

LEGEND
● Site Location



Project No: 020-022

Map By: NDB

Date: 7/22/2020

Piceance 28-05 General Location
Laramie Energy
Garfield County, Colorado
SWNW Sec 28 T9S R93W
SENE Sec 28 T9S R93W



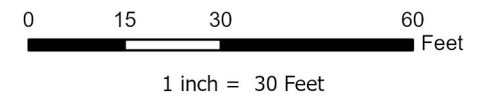
330 Grand Avenue, Unit C
Grand Junction, CO 81501
970-549-1015

Figure
1



LEGEND

● Soil Sample Location  Spill Area



Project No: 020-022

Map By: NDB

Date: 7/22/2020

Piceance 28-05 Spill Response
Laramie Energy
Garfield County, Colorado
SWNW Sec 28 T9S R93W
SEnw Sec 28 T9S R93W



330 Grand Avenue, Unit C
Grand Junction, CO 81501
970-549-1015

Figure

2

Table 1
Piceance 28-05 Spill Response
Soil Sample Summary

LABORATORY DATA SUMMARY								
Sample ID	28-05 SS1	28-05 SS2	28-05 SS3	28-05 SS4	28-05 SS5	28-05 BG1	COGCC TABLE 910-1 CONCENTRATION LEVELS	UNITS
Sample Depth	0-6"	6-12"	12-18"	0-6"	0-6"	24"		
Latitude W	39.25066229	39.25061494	39.25059958	39.25067828	39.25066322	39.245955		
Longitude N	-107.7791154	-107.7791344	-107.7792046	-107.7790966	-107.7790166	-107.77927		
Sample Date	6/18/2020	6/18/2020	6/18/2020	6/30/2020	6/30/2020	6/18/2020		
Sample Type	Grab	Grab	Grab	Grab	Grab	Grab		
Sample Description	Origin of spill	Terminal of Spill	Collected below excavation	Below containment	Below Containment	Soil		
Analytical Parameters								
TPH								
TPH Gasoline Range Organics	ND	0.114	ND	ND	ND	NT	500	mg/kg
TPH Diesel Range Organics	ND	ND	ND	ND	ND	NT		
BTEX								
Benzene	0.00659	0.00289	0.00397	0.000720	ND	NT	0.17	mg/kg
Toluene	0.0143	ND	0.00666	ND	ND	NT	85	mg/kg
Ethylbenzene	0.00329	0.00247	0.00376	ND	ND	NT	100	mg/kg
Total Xylene	0.00907	0.00208	0.00306	ND	ND	NT	175	mg/kg
Metals								
Arsenic	ND	ND	2.59	ND	ND	3.53	0.39	mg/kg
Barium	368	479	154	57.3	110	NT	15,000	mg/kg
Cadmium	ND	ND	ND	ND	ND	NT	70	mg/kg
Chromium	14.3	16.9	20.3	5.39	4.45	NT	NA	mg/kg
Copper	20.4	19.8	21.3	12.0	11.4	NT	3,100	mg/kg
Lead	3.47	7.45	11.3	1.96	2.21	NT	400	mg/kg
Mercury	ND	ND	ND	ND	ND	NT	23	mg/kg
Nickel	43.1	23.5	17.5	28.3	28.4	NT	1,600	mg/kg
Selenium	ND	ND	ND	ND	ND	NT	390	mg/kg
Silver	ND	ND	ND	ND	ND	NT	390	mg/kg
Zinc	36.5	47.0	56.8	19.6	19.4	NT	23,000	mg/kg
SAR Metals Analysis								
Sodium Adsorption Ratio	81.1	11.2	1.12	11.5	67.7	NT	12	ratio
Polynuclear Aromatic Hydrocarbons								
Acenaphthene	ND	ND	ND	ND	ND	NT	1,000	mg/kg
Anthracene	ND	ND	ND	ND	ND	NT	1,000	mg/kg
Benzo(a)anthracene	ND	ND	ND	ND	ND	NT	0.22	mg/kg
Benzo(a)pyrene	ND	ND	ND	ND	ND	NT	0.022	mg/kg
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	NT	0.22	mg/kg
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	NT	2.2	mg/kg
Chrysene	ND	ND	ND	ND	ND	NT	22	mg/kg
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	NT	0.022	mg/kg
Fluoranthene	ND	ND	ND	ND	ND	NT	1,000	mg/kg
Fluorene	ND	ND	ND	ND	ND	NT	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	NT	0.22	mg/kg
Napthalene	ND	ND	ND	ND	ND	NT	23	mg/kg
Pyrene	ND	ND	ND	ND	ND	NT	1,000	mg/kg
General Chemistry								
Chromium, Hexavalent	ND	ND	ND	ND	ND	NT	23	mg/kg
Chromium, Trivalent	14.3	16.9	20.3	5.39	4.45	NT	120,000	mg/kg
Specific Conductivity	3.970	4.550	0.675	1.040	2.580	NT	<4 or 2 x the background	mmhos/cm
pH	8.33	8.04	8.22	8.96	9.37	NT	6-9	su

mg/kg - milligrams per kilogram
mg/L - milligrams per liter
J - indicates an estimated value
mmhos/cm - millimhos per centimeter
mv - millivolts
su - standard units
NA - not applicable
NT - parameter was not tested
ND - not detected above method detection limit

Over COGCC Table 910-1 concentration levels but under BACKGROUND level.
Over COGCC Table 910-1 concentration levels and not within BACKGROUND level.
Over COGCC Table 910-1 concentration levels

June 29, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Entrada Consulting Group

Sample Delivery Group: L1231274
Samples Received: 06/19/2020
Project Number: 020-022
Description: Piceance 28-05 Spill

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

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

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



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



28-05 SS1 L1231274-01 Solid

Collected by
Stuart Hall

Collected date/time
06/18/20 12:10

Received date/time
06/19/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1496590	1	06/26/20 09:10	06/26/20 09:10	TRB	Mt. Juliet, TN
Calculated Results	WG1496509	1	06/22/20 06:24	06/26/20 16:53	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1499053	1	06/25/20 16:00	06/26/20 16:53	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1498662	1	06/25/20 15:00	06/25/20 22:21	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1499219	1	06/26/20 11:38	06/26/20 14:05	SL	Mt. Juliet, TN
Mercury by Method 7471A	WG1496665	1	06/22/20 11:40	06/22/20 20:28	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1496509	1	06/22/20 06:24	06/22/20 21:01	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1500352	1	06/20/20 12:31	06/28/20 18:38	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1497982	1	06/24/20 06:41	06/24/20 18:46	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1498378	1	06/24/20 21:41	06/25/20 10:32	AAT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

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⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

28-05 SS2 L1231274-02 Solid

Collected by
Stuart Hall

Collected date/time
06/18/20 12:15

Received date/time
06/19/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1496590	1	06/26/20 09:12	06/26/20 09:12	TRB	Mt. Juliet, TN
Calculated Results	WG1496509	1	06/22/20 06:24	06/26/20 16:55	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1499053	1	06/25/20 16:00	06/26/20 16:55	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1498662	1	06/25/20 15:00	06/25/20 22:21	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1499219	1	06/26/20 11:38	06/26/20 14:05	SL	Mt. Juliet, TN
Mercury by Method 7471A	WG1496665	1	06/22/20 11:40	06/22/20 20:31	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1496509	1	06/22/20 06:24	06/22/20 21:05	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1500944	1	06/20/20 12:31	06/29/20 11:46	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1497982	1	06/24/20 06:41	06/24/20 18:58	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1498378	1	06/24/20 21:41	06/25/20 10:56	AAT	Mt. Juliet, TN

28-05 SS3 L1231274-03 Solid

Collected by
Stuart Hall

Collected date/time
06/18/20 12:30

Received date/time
06/19/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1496590	1	06/26/20 09:15	06/26/20 09:15	TRB	Mt. Juliet, TN
Calculated Results	WG1496509	1	06/22/20 06:24	06/26/20 16:55	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1499053	1	06/25/20 16:00	06/26/20 16:55	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1498662	1	06/25/20 15:00	06/25/20 22:21	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1499219	1	06/26/20 11:38	06/26/20 14:05	SL	Mt. Juliet, TN
Mercury by Method 7471A	WG1496664	1	06/21/20 20:46	06/22/20 14:09	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1496509	1	06/22/20 06:24	06/22/20 21:08	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1500352	1	06/20/20 12:31	06/28/20 19:20	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1497982	1	06/24/20 06:41	06/26/20 02:33	TH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1498378	1	06/24/20 21:41	06/25/20 11:19	AAT	Mt. Juliet, TN

28-05 BG1 L1231274-04 Solid

Collected by
Stuart Hall

Collected date/time
06/18/20 12:45

Received date/time
06/19/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1497867	1	06/23/20 19:32	06/25/20 04:13	CCE	Mt. Juliet, TN

ACCOUNT:

Entrada Consulting Group

PROJECT:

020-022

SDG:

L1231274

DATE/TIME:

06/29/20 17:27

PAGE:

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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	81.1		1	06/26/2020 09:10	WG1496590

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	14.3		1.00	1	06/26/2020 16:53	WG1496509

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	06/26/2020 16:53	WG1499053

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.33	T8	1	06/25/2020 22:21	WG1498662

Sample Narrative:

L1231274-01 WG1498662: 8.33 at 22.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3970		10.0	1	06/26/2020 14:05	WG1499219

Mercury by Method 7471A

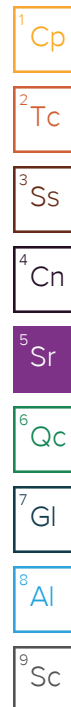
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/22/2020 20:28	WG1496665

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	ND		2.00	1	06/22/2020 21:01	WG1496509
Barium	368		0.500	1	06/22/2020 21:01	WG1496509
Cadmium	ND		0.500	1	06/22/2020 21:01	WG1496509
Chromium	14.3		1.00	1	06/22/2020 21:01	WG1496509
Copper	20.4		2.00	1	06/22/2020 21:01	WG1496509
Lead	3.47		0.500	1	06/22/2020 21:01	WG1496509
Nickel	43.1		2.00	1	06/22/2020 21:01	WG1496509
Selenium	ND		2.00	1	06/22/2020 21:01	WG1496509
Silver	ND		1.00	1	06/22/2020 21:01	WG1496509
Zinc	36.5		5.00	1	06/22/2020 21:01	WG1496509

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00659		0.000500	1	06/28/2020 18:38	WG1500352
Toluene	0.0143		0.00500	1	06/28/2020 18:38	WG1500352
Ethylbenzene	0.00329		0.000500	1	06/28/2020 18:38	WG1500352
Total Xylene	0.00907		0.00150	1	06/28/2020 18:38	WG1500352
TPH (GC/FID) Low Fraction	ND		0.100	1	06/28/2020 18:38	WG1500352





Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	98.1		77.0-120		06/28/2020 18:38	WG1500352
(S) a,a,a-Trifluorotoluene(PID)	97.3		72.0-128		06/28/2020 18:38	WG1500352

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	06/24/2020 18:46	WG1497982
(S) o-Terphenyl	49.8		18.0-148		06/24/2020 18:46	WG1497982

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Acenaphthene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Acenaphthylene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Benzo(a)anthracene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Benzo(a)pyrene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Benzo(b)fluoranthene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Benzo(g,h,i)perylene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Benzo(k)fluoranthene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Chrysene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Dibenz(a,h)anthracene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Fluoranthene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Fluorene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Naphthalene	ND		0.0200	1	06/25/2020 10:32	WG1498378
Phenanthrene	ND		0.00600	1	06/25/2020 10:32	WG1498378
Pyrene	ND		0.00600	1	06/25/2020 10:32	WG1498378
1-Methylnaphthalene	ND		0.0200	1	06/25/2020 10:32	WG1498378
2-Methylnaphthalene	ND		0.0200	1	06/25/2020 10:32	WG1498378
2-Chloronaphthalene	ND		0.0200	1	06/25/2020 10:32	WG1498378
(S) p-Terphenyl-d14	43.6		23.0-120		06/25/2020 10:32	WG1498378
(S) Nitrobenzene-d5	41.4		14.0-149		06/25/2020 10:32	WG1498378
(S) 2-Fluorobiphenyl	39.9		34.0-125		06/25/2020 10:32	WG1498378

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	11.2		1	06/26/2020 09:12	WG1496590

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	16.9		1.00	1	06/26/2020 16:55	WG1496509

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	06/26/2020 16:55	WG1499053

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.04	T8	1	06/25/2020 22:21	WG1498662

Sample Narrative:

L1231274-02 WG1498662: 8.04 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	4550		10.0	1	06/26/2020 14:05	WG1499219

Mercury by Method 7471A

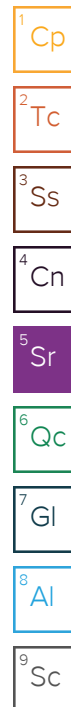
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/22/2020 20:31	WG1496665

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	ND		2.00	1	06/22/2020 21:05	WG1496509
Barium	479		0.500	1	06/22/2020 21:05	WG1496509
Cadmium	ND		0.500	1	06/22/2020 21:05	WG1496509
Chromium	16.9		1.00	1	06/22/2020 21:05	WG1496509
Copper	19.8		2.00	1	06/22/2020 21:05	WG1496509
Lead	7.45		0.500	1	06/22/2020 21:05	WG1496509
Nickel	23.5		2.00	1	06/22/2020 21:05	WG1496509
Selenium	ND		2.00	1	06/22/2020 21:05	WG1496509
Silver	ND		1.00	1	06/22/2020 21:05	WG1496509
Zinc	47.0		5.00	1	06/22/2020 21:05	WG1496509

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00289		0.000500	1	06/29/2020 11:46	WG1500944
Toluene	ND		0.00500	1	06/29/2020 11:46	WG1500944
Ethylbenzene	0.00247		0.000500	1	06/29/2020 11:46	WG1500944
Total Xylene	0.00208		0.00150	1	06/29/2020 11:46	WG1500944
TPH (GC/FID) Low Fraction	0.114		0.100	1	06/29/2020 11:46	WG1500944





Volatile Organic Compounds (GC) by Method 8015/8021

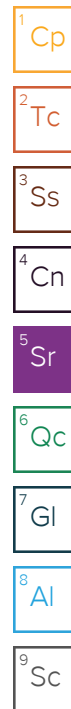
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	86.3		77.0-120		06/29/2020 11:46	WG1500944
(S) a,a,a-Trifluorotoluene(PID)	95.4		72.0-128		06/29/2020 11:46	WG1500944

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	06/24/2020 18:58	WG1497982
(S) o-Terphenyl	52.6		18.0-148		06/24/2020 18:58	WG1497982

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Acenaphthene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Acenaphthylene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Benzo(a)anthracene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Benzo(a)pyrene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Benzo(b)fluoranthene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Benzo(g,h,i)perylene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Benzo(k)fluoranthene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Chrysene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Dibenz(a,h)anthracene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Fluoranthene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Fluorene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Naphthalene	ND		0.0200	1	06/25/2020 10:56	WG1498378
Phenanthrene	ND		0.00600	1	06/25/2020 10:56	WG1498378
Pyrene	ND		0.00600	1	06/25/2020 10:56	WG1498378
1-Methylnaphthalene	ND		0.0200	1	06/25/2020 10:56	WG1498378
2-Methylnaphthalene	ND		0.0200	1	06/25/2020 10:56	WG1498378
2-Chloronaphthalene	ND		0.0200	1	06/25/2020 10:56	WG1498378
(S) p-Terphenyl-d14	69.2		23.0-120		06/25/2020 10:56	WG1498378
(S) Nitrobenzene-d5	70.8		14.0-149		06/25/2020 10:56	WG1498378
(S) 2-Fluorobiphenyl	59.8		34.0-125		06/25/2020 10:56	WG1498378





Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.12		1	06/26/2020 09:15	WG1496590

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	20.3		1.00	1	06/26/2020 16:55	WG1496509

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	06/26/2020 16:55	WG1499053

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.22	T8	1	06/25/2020 22:21	WG1498662

Sample Narrative:

L1231274-03 WG1498662: 8.22 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	675		10.0	1	06/26/2020 14:05	WG1499219

Mercury by Method 7471A

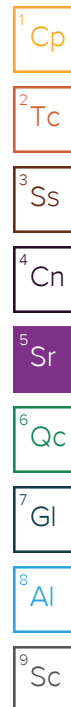
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/22/2020 14:09	WG1496664

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.59		2.00	1	06/22/2020 21:08	WG1496509
Barium	154		0.500	1	06/22/2020 21:08	WG1496509
Cadmium	ND		0.500	1	06/22/2020 21:08	WG1496509
Chromium	20.3		1.00	1	06/22/2020 21:08	WG1496509
Copper	21.3		2.00	1	06/22/2020 21:08	WG1496509
Lead	11.3		0.500	1	06/22/2020 21:08	WG1496509
Nickel	17.5		2.00	1	06/22/2020 21:08	WG1496509
Selenium	ND		2.00	1	06/22/2020 21:08	WG1496509
Silver	ND		1.00	1	06/22/2020 21:08	WG1496509
Zinc	56.8		5.00	1	06/22/2020 21:08	WG1496509

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00397		0.000500	1	06/28/2020 19:20	WG1500352
Toluene	0.00666		0.00500	1	06/28/2020 19:20	WG1500352
Ethylbenzene	0.00376		0.000500	1	06/28/2020 19:20	WG1500352
Total Xylene	0.00306		0.00150	1	06/28/2020 19:20	WG1500352
TPH (GC/FID) Low Fraction	ND		0.100	1	06/28/2020 19:20	WG1500352





Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	97.4		77.0-120		06/28/2020 19:20	WG1500352
(S) a,a,a-Trifluorotoluene(PID)	97.5		72.0-128		06/28/2020 19:20	WG1500352

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	06/26/2020 02:33	WG1497982
(S) o-Terphenyl	67.2		18.0-148		06/26/2020 02:33	WG1497982

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Acenaphthene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Acenaphthylene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Benzo(a)anthracene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Benzo(a)pyrene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Benzo(b)fluoranthene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Benzo(g,h,i)perylene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Benzo(k)fluoranthene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Chrysene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Dibenz(a,h)anthracene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Fluoranthene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Fluorene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Naphthalene	ND		0.0200	1	06/25/2020 11:19	WG1498378
Phenanthrene	ND		0.00600	1	06/25/2020 11:19	WG1498378
Pyrene	ND		0.00600	1	06/25/2020 11:19	WG1498378
1-Methylnaphthalene	ND		0.0200	1	06/25/2020 11:19	WG1498378
2-Methylnaphthalene	ND		0.0200	1	06/25/2020 11:19	WG1498378
2-Chloronaphthalene	ND		0.0200	1	06/25/2020 11:19	WG1498378
(S) p-Terphenyl-d14	57.1		23.0-120		06/25/2020 11:19	WG1498378
(S) Nitrobenzene-d5	50.8		14.0-149		06/25/2020 11:19	WG1498378
(S) 2-Fluorobiphenyl	52.7		34.0-125		06/25/2020 11:19	WG1498378

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.53	B	2.00	1	06/25/2020 04:13	WG1497867

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3543555-1 06/26/20 16:41

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1231274-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1231274-01 06/26/20 16:53 • (DUP) R3543555-7 06/26/20 16:54

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

L1231694-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1231694-02 06/26/20 17:02 • (DUP) R3543555-8 06/26/20 17:04

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

Laboratory Control Sample (LCS)

(LCS) R3543555-2 06/26/20 16:45

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	24.6	102	80.0-120	

L1230982-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230982-10 06/26/20 16:48 • (MS) R3543555-3 06/26/20 16:49 • (MSD) R3543555-4 06/26/20 16:50

	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	%	%		%			%	%
Chromium,Hexavalent	20.0	ND	9.18	9.06	45.9	45.3	1	75.0-125	J6	J6	1.32	20

Sample Narrative:

OS: Sample is a reducer



L1230982-10 Original Sample (OS) • Matrix Spike (MS)

(OS) L1230982-10 06/26/20 16:48 • (MS) R3543555-5 06/26/20 16:50

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chromium,Hexavalent	669	ND	519	77.5	50	75.0-125	

Sample Narrative:
OS: Sample is a reducer

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



L1231139-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1231139-01 06/25/20 22:21 • (DUP) R3543138-2 06/25/20 22:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.41	8.40	1	0.119		1

Sample Narrative:

OS: 8.41 at 24.9C

DUP: 8.4 at 24.6C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1232111-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1232111-02 06/25/20 22:21 • (DUP) R3543138-3 06/25/20 22:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.38	8.38	1	0.000		1

Sample Narrative:

OS: 8.38 at 22.3C

DUP: 8.38 at 22.4C

Laboratory Control Sample (LCS)

(LCS) R3543138-1 06/25/20 22:21

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

Sample Narrative:

LCS: 9.99 at 20.3C

Method Blank (MB)

(MB) R3543429-1 06/26/20 14:05

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1231274-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1231274-01 06/26/20 14:05 • (DUP) R3543429-3 06/26/20 14:05

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3970	3990	1	0.503		20

L1232111-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1232111-01 06/26/20 14:05 • (DUP) R3543429-4 06/26/20 14:05

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	262	269	1	2.75		20

Laboratory Control Sample (LCS)

(LCS) R3543429-2 06/26/20 14:05

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	445	444	99.8	85.0-115	



Method Blank (MB)

(MB) R3541449-1 06/22/20 13:02

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3541449-2 06/22/20 13:05

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.450	90.1	80.0-120	

L1230800-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230800-02 06/22/20 13:07 • (MS) R3541449-3 06/22/20 13:10 • (MSD) R3541449-4 06/22/20 13:13

	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	%	%		%			%	%
Mercury	0.500	ND	0.445	0.442	85.2	84.7	1	75.0-125			0.510	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3541593-1 06/22/20 19:22

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3541593-2 06/22/20 19:24

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.467	93.3	80.0-120	

⁷Gl

⁸Al

⁹Sc

L1230676-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230676-16 06/22/20 19:27 • (MS) R3541593-3 06/22/20 19:29 • (MSD) R3541593-4 06/22/20 19:32

	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	%	%		%			%	%
Mercury	0.500	0.0877	0.611	0.631	105	109	1	75.0-125			3.16	20



Method Blank (MB)

(MB) R3541615-1 06/22/20 19:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
Barium	U		0.240	0.500
Cadmium	U		0.0810	0.500
Chromium	U		0.250	1.00
Copper	U		0.506	2.00
Lead	U		0.208	0.500
Nickel	U		0.490	2.00
Selenium	U		0.617	2.00
Silver	U		0.228	1.00
Zinc	U		0.939	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3541615-2 06/22/20 19:47

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	104	104	80.0-120	
Cadmium	100	98.1	98.1	80.0-120	
Chromium	100	102	102	80.0-120	
Copper	100	99.6	99.6	80.0-120	
Lead	100	99.3	99.3	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	99.8	99.8	80.0-120	
Silver	20.0	18.8	93.8	80.0-120	
Zinc	100	98.3	98.3	80.0-120	

L1230216-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230216-01 06/22/20 19:50 • (MS) R3541615-5 06/22/20 19:58 • (MSD) R3541615-6 06/22/20 20:01

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	99.9	ND	84.6	88.3	84.6	88.3	1	75.0-125			4.26	20
Barium	99.9	36.0	128	139	91.5	103	1	75.0-125			8.44	20
Cadmium	99.9	ND	88.0	91.7	88.0	91.7	1	75.0-125			4.19	20
Chromium	99.9	38.5	122	136	84.0	97.4	1	75.0-125			10.4	20
Copper	99.9	2.33	92.6	96.1	90.2	93.7	1	75.0-125			3.72	20
Lead	99.9	3.35	93.2	97.1	89.9	93.7	1	75.0-125			4.04	20
Nickel	99.9	3.13	97.4	102	94.2	99.0	1	75.0-125			4.73	20



L1230216-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230216-01 06/22/20 19:50 • (MS) R3541615-5 06/22/20 19:58 • (MSD) R3541615-6 06/22/20 20:01

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 %
Selenium	99.9	ND	88.0	92.0	88.0	92.0	1	75.0-125			4.37	20
Silver	20.0	ND	16.8	17.5	84.2	87.3	1	75.0-125			3.67	20
Zinc	99.9	13.9	103	109	89.1	95.4	1	75.0-125			5.90	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3542718-1 06/25/20 03:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	0.569	⬇	0.460	2.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3542718-2 06/25/20 03:10

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

L1230781-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230781-09 06/25/20 03:12 • (MS) R3542718-5 06/25/20 03:20 • (MSD) R3542718-6 06/25/20 03:22

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 %
Arsenic	100	11.9	105	107	93.5	95.3	1	75.0-125			1.62	20

Method Blank (MB)

(MB) R3544074-3 06/28/20 17:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	104			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	102			72.0-128

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3544074-1 06/28/20 15:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0448	89.6	76.0-121	
Toluene	0.0500	0.0474	94.8	80.0-120	
Ethylbenzene	0.0500	0.0478	95.6	80.0-124	
Total Xylene	0.150	0.141	94.0	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			106	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			101	72.0-128	

Laboratory Control Sample (LCS)

(LCS) R3544074-2 06/28/20 16:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.02	109	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			101	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			109	72.0-128	



L1233632-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1233632-04 06/28/20 23:28 • (MS) R3544074-4 06/29/20 01:52 • (MSD) R3544074-5 06/29/20 02:13

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	135	ND	140	147	103	108	25	10.0-151			4.88	28
(S) a,a,a-Trifluorotoluene(FID)					99.3	101		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					108	109		72.0-128				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3544273-3 06/29/20 10:53

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	94.2			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	105			72.0-128

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3544273-1 06/29/20 09:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0500	100	76.0-121	
Toluene	0.0500	0.0517	103	80.0-120	
Ethylbenzene	0.0500	0.0544	109	80.0-124	
Total Xylene	0.150	0.159	106	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			92.5	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			99.1	72.0-128	

Laboratory Control Sample (LCS)

(LCS) R3544273-2 06/29/20 10:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.30	96.4	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			108	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			105	72.0-128	



Method Blank (MB)

(MB) R3542779-1 06/24/20 14:05

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	77.0			18.0-148

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3542779-2 06/24/20 14:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	39.3	78.6	50.0-150	
(S) o-Terphenyl			89.2	18.0-148	

L1230773-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230773-06 06/26/20 02:58 • (MS) R3543426-1 06/26/20 03:11 • (MSD) R3543426-2 06/26/20 03:23

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 %
TPH (GC/FID) High Fraction	49.0	ND	37.3	39.2	70.1	74.1	1	50.0-150			4.97	20
(S) o-Terphenyl					84.3	85.1		18.0-148				

Method Blank (MB)

(MB) R3543031-2 06/25/20 03:35

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	61.2			14.0-149
(S) 2-Fluorobiphenyl	69.3			34.0-125
(S) p-Terphenyl-d14	71.7			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3543031-1 06/25/20 03:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0590	73.8	50.0-126	
Acenaphthene	0.0800	0.0515	64.4	50.0-120	
Acenaphthylene	0.0800	0.0548	68.5	50.0-120	
Benzo(a)anthracene	0.0800	0.0590	73.8	45.0-120	
Benzo(a)pyrene	0.0800	0.0529	66.1	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0583	72.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0568	71.0	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0583	72.9	49.0-125	
Chrysene	0.0800	0.0590	73.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0556	69.5	47.0-125	
Fluoranthene	0.0800	0.0619	77.4	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3543031-1 06/25/20 03:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluorene	0.0800	0.0532	66.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0581	72.6	46.0-125	
Naphthalene	0.0800	0.0507	63.4	50.0-120	
Phenanthrene	0.0800	0.0539	67.4	47.0-120	
Pyrene	0.0800	0.0599	74.9	43.0-123	
1-Methylnaphthalene	0.0800	0.0548	68.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0520	65.0	50.0-120	
2-Chloronaphthalene	0.0800	0.0503	62.9	50.0-120	
(S) Nitrobenzene-d5			65.0	14.0-149	
(S) 2-Fluorobiphenyl			64.7	34.0-125	
(S) p-Terphenyl-d14			70.4	23.0-120	

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

L1231259-22 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1231259-22 06/25/20 08:34 • (MS) R3543031-3 06/25/20 08:58 • (MSD) R3543031-4 06/25/20 09:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Anthracene	0.0780	ND	0.0691	0.0661	88.6	84.3	1	10.0-145			4.44	30
Acenaphthene	0.0780	0.0155	0.0642	0.0590	62.4	55.5	1	14.0-127			8.44	27
Acenaphthylene	0.0780	ND	0.0521	0.0476	66.8	60.7	1	21.0-124			9.03	25
Benzo(a)anthracene	0.0780	ND	0.0589	0.0598	75.5	76.3	1	10.0-139			1.52	30
Benzo(a)pyrene	0.0780	ND	0.0579	0.0585	74.2	74.6	1	10.0-141			1.03	31
Benzo(b)fluoranthene	0.0780	ND	0.0549	0.0589	68.0	72.7	1	10.0-140			7.03	36
Benzo(g,h,i)perylene	0.0780	ND	0.0542	0.0548	66.7	67.2	1	10.0-140			1.10	33
Benzo(k)fluoranthene	0.0780	ND	0.0558	0.0523	71.5	66.7	1	10.0-137			6.48	31
Chrysene	0.0780	ND	0.0563	0.0562	72.2	71.7	1	10.0-145			0.178	30
Dibenz(a,h)anthracene	0.0780	ND	0.0519	0.0524	66.5	66.8	1	10.0-132			0.959	31
Fluoranthene	0.0780	ND	0.0668	0.0646	80.6	77.4	1	10.0-153			3.35	33
Fluorene	0.0780	0.0167	0.0730	0.0690	72.2	66.7	1	11.0-130			5.63	29
Indeno(1,2,3-cd)pyrene	0.0780	ND	0.0539	0.0543	69.1	69.3	1	10.0-137			0.739	32
Naphthalene	0.0780	ND	0.0574	0.0634	55.1	62.5	1	10.0-135			9.93	27
Phenanthrene	0.0780	0.0280	0.0918	0.0841	81.8	71.6	1	10.0-144			8.75	31
Pyrene	0.0780	ND	0.0673	0.0658	81.3	78.9	1	10.0-148			2.25	35
1-Methylnaphthalene	0.0780	ND	0.0647	0.0604	67.1	61.2	1	10.0-142			6.87	28
2-Methylnaphthalene	0.0780	ND	0.0594	0.0539	67.1	59.7	1	10.0-137			9.71	28
2-Chloronaphthalene	0.0780	ND	0.0419	0.0391	53.7	49.9	1	29.0-120			6.91	24
(S) Nitrobenzene-d5					0.000	0.000		14.0-149	J2	J2		
(S) 2-Fluorobiphenyl					61.7	55.9		34.0-125				
(S) p-Terphenyl-d14					62.9	66.3		23.0-120				



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.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
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.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* 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 National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
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}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



[illegible]

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client:	ENTLONGSCO	L1231274	
Cooler Received/Opened On:	6 / 19 / 20	Temperature:	1.3
Received By:	Billy Barras		
Signature:	<i>Billy Barras</i>		
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		✓	
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

July 10, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Entrada Consulting Group

Sample Delivery Group: L1235074

Samples Received: 07/01/2020

Project Number:

Description: Piceance 28-05

Report To:

Stuart Hall

240 Mesa Avenue

Grand Junction, CO 81501

Entire Report Reviewed By:

Chris Ward

Chris Ward

Project Manager

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



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



SB4 L1235074-01 Solid

Collected by
Reed Johnson

Collected date/time
06/30/20 11:45

Received date/time
07/01/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1504075	1	07/08/20 09:28	07/08/20 09:28	EL	Mt. Juliet, TN
Calculated Results	WG1504747	1	07/07/20 08:39	07/09/20 18:14	KPS	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1502658	1	07/07/20 12:01	07/09/20 18:14	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1502648	1	07/02/20 10:24	07/02/20 12:54	JMB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1503023	1	07/02/20 15:59	07/02/20 19:00	LRP	Mt. Juliet, TN
Mercury by Method 7471A	WG1504780	1	07/07/20 07:54	07/07/20 17:40	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1504747	1	07/07/20 08:39	07/07/20 15:10	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1505594	1	07/01/20 20:17	07/08/20 17:31	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1505087	1	07/07/20 17:07	07/08/20 10:03	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1505092	1	07/07/20 16:16	07/07/20 21:32	DMG	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SB5 L1235074-02 Solid

Collected by
Reed Johnson

Collected date/time
06/30/20 12:00

Received date/time
07/01/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1504075	1	07/08/20 09:31	07/08/20 09:31	EL	Mt. Juliet, TN
Calculated Results	WG1504747	1	07/07/20 08:39	07/09/20 18:14	KPS	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1502658	1	07/07/20 12:01	07/09/20 18:14	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1502648	1	07/02/20 10:24	07/02/20 12:54	JMB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1503023	1	07/02/20 15:59	07/02/20 19:00	LRP	Mt. Juliet, TN
Mercury by Method 7471A	WG1504780	1	07/07/20 07:54	07/07/20 17:42	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1504747	1	07/07/20 08:39	07/07/20 15:13	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1505594	1	07/01/20 20:17	07/08/20 17:51	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1505087	1	07/07/20 17:07	07/08/20 10:41	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1505092	1	07/07/20 16:16	07/07/20 21:53	DMG	Mt. Juliet, TN



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	11.5		1	07/08/2020 09:28	WG1504075

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	5.39		1.00	1	07/09/2020 18:14	WG1504747

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	07/09/2020 18:14	WG1502658

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.96	T8	1	07/02/2020 12:54	WG1502648

Sample Narrative:

L1235074-01 WG1502648: 8.96 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1040		10.0	1	07/02/2020 19:00	WG1503023

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	07/07/2020 17:40	WG1504780

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	ND		2.00	1	07/07/2020 15:10	WG1504747
Barium	57.3		0.500	1	07/07/2020 15:10	WG1504747
Cadmium	ND		0.500	1	07/07/2020 15:10	WG1504747
Chromium	5.39		1.00	1	07/07/2020 15:10	WG1504747
Copper	12.0		2.00	1	07/07/2020 15:10	WG1504747
Lead	1.96		0.500	1	07/07/2020 15:10	WG1504747
Nickel	28.3		2.00	1	07/07/2020 15:10	WG1504747
Selenium	ND		2.00	1	07/07/2020 15:10	WG1504747
Silver	ND		1.00	1	07/07/2020 15:10	WG1504747
Zinc	19.6		5.00	1	07/07/2020 15:10	WG1504747

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000720		0.000500	1	07/08/2020 17:31	WG1505594
Toluene	ND		0.00500	1	07/08/2020 17:31	WG1505594
Ethylbenzene	ND		0.000500	1	07/08/2020 17:31	WG1505594
Total Xylene	ND		0.00150	1	07/08/2020 17:31	WG1505594
TPH (GC/FID) Low Fraction	ND		0.100	1	07/08/2020 17:31	WG1505594



Collected date/time: 06/30/20 11:45

L1235074

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	104		77.0-120		07/08/2020 17:31	WG1505594
(S) a,a,a-Trifluorotoluene(PID)	99.6		72.0-128		07/08/2020 17:31	WG1505594

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	07/08/2020 10:03	WG1505087
(S) o-Terphenyl	54.2		18.0-148		07/08/2020 10:03	WG1505087

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Acenaphthene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Acenaphthylene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Benzo(a)anthracene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Benzo(a)pyrene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Benzo(b)fluoranthene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Benzo(g,h,i)perylene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Benzo(k)fluoranthene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Chrysene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Dibenz(a,h)anthracene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Fluoranthene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Fluorene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Naphthalene	ND		0.0200	1	07/07/2020 21:32	WG1505092
Phenanthrene	ND		0.00600	1	07/07/2020 21:32	WG1505092
Pyrene	ND		0.00600	1	07/07/2020 21:32	WG1505092
1-Methylnaphthalene	ND		0.0200	1	07/07/2020 21:32	WG1505092
2-Methylnaphthalene	ND		0.0200	1	07/07/2020 21:32	WG1505092
2-Chloronaphthalene	ND		0.0200	1	07/07/2020 21:32	WG1505092
(S) p-Terphenyl-d14	66.6		23.0-120		07/07/2020 21:32	WG1505092
(S) Nitrobenzene-d5	83.5		14.0-149		07/07/2020 21:32	WG1505092
(S) 2-Fluorobiphenyl	59.7		34.0-125		07/07/2020 21:32	WG1505092



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	67.7		1	07/08/2020 09:31	WG1504075

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	4.45		1.00	1	07/09/2020 18:14	WG1504747

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	07/09/2020 18:14	WG1502658

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.37	T8	1	07/02/2020 12:54	WG1502648

Sample Narrative:

L1235074-02 WG1502648: 9.37 at 22.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2580		10.0	1	07/02/2020 19:00	WG1503023

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	07/07/2020 17:42	WG1504780

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	ND		2.00	1	07/07/2020 15:13	WG1504747
Barium	110		0.500	1	07/07/2020 15:13	WG1504747
Cadmium	ND		0.500	1	07/07/2020 15:13	WG1504747
Chromium	4.45		1.00	1	07/07/2020 15:13	WG1504747
Copper	11.4		2.00	1	07/07/2020 15:13	WG1504747
Lead	2.21		0.500	1	07/07/2020 15:13	WG1504747
Nickel	28.4		2.00	1	07/07/2020 15:13	WG1504747
Selenium	ND		2.00	1	07/07/2020 15:13	WG1504747
Silver	ND		1.00	1	07/07/2020 15:13	WG1504747
Zinc	19.4		5.00	1	07/07/2020 15:13	WG1504747

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	07/08/2020 17:51	WG1505594
Toluene	ND		0.00500	1	07/08/2020 17:51	WG1505594
Ethylbenzene	ND		0.000500	1	07/08/2020 17:51	WG1505594
Total Xylene	ND		0.00150	1	07/08/2020 17:51	WG1505594
TPH (GC/FID) Low Fraction	ND		0.100	1	07/08/2020 17:51	WG1505594



Collected date/time: 06/30/20 12:00

L1235074

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	100		77.0-120		07/08/2020 17:51	WG1505594
(S) a,a,a-Trifluorotoluene(PID)	98.8		72.0-128		07/08/2020 17:51	WG1505594

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	07/08/2020 10:41	WG1505087
(S) o-Terphenyl	65.8		18.0-148		07/08/2020 10:41	WG1505087

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Acenaphthene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Acenaphthylene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Benzo(a)anthracene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Benzo(a)pyrene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Benzo(b)fluoranthene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Benzo(g,h,i)perylene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Benzo(k)fluoranthene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Chrysene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Dibenz(a,h)anthracene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Fluoranthene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Fluorene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Naphthalene	ND		0.0200	1	07/07/2020 21:53	WG1505092
Phenanthrene	ND		0.00600	1	07/07/2020 21:53	WG1505092
Pyrene	ND		0.00600	1	07/07/2020 21:53	WG1505092
1-Methylnaphthalene	ND		0.0200	1	07/07/2020 21:53	WG1505092
2-Methylnaphthalene	ND		0.0200	1	07/07/2020 21:53	WG1505092
2-Chloronaphthalene	ND		0.0200	1	07/07/2020 21:53	WG1505092
(S) p-Terphenyl-d14	62.5		23.0-120		07/07/2020 21:53	WG1505092
(S) Nitrobenzene-d5	82.4		14.0-149		07/07/2020 21:53	WG1505092
(S) 2-Fluorobiphenyl	62.2		34.0-125		07/07/2020 21:53	WG1505092

Method Blank (MB)

(MB) R3548000-1 07/09/20 18:09

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1234757-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1234757-01 07/09/20 18:10 • (DUP) R3548000-3 07/09/20 18:10

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

L1236264-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1236264-01 07/09/20 18:16 • (DUP) R3548000-4 07/09/20 18:17

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

Laboratory Control Sample (LCS)

(LCS) R3548000-2 07/09/20 18:09

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	23.6	98.3	80.0-120	

L1236264-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1236264-02 07/09/20 18:17 • (MS) R3548000-6 07/09/20 18:19 • (MSD) R3548000-5 07/09/20 18:18

	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	%	%		%			%	%
Chromium,Hexavalent	20.0	ND	8.13	7.41	40.7	37.1	1	75.0-125	J6	J6	9.30	20

L1236264-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1236264-02 07/09/20 18:17 • (MS) R3548000-7 07/09/20 18:20

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	688	ND	642	93.3	50	75.0-125	

L1235074-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1235074-01 07/02/20 12:54 • (DUP) R3545552-2 07/02/20 12:54

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.96	8.91	1	0.560		1

Sample Narrative:
OS: 8.96 at 22.7C
DUP: 8.91 at 22.9C

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1235291-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1235291-16 07/02/20 12:54 • (DUP) R3545552-3 07/02/20 12:54

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.77	7.80	1	0.385		1

Sample Narrative:
OS: 7.77 at 22.9C
DUP: 7.8 at 22.7C

Laboratory Control Sample (LCS)

(LCS) R3545552-1 07/02/20 12:54

	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: 10.03 at 22.4C

Method Blank (MB)

(MB) R3545794-1 07/02/20 19:00

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1233888-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1233888-04 07/02/20 19:00 • (DUP) R3545794-3 07/02/20 19:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2660	2690	1	1.31		20

L1233890-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1233890-03 07/02/20 19:00 • (DUP) R3545794-4 07/02/20 19:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3790	3670	1	3.22		20

Laboratory Control Sample (LCS)

(LCS) R3545794-2 07/02/20 19:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	265	98.8	85.0-115	



Method Blank (MB)

(MB) R3547084-1 07/07/20 17:09

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS)

(LCS) R3547084-2 07/07/20 17:11

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.487	97.3	80.0-120	

⁷ Gl

⁸ Al

⁹ Sc

L1236163-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1236163-05 07/07/20 17:14 • (MS) R3547084-3 07/07/20 17:16 • (MSD) R3547084-4 07/07/20 17:18

	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	%	%		%			%	%
Mercury	0.500	0.179	0.548	0.669	73.9	98.1	1	75.0-125	J6		19.8	20

Method Blank (MB)

(MB) R3546889-1 07/07/20 12:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
Barium	U		0.240	0.500
Cadmium	U		0.0810	0.500
Chromium	U		0.250	1.00
Copper	U		0.506	2.00
Lead	U		0.208	0.500
Nickel	U		0.490	2.00
Selenium	U		0.617	2.00
Silver	U		0.228	1.00
Zinc	U		0.939	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3546889-2 07/07/20 12:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.0	96.0	80.0-120	
Barium	100	100	100	80.0-120	
Cadmium	100	94.7	94.7	80.0-120	
Chromium	100	99.0	99.0	80.0-120	
Copper	100	98.1	98.1	80.0-120	
Lead	100	97.4	97.4	80.0-120	
Nickel	100	99.5	99.5	80.0-120	
Selenium	100	95.1	95.1	80.0-120	
Silver	20.0	18.2	91.0	80.0-120	
Zinc	100	96.6	96.6	80.0-120	

L1234967-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1234967-01 07/07/20 12:26 • (MS) R3546889-5 07/07/20 12:34 • (MSD) R3546889-6 07/07/20 13:19

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	99.8	3.81	104	104	99.9	99.9	1	75.0-125			0.00212	20
Barium	99.8	45.8	138	138	92.0	92.6	1	75.0-125			0.453	20
Cadmium	99.8	ND	101	100	101	100	1	75.0-125			1.01	20
Chromium	99.8	9.64	111	112	101	102	1	75.0-125			0.897	20
Copper	99.8	4.24	112	113	108	108	1	75.0-125			0.602	20
Lead	99.8	11.7	111	112	99.4	100	1	75.0-125			0.798	20
Nickel	99.8	3.68	109	109	105	106	1	75.0-125			0.108	20



[L1235074-01,02](#)

L1234967-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1234967-01 07/07/20 12:26 • (MS) R3546889-5 07/07/20 12:34 • (MSD) R3546889-6 07/07/20 13:19

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 %
Selenium	99.8	ND	92.4	90.7	92.4	90.7	1	75.0-125			1.80	20
Silver	20.0	ND	19.8	19.5	99.2	97.3	1	75.0-125			1.93	20
Zinc	99.8	32.0	128	133	96.4	101	1	75.0-125			3.80	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3547488-3 07/08/20 11:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	106			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	102			72.0-128

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3547488-1 07/08/20 10:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0483	96.6	76.0-121	
Toluene	0.0500	0.0517	103	80.0-120	
Ethylbenzene	0.0500	0.0528	106	80.0-124	
Total Xylene	0.150	0.155	103	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			107	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			101	72.0-128	

Laboratory Control Sample (LCS)

(LCS) R3547488-2 07/08/20 10:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.33	96.9	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			94.0	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			104	72.0-128	



L1235074-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1235074-01 07/08/20 17:31 • (MS) R3547488-4 07/08/20 20:36 • (MSD) R3547488-5 07/08/20 20:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.000720	0.0355	0.0382	69.6	75.0	1	10.0-155			7.33	32
Toluene	0.0500	ND	0.0367	0.0399	73.4	79.8	1	10.0-160			8.36	34
Ethylbenzene	0.0500	ND	0.0351	0.0381	70.2	76.2	1	10.0-160			8.20	32
Total Xylene	0.150	ND	0.101	0.111	67.3	74.0	1	10.0-160			9.43	32
(S) a,a,a-Trifluorotoluene(FID)					105	102		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					98.4	98.6		72.0-128				

L1235074-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1235074-01 07/08/20 17:31 • (MS) R3547488-6 07/08/20 21:18 • (MSD) R3547488-7 07/08/20 21:38

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	4.07	4.05	74.0	73.6	1	10.0-151			0.493	28
(S) a,a,a-Trifluorotoluene(FID)					97.3	95.7		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					103	103		72.0-128				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) R3547434-2 07/08/20 09:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	76.3			18.0-148

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3547434-1 07/08/20 09:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	34.6	69.2	50.0-150	
(S) o-Terphenyl			88.4	18.0-148	

Method Blank (MB)

(MB) R3547114-2 07/07/20 19:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	46.8			14.0-149
(S) 2-Fluorobiphenyl	51.0			34.0-125
(S) p-Terphenyl-d14	61.8			23.0-120

1

Cp

2

Tc

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Ss

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Cn

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Sr

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Qc

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Gl

8

Al

9

Sc

Laboratory Control Sample (LCS)

(LCS) R3547114-1 07/07/20 19:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0534	66.8	50.0-126	
Acenaphthene	0.0800	0.0571	71.4	50.0-120	
Acenaphthylene	0.0800	0.0538	67.3	50.0-120	
Benzo(a)anthracene	0.0800	0.0555	69.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0497	62.1	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0514	64.3	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0439	54.9	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0541	67.6	49.0-125	
Chrysene	0.0800	0.0560	70.0	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0459	57.4	47.0-125	
Fluoranthene	0.0800	0.0580	72.5	49.0-129	



Laboratory Control Sample (LCS)

(LCS) R3547114-1 07/07/20 19:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0569	71.1	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0460	57.5	46.0-125	
Naphthalene	0.0800	0.0535	66.9	50.0-120	
Phenanthrene	0.0800	0.0548	68.5	47.0-120	
Pyrene	0.0800	0.0520	65.0	43.0-123	
1-Methylnaphthalene	0.0800	0.0598	74.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0532	66.5	50.0-120	
2-Chloronaphthalene	0.0800	0.0559	69.9	50.0-120	
(S) Nitrobenzene-d5			84.3	14.0-149	
(S) 2-Fluorobiphenyl			70.9	34.0-125	
(S) p-Terphenyl-d14			71.0	23.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1235362-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1235362-06 07/08/20 00:18 • (MS) R3547114-3 07/08/20 00:39 • (MSD) R3547114-4 07/08/20 01:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	ND	0.0417	0.0475	52.1	59.4	1	10.0-145			13.0	30
Acenaphthene	0.0800	ND	0.0416	0.0416	52.0	52.0	1	14.0-127			0.000	27
Acenaphthylene	0.0800	ND	0.0394	0.0391	49.3	48.9	1	21.0-124			0.764	25
Benzo(a)anthracene	0.0800	ND	0.0409	0.0447	51.1	55.9	1	10.0-139			8.88	30
Benzo(a)pyrene	0.0800	ND	0.0395	0.0421	49.4	52.6	1	10.0-141			6.37	31
Benzo(b)fluoranthene	0.0800	ND	0.0352	0.0397	44.0	49.6	1	10.0-140			12.0	36
Benzo(g,h,i)perylene	0.0800	ND	0.0343	0.0378	42.9	47.3	1	10.0-140			9.71	33
Benzo(k)fluoranthene	0.0800	ND	0.0427	0.0457	53.4	57.1	1	10.0-137			6.79	31
Chrysene	0.0800	ND	0.0442	0.0467	55.3	58.4	1	10.0-145			5.50	30
Dibenz(a,h)anthracene	0.0800	ND	0.0368	0.0383	46.0	47.9	1	10.0-132			3.99	31
Fluoranthene	0.0800	ND	0.0430	0.0483	53.8	60.4	1	10.0-153			11.6	33
Fluorene	0.0800	ND	0.0418	0.0445	52.3	55.6	1	11.0-130			6.26	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0359	0.0389	44.9	48.6	1	10.0-137			8.02	32
Naphthalene	0.0800	ND	0.0393	0.0363	49.1	45.4	1	10.0-135			7.94	27
Phenanthrene	0.0800	ND	0.0397	0.0440	49.6	55.0	1	10.0-144			10.3	31
Pyrene	0.0800	ND	0.0408	0.0453	51.0	56.6	1	10.0-148			10.5	35
1-Methylnaphthalene	0.0800	ND	0.0416	0.0413	52.0	51.6	1	10.0-142			0.724	28
2-Methylnaphthalene	0.0800	ND	0.0374	0.0368	46.8	46.0	1	10.0-137			1.62	28
2-Chloronaphthalene	0.0800	ND	0.0397	0.0399	49.6	49.9	1	29.0-120			0.503	24
(S) Nitrobenzene-d5					72.9	88.7		14.0-149				
(S) 2-Fluorobiphenyl					49.4	62.5		34.0-125				
(S) p-Terphenyl-d14					49.8	53.0		23.0-120				



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

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.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* 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 National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
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}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



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Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client:	EATCOALSCO	1295074
Cooler Received/Opened On:	7 / 1 / 20	Temperature: 1.2
Received By: Carol Kemp		
Signature: <i>Carol Kemp</i>		
Receipt Check List	NP	Yes
COC Seal Present / Intact?	/	/
COC Signed / Accurate?		/
Bottles arrive intact?		/
Correct bottles used?		/
Sufficient volume sent?		/
If Applicable		
VOA Zero headspace?		
Preservation Correct / Checked?		