

Caerus Oil and Gas

Sample Delivery Group: L1474761

Samples Received: 03/24/2022

Project Number:

Description: Garden Gulch 8"

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

Entire Report Reviewed By:



Chris Ward
Project Manager

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Pace Analytical National

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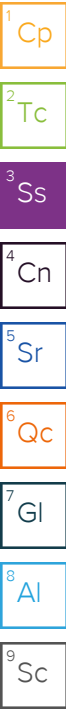
¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

220323-LATHAM-SS-POR @ 8' L1474761-01 Solid

Collected by Adam Roll
Collected date/time 03/23/22 11:30
Received date/time 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1838799	1	03/31/22 10:37	03/31/22 10:37	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1839697	1	03/28/22 16:00	03/30/22 12:58	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1838196	1	03/25/22 09:02	03/25/22 12:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1839170	1	03/28/22 01:47	03/28/22 08:25	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1838397	1	03/28/22 16:49	03/29/22 01:30	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1838802	1	03/30/22 13:28	03/31/22 12:07	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838399	5	03/28/22 09:04	03/28/22 18:54	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1840291	500	03/24/22 21:19	03/30/22 00:19	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1839104	8	03/24/22 21:19	03/29/22 00:12	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1840487	40	03/24/22 21:19	03/30/22 23:43	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1840039	1	03/30/22 07:53	03/30/22 16:59	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1839556	1	03/29/22 10:24	03/29/22 21:20	LEA	Mt. Juliet, TN



220323-LATHAM-WW-SOURCE L1474761-02 GW

Collected by Adam Roll
Collected date/time 03/23/22 11:50
Received date/time 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1839872	1	03/29/22 09:14	03/29/22 11:53	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1841179	1	03/31/22 16:00	03/31/22 16:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1839769	1	03/29/22 08:56	03/29/22 08:56	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1837980	1	03/25/22 03:53	03/25/22 03:53	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1837980	100	03/25/22 00:40	03/25/22 00:40	LBR	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1842263	50	04/03/22 16:01	04/03/22 18:55	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1838796	5000	03/26/22 20:33	03/26/22 20:33	ACG	Mt. Juliet, TN

220323-LATHAM-SS-W @ 6' L1474761-03 Solid

Collected by Adam Roll
Collected date/time 03/23/22 12:05
Received date/time 03/24/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1838799	1	03/31/22 10:40	03/31/22 10:40	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1839697	1	03/28/22 16:00	03/30/22 13:03	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1838196	1	03/25/22 09:02	03/25/22 12:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1839170	1	03/28/22 01:47	03/28/22 08:25	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1838397	1	03/28/22 16:49	03/29/22 01:38	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1838802	1	03/30/22 13:28	03/31/22 12:09	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838399	5	03/28/22 09:04	03/28/22 18:57	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1839309	25	03/24/22 21:19	03/28/22 21:29	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1839104	1	03/24/22 21:19	03/28/22 23:53	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1840039	1	03/30/22 07:53	03/30/22 15:28	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1839556	1	03/29/22 10:24	03/29/22 22:20	LEA	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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	39.3		1	03/31/2022 10:37	WG1838799

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	03/30/2022 12:58	WG1839697

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.45	T8	1	03/25/2022 12:00	WG1838196

Sample Narrative:

L1474761-01 WG1838196: 7.45 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	4950		10.0	1	03/28/2022 08:25	WG1839170

Sample Narrative:

L1474761-01 WG1839170: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	295		0.500	1	03/29/2022 01:30	WG1838397
Cadmium	ND		0.500	1	03/29/2022 01:30	WG1838397
Copper	17.2		2.00	1	03/29/2022 01:30	WG1838397
Lead	14.7		0.500	1	03/29/2022 01:30	WG1838397
Nickel	23.7		2.00	1	03/29/2022 01:30	WG1838397
Selenium	ND		2.00	1	03/29/2022 01:30	WG1838397
Silver	ND		1.00	1	03/29/2022 01:30	WG1838397
Zinc	56.2		5.00	1	03/29/2022 01:30	WG1838397

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	3.34		0.200	1	03/31/2022 12:07	WG1838802

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	9.56		1.00	5	03/28/2022 18:54	WG1838399

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	608		50.0	500	03/30/2022 00:19	WG1840291
(S) a,a,a-Trifluorotoluene(FID)	89.4		77.0-120		03/30/2022 00:19	WG1840291

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	3.08		0.00800	8	03/29/2022 00:12	WG1839104
Toluene	33.3		0.200	40	03/30/2022 23:43	WG1840487
Ethylbenzene	2.21		0.0200	8	03/29/2022 00:12	WG1839104
Xylenes, Total	40.1		0.0520	8	03/29/2022 00:12	WG1839104
1,2,4-Trimethylbenzene	4.46		0.0400	8	03/29/2022 00:12	WG1839104
1,3,5-Trimethylbenzene	4.85		0.0400	8	03/29/2022 00:12	WG1839104
(S) Toluene-d8	110		75.0-131		03/29/2022 00:12	WG1839104
(S) Toluene-d8	106		75.0-131		03/30/2022 23:43	WG1840487
(S) 4-Bromofluorobenzene	101		67.0-138		03/29/2022 00:12	WG1839104
(S) 4-Bromofluorobenzene	91.5		67.0-138		03/30/2022 23:43	WG1840487
(S) 1,2-Dichloroethane-d4	103		70.0-130		03/29/2022 00:12	WG1839104
(S) 1,2-Dichloroethane-d4	113		70.0-130		03/30/2022 23:43	WG1840487

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	124		4.00	1	03/30/2022 16:59	WG1840039
C28-C36 Motor Oil Range	14.2		4.00	1	03/30/2022 16:59	WG1840039
(S) o-Terphenyl	57.5		18.0-148		03/30/2022 16:59	WG1840039

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	03/29/2022 21:20	WG1839556
Anthracene	ND		0.00600	1	03/29/2022 21:20	WG1839556
Benzo(a)anthracene	ND		0.00600	1	03/29/2022 21:20	WG1839556
Benzo(b)fluoranthene	ND		0.00600	1	03/29/2022 21:20	WG1839556
Benzo(k)fluoranthene	ND		0.00600	1	03/29/2022 21:20	WG1839556
Benzo(a)pyrene	ND		0.00600	1	03/29/2022 21:20	WG1839556
Chrysene	ND		0.00600	1	03/29/2022 21:20	WG1839556
Dibenz(a,h)anthracene	ND		0.00600	1	03/29/2022 21:20	WG1839556
Fluoranthene	ND		0.00600	1	03/29/2022 21:20	WG1839556
Fluorene	0.00721		0.00600	1	03/29/2022 21:20	WG1839556
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	03/29/2022 21:20	WG1839556
1-Methylnaphthalene	0.0974		0.0200	1	03/29/2022 21:20	WG1839556
2-Methylnaphthalene	0.317		0.0200	1	03/29/2022 21:20	WG1839556
Naphthalene	0.185		0.0200	1	03/29/2022 21:20	WG1839556
Pyrene	ND		0.00600	1	03/29/2022 21:20	WG1839556
(S) p-Terphenyl-d14	91.3		23.0-120		03/29/2022 21:20	WG1839556
(S) Nitrobenzene-d5	173	J1	14.0-149		03/29/2022 21:20	WG1839556
(S) 2-Fluorobiphenyl	70.2		34.0-125		03/29/2022 21:20	WG1839556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	8640		200	1	03/29/2022 11:53	WG1839872

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.86	T8	1	03/31/2022 16:00	WG1841179

Sample Narrative:

L1474761-02 WG1841179: 6.86 at 18.6C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	15500		10.0	1	03/29/2022 08:56	WG1839769

Sample Narrative:

L1474761-02 WG1839769: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	5690		100	100	03/25/2022 00:40	WG1837980
Sulfate	6.38		5.00	1	03/25/2022 03:53	WG1837980

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	50	04/03/2022 18:55	WG1842263

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	18.7		5.00	5000	03/26/2022 20:33	WG1838796
Toluene	29.6		5.00	5000	03/26/2022 20:33	WG1838796
Ethylbenzene	ND		5.00	5000	03/26/2022 20:33	WG1838796
Xylenes, Total	ND		15.0	5000	03/26/2022 20:33	WG1838796
Naphthalene	ND	J4	25.0	5000	03/26/2022 20:33	WG1838796
1,2,4-Trimethylbenzene	ND		5.00	5000	03/26/2022 20:33	WG1838796
1,3,5-Trimethylbenzene	ND		5.00	5000	03/26/2022 20:33	WG1838796
(S) Toluene-d8	101		80.0-120		03/26/2022 20:33	WG1838796
(S) 4-Bromofluorobenzene	94.8		77.0-126		03/26/2022 20:33	WG1838796
(S) 1,2-Dichloroethane-d4	127		70.0-130		03/26/2022 20:33	WG1838796

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	17.4		1	03/31/2022 10:40	WG1838799

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	03/30/2022 13:03	WG1839697

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.90	T8	1	03/25/2022 12:00	WG1838196

Sample Narrative:

L1474761-03 WG1838196: 7.9 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	2390		10.0	1	03/28/2022 08:25	WG1839170

Sample Narrative:

L1474761-03 WG1839170: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	329		0.500	1	03/29/2022 01:38	WG1838397
Cadmium	ND		0.500	1	03/29/2022 01:38	WG1838397
Copper	14.6		2.00	1	03/29/2022 01:38	WG1838397
Lead	14.6		0.500	1	03/29/2022 01:38	WG1838397
Nickel	24.7		2.00	1	03/29/2022 01:38	WG1838397
Selenium	ND		2.00	1	03/29/2022 01:38	WG1838397
Silver	ND		1.00	1	03/29/2022 01:38	WG1838397
Zinc	48.3		5.00	1	03/29/2022 01:38	WG1838397

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.740		0.200	1	03/31/2022 12:09	WG1838802

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	9.32		1.00	5	03/28/2022 18:57	WG1838399

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	8.52	B	2.50	25	03/28/2022 21:29	WG1839309
(S) a,a,a-Trifluorotoluene(FID)	93.8		77.0-120		03/28/2022 21:29	WG1839309

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0378	J5	0.00100	1	03/28/2022 23:53	WG1839104
Toluene	0.168	J5	0.00500	1	03/28/2022 23:53	WG1839104
Ethylbenzene	0.0108		0.00250	1	03/28/2022 23:53	WG1839104
Xylenes, Total	0.207	J5	0.00650	1	03/28/2022 23:53	WG1839104
1,2,4-Trimethylbenzene	0.0181		0.00500	1	03/28/2022 23:53	WG1839104
1,3,5-Trimethylbenzene	0.0185		0.00500	1	03/28/2022 23:53	WG1839104
(S) Toluene-d8	110		75.0-131		03/28/2022 23:53	WG1839104
(S) 4-Bromofluorobenzene	93.9		67.0-138		03/28/2022 23:53	WG1839104
(S) 1,2-Dichloroethane-d4	102		70.0-130		03/28/2022 23:53	WG1839104

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	7.48	J3 J6	4.00	1	03/30/2022 15:28	WG1840039
C28-C36 Motor Oil Range	22.2		4.00	1	03/30/2022 15:28	WG1840039
(S) o-Terphenyl	56.9		18.0-148		03/30/2022 15:28	WG1840039

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	03/29/2022 22:20	WG1839556
Anthracene	ND		0.00600	1	03/29/2022 22:20	WG1839556
Benzo(a)anthracene	ND		0.00600	1	03/29/2022 22:20	WG1839556
Benzo(b)fluoranthene	ND		0.00600	1	03/29/2022 22:20	WG1839556
Benzo(k)fluoranthene	ND		0.00600	1	03/29/2022 22:20	WG1839556
Benzo(a)pyrene	ND		0.00600	1	03/29/2022 22:20	WG1839556
Chrysene	ND		0.00600	1	03/29/2022 22:20	WG1839556
Dibenz(a,h)anthracene	ND		0.00600	1	03/29/2022 22:20	WG1839556
Fluoranthene	ND		0.00600	1	03/29/2022 22:20	WG1839556
Fluorene	ND		0.00600	1	03/29/2022 22:20	WG1839556
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	03/29/2022 22:20	WG1839556
1-Methylnaphthalene	ND		0.0200	1	03/29/2022 22:20	WG1839556
2-Methylnaphthalene	ND		0.0200	1	03/29/2022 22:20	WG1839556
Naphthalene	ND		0.0200	1	03/29/2022 22:20	WG1839556
Pyrene	ND		0.00600	1	03/29/2022 22:20	WG1839556
(S) p-Terphenyl-d14	88.0		23.0-120		03/29/2022 22:20	WG1839556
(S) Nitrobenzene-d5	71.7		14.0-149		03/29/2022 22:20	WG1839556
(S) 2-Fluorobiphenyl	71.8		34.0-125		03/29/2022 22:20	WG1839556

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3776111-1 03/29/22 11:53

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		10.0	10.0

L1474903-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1474903-05 03/29/22 11:53 • (DUP) R3776111-3 03/29/22 11:53

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	649	661	1	1.83		5

L1475342-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1475342-02 03/29/22 11:53 • (DUP) R3776111-4 03/29/22 11:53

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	967	951	1	1.67		5

Laboratory Control Sample (LCS)

(LCS) R3776111-2 03/29/22 11:53

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	8600	97.7	77.4-123	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3775765-1 03/30/22 12:40

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

L1474804-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1474804-02 03/30/22 13:13 • (DUP) R3775765-3 03/30/22 13:19

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	ND	ND	1	13.9		20

L1474804-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1474804-08 03/30/22 14:00 • (DUP) R3775765-4 03/30/22 14:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	ND	ND	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3775765-2 03/30/22 12:48

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.4	104	80.0-120	

L1474960-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474960-04 03/30/22 14:16 • (MS) R3775765-5 03/30/22 14:21 • (MSD) R3775765-6 03/30/22 14:26

	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	9.92	11.5	49.6	57.7	1	75.0-125	J6	J6	15.1	20

L1474960-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1474960-04 03/30/22 14:16 • (MS) R3775765-7 03/30/22 14:31

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	665	ND	384	57.7	50	75.0-125	J6

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1474761-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1474761-02 03/31/22 16:00 • (DUP) R3776266-2 03/31/22 16:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	6.86	6.84	1	0.292		1

Sample Narrative:

OS: 6.86 at 18.6C

DUP: 6.84 at 18.8C

L1476333-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1476333-02 03/31/22 16:00 • (DUP) R3776266-3 03/31/22 16:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.54	7.51	1	0.399		1

Sample Narrative:

OS: 7.54 at 19.3C

DUP: 7.51 at 18.4C

Laboratory Control Sample (LCS)

(LCS) R3776266-1 03/31/22 16:00

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

Sample Narrative:

LCS: 9.97 at 18.9C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1473573-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1473573-02 03/25/22 12:00 • (DUP) R3774009-2 03/25/22 12:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.84	7.84	1	0.000		1

Sample Narrative:

OS: 7.84 at 20.2C

DUP: 7.84 at 20.2C

Laboratory Control Sample (LCS)

(LCS) R3774009-1 03/25/22 12:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.95	99.5	99.0-101	

Sample Narrative:

LCS: 9.95 at 19C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3775011-1 03/29/22 08:56

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

L1474761-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1474761-02 03/29/22 08:56 • (DUP) R3775011-3 03/29/22 08:56

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	15500	15500	1	0.0645		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3775011-2 03/29/22 08:56

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	265	98.9	85.0-115	

Sample Narrative:

LCS: at 25C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3774554-1 03/28/22 08:25

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

L1474761-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1474761-01 03/28/22 08:25 • (DUP) R3774554-3 03/28/22 08:25

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4950	4920	1	0.608		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1474960-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1474960-05 03/28/22 08:25 • (DUP) R3774554-4 03/28/22 08:25

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	216	195	1	10.4		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3774554-2 03/28/22 08:25

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	270	101	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3774104-1 03/24/22 21:02

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Chloride	U		0.379	1.00
Sulfate	U		0.594	5.00

L1474616-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1474616-09 03/24/22 22:19 • (DUP) R3774104-3 03/24/22 22:32

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	ND	ND	1	0.000		15
Sulfate	ND	ND	1	0.000		15

L1474827-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1474827-05 03/25/22 03:14 • (DUP) R3774104-6 03/25/22 03:27

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	3.43	3.53	1	2.96		15
Sulfate	9.86	10.1	1	2.56		15

Laboratory Control Sample (LCS)

(LCS) R3774104-2 03/24/22 21:15

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Chloride	40.0	39.0	97.4	80.0-120	
Sulfate	40.0	39.6	98.9	80.0-120	

L1474616-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474616-09 03/24/22 22:19 • (MS) R3774104-4 03/24/22 22:45 • (MSD) R3774104-5 03/24/22 22:58

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Chloride	50.0	ND	49.8	51.5	99.5	103	1	80.0-120			3.35	15
Sulfate	50.0	ND	50.6	52.4	101	105	1	80.0-120			3.58	15



L1474827-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1474827-05 03/25/22 03:14 • (MS) R3774104-7 03/25/22 03:40

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50.0	3.43	52.6	98.3	1	80.0-120	
Sulfate	50.0	9.86	58.7	97.7	1	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3774962-1 03/29/22 01:07

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3774962-2 03/29/22 01:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	104	104	80.0-120	
Cadmium	100	99.1	99.1	80.0-120	
Copper	100	99.1	99.1	80.0-120	
Lead	100	102	102	80.0-120	
Nickel	100	104	104	80.0-120	
Selenium	100	101	101	80.0-120	
Silver	20.0	19.5	97.7	80.0-120	
Zinc	100	99.4	99.4	80.0-120	

L1474430-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474430-01 03/29/22 01:12 • (MS) R3774962-5 03/29/22 01:19 • (MSD) R3774962-6 03/29/22 01:22

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	55.9	169	170	113	114	1	75.0-125			1.04	20
Cadmium	100	ND	106	108	106	108	1	75.0-125			1.95	20
Copper	100	10.1	115	119	105	109	1	75.0-125			3.09	20
Lead	100	ND	108	110	108	110	1	75.0-125			1.86	20
Nickel	100	4.68	117	119	112	114	1	75.0-125			1.76	20
Selenium	100	5.28	115	117	110	112	1	75.0-125			1.81	20
Silver	20.0	ND	19.9	20.4	99.6	102	1	75.0-125			2.25	20
Zinc	100	10.3	113	117	103	106	1	75.0-125			2.78	20

Method Blank (MB)

(MB) R3776141-1 03/31/22 11:59

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) R3776141-2 03/31/22 12:01 • (LCSD) R3776141-3 03/31/22 12:04

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	0.970	0.974	97.0	97.4	80.0-120			0.310	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3774881-1 03/28/22 18:03

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) R3774881-2 03/28/22 18:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.1	96.1	80.0-120	

L1474430-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474430-01 03/28/22 18:10 • (MS) R3774881-5 03/28/22 18:20 • (MSD) R3774881-6 03/28/22 18:23

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	ND	95.7	99.7	95.1	99.1	5	75.0-125			4.09	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3777056-1 04/03/22 18:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.000180	0.00200

Laboratory Control Sample (LCS)

(LCS) R3777056-2 04/03/22 18:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	0.0500	0.0486	97.2	80.0-120	

L1477319-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1477319-01 04/03/22 18:35 • (MS) R3777056-4 04/03/22 18:42 • (MSD) R3777056-5 04/03/22 18:45

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	0.0500	0.00200	0.0506	0.0507	97.1	97.3	1	75.0-125			0.213	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3775067-2 03/28/22 18:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	1.29	⬇	0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	97.7			77.0-120

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

(LCS) R3775067-1 03/28/22 16:08 • (LCSD) R3775067-3 03/28/22 18:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	4.65	4.99	84.5	90.7	72.0-127			7.05	20
(S) a,a,a-Trifluorotoluene(FID)				110	113	77.0-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3775589-2 03/29/22 19:31

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	1.15	⬇	0.543	2.50
(S) a,a,a-Trifluorotoluene(FID)	95.6			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3775589-1 03/29/22 15:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.27	95.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			100	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3774625-3 03/26/22 14:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
Ethylbenzene	U		0.000137	0.00100
Xylenes, Total	U		0.000174	0.00300
Naphthalene	U		0.00100	0.00500
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
(S) Toluene-d8	103			80.0-120
(S) 4-Bromofluorobenzene	101			77.0-126
(S) 1,2-Dichloroethane-d4	129			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3774625-1 03/26/22 12:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00493	98.6	70.0-123	
Toluene	0.00500	0.00422	84.4	79.0-120	
Ethylbenzene	0.00500	0.00417	83.4	79.0-123	
Xylenes, Total	0.0150	0.0123	82.0	79.0-123	
Naphthalene	0.00500	0.00242	48.4	54.0-135	J4
1,2,4-Trimethylbenzene	0.00500	0.00452	90.4	76.0-121	
1,3,5-Trimethylbenzene	0.00500	0.00475	95.0	76.0-122	
(S) Toluene-d8			95.9	80.0-120	
(S) 4-Bromofluorobenzene			105	77.0-126	
(S) 1,2-Dichloroethane-d4			124	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3775470-3 03/28/22 17:52

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	114			75.0-131
(S) 4-Bromofluorobenzene	96.6			67.0-138
(S) 1,2-Dichloroethane-d4	102			70.0-130

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

(LCS) R3775470-1 03/28/22 16:34 • (LCSD) R3775470-2 03/28/22 16:53

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	0.0978	0.102	78.2	81.6	70.0-123			4.20	20
Toluene	0.125	0.111	0.117	88.8	93.6	75.0-121			5.26	20
Ethylbenzene	0.125	0.115	0.123	92.0	98.4	74.0-126			6.72	20
Xylenes, Total	0.375	0.344	0.365	91.7	97.3	72.0-127			5.92	20
1,2,4-Trimethylbenzene	0.125	0.0993	0.108	79.4	86.4	70.0-126			8.39	20
1,3,5-Trimethylbenzene	0.125	0.102	0.108	81.6	86.4	73.0-127			5.71	20
(S) Toluene-d8				108	112	75.0-131				
(S) 4-Bromofluorobenzene				96.4	97.6	67.0-138				
(S) 1,2-Dichloroethane-d4				103	103	70.0-130				

L1474761-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474761-03 03/28/22 23:53 • (MS) R3775470-4 03/29/22 00:31 • (MSD) R3775470-5 03/29/22 00:50

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.0378	0.301	0.291	211	203	1	10.0-149	J5	J5	3.38	37
Toluene	0.125	0.168	0.980	0.988	650	656	1	10.0-156	J5	J5	0.813	38
Ethylbenzene	0.125	0.0108	0.184	0.177	139	133	1	10.0-160			3.88	38
Xylenes, Total	0.375	0.207	1.23	1.17	273	257	1	10.0-160	J5	J5	5.00	38
1,2,4-Trimethylbenzene	0.125	0.0181	0.190	0.181	138	130	1	10.0-160			4.85	36
1,3,5-Trimethylbenzene	0.125	0.0185	0.192	0.186	139	134	1	10.0-160			3.17	38
(S) Toluene-d8					109	112		75.0-131				
(S) 4-Bromofluorobenzene					95.8	91.3		67.0-138				
(S) 1,2-Dichloroethane-d4					106	99.6		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3775875-3 03/30/22 17:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Toluene	U		0.00130	0.00500
(S) Toluene-d8	106			75.0-131
(S) 4-Bromofluorobenzene	96.2			67.0-138
(S) 1,2-Dichloroethane-d4	107			70.0-130

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

(LCS) R3775875-1 03/30/22 16:05 • (LCSD) R3775875-2 03/30/22 16:24

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 %
Toluene	0.125	0.134	0.136	107	109	75.0-121			1.48	20
(S) Toluene-d8				106	105	75.0-131				
(S) 4-Bromofluorobenzene				93.1	93.9	67.0-138				
(S) 1,2-Dichloroethane-d4				111	113	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) R3775659-1 03/30/22 12:12

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	57.4			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3775659-2 03/30/22 12:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	33.1	66.2	50.0-150	
(S) o-Terphenyl			72.5	18.0-148	

L1474761-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474761-03 03/30/22 15:28 • (MS) R3775659-3 03/30/22 15:41 • (MSD) R3775659-4 03/30/22 15:54

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.0	7.48	25.7	36.5	37.2	59.0	1	50.0-150	J6	J3	34.7	20
(S) o-Terphenyl					57.3	73.2		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3775374-2 03/29/22 15:23

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	98.6			23.0-120
(S) Nitrobenzene-d5	73.9			14.0-149
(S) 2-Fluorobiphenyl	77.7			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3775374-1 03/29/22 15:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0577	72.1	50.0-120	
Anthracene	0.0800	0.0545	68.1	50.0-126	
Benzo(a)anthracene	0.0800	0.0567	70.9	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0580	72.5	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0569	71.1	49.0-125	
Benzo(a)pyrene	0.0800	0.0442	55.3	42.0-120	
Chrysene	0.0800	0.0604	75.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0565	70.6	47.0-125	
Fluoranthene	0.0800	0.0560	70.0	49.0-129	
Fluorene	0.0800	0.0596	74.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0545	68.1	46.0-125	
1-Methylnaphthalene	0.0800	0.0584	73.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0560	70.0	50.0-120	
Naphthalene	0.0800	0.0570	71.3	50.0-120	
Pyrene	0.0800	0.0598	74.8	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3775374-1 03/29/22 15:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			109	23.0-120	
(S) Nitrobenzene-d5			85.9	14.0-149	
(S) 2-Fluorobiphenyl			88.4	34.0-125	

L1474590-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474590-01 03/29/22 18:21 • (MS) R3775374-3 03/29/22 18:41 • (MSD) R3775374-4 03/29/22 19:01

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Acenaphthene	0.0800	ND	0.0525	0.0491	65.6	61.4	1	14.0-127			6.69	27
Anthracene	0.0800	ND	0.0516	0.0471	64.5	58.9	1	10.0-145			9.12	30
Benzo(a)anthracene	0.0800	ND	0.0591	0.0506	66.9	56.3	1	10.0-139			15.5	30
Benzo(b)fluoranthene	0.0800	0.0121	0.0639	0.0531	64.8	51.3	1	10.0-140			18.5	36
Benzo(k)fluoranthene	0.0800	ND	0.0550	0.0487	63.5	55.6	1	10.0-137			12.2	31
Benzo(a)pyrene	0.0800	0.00723	0.0561	0.0485	61.1	51.6	1	10.0-141			14.5	31
Chrysene	0.0800	0.00746	0.0623	0.0536	68.6	57.7	1	10.0-145			15.0	30
Dibenz(a,h)anthracene	0.0800	ND	0.0501	0.0469	62.6	58.6	1	10.0-132			6.60	31
Fluoranthene	0.0800	0.0149	0.0675	0.0533	65.8	48.0	1	10.0-153			23.5	33
Fluorene	0.0800	ND	0.0546	0.0501	68.3	62.6	1	11.0-130			8.60	29
Indeno(1,2,3-cd)pyrene	0.0800	0.00745	0.0541	0.0473	58.3	49.8	1	10.0-137			13.4	32
1-Methylnaphthalene	0.0800	ND	0.0539	0.0505	67.4	63.1	1	10.0-142			6.51	28
2-Methylnaphthalene	0.0800	ND	0.0519	0.0485	64.9	60.6	1	10.0-137			6.77	28
Naphthalene	0.0800	ND	0.0528	0.0496	66.0	62.0	1	10.0-135			6.25	27
Pyrene	0.0800	0.0139	0.0672	0.0556	66.6	52.1	1	10.0-148			18.9	35
(S) p-Terphenyl-d14					94.6	93.0		23.0-120				
(S) Nitrobenzene-d5					75.7	73.4		14.0-149				
(S) 2-Fluorobiphenyl					79.3	75.7		34.0-125				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

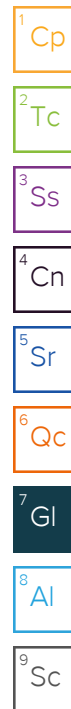
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
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.

