


October 04, 2018

Utah Gas Corporation

Sample Delivery Group: L1028992
Samples Received: 09/26/2018
Project Number:
Description: MFS Federal 8-1
Site: MFS FEDERAL 8-1
Report To: Mr. Steve Hale
1125 Escalante Drive
Rangely, CO 81648

Entire Report Reviewed By:



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 National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



SS-A L1028992-01 Solid

Collected by
Charlie Jensen

Collected date/time
09/24/18 10:45

Received date/time
09/26/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1174113	1	09/27/18 09:28	10/02/18 09:10	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1172591	10	10/03/18 07:32	10/03/18 13:46	KME
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1172566	1	09/30/18 13:44	10/01/18 08:00	JNJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1172566	10	09/30/18 13:44	10/01/18 15:43	JNJ

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

SS-B L1028992-02 Solid

Collected by
Charlie Jensen

Collected date/time
09/24/18 10:50

Received date/time
09/26/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1174113	1	09/27/18 09:28	10/02/18 11:35	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1172591	10	10/03/18 07:32	10/03/18 14:22	KME
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1172566	1	09/30/18 13:44	10/01/18 08:47	JNJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1172566	10	09/30/18 13:44	10/01/18 16:07	JNJ

SS-C L1028992-03 Solid

Collected by
Charlie Jensen

Collected date/time
09/24/18 10:55

Received date/time
09/26/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1174113	25	09/27/18 09:28	10/02/18 09:52	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1172591	10	10/03/18 07:32	10/03/18 14:33	KME
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1172566	1	09/30/18 13:44	10/01/18 08:23	JNJ
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1172566	10	09/30/18 13:44	10/01/18 16:30	JNJ

SS-D L1028992-04 Solid

Collected by
Charlie Jensen

Collected date/time
09/24/18 11:00

Received date/time
09/26/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1174113	1	09/27/18 09:28	10/02/18 10:12	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1172591	10	10/03/18 07:32	10/03/18 14:44	AAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1172566	1	09/30/18 13:44	10/01/18 05:40	JNJ

COMPOSITE (SPOILS) L1028992-05 Solid

Collected by
Charlie Jensen

Collected date/time
09/24/18 11:30

Received date/time
09/26/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1174113	500	09/27/18 09:28	10/02/18 11:15	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1172591	10	10/03/18 07:32	10/03/18 22:58	KME
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1172566	50	09/30/18 13:44	10/01/18 18:26	JNJ



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



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.191		0.100	1	10/02/2018 09:10	WG1174113
(S) a,a,a-Trifluorotoluene(FID)	90.6		77.0-120		10/02/2018 09:10	WG1174113

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	137	J3 J5 J6	40.0	10	10/03/2018 13:46	WG1172591
(S) o-Terphenyl	65.4		18.0-148		10/03/2018 13:46	WG1172591

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	10/01/2018 08:00	WG1172566
Acenaphthylene	ND		0.0333	1	10/01/2018 08:00	WG1172566
Anthracene	ND		0.0333	1	10/01/2018 08:00	WG1172566
Benidine	ND	J3 J4	0.333	1	10/01/2018 08:00	WG1172566
Benzo(a)anthracene	ND		0.0333	1	10/01/2018 08:00	WG1172566
Benzo(b)fluoranthene	ND		0.333	10	10/01/2018 15:43	WG1172566
Benzo(k)fluoranthene	ND		0.333	10	10/01/2018 15:43	WG1172566
Benzo(g,h,i)perylene	ND		0.333	10	10/01/2018 15:43	WG1172566
Benzo(a)pyrene	ND		0.333	10	10/01/2018 15:43	WG1172566
Bis(2-chlorethoxy)methane	ND		0.333	1	10/01/2018 08:00	WG1172566
Bis(2-chloroethyl)ether	ND		0.333	1	10/01/2018 08:00	WG1172566
Bis(2-chloroisopropyl)ether	ND		0.333	1	10/01/2018 08:00	WG1172566
4-Bromophenyl-phenylether	ND		0.333	1	10/01/2018 08:00	WG1172566
2-Chloronaphthalene	ND		0.0333	1	10/01/2018 08:00	WG1172566
4-Chlorophenyl-phenylether	ND		0.333	1	10/01/2018 08:00	WG1172566
Chrysene	ND		0.0333	1	10/01/2018 08:00	WG1172566
Dibenz(a,h)anthracene	ND		0.333	10	10/01/2018 15:43	WG1172566
3,3-Dichlorobenzidine	ND		0.333	1	10/01/2018 08:00	WG1172566
2,4-Dinitrotoluene	ND		0.333	1	10/01/2018 08:00	WG1172566
2,6-Dinitrotoluene	ND		0.333	1	10/01/2018 08:00	WG1172566
Fluoranthene	ND		0.0333	1	10/01/2018 08:00	WG1172566
Fluorene	ND		0.0333	1	10/01/2018 08:00	WG1172566
Hexachlorobenzene	ND		0.333	1	10/01/2018 08:00	WG1172566
Hexachloro-1,3-butadiene	ND		0.333	1	10/01/2018 08:00	WG1172566
Hexachlorocyclopentadiene	ND		0.333	1	10/01/2018 08:00	WG1172566
Hexachloroethane	ND		0.333	1	10/01/2018 08:00	WG1172566
Indeno(1,2,3-cd)pyrene	ND		0.333	10	10/01/2018 15:43	WG1172566
Isophorone	ND		0.333	1	10/01/2018 08:00	WG1172566
Naphthalene	ND		0.0333	1	10/01/2018 08:00	WG1172566
Nitrobenzene	ND		0.333	1	10/01/2018 08:00	WG1172566
n-Nitrosodimethylamine	ND		0.333	1	10/01/2018 08:00	WG1172566
n-Nitrosodiphenylamine	ND		0.333	1	10/01/2018 08:00	WG1172566
n-Nitrosodi-n-propylamine	ND		0.333	1	10/01/2018 08:00	WG1172566
Phenanthrene	ND		0.0333	1	10/01/2018 08:00	WG1172566
Benzylbutyl phthalate	ND		0.333	1	10/01/2018 08:00	WG1172566
Bis(2-ethylhexyl)phthalate	ND		0.333	1	10/01/2018 08:00	WG1172566
Di-n-butyl phthalate	ND		0.333	1	10/01/2018 08:00	WG1172566
Diethyl phthalate	ND		0.333	1	10/01/2018 08:00	WG1172566
Dimethyl phthalate	ND		0.333	1	10/01/2018 08:00	WG1172566
Di-n-octyl phthalate	ND		0.333	1	10/01/2018 08:00	WG1172566
Pyrene	ND		0.0333	1	10/01/2018 08:00	WG1172566
1,2,4-Trichlorobenzene	ND		0.333	1	10/01/2018 08:00	WG1172566
4-Chloro-3-methylphenol	ND		0.333	1	10/01/2018 08:00	WG1172566

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

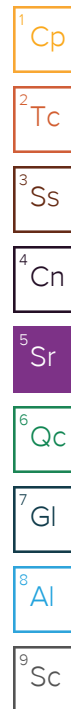


Collected date/time: 09/24/18 10:45

L1028992

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
2-Chlorophenol	ND		0.333	1	10/01/2018 08:00	WG1172566
2,4-Dichlorophenol	ND		0.333	1	10/01/2018 08:00	WG1172566
2,4-Dimethylphenol	ND		0.333	1	10/01/2018 08:00	WG1172566
4,6-Dinitro-2-methylphenol	ND		0.333	1	10/01/2018 08:00	WG1172566
2,4-Dinitrophenol	ND		0.333	1	10/01/2018 08:00	WG1172566
2-Nitrophenol	ND		0.333	1	10/01/2018 08:00	WG1172566
4-Nitrophenol	ND		0.333	1	10/01/2018 08:00	WG1172566
Pentachlorophenol	ND		0.333	1	10/01/2018 08:00	WG1172566
Phenol	ND		0.333	1	10/01/2018 08:00	WG1172566
2,4,6-Trichlorophenol	ND		0.333	1	10/01/2018 08:00	WG1172566
(S) 2-Fluorophenol	37.6		12.0-120		10/01/2018 08:00	WG1172566
(S) 2-Fluorophenol	32.6		12.0-120		10/01/2018 15:43	WG1172566
(S) Phenol-d5	35.7		10.0-120		10/01/2018 08:00	WG1172566
(S) Phenol-d5	32.0		10.0-120		10/01/2018 15:43	WG1172566
(S) Nitrobenzene-d5	31.0		10.0-122		10/01/2018 15:43	WG1172566
(S) Nitrobenzene-d5	29.2		10.0-122		10/01/2018 08:00	WG1172566
(S) 2-Fluorobiphenyl	29.3		15.0-120		10/01/2018 15:43	WG1172566
(S) 2-Fluorobiphenyl	31.5		15.0-120		10/01/2018 08:00	WG1172566
(S) 2,4,6-Tribromophenol	41.4		10.0-127		10/01/2018 08:00	WG1172566
(S) 2,4,6-Tribromophenol	30.1		10.0-127		10/01/2018 15:43	WG1172566
(S) p-Terphenyl-d14	51.9		10.0-120		10/01/2018 08:00	WG1172566
(S) p-Terphenyl-d14	31.6		10.0-120		10/01/2018 15:43	WG1172566



Sample Narrative:

L1028992-01 WG1172566: IS/SURR failed on lower dilution.



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.149		0.100	1	10/02/2018 11:35	WG1174113
(S) a,a,a-Trifluorotoluene(FID)	89.8		77.0-120		10/02/2018 11:35	WG1174113

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	168		40.0	10	10/03/2018 14:22	WG1172591
(S) o-Terphenyl	60.1		18.0-148		10/03/2018 14:22	WG1172591

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	10/01/2018 08:47	WG1172566
Acenaphthylene	ND		0.0333	1	10/01/2018 08:47	WG1172566
Anthracene	ND	J3	0.0333	1	10/01/2018 08:47	WG1172566
Benidine	ND	J3 J4 J6	0.333	1	10/01/2018 08:47	WG1172566
Benzo(a)anthracene	ND		0.0333	1	10/01/2018 08:47	WG1172566
Benzo(b)fluoranthene	ND		0.333	10	10/01/2018 16:07	WG1172566
Benzo(k)fluoranthene	ND		0.333	10	10/01/2018 16:07	WG1172566
Benzo(g,h,i)perylene	ND		0.333	10	10/01/2018 16:07	WG1172566
Benzo(a)pyrene	ND		0.333	10	10/01/2018 16:07	WG1172566
Bis(2-chlorethoxy)methane	ND		0.333	1	10/01/2018 08:47	WG1172566
Bis(2-chloroethyl)ether	ND		0.333	1	10/01/2018 08:47	WG1172566
Bis(2-chloroisopropyl)ether	ND		0.333	1	10/01/2018 08:47	WG1172566
4-Bromophenyl-phenylether	ND	J3	0.333	1	10/01/2018 08:47	WG1172566
2-Chloronaphthalene	ND		0.0333	1	10/01/2018 08:47	WG1172566
4-Chlorophenyl-phenylether	ND	J3	0.333	1	10/01/2018 08:47	WG1172566
Chrysene	ND	J3	0.0333	1	10/01/2018 08:47	WG1172566
Dibenz(a,h)anthracene	ND		0.333	10	10/01/2018 16:07	WG1172566
3,3-Dichlorobenzidine	ND		0.333	1	10/01/2018 08:47	WG1172566
2,4-Dinitrotoluene	ND	J3 J6	0.333	1	10/01/2018 08:47	WG1172566
2,6-Dinitrotoluene	ND		0.333	1	10/01/2018 08:47	WG1172566
Fluoranthene	ND		0.0333	1	10/01/2018 08:47	WG1172566
Fluorene	ND	J3	0.0333	1	10/01/2018 08:47	WG1172566
Hexachlorobenzene	ND	J3	0.333	1	10/01/2018 08:47	WG1172566
Hexachloro-1,3-butadiene	ND		0.333	1	10/01/2018 08:47	WG1172566
Hexachlorocyclopentadiene	ND		0.333	1	10/01/2018 08:47	WG1172566
Hexachloroethane	ND		0.333	1	10/01/2018 08:47	WG1172566
Indeno(1,2,3-cd)pyrene	ND		0.333	10	10/01/2018 16:07	WG1172566
Isophorone	ND		0.333	1	10/01/2018 08:47	WG1172566
Naphthalene	ND		0.0333	1	10/01/2018 08:47	WG1172566
Nitrobenzene	ND		0.333	1	10/01/2018 08:47	WG1172566
n-Nitrosodimethylamine	ND		0.333	1	10/01/2018 08:47	WG1172566
n-Nitrosodiphenylamine	ND	J3	0.333	1	10/01/2018 08:47	WG1172566
n-Nitrosodi-n-propylamine	ND		0.333	1	10/01/2018 08:47	WG1172566
Phenanthrene	ND	J3	0.0333	1	10/01/2018 08:47	WG1172566
Benzylbutyl phthalate	ND		0.333	1	10/01/2018 08:47	WG1172566
Bis(2-ethylhexyl)phthalate	ND		0.333	1	10/01/2018 08:47	WG1172566
Di-n-butyl phthalate	ND	J3	0.333	1	10/01/2018 08:47	WG1172566
Diethyl phthalate	ND	J3	0.333	1	10/01/2018 08:47	WG1172566
Dimethyl phthalate	ND		0.333	1	10/01/2018 08:47	WG1172566
Di-n-octyl phthalate	ND	J3	0.333	1	10/01/2018 08:47	WG1172566
Pyrene	ND	J3	0.0333	1	10/01/2018 08:47	WG1172566
1,2,4-Trichlorobenzene	ND		0.333	1	10/01/2018 08:47	WG1172566
4-Chloro-3-methylphenol	ND		0.333	1	10/01/2018 08:47	WG1172566





Collected date/time: 09/24/18 10:50

L1028992

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch	¹ Cp
2-Chlorophenol	ND		0.333	1	10/01/2018 08:47	WG1172566	² Tc
2,4-Dichlorophenol	ND		0.333	1	10/01/2018 08:47	WG1172566	³ Ss
2,4-Dimethylphenol	ND		0.333	1	10/01/2018 08:47	WG1172566	⁴ Cn
4,6-Dinitro-2-methylphenol	ND	<u>J6</u>	0.333	1	10/01/2018 08:47	WG1172566	⁵ Sr
2,4-Dinitrophenol	ND		0.333	1	10/01/2018 08:47	WG1172566	⁶ Qc
2-Nitrophenol	ND		0.333	1	10/01/2018 08:47	WG1172566	⁷ Gl
4-Nitrophenol	ND	<u>J3</u>	0.333	1	10/01/2018 08:47	WG1172566	⁸ Al
Pentachlorophenol	ND	<u>J3</u>	0.333	1	10/01/2018 08:47	WG1172566	⁹ Sc
Phenol	ND		0.333	1	10/01/2018 08:47	WG1172566	
2,4,6-Trichlorophenol	ND		0.333	1	10/01/2018 08:47	WG1172566	
(S) 2-Fluorophenol	34.8		12.0-120		10/01/2018 16:07	WG1172566	
(S) 2-Fluorophenol	38.5		12.0-120		10/01/2018 08:47	WG1172566	
(S) Phenol-d5	33.8		10.0-120		10/01/2018 16:07	WG1172566	
(S) Phenol-d5	36.2		10.0-120		10/01/2018 08:47	WG1172566	
(S) Nitrobenzene-d5	28.8		10.0-122		10/01/2018 16:07	WG1172566	
(S) Nitrobenzene-d5	31.5		10.0-122		10/01/2018 08:47	WG1172566	
(S) 2-Fluorobiphenyl	33.9		15.0-120		10/01/2018 16:07	WG1172566	
(S) 2-Fluorobiphenyl	35.8		15.0-120		10/01/2018 08:47	WG1172566	
(S) 2,4,6-Tribromophenol	51.2		10.0-127		10/01/2018 08:47	WG1172566	
(S) 2,4,6-Tribromophenol	38.6		10.0-127		10/01/2018 16:07	WG1172566	
(S) p-Terphenyl-d14	39.4		10.0-120		10/01/2018 16:07	WG1172566	
(S) p-Terphenyl-d14	66.1		10.0-120		10/01/2018 08:47	WG1172566	

Sample Narrative:

L1028992-02 WG1172566: IS/SURR failed on lower dilution.



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	23.4		2.50	25	10/02/2018 09:52	WG1174113
(S) a,a,a-Trifluorotoluene(FID)	96.3		77.0-120		10/02/2018 09:52	WG1174113

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	161		40.0	10	10/03/2018 14:33	WG1172591
(S) o-Terphenyl	69.0		18.0-148		10/03/2018 14:33	WG1172591

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	10/01/2018 08:23	WG1172566
Acenaphthylene	ND		0.0333	1	10/01/2018 08:23	WG1172566
Anthracene	ND		0.0333	1	10/01/2018 08:23	WG1172566
Benidine	ND	J3 J4	0.333	1	10/01/2018 08:23	WG1172566
Benzo(a)anthracene	ND		0.0333	1	10/01/2018 08:23	WG1172566
Benzo(b)fluoranthene	ND		0.333	10	10/01/2018 16:30	WG1172566
Benzo(k)fluoranthene	ND		0.333	10	10/01/2018 16:30	WG1172566
Benzo(g,h,i)perylene	ND		0.333	10	10/01/2018 16:30	WG1172566
Benzo(a)pyrene	ND		0.333	10	10/01/2018 16:30	WG1172566
Bis(2-chlorethoxy)methane	ND		0.333	1	10/01/2018 08:23	WG1172566
Bis(2-chloroethyl)ether	ND		0.333	1	10/01/2018 08:23	WG1172566
Bis(2-chloroisopropyl)ether	ND		0.333	1	10/01/2018 08:23	WG1172566
4-Bromophenyl-phenylether	ND		0.333	1	10/01/2018 08:23	WG1172566
2-Chloronaphthalene	ND		0.0333	1	10/01/2018 08:23	WG1172566
4-Chlorophenyl-phenylether	ND		0.333	1	10/01/2018 08:23	WG1172566
Chrysene	ND		0.0333	1	10/01/2018 08:23	WG1172566
Dibenz(a,h)anthracene	ND		0.333	10	10/01/2018 16:30	WG1172566
3,3-Dichlorobenzidine	ND		0.333	1	10/01/2018 08:23	WG1172566
2,4-Dinitrotoluene	ND		0.333	1	10/01/2018 08:23	WG1172566
2,6-Dinitrotoluene	ND		0.333	1	10/01/2018 08:23	WG1172566
Fluoranthene	ND		0.0333	1	10/01/2018 08:23	WG1172566
Fluorene	ND		0.0333	1	10/01/2018 08:23	WG1172566
Hexachlorobenzene	ND		0.333	1	10/01/2018 08:23	WG1172566
Hexachloro-1,3-butadiene	ND		0.333	1	10/01/2018 08:23	WG1172566
Hexachlorocyclopentadiene	ND		0.333	1	10/01/2018 08:23	WG1172566
Hexachloroethane	ND		0.333	1	10/01/2018 08:23	WG1172566
Indeno(1,2,3-cd)pyrene	ND		0.333	10	10/01/2018 16:30	WG1172566
Isophorone	ND		0.333	1	10/01/2018 08:23	WG1172566
Naphthalene	ND		0.0333	1	10/01/2018 08:23	WG1172566
Nitrobenzene	ND		0.333	1	10/01/2018 08:23	WG1172566
n-Nitrosodimethylamine	ND		0.333	1	10/01/2018 08:23	WG1172566
n-Nitrosodiphenylamine	ND		0.333	1	10/01/2018 08:23	WG1172566
n-Nitrosodi-n-propylamine	ND		0.333	1	10/01/2018 08:23	WG1172566
Phenanthrene	ND		0.0333	1	10/01/2018 08:23	WG1172566
Benzylbutyl phthalate	ND		0.333	1	10/01/2018 08:23	WG1172566
Bis(2-ethylhexyl)phthalate	ND		0.333	1	10/01/2018 08:23	WG1172566
Di-n-butyl phthalate	ND		0.333	1	10/01/2018 08:23	WG1172566
Diethyl phthalate	ND		0.333	1	10/01/2018 08:23	WG1172566
Dimethyl phthalate	ND		0.333	1	10/01/2018 08:23	WG1172566
Di-n-octyl phthalate	ND		0.333	1	10/01/2018 08:23	WG1172566
Pyrene	ND		0.0333	1	10/01/2018 08:23	WG1172566
1,2,4-Trichlorobenzene	ND		0.333	1	10/01/2018 08:23	WG1172566
4-Chloro-3-methylphenol	ND		0.333	1	10/01/2018 08:23	WG1172566





Collected date/time: 09/24/18 10:55

L1028992

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch	<div><div>1</div>Cp</div>
2-Chlorophenol	ND		0.333	1	10/01/2018 08:23	WG1172566	<div><div>2</div>Tc</div>
2,4-Dichlorophenol	ND		0.333	1	10/01/2018 08:23	WG1172566	<div><div>3</div>Ss</div>
2,4-Dimethylphenol	ND		0.333	1	10/01/2018 08:23	WG1172566	<div><div>4</div>Cn</div>
4,6-Dinitro-2-methylphenol	ND		0.333	1	10/01/2018 08:23	WG1172566	<div><div>5</div>Sr</div>
2,4-Dinitrophenol	ND		0.333	1	10/01/2018 08:23	WG1172566	<div><div>6</div>Qc</div>
2-Nitrophenol	ND		0.333	1	10/01/2018 08:23	WG1172566	<div><div>7</div>Gl</div>
4-Nitrophenol	ND		0.333	1	10/01/2018 08:23	WG1172566	<div><div>8</div>Al</div>
Pentachlorophenol	ND		0.333	1	10/01/2018 08:23	WG1172566	<div><div>9</div>Sc</div>
Phenol	ND		0.333	1	10/01/2018 08:23	WG1172566	
2,4,6-Trichlorophenol	ND		0.333	1	10/01/2018 08:23	WG1172566	
(S) 2-Fluorophenol	33.0		12.0-120		10/01/2018 16:30	WG1172566	
(S) 2-Fluorophenol	37.1		12.0-120		10/01/2018 08:23	WG1172566	
(S) Phenol-d5	34.8		10.0-120		10/01/2018 16:30	WG1172566	
(S) Phenol-d5	37.4		10.0-120		10/01/2018 08:23	WG1172566	
(S) Nitrobenzene-d5	37.9		10.0-122		10/01/2018 16:30	WG1172566	
(S) Nitrobenzene-d5	38.2		10.0-122		10/01/2018 08:23	WG1172566	
(S) 2-Fluorobiphenyl	37.3		15.0-120		10/01/2018 08:23	WG1172566	
(S) 2-Fluorobiphenyl	34.5		15.0-120		10/01/2018 16:30	WG1172566	
(S) 2,4,6-Tribromophenol	33.2		10.0-127		10/01/2018 16:30	WG1172566	
(S) 2,4,6-Tribromophenol	44.4		10.0-127		10/01/2018 08:23	WG1172566	
(S) p-Terphenyl-d14	36.1		10.0-120		10/01/2018 16:30	WG1172566	
(S) p-Terphenyl-d14	55.2		10.0-120		10/01/2018 08:23	WG1172566	

Sample Narrative:

L1028992-03 WG1172566: IS/SURR failed on lower dilution.



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.157		0.100	1	10/02/2018 10:12	WG1174113
(S) a,a,a-Trifluorotoluene(FID)	87.7		77.0-120		10/02/2018 10:12	WG1174113

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	131		40.0	10	10/03/2018 14:44	WG1172591
(S) o-Terphenyl	48.5		18.0-148		10/03/2018 14:44	WG1172591

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Acenaphthylene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Anthracene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Benidine	ND	J3 J4	0.333	1	10/01/2018 05:40	WG1172566
Benzo(a)anthracene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Benzo(b)fluoranthene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Benzo(k)fluoranthene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Benzo(g,h,i)perylene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Benzo(a)pyrene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Bis(2-chlorethoxy)methane	ND		0.333	1	10/01/2018 05:40	WG1172566
Bis(2-chloroethyl)ether	ND		0.333	1	10/01/2018 05:40	WG1172566
Bis(2-chloroisopropyl)ether	ND		0.333	1	10/01/2018 05:40	WG1172566
4-Bromophenyl-phenylether	ND		0.333	1	10/01/2018 05:40	WG1172566
2-Chloronaphthalene	ND		0.0333	1	10/01/2018 05:40	WG1172566
4-Chlorophenyl-phenylether	ND		0.333	1	10/01/2018 05:40	WG1172566
Chrysene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Dibenz(a,h)anthracene	ND		0.0333	1	10/01/2018 05:40	WG1172566
3,3-Dichlorobenzidine	ND		0.333	1	10/01/2018 05:40	WG1172566
2,4-Dinitrotoluene	ND		0.333	1	10/01/2018 05:40	WG1172566
2,6-Dinitrotoluene	ND		0.333	1	10/01/2018 05:40	WG1172566
Fluoranthene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Fluorene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Hexachlorobenzene	ND		0.333	1	10/01/2018 05:40	WG1172566
Hexachloro-1,3-butadiene	ND		0.333	1	10/01/2018 05:40	WG1172566
Hexachlorocyclopentadiene	ND		0.333	1	10/01/2018 05:40	WG1172566
Hexachloroethane	ND		0.333	1	10/01/2018 05:40	WG1172566
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Isophorone	ND		0.333	1	10/01/2018 05:40	WG1172566
Naphthalene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Nitrobenzene	ND		0.333	1	10/01/2018 05:40	WG1172566
n-Nitrosodimethylamine	ND		0.333	1	10/01/2018 05:40	WG1172566
n-Nitrosodiphenylamine	ND		0.333	1	10/01/2018 05:40	WG1172566
n-Nitrosodi-n-propylamine	ND		0.333	1	10/01/2018 05:40	WG1172566
Phenanthrene	ND		0.0333	1	10/01/2018 05:40	WG1172566
Benzylbutyl phthalate	ND		0.333	1	10/01/2018 05:40	WG1172566
Bis(2-ethylhexyl)phthalate	ND		0.333	1	10/01/2018 05:40	WG1172566
Di-n-butyl phthalate	ND		0.333	1	10/01/2018 05:40	WG1172566
Diethyl phthalate	ND		0.333	1	10/01/2018 05:40	WG1172566
Dimethyl phthalate	ND		0.333	1	10/01/2018 05:40	WG1172566
Di-n-octyl phthalate	ND		0.333	1	10/01/2018 05:40	WG1172566
Pyrene	ND		0.0333	1	10/01/2018 05:40	WG1172566
1,2,4-Trichlorobenzene	ND		0.333	1	10/01/2018 05:40	WG1172566
4-Chloro-3-methylphenol	ND		0.333	1	10/01/2018 05:40	WG1172566





Collected date/time: 09/24/18 11:00

L1028992

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
2-Chlorophenol	ND		0.333	1	10/01/2018 05:40	WG1172566
2,4-Dichlorophenol	ND		0.333	1	10/01/2018 05:40	WG1172566
2,4-Dimethylphenol	ND		0.333	1	10/01/2018 05:40	WG1172566
4,6-Dinitro-2-methylphenol	ND		0.333	1	10/01/2018 05:40	WG1172566
2,4-Dinitrophenol	ND		0.333	1	10/01/2018 05:40	WG1172566
2-Nitrophenol	ND		0.333	1	10/01/2018 05:40	WG1172566
4-Nitrophenol	ND		0.333	1	10/01/2018 05:40	WG1172566
Pentachlorophenol	ND		0.333	1	10/01/2018 05:40	WG1172566
Phenol	ND		0.333	1	10/01/2018 05:40	WG1172566
2,4,6-Trichlorophenol	ND		0.333	1	10/01/2018 05:40	WG1172566
(S) 2-Fluorophenol	40.4		12.0-120		10/01/2018 05:40	WG1172566
(S) Phenol-d5	41.8		10.0-120		10/01/2018 05:40	WG1172566
(S) Nitrobenzene-d5	37.1		10.0-122		10/01/2018 05:40	WG1172566
(S) 2-Fluorobiphenyl	41.9		15.0-120		10/01/2018 05:40	WG1172566
(S) 2,4,6-Tribromophenol	59.1		10.0-127		10/01/2018 05:40	WG1172566
(S) p-Terphenyl-d14	68.4		10.0-120		10/01/2018 05:40	WG1172566

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	3060		50.0	500	10/02/2018 11:15	WG1174113
(S) a,a,a-Trifluorotoluene(FID)	88.3		77.0-120		10/02/2018 11:15	WG1174113

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	951		40.0	10	10/03/2018 22:58	WG1172591
(S) o-Terphenyl	55.7		18.0-148		10/03/2018 22:58	WG1172591

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		1.67	50	10/01/2018 18:26	WG1172566
Acenaphthylene	ND		1.67	50	10/01/2018 18:26	WG1172566
Anthracene	ND		1.67	50	10/01/2018 18:26	WG1172566
Benidine	ND	J3 J4	16.7	50	10/01/2018 18:26	WG1172566
Benzo(a)anthracene	ND		1.67	50	10/01/2018 18:26	WG1172566
Benzo(b)fluoranthene	ND		1.67	50	10/01/2018 18:26	WG1172566
Benzo(k)fluoranthene	ND		1.67	50	10/01/2018 18:26	WG1172566
Benzo(g,h,i)perylene	ND		1.67	50	10/01/2018 18:26	WG1172566
Benzo(a)pyrene	ND		1.67	50	10/01/2018 18:26	WG1172566
Bis(2-chlorethoxy)methane	ND		16.7	50	10/01/2018 18:26	WG1172566
Bis(2-chloroethyl)ether	ND		16.7	50	10/01/2018 18:26	WG1172566
Bis(2-chloroisopropyl)ether	ND		16.7	50	10/01/2018 18:26	WG1172566
4-Bromophenyl-phenylether	ND		16.7	50	10/01/2018 18:26	WG1172566
2-Chloronaphthalene	ND		1.67	50	10/01/2018 18:26	WG1172566
4-Chlorophenyl-phenylether	ND		16.7	50	10/01/2018 18:26	WG1172566
Chrysene	ND		1.67	50	10/01/2018 18:26	WG1172566
Dibenz(a,h)anthracene	ND		1.67	50	10/01/2018 18:26	WG1172566
3,3-Dichlorobenzidine	ND		16.7	50	10/01/2018 18:26	WG1172566
2,4-Dinitrotoluene	ND		16.7	50	10/01/2018 18:26	WG1172566
2,6-Dinitrotoluene	ND		16.7	50	10/01/2018 18:26	WG1172566
Fluoranthene	ND		1.67	50	10/01/2018 18:26	WG1172566
Fluorene	ND		1.67	50	10/01/2018 18:26	WG1172566
Hexachlorobenzene	ND		16.7	50	10/01/2018 18:26	WG1172566
Hexachloro-1,3-butadiene	ND		16.7	50	10/01/2018 18:26	WG1172566
Hexachlorocyclopentadiene	ND		16.7	50	10/01/2018 18:26	WG1172566
Hexachloroethane	ND		16.7	50	10/01/2018 18:26	WG1172566
Indeno(1,2,3-cd)pyrene	ND		1.67	50	10/01/2018 18:26	WG1172566
Isophorone	ND		16.7	50	10/01/2018 18:26	WG1172566
Naphthalene	2.30		1.67	50	10/01/2018 18:26	WG1172566
Nitrobenzene	ND		16.7	50	10/01/2018 18:26	WG1172566
n-Nitrosodimethylamine	ND		16.7	50	10/01/2018 18:26	WG1172566
n-Nitrosodiphenylamine	ND		16.7	50	10/01/2018 18:26	WG1172566
n-Nitrosodi-n-propylamine	ND		16.7	50	10/01/2018 18:26	WG1172566
Phenanthrene	ND		1.67	50	10/01/2018 18:26	WG1172566
Benzylbutyl phthalate	ND		16.7	50	10/01/2018 18:26	WG1172566
Bis(2-ethylhexyl)phthalate	ND		16.7	50	10/01/2018 18:26	WG1172566
Di-n-butyl phthalate	ND		16.7	50	10/01/2018 18:26	WG1172566
Diethyl phthalate	ND		16.7	50	10/01/2018 18:26	WG1172566
Dimethyl phthalate	ND		16.7	50	10/01/2018 18:26	WG1172566
Di-n-octyl phthalate	ND		16.7	50	10/01/2018 18:26	WG1172566
Pyrene	ND		1.67	50	10/01/2018 18:26	WG1172566
1,2,4-Trichlorobenzene	ND		16.7	50	10/01/2018 18:26	WG1172566
4-Chloro-3-methylphenol	ND		16.7	50	10/01/2018 18:26	WG1172566

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

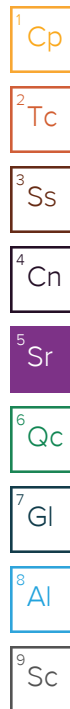


Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
2-Chlorophenol	ND		16.7	50	10/01/2018 18:26	WG1172566
2,4-Dichlorophenol	ND		16.7	50	10/01/2018 18:26	WG1172566
2,4-Dimethylphenol	ND		16.7	50	10/01/2018 18:26	WG1172566
4,6-Dinitro-2-methylphenol	ND		16.7	50	10/01/2018 18:26	WG1172566
2,4-Dinitrophenol	ND		16.7	50	10/01/2018 18:26	WG1172566
2-Nitrophenol	ND		16.7	50	10/01/2018 18:26	WG1172566
4-Nitrophenol	ND		16.7	50	10/01/2018 18:26	WG1172566
Pentachlorophenol	ND		16.7	50	10/01/2018 18:26	WG1172566
Phenol	ND		16.7	50	10/01/2018 18:26	WG1172566
2,4,6-Trichlorophenol	ND		16.7	50	10/01/2018 18:26	WG1172566
(S) 2-Fluorophenol	67.7	J7	12.0-120		10/01/2018 18:26	WG1172566
(S) Phenol-d5	87.9	J7	10.0-120		10/01/2018 18:26	WG1172566
(S) Nitrobenzene-d5	834	J7	10.0-122		10/01/2018 18:26	WG1172566
(S) 2-Fluorobiphenyl	50.5	J7	15.0-120		10/01/2018 18:26	WG1172566
(S) 2,4,6-Tribromophenol	37.3	J7	10.0-127		10/01/2018 18:26	WG1172566
(S) p-Terphenyl-d14	45.5	J7	10.0-120		10/01/2018 18:26	WG1172566

Sample Narrative:

L1028992-05 WG1172566: Dilution due to matrix





Method Blank (MB)

(MB) R3346763-4 10/02/18 02:16

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)	98.9			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3346763-2 10/02/18 01:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.04	91.6	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			110	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) R3347334-1 10/03/18 13:13

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	65.2			18.0-148

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3347334-2 10/03/18 13:24 • (LCSD) R3347334-3 10/03/18 13:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
TPH (GC/FID) High Fraction	50.0	39.5	42.3	79.0	84.6	50.0-150			6.85	20
(S) o-Terphenyl				88.4	94.6	18.0-148				

L1028992-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1028992-01 10/03/18 13:46 • (MS) R3347334-4 10/03/18 13:57 • (MSD) R3347334-5 10/03/18 14:08

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
TPH (GC/FID) High Fraction	50.0	137	159	258	44.0	242	10	50.0-150	J6	J3 J5	47.5	20
(S) o-Terphenyl					81.0	92.8		18.0-148				

Method Blank (MB)

(MB) R3346534-3 10/01/18 02:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00642	0.0333
Acenaphthylene	U		0.00671	0.0333
Anthracene	U		0.00632	0.0333
Benzidine	U		0.0637	0.333
Benzo(a)anthracene	U		0.00428	0.0333
Benzo(b)fluoranthene	U		0.00695	0.0333
Benzo(k)fluoranthene	U		0.00582	0.0333
Benzo(g,h,i)perylene	U		0.00721	0.0333
Benzo(a)pyrene	U		0.00548	0.0333
Bis(2-chlorethoxy)methane	U		0.00770	0.333
Bis(2-chloroethyl)ether	U		0.00896	0.333
Bis(2-chloroisopropyl)ether	U		0.00760	0.333
4-Bromophenyl-phenylether	U		0.0114	0.333
2-Chloronaphthalene	U		0.00639	0.0333
4-Chlorophenyl-phenylether	U		0.00627	0.333
Chrysene	U		0.00555	0.0333
Dibenz(a,h)anthracene	U		0.00821	0.0333
3,3-Dichlorobenzidine	U		0.0794	0.333
2,4-Dinitrotoluene	U		0.00607	0.333
2,6-Dinitrotoluene	U		0.00737	0.333
Fluoranthene	U		0.00496	0.0333
Fluorene	U		0.00682	0.0333
Hexachlorobenzene	U		0.00856	0.333
Hexachloro-1,3-butadiene	U		0.0100	0.333
Hexachlorocyclopentadiene	U		0.0587	0.333
Hexachloroethane	U		0.0134	0.333
Indeno(1,2,3-cd)pyrene	U		0.00772	0.0333
Isophorone	U		0.00522	0.333
Naphthalene	U		0.00889	0.0333
Nitrobenzene	U		0.00695	0.333
n-Nitrosodimethylamine	U		0.0647	0.333
n-Nitrosodiphenylamine	U		0.0900	0.333
n-Nitrosodi-n-propylamine	U		0.00906	0.333
Phenanthrene	U		0.00528	0.0333
Benzylbutyl phthalate	U		0.0103	0.333
Bis(2-ethylhexyl)phthalate	U		0.0120	0.333
Di-n-butyl phthalate	U		0.0109	0.333
Diethyl phthalate	U		0.00691	0.333
Dimethyl phthalate	U		0.00540	0.333
Di-n-octyl phthalate	U		0.00907	0.333

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3346534-3 10/01/18 02:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Pyrene	U		0.0123	0.0333
1,2,4-Trichlorobenzene	U		0.00876	0.333
4-Chloro-3-methylphenol	U		0.00477	0.333
2-Chlorophenol	U		0.00831	0.333
2,4-Dichlorophenol	U		0.00746	0.333
2,4-Dimethylphenol	U		0.0471	0.333
4,6-Dinitro-2-methylphenol	U		0.124	0.333
2,4-Dinitrophenol	U		0.0980	0.333
2-Nitrophenol	U		0.0130	0.333
4-Nitrophenol	U		0.0525	0.333
Pentachlorophenol	U		0.0480	0.333
Phenol	U		0.00695	0.333
2,4,6-Trichlorophenol	U		0.00779	0.333
(S) Nitrobenzene-d5	59.8			10.0-122
(S) 2-Fluorobiphenyl	57.1			15.0-120
(S) p-Terphenyl-d14	74.8			10.0-120
(S) Phenol-d5	60.4			10.0-120
(S) 2-Fluorophenol	67.4			12.0-120
(S) 2,4,6-Tribromophenol	53.5			10.0-127

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3346534-1 10/01/18 02:14 • (LCSD) R3346534-2 10/01/18 02:37

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 %
Acenaphthene	0.666	0.405	0.386	60.8	58.0	38.0-120			4.80	22
Acenaphthylene	0.666	0.406	0.381	61.0	57.2	40.0-120			6.35	22
Anthracene	0.666	0.400	0.405	60.1	60.8	42.0-120			1.24	20
Benidine	0.666	ND	0.0845	0.000	12.7	1.00-120	J4	J3	200	40
Benzo(a)anthracene	0.666	0.443	0.475	66.5	71.3	44.0-120			6.97	20
Benzo(b)fluoranthene	0.666	0.424	0.463	63.7	69.5	43.0-120			8.79	22
Benzo(k)fluoranthene	0.666	0.482	0.482	72.4	72.4	44.0-120			0.000	21
Benzo(g,h,i)perylene	0.666	0.493	0.520	74.0	78.1	43.0-120			5.33	22
Benzo(a)pyrene	0.666	0.442	0.468	66.4	70.3	45.0-120			5.71	20
Bis(2-chlorethoxy)methane	0.666	0.309	0.271	46.4	40.7	20.0-120			13.1	23
Bis(2-chloroethyl)ether	0.666	0.366	0.309	55.0	46.4	16.0-120			16.9	31
Bis(2-chloroisopropyl)ether	0.666	0.357	0.301	53.6	45.2	23.0-120			17.0	30
4-Bromophenyl-phenylether	0.666	0.416	0.406	62.5	61.0	40.0-120			2.43	21
2-Chloronaphthalene	0.666	0.378	0.347	56.8	52.1	35.0-120			8.55	24

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

(LCS) R3346534-1 10/01/18 02:14 • (LCSD) R3346534-2 10/01/18 02:37

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 %
4-Chlorophenyl-phenylether	0.666	0.408	0.402	61.3	60.4	40.0-120			1.48	22
Chrysene	0.666	0.441	0.477	66.2	71.6	43.0-120			7.84	20
Dibenz(a,h)anthracene	0.666	0.457	0.477	68.6	71.6	44.0-120			4.28	22
3,3-Dichlorobenzidine	0.666	0.404	0.456	60.7	68.5	28.0-120			12.1	23
2,4-Dinitrotoluene	0.666	0.451	0.477	67.7	71.6	45.0-120			5.60	21
2,6-Dinitrotoluene	0.666	0.446	0.438	67.0	65.8	42.0-120			1.81	21
Fluoranthene	0.666	0.450	0.466	67.6	70.0	44.0-120			3.49	21
Fluorene	0.666	0.420	0.410	63.1	61.6	41.0-120			2.41	22
Hexachlorobenzene	0.666	0.431	0.427	64.7	64.1	39.0-120			0.932	21
Hexachloro-1,3-butadiene	0.666	0.317	0.270	47.6	40.5	15.0-120			16.0	28
Hexachlorocyclopentadiene	0.666	0.409	0.361	61.4	54.2	15.0-120			12.5	31
Hexachloroethane	0.666	0.352	0.289	52.9	43.4	17.0-120			19.7	31
Indeno(1,2,3-cd)pyrene	0.666	0.477	0.499	71.6	74.9	45.0-120			4.51	21
Isophorone	0.666	0.323	0.287	48.5	43.1	23.0-120			11.8	23
Naphthalene	0.666	0.319	0.272	47.9	40.8	18.0-120			15.9	24
Nitrobenzene	0.666	0.324	0.284	48.6	42.6	17.0-120			13.2	26
n-Nitrosodimethylamine	0.666	0.303	0.244	45.5	36.6	10.0-125			21.6	33
n-Nitrosodiphenylamine	0.666	0.428	0.420	64.3	63.1	40.0-120			1.89	21
n-Nitrosodi-n-propylamine	0.666	0.420	0.345	63.1	51.8	26.0-120			19.6	27
Phenanthrene	0.666	0.421	0.418	63.2	62.8	42.0-120			0.715	20
Benzylbutyl phthalate	0.666	0.474	0.518	71.2	77.8	40.0-120			8.87	21
Bis(2-ethylhexyl)phthalate	0.666	0.455	0.493	68.3	74.0	41.0-120			8.02	21
Di-n-butyl phthalate	0.666	0.467	0.489	70.1	73.4	43.0-120			4.60	20
Diethyl phthalate	0.666	0.448	0.449	67.3	67.4	43.0-120			0.223	21
Dimethyl phthalate	0.666	0.410	0.415	61.6	62.3	43.0-120			1.21	22
Di-n-octyl phthalate	0.666	0.471	0.503	70.7	75.5	40.0-120			6.57	21
Pyrene	0.666	0.461	0.493	69.2	74.0	41.0-120			6.71	21
1,2,4-Trichlorobenzene	0.666	0.322	0.275	48.3	41.3	17.0-120			15.7	26
4-Chloro-3-methylphenol	0.666	0.369	0.372	55.4	55.9	28.0-120			0.810	20
2-Chlorophenol	0.666	0.402	0.342	60.4	51.4	28.0-120			16.1	28
2,4-Dichlorophenol	0.666	0.349	0.326	52.4	48.9	25.0-120			6.81	21
2,4-Dimethylphenol	0.666	0.354	0.331	53.2	49.7	15.0-120			6.72	26
4,6-Dinitro-2-methylphenol	0.666	0.424	0.433	63.7	65.0	16.0-120			2.10	33
2,4-Dinitrophenol	0.666	0.398	0.384	59.8	57.7	10.0-120			3.58	40
2-Nitrophenol	0.666	0.338	0.296	50.8	44.4	20.0-120			13.2	25
4-Nitrophenol	0.666	0.425	0.465	63.8	69.8	27.0-120			8.99	24
Pentachlorophenol	0.666	0.450	0.499	67.6	74.9	29.0-120			10.3	25
Phenol	0.666	0.444	0.362	66.7	54.4	28.0-120			20.3	27
2,4,6-Trichlorophenol	0.666	0.404	0.399	60.7	59.9	37.0-120			1.25	24
(S) Nitrobenzene-d5				48.6	42.0	10.0-122				

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Cp

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Tc

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

(LCS) R3346534-1 10/01/18 02:14 • (LCSD) R3346534-2 10/01/18 02:37

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 %
(S) 2-Fluorobiphenyl				56.8	52.3	15.0-120				
(S) p-Terphenyl-d14				64.9	75.4	10.0-120				
(S) Phenol-d5				57.2	50.2	10.0-120				
(S) 2-Fluorophenol				64.9	54.5	12.0-120				
(S) 2,4,6-Tribromophenol				60.2	62.5	10.0-127				

L1028992-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1028992-02 10/01/18 08:47 • (MS) R3346534-4 10/01/18 09:10 • (MSD) R3346534-5 10/01/18 09:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.646	ND	0.216	0.291	33.4	44.4	1	18.0-120			29.6	32
Acenaphthylene	0.646	ND	0.201	0.263	31.1	40.1	1	25.0-120			26.7	32
Anthracene	0.646	ND	0.213	0.295	33.0	45.0	1	22.0-120		J3	32.3	29
Benidine	0.646	ND	ND	ND	0.000	0.000	1	1.00-120	J6	J6	0.000	40
Benzo(a)anthracene	0.646	ND	0.226	0.301	35.0	45.9	1	25.0-120			28.5	29
Benzo(b)fluoranthene	0.646	ND	0.254	0.341	39.3	52.0	1	19.0-122	V3	V3	29.2	31
Benzo(k)fluoranthene	0.646	ND	0.276	0.355	42.7	54.1	1	23.0-120	V3	V3	25.0	30
Benzo(g,h,i)perylene	0.646	ND	0.0851	0.132	13.2	20.1	1	10.0-120	V3	J3 V3	43.2	33
Benzo(a)pyrene	0.646	ND	0.194	0.269	30.0	41.0	1	24.0-120	V3	J3 V3	32.4	30
Bis(2-chlorethoxy)methane	0.646	ND	0.142	0.158	22.0	24.1	1	10.0-120			10.7	34
Bis(2-chloroethyl)ether	0.646	ND	0.156	0.165	24.1	25.2	1	10.0-120			5.61	40
Bis(2-chloroisopropyl)ether	0.646	ND	0.155	0.170	24.0	25.9	1	10.0-120			9.23	40
4-Bromophenyl-phenylether	0.646	ND	0.242	0.338	37.5	51.5	1	27.0-120		J3	33.1	30
2-Chloronaphthalene	0.646	ND	0.191	0.252	29.6	38.4	1	20.0-120			27.5	32
4-Chlorophenyl-phenylether	0.646	ND	0.229	0.307	35.4	46.8	1	24.0-120		J3	29.1	29
Chrysene	0.646	ND	0.227	0.307	35.1	46.8	1	21.0-120		J3	30.0	29
Dibenz(a,h)anthracene	0.646	ND	0.0903	0.136	14.0	20.7	1	10.0-120	V3	J3 V3	40.4	32
3,3-Dichlorobenzidine	0.646	ND	0.0929	0.115	14.4	17.5	1	10.0-120			21.3	34
2,4-Dinitrotoluene	0.646	ND	0.189	0.270	29.3	41.2	1	30.0-120	J6	J3	35.3	31
2,6-Dinitrotoluene	0.646	ND	0.211	0.275	32.7	41.9	1	25.0-120			26.3	31
Fluoranthene	0.646	ND	0.233	0.315	36.1	48.0	1	18.0-126			29.9	32
Fluorene	0.646	ND	0.231	0.318	35.8	48.5	1	25.0-120		J3	31.7	30
Hexachlorobenzene	0.646	ND	0.228	0.322	35.3	49.1	1	27.0-120		J3	34.2	28
Hexachloro-1,3-butadiene	0.646	ND	0.160	0.187	24.8	28.5	1	10.0-120			15.6	38
Hexachlorocyclopentadiene	0.646	ND	0.0674	0.0732	10.4	11.2	1	10.0-120			8.25	40
Hexachloroethane	0.646	ND	0.124	0.136	19.2	20.7	1	10.0-120			9.23	40
Indeno(1,2,3-cd)pyrene	0.646	ND	0.0889	0.142	13.8	21.6	1	10.0-120	V3	J3 V3	46.0	32
Isophorone	0.646	ND	0.152	0.177	23.5	27.0	1	13.0-120			15.2	34

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1028992-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1028992-02 10/01/18 08:47 • (MS) R3346534-4 10/01/18 09:10 • (MSD) R3346534-5 10/01/18 09:33

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 %
Naphthalene	0.646	ND	0.156	0.181	24.1	27.6	1	10.0-120			14.8	35
Nitrobenzene	0.646	ND	0.148	0.163	22.9	24.8	1	10.0-120			9.65	36
n-Nitrosodimethylamine	0.646	ND	0.123	0.137	19.0	20.9	1	10.0-127			10.8	40
n-Nitrosodiphenylamine	0.646	ND	0.235	0.319	36.4	48.6	1	17.0-120		J3	30.3	29
n-Nitrosodi-n-propylamine	0.646	ND	0.189	0.222	29.3	33.8	1	10.0-120			16.1	37
Phenanthrene	0.646	ND	0.224	0.311	34.7	47.4	1	17.0-120		J3	32.5	31
Benzylbutyl phthalate	0.646	ND	0.373	0.499	57.7	76.1	1	23.0-120			28.9	30
Bis(2-ethylhexyl)phthalate	0.646	ND	0.337	0.452	52.2	68.9	1	17.0-126			29.2	30
Di-n-butyl phthalate	0.646	ND	0.246	0.333	38.1	50.8	1	30.0-120		J3	30.1	29
Diethyl phthalate	0.646	ND	0.229	0.309	35.4	47.1	1	26.0-120		J3	29.7	28
Dimethyl phthalate	0.646	ND	0.207	0.277	32.0	42.2	1	25.0-120			28.9	29
Di-n-octyl phthalate	0.646	ND	0.218	0.328	33.7	50.0	1	21.0-123		J3	40.3	29
Pyrene	0.646	ND	0.348	0.482	53.9	73.5	1	16.0-121		J3	32.3	32
1,2,4-Trichlorobenzene	0.646	ND	0.156	0.181	24.1	27.6	1	12.0-120			14.8	37
4-Chloro-3-methylphenol	0.646	ND	0.223	0.296	34.5	45.1	1	15.0-120			28.1	30
2-Chlorophenol	0.646	ND	0.179	0.207	27.7	31.6	1	15.0-120			14.5	37
2,4-Dichlorophenol	0.646	ND	0.191	0.246	29.6	37.5	1	20.0-120			25.2	31
2,4-Dimethylphenol	0.646	ND	0.176	0.224	27.2	34.1	1	10.0-120			24.0	33
4,6-Dinitro-2-methylphenol	0.646	ND	ND	ND	0.000	0.000	1	10.0-120	J6	J6	0.000	39
2,4-Dinitrophenol	0.646	ND	0.160	0.174	24.8	26.5	1	10.0-121			8.38	40
2-Nitrophenol	0.646	ND	0.163	0.175	25.2	26.7	1	12.0-120			7.10	39
4-Nitrophenol	0.646	ND	0.256	0.363	39.6	55.3	1	10.0-137		J3	34.6	32
Pentachlorophenol	0.646	ND	0.226	0.335	35.0	51.1	1	10.0-160		J3	38.9	31
Phenol	0.646	ND	0.197	0.232	30.5	35.4	1	12.0-120			16.3	38
2,4,6-Trichlorophenol	0.646	ND	0.214	0.295	33.1	45.0	1	19.0-120			31.8	32
(S) Nitrobenzene-d5					22.3	24.7		10.0-122				
(S) 2-Fluorobiphenyl					29.7	36.6		15.0-120				
(S) p-Terphenyl-d14					55.4	81.1		10.0-120				
(S) Phenol-d5					28.0	33.1		10.0-120				
(S) 2-Fluorophenol					29.9	32.8		12.0-120				
(S) 2,4,6-Tribromophenol					36.5	52.0		10.0-127				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



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.

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.
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
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
V3	The internal standard exhibited poor recovery due to sample matrix interference. The analytical results will be biased high. BDL results will be unaffected.

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	T 104704245-17-14
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.



Hold:	Condition: NCF / (OK)
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