

HRL Compliance Solutions- CO

Sample Delivery Group: L1647297
Samples Received: 08/17/2023
Project Number:
Description: Site Closure
Site: GORDON ENGINEERING FED 9-3
Report To: Noah Geary
2385 F ½ Road
Grand Junction, CO 81505

Entire Report Reviewed By:



Chris Ward
Project Manager

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TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
BKGD 1 L1647297-01	5
BKGD 2 L1647297-02	7
TANK 2 L1647297-03	9
Qc: Quality Control Summary	11
Wet Chemistry by Method 7199	11
Wet Chemistry by Method 9045D	12
Wet Chemistry by Method 9050AMod	13
Metals (ICP) by Method 6010B-NE493 Ch 2	14
Metals (ICPMS) by Method 6020	15
Volatile Organic Compounds (GC) by Method 8015D/GRO	16
Volatile Organic Compounds (GC/MS) by Method 8260B	17
Semi-Volatile Organic Compounds (GC) by Method 8015M	18
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	19
Gl: Glossary of Terms	21
Al: Accreditations & Locations	22
Sc: Sample Chain of Custody	23



SAMPLE SUMMARY

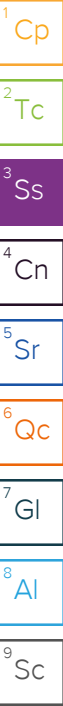
BKGD 1 L1647297-01 Solid

Collected by
N. Geary

Collected date/time
08/14/23 12:30

Received date/time
08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2117695	1	08/24/23 10:47	08/24/23 10:47	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2116612	1	08/18/23 10:45	08/23/23 18:52	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2116585	1	08/18/23 15:07	08/19/23 14:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2116693	1	08/18/23 15:00	08/18/23 17:06	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2117697	1	08/20/23 20:48	08/24/23 09:59	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2117158	5	08/19/23 16:52	08/24/23 21:03	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2119974	1	08/21/23 11:44	08/24/23 04:37	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2118365	1	08/21/23 11:44	08/22/23 01:03	KSD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2118456	1	08/22/23 16:27	08/23/23 00:27	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2118486	1	08/23/23 06:39	08/23/23 18:16	AMM	Mt. Juliet, TN



BKGD 2 L1647297-02 Solid

Collected by
N. Geary

Collected date/time
08/14/23 12:45

Received date/time
08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2117695	1	08/24/23 10:50	08/24/23 10:50	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2116612	1	08/18/23 10:45	08/23/23 18:57	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2116585	1	08/18/23 15:07	08/19/23 14:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2116693	1	08/18/23 15:00	08/18/23 17:06	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2117697	1	08/20/23 20:48	08/24/23 10:01	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2117158	5	08/19/23 16:52	08/24/23 21:07	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2119974	1	08/21/23 11:44	08/24/23 05:01	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2118365	1	08/21/23 11:44	08/22/23 01:23	KSD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2118456	1	08/22/23 16:27	08/23/23 01:07	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2118486	1	08/23/23 06:39	08/23/23 21:53	AMM	Mt. Juliet, TN

TANK 2 L1647297-03 Solid

Collected by
N. Geary

Collected date/time
08/14/23 11:30

Received date/time
08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2117695	1	08/24/23 10:53	08/24/23 10:53	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2116612	1	08/18/23 10:45	08/23/23 19:02	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2116585	1	08/18/23 15:07	08/19/23 14:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2116693	1	08/18/23 15:00	08/18/23 17:06	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2117697	1	08/20/23 20:48	08/24/23 10:04	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2117158	5	08/19/23 16:52	08/24/23 21:10	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2119974	1	08/21/23 11:44	08/24/23 05:26	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2118365	1	08/21/23 11:44	08/22/23 01:42	KSD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2118456	1	08/22/23 16:27	08/23/23 00:41	KAP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2118486	1	08/23/23 06:39	08/23/23 18:36	AMM	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.23		1	08/24/2023 10:47	WG2117695

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	08/23/2023 18:52	WG2116612

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.13	T8	1	08/19/2023 14:50	WG2116585

Sample Narrative:

L1647297-01 WG2116585: 9.13 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	281		10.0	1	08/18/2023 17:06	WG2116693

Sample Narrative:

L1647297-01 WG2116693: at 25C

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.292		0.0167	0.200	1	08/24/2023 09:59	WG2117697

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.98		0.100	1.00	5	08/24/2023 21:03	WG2117158
Barium	55.6		0.152	2.50	5	08/24/2023 21:03	WG2117158
Cadmium	0.393	J	0.0855	1.00	5	08/24/2023 21:03	WG2117158
Copper	9.40		0.132	5.00	5	08/24/2023 21:03	WG2117158
Lead	12.0		0.0990	2.00	5	08/24/2023 21:03	WG2117158
Nickel	13.6		0.197	2.50	5	08/24/2023 21:03	WG2117158
Selenium	0.606	J	0.180	2.50	5	08/24/2023 21:03	WG2117158
Silver	U		0.0865	0.500	5	08/24/2023 21:03	WG2117158
Zinc	49.7		0.740	25.0	5	08/24/2023 21:03	WG2117158

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0798	J J3	0.0217	0.100	1	08/24/2023 04:37	WG2119974
(S) a,a,a-Trifluorotoluene(FID)	97.1			77.0-120		08/24/2023 04:37	WG2119974

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	08/22/2023 01:03	WG2118365
Toluene	U		0.00130	0.00500	1	08/22/2023 01:03	WG2118365
Ethylbenzene	U		0.000737	0.00250	1	08/22/2023 01:03	WG2118365
Xylenes, Total	U		0.000880	0.00650	1	08/22/2023 01:03	WG2118365
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/22/2023 01:03	WG2118365
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/22/2023 01:03	WG2118365
(S) Toluene-d8	104			75.0-131		08/22/2023 01:03	WG2118365
(S) 4-Bromofluorobenzene	91.6			67.0-138		08/22/2023 01:03	WG2118365
(S) 1,2-Dichloroethane-d4	99.9			70.0-130		08/22/2023 01:03	WG2118365

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.65		1.61	4.00	1	08/23/2023 00:27	WG2118456
C28-C36 Motor Oil Range	9.43		0.274	4.00	1	08/23/2023 00:27	WG2118456
(S) o-Terphenyl	61.9			18.0-148		08/23/2023 00:27	WG2118456

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	08/23/2023 18:16	WG2118486
Acenaphthene	U		0.00209	0.00600	1	08/23/2023 18:16	WG2118486
Acenaphthylene	U		0.00216	0.00600	1	08/23/2023 18:16	WG2118486
Benzo(a)anthracene	U		0.00173	0.00600	1	08/23/2023 18:16	WG2118486
Benzo(a)pyrene	U		0.00179	0.00600	1	08/23/2023 18:16	WG2118486
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/23/2023 18:16	WG2118486
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	08/23/2023 18:16	WG2118486
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/23/2023 18:16	WG2118486
Chrysene	U		0.00232	0.00600	1	08/23/2023 18:16	WG2118486
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/23/2023 18:16	WG2118486
Fluoranthene	U		0.00227	0.00600	1	08/23/2023 18:16	WG2118486
Fluorene	U		0.00205	0.00600	1	08/23/2023 18:16	WG2118486
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/23/2023 18:16	WG2118486
Naphthalene	U		0.00408	0.0200	1	08/23/2023 18:16	WG2118486
Phenanthrene	U		0.00231	0.00600	1	08/23/2023 18:16	WG2118486
Pyrene	U		0.00200	0.00600	1	08/23/2023 18:16	WG2118486
1-Methylnaphthalene	U		0.00449	0.0200	1	08/23/2023 18:16	WG2118486
2-Methylnaphthalene	U		0.00427	0.0200	1	08/23/2023 18:16	WG2118486
2-Chloronaphthalene	U		0.00466	0.0200	1	08/23/2023 18:16	WG2118486
(S) p-Terphenyl-d14	59.3			23.0-120		08/23/2023 18:16	WG2118486
(S) Nitrobenzene-d5	82.7			14.0-149		08/23/2023 18:16	WG2118486
(S) 2-Fluorobiphenyl	57.6			34.0-125		08/23/2023 18:16	WG2118486

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	4.20		1	08/24/2023 10:50	WG2117695

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	08/23/2023 18:57	WG2116612

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.72	T8	1	08/19/2023 14:50	WG2116585

Sample Narrative:

L1647297-02 WG2116585: 8.72 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	542		10.0	1	08/18/2023 17:06	WG2116693

Sample Narrative:

L1647297-02 WG2116693: at 25C

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

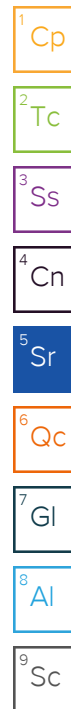
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.360		0.0167	0.200	1	08/24/2023 10:01	WG2117697

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.15		0.100	1.00	5	08/24/2023 21:07	WG2117158
Barium	73.8		0.152	2.50	5	08/24/2023 21:07	WG2117158
Cadmium	0.275	J	0.0855	1.00	5	08/24/2023 21:07	WG2117158
Copper	8.28		0.132	5.00	5	08/24/2023 21:07	WG2117158
Lead	16.1		0.0990	2.00	5	08/24/2023 21:07	WG2117158
Nickel	10.7		0.197	2.50	5	08/24/2023 21:07	WG2117158
Selenium	0.572	J	0.180	2.50	5	08/24/2023 21:07	WG2117158
Silver	0.0938	J	0.0865	0.500	5	08/24/2023 21:07	WG2117158
Zinc	51.3		0.740	25.0	5	08/24/2023 21:07	WG2117158

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0238	J J3	0.0217	0.100	1	08/24/2023 05:01	WG2119974
(S) a,a,a-Trifluorotoluene(FID)	98.6			77.0-120		08/24/2023 05:01	WG2119974



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	08/22/2023 01:23	WG2118365
Toluene	0.00155	J	0.00130	0.00500	1	08/22/2023 01:23	WG2118365
Ethylbenzene	U		0.000737	0.00250	1	08/22/2023 01:23	WG2118365
Xylenes, Total	U		0.000880	0.00650	1	08/22/2023 01:23	WG2118365
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/22/2023 01:23	WG2118365
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/22/2023 01:23	WG2118365
(S) Toluene-d8	102			75.0-131		08/22/2023 01:23	WG2118365
(S) 4-Bromofluorobenzene	92.9			67.0-138		08/22/2023 01:23	WG2118365
(S) 1,2-Dichloroethane-d4	97.4			70.0-130		08/22/2023 01:23	WG2118365

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	3.86	J	1.61	4.00	1	08/23/2023 01:07	WG2118456
C28-C36 Motor Oil Range	11.8		0.274	4.00	1	08/23/2023 01:07	WG2118456
(S) o-Terphenyl	55.5			18.0-148		08/23/2023 01:07	WG2118456

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	08/23/2023 21:53	WG2118486
Acenaphthene	U		0.00209	0.00600	1	08/23/2023 21:53	WG2118486
Acenaphthylene	U		0.00216	0.00600	1	08/23/2023 21:53	WG2118486
Benzo(a)anthracene	U		0.00173	0.00600	1	08/23/2023 21:53	WG2118486
Benzo(a)pyrene	U		0.00179	0.00600	1	08/23/2023 21:53	WG2118486
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/23/2023 21:53	WG2118486
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	08/23/2023 21:53	WG2118486
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/23/2023 21:53	WG2118486
Chrysene	U		0.00232	0.00600	1	08/23/2023 21:53	WG2118486
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/23/2023 21:53	WG2118486
Fluoranthene	U		0.00227	0.00600	1	08/23/2023 21:53	WG2118486
Fluorene	U		0.00205	0.00600	1	08/23/2023 21:53	WG2118486
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/23/2023 21:53	WG2118486
Naphthalene	U		0.00408	0.0200	1	08/23/2023 21:53	WG2118486
Phenanthrene	U		0.00231	0.00600	1	08/23/2023 21:53	WG2118486
Pyrene	U		0.00200	0.00600	1	08/23/2023 21:53	WG2118486
1-Methylnaphthalene	U		0.00449	0.0200	1	08/23/2023 21:53	WG2118486
2-Methylnaphthalene	U		0.00427	0.0200	1	08/23/2023 21:53	WG2118486
2-Chloronaphthalene	U		0.00466	0.0200	1	08/23/2023 21:53	WG2118486
(S) p-Terphenyl-d14	73.4			23.0-120		08/23/2023 21:53	WG2118486
(S) Nitrobenzene-d5	95.2			14.0-149		08/23/2023 21:53	WG2118486
(S) 2-Fluorobiphenyl	70.9			34.0-125		08/23/2023 21:53	WG2118486

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

TANK 2

Collected date/time: 08/14/23 11:30

SAMPLE RESULTS - 03

L1647297

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	8.01		1	08/24/2023 10:53	WG2117695

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	08/23/2023 19:02	WG2116612

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.00	T8	1	08/19/2023 14:50	WG2116585

Sample Narrative:

L1647297-03 WG2116585: 9 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	146		10.0	1	08/18/2023 17:06	WG2116693

Sample Narrative:

L1647297-03 WG2116693: at 25C

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

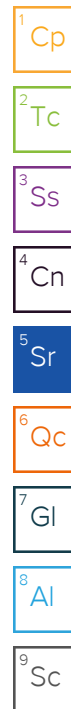
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.396		0.0167	0.200	1	08/24/2023 10:04	WG2117697

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.06		0.100	1.00	5	08/24/2023 21:10	WG2117158
Barium	103		0.152	2.50	5	08/24/2023 21:10	WG2117158
Cadmium	0.354	J	0.0855	1.00	5	08/24/2023 21:10	WG2117158
Copper	8.69		0.132	5.00	5	08/24/2023 21:10	WG2117158
Lead	12.6		0.0990	2.00	5	08/24/2023 21:10	WG2117158
Nickel	14.5		0.197	2.50	5	08/24/2023 21:10	WG2117158
Selenium	0.535	J	0.180	2.50	5	08/24/2023 21:10	WG2117158
Silver	U		0.0865	0.500	5	08/24/2023 21:10	WG2117158
Zinc	57.6		0.740	25.0	5	08/24/2023 21:10	WG2117158

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0597	J J3	0.0217	0.100	1	08/24/2023 05:26	WG2119974
(S) a,a,a-Trifluorotoluene(FID)	97.4			77.0-120		08/24/2023 05:26	WG2119974



TANK 2

Collected date/time: 08/14/23 11:30

SAMPLE RESULTS - 03

L1647297

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	08/22/2023 01:42	WG2118365
Toluene	0.00145	J	0.00130	0.00500	1	08/22/2023 01:42	WG2118365
Ethylbenzene	U		0.000737	0.00250	1	08/22/2023 01:42	WG2118365
Xylenes, Total	U		0.000880	0.00650	1	08/22/2023 01:42	WG2118365
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/22/2023 01:42	WG2118365
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/22/2023 01:42	WG2118365
(S) Toluene-d8	104			75.0-131		08/22/2023 01:42	WG2118365
(S) 4-Bromofluorobenzene	93.4			67.0-138		08/22/2023 01:42	WG2118365
(S) 1,2-Dichloroethane-d4	101			70.0-130		08/22/2023 01:42	WG2118365

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	5.39		1.61	4.00	1	08/23/2023 00:41	WG2118456
C28-C36 Motor Oil Range	7.86		0.274	4.00	1	08/23/2023 00:41	WG2118456
(S) o-Terphenyl	56.0			18.0-148		08/23/2023 00:41	WG2118456

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	08/23/2023 18:36	WG2118486
Acenaphthene	U		0.00209	0.00600	1	08/23/2023 18:36	WG2118486
Acenaphthylene	U		0.00216	0.00600	1	08/23/2023 18:36	WG2118486
Benzo(a)anthracene	U		0.00173	0.00600	1	08/23/2023 18:36	WG2118486
Benzo(a)pyrene	U		0.00179	0.00600	1	08/23/2023 18:36	WG2118486
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/23/2023 18:36	WG2118486
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	08/23/2023 18:36	WG2118486
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/23/2023 18:36	WG2118486
Chrysene	U		0.00232	0.00600	1	08/23/2023 18:36	WG2118486
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/23/2023 18:36	WG2118486
Fluoranthene	U		0.00227	0.00600	1	08/23/2023 18:36	WG2118486
Fluorene	U		0.00205	0.00600	1	08/23/2023 18:36	WG2118486
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/23/2023 18:36	WG2118486
Naphthalene	U		0.00408	0.0200	1	08/23/2023 18:36	WG2118486
Phenanthrene	U		0.00231	0.00600	1	08/23/2023 18:36	WG2118486
Pyrene	U		0.00200	0.00600	1	08/23/2023 18:36	WG2118486
1-Methylnaphthalene	U		0.00449	0.0200	1	08/23/2023 18:36	WG2118486
2-Methylnaphthalene	U		0.00427	0.0200	1	08/23/2023 18:36	WG2118486
2-Chloronaphthalene	U		0.00466	0.0200	1	08/23/2023 18:36	WG2118486
(S) p-Terphenyl-d14	61.8			23.0-120		08/23/2023 18:36	WG2118486
(S) Nitrobenzene-d5	86.6			14.0-149		08/23/2023 18:36	WG2118486
(S) 2-Fluorobiphenyl	61.5			34.0-125		08/23/2023 18:36	WG2118486

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3964698-1 08/23/23 16:19

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

L1647175-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1647175-01 08/23/23 16:32 • (DUP) R3964698-3 08/23/23 16:37

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	0.641	0.892	1	32.8	J P1	20

L1647175-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1647175-11 08/23/23 17:39 • (DUP) R3964698-4 08/23/23 17:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	0.592	0.972	1	48.6	J P1	20

Laboratory Control Sample (LCS)

(LCS) R3964698-2 08/23/23 16:26

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	11.0	110	80.0-120	

L1647175-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647175-13 08/23/23 17:55 • (MS) R3964698-5 08/23/23 18:00 • (MSD) R3964698-6 08/23/23 18:05

	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	0.925	19.9	19.3	94.7	91.8	1	75.0-125			3.00	20

L1647175-13 Original Sample (OS) • Matrix Spike (MS)

(OS) L1647175-13 08/23/23 17:55 • (MS) R3964698-7 08/23/23 18:10

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	643	0.925	698	109	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1645741-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1645741-01 08/19/23 14:50 • (DUP) R3962879-2 08/19/23 14:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	9.43	9.44	1	0.106		1

Sample Narrative:

OS: 9.43 at 21C

DUP: 9.44 at 21C

L1646892-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1646892-02 08/19/23 14:50 • (DUP) R3962879-3 08/19/23 14:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	5.04	5.04	1	0.000		1

Sample Narrative:

OS: 5.04 at 20.9C

DUP: 5.04 at 20.8C

Laboratory Control Sample (LCS)

(LCS) R3962879-1 08/19/23 14:50

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

Sample Narrative:

LCS: 10.01 at 21C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3962785-1 08/18/23 17:06

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

L1647546-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1647546-05 08/18/23 17:06 • (DUP) R3962785-3 08/18/23 17:06

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2250	2280	1	1.19		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1647549-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1647549-01 08/18/23 17:06 • (DUP) R3962785-4 08/18/23 17:06

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	6330	6390	1	0.943		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3962785-2 08/18/23 17:06

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	744	102	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3964879-1 08/24/23 10:13

Analyte	MB Result mg/l	<u>MB Qualifier</u>	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) R3964879-2 08/24/23 10:15 • (LCSD) R3964879-3 08/24/23 10:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.04	1.03	104	103	80.0-120			0.601	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3965242-1 08/24/23 20:40

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3965242-2 08/24/23 20:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	101	101	80.0-120	
Barium	100	97.6	97.6	80.0-120	
Cadmium	100	98.3	98.3	80.0-120	
Copper	100	90.9	90.9	80.0-120	
Lead	100	100	100	80.0-120	
Nickel	100	98.3	98.3	80.0-120	
Selenium	100	103	103	80.0-120	
Silver	20.0	19.5	97.5	80.0-120	
Zinc	100	94.9	94.9	80.0-120	

⁷Gl

⁸Al

⁹Sc

L1646994-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1646994-01 08/24/23 20:47 • (MS) R3965242-5 08/24/23 20:57 • (MSD) R3965242-6 08/24/23 21:00

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 %
Arsenic	100	4.07	92.3	89.9	88.2	85.9	5	75.0-125			2.62	20
Barium	100	239	320	333	81.2	94.2	5	75.0-125			3.95	20
Cadmium	100	0.243	92.4	90.6	92.2	90.4	5	75.0-125			2.00	20
Copper	100	10.2	93.8	93.1	83.6	82.9	5	75.0-125			0.778	20
Lead	100	13.4	105	106	91.6	92.3	5	75.0-125			0.679	20
Nickel	100	14.5	101	97.0	86.7	82.5	5	75.0-125			4.29	20
Selenium	100	0.463	98.6	96.1	98.1	95.6	5	75.0-125			2.55	20
Silver	20.0	U	18.3	18.1	91.3	90.5	5	75.0-125			0.912	20
Zinc	100	55.1	138	135	82.7	79.6	5	75.0-125			2.31	20

Method Blank (MB)

(MB) R3964929-3 08/24/23 02:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	99.3			77.0-120

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

(LCS) R3964929-1 08/24/23 00:58 • (LCSD) R3964929-2 08/24/23 01:23

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	6.64	4.22	121	76.7	72.0-127		J3	44.6	20
(S) a,a,a-Trifluorotoluene(FID)				105	105	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) R3964031-3 08/21/23 19:23

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	102			75.0-131
(S) 4-Bromofluorobenzene	97.7			67.0-138
(S) 1,2-Dichloroethane-d4	104			70.0-130

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

(LCS) R3964031-1 08/21/23 16:06 • (LCSD) R3964031-2 08/21/23 17:57

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	0.128	0.134	102	107	70.0-123			4.58	20
Toluene	0.125	0.119	0.121	95.2	96.8	75.0-121			1.67	20
Ethylbenzene	0.125	0.117	0.116	93.6	92.8	74.0-126			0.858	20
Xylenes, Total	0.375	0.339	0.347	90.4	92.5	72.0-127			2.33	20
1,2,4-Trimethylbenzene	0.125	0.132	0.130	106	104	70.0-126			1.53	20
1,3,5-Trimethylbenzene	0.125	0.131	0.127	105	102	73.0-127			3.10	20
(S) Toluene-d8				98.5	95.4	75.0-131				
(S) 4-Bromofluorobenzene				90.6	90.2	67.0-138				
(S) 1,2-Dichloroethane-d4				105	106	70.0-130				

L1646888-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1646888-01 08/21/23 21:06 • (MS) R3964031-4 08/22/23 03:02 • (MSD) R3964031-5 08/22/23 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 %
Benzene	0.125	U	0.153	0.154	122	123	1	10.0-149			0.651	37
Toluene	0.125	U	0.142	0.146	114	117	1	10.0-156			2.78	38
Ethylbenzene	0.125	U	0.138	0.139	110	111	1	10.0-160			0.722	38
Xylenes, Total	0.375	U	0.411	0.398	110	106	1	10.0-160			3.21	38
1,2,4-Trimethylbenzene	0.125	U	0.147	0.148	118	118	1	10.0-160			0.678	36
1,3,5-Trimethylbenzene	0.125	U	0.152	0.151	122	121	1	10.0-160			0.660	38
(S) Toluene-d8					95.8	100		75.0-131				
(S) 4-Bromofluorobenzene					92.1	95.2		67.0-138				
(S) 1,2-Dichloroethane-d4					99.6	104		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3964198-1 08/22/23 22:42

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

Laboratory Control Sample (LCS)

(LCS) R3964198-2 08/22/23 22:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	27.6	55.2	50.0-150	
(S) o-Terphenyl			57.2	18.0-148	

L1647241-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647241-01 08/23/23 02:26 • (MS) R3964198-3 08/23/23 02:39 • (MSD) R3964198-4 08/23/23 02:52

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	48.9	1600	2360	2560	1550	2010	25	50.0-150	V	V	8.13	20
(S) o-Terphenyl					0.000	0.000		18.0-148	J7	J7		

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3964895-2 08/23/23 16:18

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) p-Terphenyl-d14	65.3			23.0-120
(S) Nitrobenzene-d5	92.2			14.0-149
(S) 2-Fluorobiphenyl	63.3			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3964895-1 08/23/23 15:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0690	86.3	50.0-126	
Acenaphthene	0.0800	0.0695	86.9	50.0-120	
Acenaphthylene	0.0800	0.0748	93.5	50.0-120	
Benzo(a)anthracene	0.0800	0.0807	101	45.0-120	
Benzo(a)pyrene	0.0800	0.0712	89.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0758	94.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0668	83.5	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0678	84.8	49.0-125	
Chrysene	0.0800	0.0758	94.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0737	92.1	47.0-125	
Fluoranthene	0.0800	0.0739	92.4	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3964895-1 08/23/23 15:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0758	94.8	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0833	104	46.0-125	
Naphthalene	0.0800	0.0720	90.0	50.0-120	
Phenanthrene	0.0800	0.0686	85.8	47.0-120	
Pyrene	0.0800	0.0755	94.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0719	89.9	51.0-121	
2-Methylnaphthalene	0.0800	0.0746	93.3	50.0-120	
2-Chloronaphthalene	0.0800	0.0659	82.4	50.0-120	
(S) p-Terphenyl-d14			87.2	23.0-120	
(S) Nitrobenzene-d5			125	14.0-149	
(S) 2-Fluorobiphenyl			84.8	34.0-125	

L1647329-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647329-02 08/23/23 19:35 • (MS) R3964895-3 08/23/23 19:54 • (MSD) R3964895-4 08/23/23 20:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	0.0119	0.0599	0.0516	60.0	52.5	1	10.0-145			14.9	30
Acenaphthene	0.0800	0.00475	0.0632	0.0540	73.1	65.1	1	14.0-127			15.7	27
Acenaphthylene	0.0800	U	0.0659	0.0566	82.4	74.9	1	21.0-124			15.2	25
Benzo(a)anthracene	0.0800	0.0324	0.0711	0.0616	48.4	38.6	1	10.0-139			14.3	30
Benzo(a)pyrene	0.0800	0.0262	0.0716	0.0624	56.8	47.9	1	10.0-141			13.7	31
Benzo(b)fluoranthene	0.0800	0.0355	0.0688	0.0591	41.6	31.2	1	10.0-140			15.2	36
Benzo(g,h,i)perylene	0.0800	0.0169	0.0638	0.0562	58.6	52.0	1	10.0-140			12.7	33
Benzo(k)fluoranthene	0.0800	0.0111	0.0660	0.0584	68.6	62.6	1	10.0-137			12.2	31
Chrysene	0.0800	0.0274	0.0710	0.0633	54.5	47.5	1	10.0-145			11.5	30
Dibenz(a,h)anthracene	0.0800	0.00456	0.0724	0.0641	84.8	78.8	1	10.0-132			12.2	31
Fluoranthene	0.0800	0.0605	0.0646	0.0558	5.12	0.000	1	10.0-153	J6	J6	14.6	33
Fluorene	0.0800	0.00633	0.0676	0.0579	76.6	68.2	1	11.0-130			15.5	29
Indeno(1,2,3-cd)pyrene	0.0800	0.0185	0.0762	0.0655	72.1	62.2	1	10.0-137			15.1	32
Naphthalene	0.0800	0.00544	0.0682	0.0588	78.5	70.6	1	10.0-135			14.8	27
Phenanthrene	0.0800	0.0571	0.0609	0.0532	4.75	0.000	1	10.0-144	J6	J6	13.5	31
Pyrene	0.0800	0.0514	0.0675	0.0582	20.1	8.99	1	10.0-148		J6	14.8	35
1-Methylnaphthalene	0.0800	U	0.0667	0.0577	80.5	73.3	1	10.0-142			14.5	28
2-Methylnaphthalene	0.0800	U	0.0682	0.0594	81.3	74.4	1	10.0-137			13.8	28
2-Chloronaphthalene	0.0800	U	0.0609	0.0518	76.0	68.4	1	29.0-120			16.1	24
(S) p-Terphenyl-d14					90.5	76.5		23.0-120				
(S) Nitrobenzene-d5					129	110		14.0-149				
(S) 2-Fluorobiphenyl					91.4	79.7		34.0-125				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

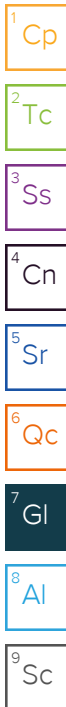
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



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.



