2024 23:52	WG2233120
(S) Toluene-d8	98.8		75.0-131		02/24/2024 23:52	WG2233120
(S) 4-Bromofluorobenzene	109		67.0-138		02/24/2024 23:52	WG2233120
(S) 1,2-Dichloroethane-d4	101		70.0-130		02/24/2024 23:52	WG2233120

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	9.48		4.00	1	02/23/2024 10:26	WG2231876
C28-C36 Motor Oil Range	12.5		4.00	1	02/23/2024 10:26	WG2231876
(S) o-Terphenyl	55.1		18.0-148		02/23/2024 10:26	WG2231876

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Anthracene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Benzo(a)anthracene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Benzo(b)fluoranthene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Benzo(k)fluoranthene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Benzo(a)pyrene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Chrysene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Dibenz(a,h)anthracene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Fluoranthene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Fluorene	ND		0.00600	1	02/22/2024 17:15	WG2231346
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	02/22/2024 17:15	WG2231346
1-Methylnaphthalene	ND		0.0200	1	02/22/2024 17:15	WG2231346
2-Methylnaphthalene	ND		0.0200	1	02/22/2024 17:15	WG2231346
Naphthalene	ND		0.0200	1	02/22/2024 17:15	WG2231346
Pyrene	ND		0.00600	1	02/22/2024 17:15	WG2231346
(S) p-Terphenyl-d14	74.4		23.0-120		02/22/2024 17:15	WG2231346
(S) Nitrobenzene-d5	87.5		14.0-149		02/22/2024 17:15	WG2231346
(S) 2-Fluorobiphenyl	82.5		34.0-125		02/22/2024 17:15	WG2231346

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.625		1	02/27/2024 09:53	WG2233441

1
Cp

2
Tc

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	02/26/2024 08:05	WG2231642

3
Ss

4
Cn

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.61	T8	1	02/22/2024 10:50	WG2231495

5
Sr

6
Qc

Sample Narrative:

L1707915-05 WG2231495: 8.61 at 20.8C

7
Gl

8
Al

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	348		10.0	1	02/23/2024 11:00	WG2231552

9
Sc

Sample Narrative:

L1707915-05 WG2231552: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.741		0.200	1	02/25/2024 17:48	WG2233445

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	11.7		1.00	5	02/22/2024 18:19	WG2231573
Barium	2110		2.50	5	02/22/2024 18:19	WG2231573
Cadmium	ND		1.00	5	02/22/2024 18:19	WG2231573
Copper	18.8		5.00	5	02/22/2024 18:19	WG2231573
Lead	12.5		2.00	5	02/22/2024 18:19	WG2231573
Nickel	13.0		2.50	5	02/22/2024 18:19	WG2231573
Selenium	ND		2.50	5	02/22/2024 18:19	WG2231573
Silver	ND		0.500	5	02/22/2024 18:19	WG2231573
Zinc	47.1		25.0	5	02/22/2024 18:19	WG2231573

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.599		0.100	1	02/26/2024 15:01	WG2234053
(S) a,a,a-Trifluorotoluene(FID)	88.2		77.0-120		02/26/2024 15:01	WG2234053

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00623		0.00100	1	02/25/2024 00:12	WG2233120
Toluene	0.0427		0.00500	1	02/25/2024 00:12	WG2233120
Ethylbenzene	0.00613		0.00250	1	02/25/2024 00:12	WG2233120
Xylenes, Total	0.166		0.00650	1	02/25/2024 00:12	WG2233120
1,2,4-Trimethylbenzene	0.0563		0.00500	1	02/25/2024 00:12	WG2233120
1,3,5-Trimethylbenzene	0.175		0.00500	1	02/25/2024 00:12	WG2233120
(S) Toluene-d8	101		75.0-131		02/25/2024 00:12	WG2233120
(S) 4-Bromofluorobenzene	108		67.0-138		02/25/2024 00:12	WG2233120
(S) 1,2-Dichloroethane-d4	98.3		70.0-130		02/25/2024 00:12	WG2233120

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	51.7		4.00	1	02/23/2024 01:53	WG2231876
C28-C36 Motor Oil Range	114		4.00	1	02/23/2024 01:53	WG2231876
(S) o-Terphenyl	39.0		18.0-148		02/23/2024 01:53	WG2231876

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00600	1	02/22/2024 17:32	WG2231346
Anthracene	ND		0.00600	1	02/22/2024 17:32	WG2231346
Benzo(a)anthracene	0.00848		0.00600	1	02/22/2024 17:32	WG2231346
Benzo(b)fluoranthene	0.0346		0.00600	1	02/22/2024 17:32	WG2231346
Benzo(k)fluoranthene	0.00790		0.00600	1	02/22/2024 17:32	WG2231346
Benzo(a)pyrene	0.00928		0.00600	1	02/22/2024 17:32	WG2231346
Chrysene	0.0121		0.00600	1	02/22/2024 17:32	WG2231346
Dibenz(a,h)anthracene	ND		0.00600	1	02/22/2024 17:32	WG2231346
Fluoranthene	0.0103		0.00600	1	02/22/2024 17:32	WG2231346
Fluorene	ND		0.00600	1	02/22/2024 17:32	WG2231346
Indeno(1,2,3-cd)pyrene	0.0144		0.00600	1	02/22/2024 17:32	WG2231346
1-Methylnaphthalene	0.0237		0.0200	1	02/22/2024 17:32	WG2231346
2-Methylnaphthalene	0.0515		0.0200	1	02/22/2024 17:32	WG2231346
Naphthalene	0.0350		0.0200	1	02/22/2024 17:32	WG2231346
Pyrene	ND		0.00600	1	02/22/2024 17:32	WG2231346
(S) p-Terphenyl-d14	68.0		23.0-120		02/22/2024 17:32	WG2231346
(S) Nitrobenzene-d5	75.3		14.0-149		02/22/2024 17:32	WG2231346
(S) 2-Fluorobiphenyl	67.7		34.0-125		02/22/2024 17:32	WG2231346

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4038197-1 02/26/24 06:23

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

L1707915-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1707915-05 02/26/24 08:05 • (DUP) R4038197-7 02/26/24 08:11

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

L1708578-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1708578-01 02/26/24 08:35 • (DUP) R4038197-8 02/26/24 08:54

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

Laboratory Control Sample (LCS)

(LCS) R4038197-2 02/26/24 06:32

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	11.2	112	80.0-120	

L1707915-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1707915-02 02/26/24 07:09 • (MS) R4038197-4 02/26/24 07:21 • (MSD) R4038197-5 02/26/24 07:40

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	ND	4.34	7.70	21.7	38.5	1	75.0-125	J6	J3 J6	55.8	20

L1707915-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1707915-02 02/26/24 07:09 • (MS) R4038197-6 02/26/24 07:46

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	631	ND	592	93.8	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1707915-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1707915-03 02/22/24 10:50 • (DUP) R4036923-2 02/22/24 10:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.60	8.59	1	0.116		1

Sample Narrative:

OS: 8.6 at 21.2C

DUP: 8.59 at 20.9C

Laboratory Control Sample (LCS)

(LCS) R4036923-1 02/22/24 10:50

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

Sample Narrative:

LCS: 10 at 20.4C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4037493-1 02/23/24 11:00

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

L1706679-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1706679-01 02/23/24 11:00 • (DUP) R4037493-3 02/23/24 11:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2570	2590	1	0.813		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1707132-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1707132-07 02/23/24 11:00 • (DUP) R4037493-4 02/23/24 11:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	31.0	30.2	1	2.61		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4037493-2 02/23/24 11:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	327	329	101	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R4038040-1 02/25/24 17:28

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) R4038040-2 02/25/24 17:30 • (LCSD) R4038040-3 02/25/24 17:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.01	1.03	101	103	80.0-120			1.29	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4037297-1 02/22/24 17:22

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4037297-8 02/22/24 18:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	95.6	95.6	80.0-120	
Barium	100	93.5	93.5	80.0-120	
Cadmium	100	99.9	99.9	80.0-120	
Copper	100	99.4	99.4	80.0-120	
Lead	100	94.6	94.6	80.0-120	
Nickel	100	98.9	98.9	80.0-120	
Selenium	100	96.9	96.9	80.0-120	
Silver	20.0	19.8	98.9	80.0-120	
Zinc	100	94.1	94.1	80.0-120	

L1707539-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1707539-01 02/22/24 17:29 • (MS) R4037297-6 02/22/24 17:39 • (MSD) R4037297-7 02/22/24 17:42

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	99.6	3.20	89.3	86.7	86.1	83.5	5	75.0-125			2.89	20
Barium	99.6	77.3	160	163	82.6	85.7	5	75.0-125			1.87	20
Cadmium	99.6	ND	94.5	91.6	94.5	91.6	5	75.0-125			3.17	20
Copper	99.6	12.5	102	97.6	89.2	85.1	5	75.0-125			4.16	20
Lead	99.6	7.18	95.0	96.9	87.8	89.8	5	75.0-125			2.00	20
Nickel	99.6	10.1	101	96.4	90.8	86.3	5	75.0-125			4.48	20
Selenium	99.6	ND	87.5	86.6	87.3	86.3	5	75.0-125			1.07	20
Silver	20.0	ND	18.6	18.1	93.2	90.5	5	75.0-125			2.91	20
Zinc	99.6	34.5	114	116	79.1	81.3	5	75.0-125			1.91	20

Method Blank (MB)

(MB) R4039156-3 02/26/24 10:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0297	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	95.9			77.0-120

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

(LCS) R4039156-1 02/26/24 09:41 • (LCSD) R4039156-2 02/26/24 10:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.00	5.32	5.39	106	108	72.0-127			1.31	20
(S) a,a,a-Trifluorotoluene(FID)				105	104	77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4038568-3 02/24/24 17:33

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	99.4			75.0-131
(S) 4-Bromofluorobenzene	104			67.0-138
(S) 1,2-Dichloroethane-d4	90.3			70.0-130

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

(LCS) R4038568-1 02/24/24 15:56 • (LCSD) R4038568-2 02/24/24 16:15

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	0.134	0.132	107	106	70.0-123			1.50	20
Toluene	0.125	0.134	0.132	107	106	75.0-121			1.50	20
Ethylbenzene	0.125	0.132	0.132	106	106	74.0-126			0.000	20
Xylenes, Total	0.375	0.400	0.396	107	106	72.0-127			1.01	20
1,2,4-Trimethylbenzene	0.125	0.124	0.120	99.2	96.0	70.0-126			3.28	20
1,3,5-Trimethylbenzene	0.125	0.124	0.120	99.2	96.0	73.0-127			3.28	20
(S) Toluene-d8				99.1	99.6	75.0-131				
(S) 4-Bromofluorobenzene				109	109	67.0-138				
(S) 1,2-Dichloroethane-d4				95.8	99.9	70.0-130				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4038688-3 02/24/24 11:32

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	98.1			75.0-131
(S) 4-Bromofluorobenzene	95.4			67.0-138
(S) 1,2-Dichloroethane-d4	81.0			70.0-130

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

(LCS) R4038688-1 02/24/24 09:45 • (LCSD) R4038688-2 02/24/24 10:06

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	0.127	0.126	102	101	70.0-123			0.791	20
Toluene	0.125	0.120	0.121	96.0	96.8	75.0-121			0.830	20
Ethylbenzene	0.125	0.127	0.139	102	111	74.0-126			9.02	20
Xylenes, Total	0.375	0.381	0.381	102	102	72.0-127			0.000	20
1,2,4-Trimethylbenzene	0.125	0.116	0.119	92.8	95.2	70.0-126			2.55	20
1,3,5-Trimethylbenzene	0.125	0.117	0.121	93.6	96.8	73.0-127			3.36	20
(S) Toluene-d8				94.9	94.5	75.0-131				
(S) 4-Bromofluorobenzene				98.1	99.9	67.0-138				
(S) 1,2-Dichloroethane-d4				88.1	88.7	70.0-130				

L1708212-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1708212-07 02/24/24 20:03 • (MS) R4038688-4 02/24/24 21:52 • (MSD) R4038688-5 02/24/24 22:14

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 %
Benzene	0.113	ND	0.0326	0.115	28.8	102	1	10.0-149		J3	112	37
Toluene	0.113	ND	0.0322	0.116	28.5	103	1	10.0-156		J3	113	38
Ethylbenzene	0.113	ND	0.0321	0.121	28.4	107	1	10.0-160		J3	116	38
Xylenes, Total	0.337	ND	0.101	0.349	30.0	104	1	10.0-160		J3	110	38
1,2,4-Trimethylbenzene	0.113	ND	0.0334	0.112	29.6	99.1	1	10.0-160		J3	108	36
1,3,5-Trimethylbenzene	0.113	ND	0.0307	0.110	27.2	97.3	1	10.0-160		J3	113	38
(S) Toluene-d8					95.5	95.8		75.0-131				
(S) 4-Bromofluorobenzene					95.6	94.4		67.0-138				
(S) 1,2-Dichloroethane-d4					81.1	83.8		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4037422-1 02/22/24 22:09

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	56.8			18.0-148

Laboratory Control Sample (LCS)

(LCS) R4037422-2 02/22/24 22:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.5	65.0	50.0-150	
(S) o-Terphenyl			59.8	18.0-148	

L1708082-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1708082-05 02/23/24 02:45 • (MS) R4037422-3 02/23/24 02:58 • (MSD) R4037422-4 02/23/24 03:11

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	47.3	ND	29.8	34.4	59.5	68.2	1	50.0-150			14.3	20
(S) o-Terphenyl					44.0	51.7		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4038675-2 02/22/24 12:54

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	79.1			23.0-120
(S) Nitrobenzene-d5	69.7			14.0-149
(S) 2-Fluorobiphenyl	76.3			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4038675-1 02/22/24 12:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0627	78.4	50.0-120	
Anthracene	0.0800	0.0672	84.0	50.0-126	
Benzo(a)anthracene	0.0800	0.0651	81.4	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0620	77.5	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0618	77.3	49.0-125	
Benzo(a)pyrene	0.0800	0.0588	73.5	42.0-120	
Chrysene	0.0800	0.0649	81.1	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0652	81.5	47.0-125	
Fluoranthene	0.0800	0.0696	87.0	49.0-129	
Fluorene	0.0800	0.0685	85.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0618	77.3	46.0-125	
1-Methylnaphthalene	0.0800	0.0677	84.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0655	81.9	50.0-120	
Naphthalene	0.0800	0.0626	78.3	50.0-120	
Pyrene	0.0800	0.0607	75.9	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R4038675-1 02/22/24 12:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			80.3	23.0-120	
(S) Nitrobenzene-d5			81.9	14.0-149	
(S) 2-Fluorobiphenyl			83.6	34.0-125	

L1707878-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1707878-04 02/22/24 13:12 • (MS) R4038675-3 02/22/24 13:29 • (MSD) R4038675-4 02/22/24 13:46

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0788	ND	0.0540	0.0522	68.5	66.2	1	14.0-127			3.39	27
Anthracene	0.0788	ND	0.0617	0.0568	74.4	68.1	1	10.0-145			8.27	30
Benzo(a)anthracene	0.0788	0.0206	0.0821	0.0706	78.0	63.5	1	10.0-139			15.1	30
Benzo(b)fluoranthene	0.0788	0.0293	0.0886	0.0773	75.3	60.9	1	10.0-140			13.6	36
Benzo(k)fluoranthene	0.0788	0.0112	0.0658	0.0618	69.3	64.2	1	10.0-137			6.27	31
Benzo(a)pyrene	0.0788	0.0225	0.0835	0.0736	77.4	64.8	1	10.0-141			12.6	31
Chrysene	0.0788	0.0201	0.0871	0.0763	85.0	71.3	1	10.0-145			13.2	30
Dibenz(a,h)anthracene	0.0788	ND	0.0570	0.0571	68.0	68.1	1	10.0-132			0.175	31
Fluoranthene	0.0788	0.0467	0.128	0.0960	103	62.6	1	10.0-153			28.6	33
Fluorene	0.0788	ND	0.0569	0.0561	72.2	71.2	1	11.0-130			1.42	29
Indeno(1,2,3-cd)pyrene	0.0788	0.0155	0.0716	0.0657	71.2	63.7	1	10.0-137			8.59	32
1-Methylnaphthalene	0.0788	ND	0.0561	0.0563	71.2	71.4	1	10.0-142			0.356	28
2-Methylnaphthalene	0.0788	ND	0.0544	0.0553	69.0	70.2	1	10.0-137			1.64	28
Naphthalene	0.0788	ND	0.0545	0.0556	69.2	70.6	1	10.0-135			2.00	27
Pyrene	0.0788	0.0346	0.104	0.0803	88.1	58.0	1	10.0-148			25.7	35
(S) p-Terphenyl-d14					62.7	68.7		23.0-120				
(S) Nitrobenzene-d5					64.9	64.7		14.0-149				
(S) 2-Fluorobiphenyl					55.7	57.2		34.0-125				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

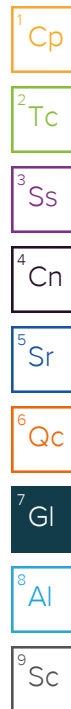
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

Abbreviations and Definitions

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

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

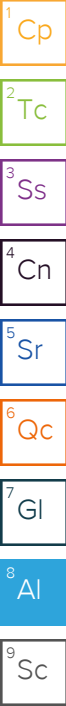
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



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