

Colorado Oil & Gas Conservation

Sample Delivery Group: L960978
Samples Received: 01/04/2018
Project Number:
Description: Wet Canyon Spill
Site: WET CANYON
Report To: Jason Kosola
5405 Sacramento Pl.
Colorado Springs, CO 80917

Entire Report Reviewed By:



Daphne Richards
Technical Service Representative

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



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



COGCC #1 L960978-01 GW

Collected by J. Kosola
Collected date/time 01/03/18 08:25
Received date/time 01/04/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1059558	1	01/04/18 14:38	01/04/18 14:38	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1059659	1	01/04/18 15:19	01/04/18 15:19	BMB
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1059616	1	01/04/18 16:12	01/05/18 21:41	LM

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

COGCC #2 L960978-02 GW

Collected by J. Kosola
Collected date/time 01/03/18 08:40
Received date/time 01/04/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1059558	1	01/04/18 15:00	01/04/18 15:00	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1059659	1	01/04/18 15:38	01/04/18 15:38	BMB
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1059616	1	01/04/18 16:12	01/05/18 21:59	LM

COGCC #3 L960978-03 GW

Collected by J. Kosola
Collected date/time 01/03/18 09:00
Received date/time 01/04/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1059558	1	01/04/18 15:22	01/04/18 15:22	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1059659	1	01/04/18 15:58	01/04/18 15:58	BMB
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1059616	5	01/04/18 16:12	01/09/18 16:30	TH

ACCOUNT:

Colorado Oil & Gas Conservation

PROJECT:

SDG:

L960978

DATE/TIME:

01/11/18 16:18

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 radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.

Daphne Richards
Technical Service Representative

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/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	01/04/2018 14:38	WG1059558
(S) a,a,a-Trifluorotoluene(FID)	99.0		77.0-122		01/04/2018 14:38	WG1059558

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	01/04/2018 15:19	WG1059659
Acrolein	ND		0.0500	1	01/04/2018 15:19	WG1059659
Acrylonitrile	ND		0.0100	1	01/04/2018 15:19	WG1059659
Benzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
Bromobenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
Bromodichloromethane	ND		0.00100	1	01/04/2018 15:19	WG1059659
Bromoform	ND		0.00100	1	01/04/2018 15:19	WG1059659
Bromomethane	ND		0.00500	1	01/04/2018 15:19	WG1059659
n-Butylbenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
sec-Butylbenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
tert-Butylbenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
Carbon tetrachloride	ND		0.00100	1	01/04/2018 15:19	WG1059659
Chlorobenzene	ND	J4	0.00100	1	01/04/2018 15:19	WG1059659
Chlorodibromomethane	ND		0.00100	1	01/04/2018 15:19	WG1059659
Chloroethane	ND		0.00500	1	01/04/2018 15:19	WG1059659
Chloroform	ND		0.00500	1	01/04/2018 15:19	WG1059659
Chloromethane	ND		0.00250	1	01/04/2018 15:19	WG1059659
2-Chlorotoluene	ND		0.00100	1	01/04/2018 15:19	WG1059659
4-Chlorotoluene	ND		0.00100	1	01/04/2018 15:19	WG1059659
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	01/04/2018 15:19	WG1059659
1,2-Dibromoethane	ND		0.00100	1	01/04/2018 15:19	WG1059659
Dibromomethane	ND		0.00100	1	01/04/2018 15:19	WG1059659
1,2-Dichlorobenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
1,3-Dichlorobenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
1,4-Dichlorobenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
Dichlorodifluoromethane	ND		0.00500	1	01/04/2018 15:19	WG1059659
1,1-Dichloroethane	ND		0.00100	1	01/04/2018 15:19	WG1059659
1,2-Dichloroethane	ND		0.00100	1	01/04/2018 15:19	WG1059659
1,1-Dichloroethene	ND		0.00100	1	01/04/2018 15:19	WG1059659
cis-1,2-Dichloroethene	ND		0.00100	1	01/04/2018 15:19	WG1059659
trans-1,2-Dichloroethene	ND		0.00100	1	01/04/2018 15:19	WG1059659
1,2-Dichloropropane	ND		0.00100	1	01/04/2018 15:19	WG1059659
1,1-Dichloropropene	ND		0.00100	1	01/04/2018 15:19	WG1059659
1,3-Dichloropropane	ND		0.00100	1	01/04/2018 15:19	WG1059659
cis-1,3-Dichloropropene	ND		0.00100	1	01/04/2018 15:19	WG1059659
trans-1,3-Dichloropropene	ND		0.00100	1	01/04/2018 15:19	WG1059659
2,2-Dichloropropane	ND		0.00100	1	01/04/2018 15:19	WG1059659
Di-isopropyl ether	ND		0.00100	1	01/04/2018 15:19	WG1059659
Ethylbenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
Hexachloro-1,3-butadiene	ND		0.00100	1	01/04/2018 15:19	WG1059659
Isopropylbenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
p-Isopropyltoluene	ND		0.00100	1	01/04/2018 15:19	WG1059659
2-Butanone (MEK)	ND		0.0100	1	01/04/2018 15:19	WG1059659
Methylene Chloride	ND		0.00500	1	01/04/2018 15:19	WG1059659
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	01/04/2018 15:19	WG1059659
Methyl tert-butyl ether	ND		0.00100	1	01/04/2018 15:19	WG1059659
Naphthalene	ND		0.00500	1	01/04/2018 15:19	WG1059659
n-Propylbenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659
Styrene	ND		0.00100	1	01/04/2018 15:19	WG1059659

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch	
1,1,1,2-Tetrachloroethane	ND	J4	0.00100	1	01/04/2018 15:19	WG1059659	¹ Cp
1,1,2,2-Tetrachloroethane	ND		0.00100	1	01/04/2018 15:19	WG1059659	² Tc
1,1,2-Trichlorotrifluoroethane	ND	J4	0.00100	1	01/04/2018 15:19	WG1059659	³ Ss
Tetrachloroethene	ND		0.00100	1	01/04/2018 15:19	WG1059659	⁴ Cn
Toluene	ND		0.00100	1	01/04/2018 15:19	WG1059659	⁵ Sr
1,2,3-Trichlorobenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659	⁶ Qc
1,2,4-Trichlorobenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659	⁷ Gl
1,1,1-Trichloroethane	ND		0.00100	1	01/04/2018 15:19	WG1059659	⁸ Al
1,1,2-Trichloroethane	ND	J4	0.00100	1	01/04/2018 15:19	WG1059659	⁹ Sc
Trichloroethene	ND		0.00100	1	01/04/2018 15:19	WG1059659	
Trichlorofluoromethane	ND		0.00500	1	01/04/2018 15:19	WG1059659	
1,2,3-Trichloropropane	ND		0.00250	1	01/04/2018 15:19	WG1059659	
1,2,4-Trimethylbenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659	
1,2,3-Trimethylbenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659	
1,3,5-Trimethylbenzene	ND		0.00100	1	01/04/2018 15:19	WG1059659	
Vinyl chloride	ND		0.00100	1	01/04/2018 15:19	WG1059659	
Xylenes, Total	ND		0.00300	1	01/04/2018 15:19	WG1059659	
(S) Toluene-d8	105		80.0-120		01/04/2018 15:19	WG1059659	
(S) Dibromofluoromethane	101		76.0-123		01/04/2018 15:19	WG1059659	
(S) 4-Bromofluorobenzene	101		80.0-120		01/04/2018 15:19	WG1059659	

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	0.197		0.100	1	01/05/2018 21:41	WG1059616
(S) o-Terphenyl	116		31.0-160		01/05/2018 21:41	WG1059616



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	01/04/2018 15:00	WG1059558
(S) a,a,a-Trifluorotoluene(FID)	98.8		77.0-122		01/04/2018 15:00	WG1059558

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	01/04/2018 15:38	WG1059659
Acrolein	ND		0.0500	1	01/04/2018 15:38	WG1059659
Acrylonitrile	ND		0.0100	1	01/04/2018 15:38	WG1059659
Benzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Bromobenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Bromodichloromethane	ND		0.00100	1	01/04/2018 15:38	WG1059659
Bromoform	ND		0.00100	1	01/04/2018 15:38	WG1059659
Bromomethane	ND		0.00500	1	01/04/2018 15:38	WG1059659
n-Butylbenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
sec-Butylbenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
tert-Butylbenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Carbon tetrachloride	ND		0.00100	1	01/04/2018 15:38	WG1059659
Chlorobenzene	ND	J4	0.00100	1	01/04/2018 15:38	WG1059659
Chlorodibromomethane	ND		0.00100	1	01/04/2018 15:38	WG1059659
Chloroethane	ND		0.00500	1	01/04/2018 15:38	WG1059659
Chloroform	ND		0.00500	1	01/04/2018 15:38	WG1059659
Chloromethane	ND		0.00250	1	01/04/2018 15:38	WG1059659
2-Chlorotoluene	ND		0.00100	1	01/04/2018 15:38	WG1059659
4-Chlorotoluene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	01/04/2018 15:38	WG1059659
1,2-Dibromoethane	ND		0.00100	1	01/04/2018 15:38	WG1059659
Dibromomethane	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,2-Dichlorobenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,3-Dichlorobenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,4-Dichlorobenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Dichlorodifluoromethane	ND		0.00500	1	01/04/2018 15:38	WG1059659
1,1-Dichloroethane	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,2-Dichloroethane	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,1-Dichloroethene	ND		0.00100	1	01/04/2018 15:38	WG1059659
cis-1,2-Dichloroethene	ND		0.00100	1	01/04/2018 15:38	WG1059659
trans-1,2-Dichloroethene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,2-Dichloropropane	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,1-Dichloropropene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,3-Dichloropropane	ND		0.00100	1	01/04/2018 15:38	WG1059659
cis-1,3-Dichloropropene	ND		0.00100	1	01/04/2018 15:38	WG1059659
trans-1,3-Dichloropropene	ND		0.00100	1	01/04/2018 15:38	WG1059659
2,2-Dichloropropane	ND		0.00100	1	01/04/2018 15:38	WG1059659
Di-isopropyl ether	ND		0.00100	1	01/04/2018 15:38	WG1059659
Ethylbenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Hexachloro-1,3-butadiene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Isopropylbenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
p-Isopropyltoluene	ND		0.00100	1	01/04/2018 15:38	WG1059659
2-Butanone (MEK)	ND		0.0100	1	01/04/2018 15:38	WG1059659
Methylene Chloride	ND		0.00500	1	01/04/2018 15:38	WG1059659
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	01/04/2018 15:38	WG1059659
Methyl tert-butyl ether	ND		0.00100	1	01/04/2018 15:38	WG1059659
Naphthalene	ND		0.00500	1	01/04/2018 15:38	WG1059659
n-Propylbenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Styrene	ND		0.00100	1	01/04/2018 15:38	WG1059659

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	ND	J4	0.00100	1	01/04/2018 15:38	WG1059659
1,1,2,2-Tetrachloroethane	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,1,2-Trichlorotrifluoroethane	ND	J4	0.00100	1	01/04/2018 15:38	WG1059659
Tetrachloroethene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Toluene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,2,3-Trichlorobenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,2,4-Trichlorobenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,1,1-Trichloroethane	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,1,2-Trichloroethane	ND	J4	0.00100	1	01/04/2018 15:38	WG1059659
Trichloroethene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Trichlorofluoromethane	ND		0.00500	1	01/04/2018 15:38	WG1059659
1,2,3-Trichloropropane	ND		0.00250	1	01/04/2018 15:38	WG1059659
1,2,4-Trimethylbenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,2,3-Trimethylbenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
1,3,5-Trimethylbenzene	ND		0.00100	1	01/04/2018 15:38	WG1059659
Vinyl chloride	ND		0.00100	1	01/04/2018 15:38	WG1059659
Xylenes, Total	ND		0.00300	1	01/04/2018 15:38	WG1059659
(S) Toluene-d8	107		80.0-120		01/04/2018 15:38	WG1059659
(S) Dibromofluoromethane	103		76.0-123		01/04/2018 15:38	WG1059659
(S) 4-Bromofluorobenzene	107		80.0-120		01/04/2018 15:38	WG1059659

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

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	0.103		0.100	1	01/05/2018 21:59	WG1059616
(S) o-Terphenyl	120		31.0-160		01/05/2018 21:59	WG1059616



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	01/04/2018 15:22	WG1059558
(S) a,a,a-Trifluorotoluene(FID)	99.5		77.0-122		01/04/2018 15:22	WG1059558

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	01/04/2018 15:58	WG1059659
Acrolein	ND		0.0500	1	01/04/2018 15:58	WG1059659
Acrylonitrile	ND		0.0100	1	01/04/2018 15:58	WG1059659
Benzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Bromobenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Bromodichloromethane	ND		0.00100	1	01/04/2018 15:58	WG1059659
Bromoform	ND		0.00100	1	01/04/2018 15:58	WG1059659
Bromomethane	ND		0.00500	1	01/04/2018 15:58	WG1059659
n-Butylbenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
sec-Butylbenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
tert-Butylbenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Carbon tetrachloride	ND		0.00100	1	01/04/2018 15:58	WG1059659
Chlorobenzene	ND	J4	0.00100	1	01/04/2018 15:58	WG1059659
Chlorodibromomethane	ND		0.00100	1	01/04/2018 15:58	WG1059659
Chloroethane	ND		0.00500	1	01/04/2018 15:58	WG1059659
Chloroform	ND		0.00500	1	01/04/2018 15:58	WG1059659
Chloromethane	ND		0.00250	1	01/04/2018 15:58	WG1059659
2-Chlorotoluene	ND		0.00100	1	01/04/2018 15:58	WG1059659
4-Chlorotoluene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	01/04/2018 15:58	WG1059659
1,2-Dibromoethane	ND		0.00100	1	01/04/2018 15:58	WG1059659
Dibromomethane	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,2-Dichlorobenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,3-Dichlorobenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,4-Dichlorobenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Dichlorodifluoromethane	ND		0.00500	1	01/04/2018 15:58	WG1059659
1,1-Dichloroethane	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,2-Dichloroethane	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,1-Dichloroethene	ND		0.00100	1	01/04/2018 15:58	WG1059659
cis-1,2-Dichloroethene	ND		0.00100	1	01/04/2018 15:58	WG1059659
trans-1,2-Dichloroethene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,2-Dichloropropane	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,1-Dichloropropene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,3-Dichloropropane	ND		0.00100	1	01/04/2018 15:58	WG1059659
cis-1,3-Dichloropropene	ND		0.00100	1	01/04/2018 15:58	WG1059659
trans-1,3-Dichloropropene	ND		0.00100	1	01/04/2018 15:58	WG1059659
2,2-Dichloropropane	ND		0.00100	1	01/04/2018 15:58	WG1059659
Di-isopropyl ether	ND		0.00100	1	01/04/2018 15:58	WG1059659
Ethylbenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Hexachloro-1,3-butadiene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Isopropylbenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
p-Isopropyltoluene	ND		0.00100	1	01/04/2018 15:58	WG1059659
2-Butanone (MEK)	ND		0.0100	1	01/04/2018 15:58	WG1059659
Methylene Chloride	ND		0.00500	1	01/04/2018 15:58	WG1059659
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	01/04/2018 15:58	WG1059659
Methyl tert-butyl ether	ND		0.00100	1	01/04/2018 15:58	WG1059659
Naphthalene	ND		0.00500	1	01/04/2018 15:58	WG1059659
n-Propylbenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Styrene	ND		0.00100	1	01/04/2018 15:58	WG1059659

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	ND	J4	0.00100	1	01/04/2018 15:58	WG1059659
1,1,2,2-Tetrachloroethane	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,1,2-Trichlorotrifluoroethane	ND	J4	0.00100	1	01/04/2018 15:58	WG1059659
Tetrachloroethene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Toluene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,2,3-Trichlorobenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,2,4-Trichlorobenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,1,1-Trichloroethane	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,1,2-Trichloroethane	ND	J4	0.00100	1	01/04/2018 15:58	WG1059659
Trichloroethene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Trichlorofluoromethane	ND		0.00500	1	01/04/2018 15:58	WG1059659
1,2,3-Trichloropropane	ND		0.00250	1	01/04/2018 15:58	WG1059659
1,2,4-Trimethylbenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,2,3-Trimethylbenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
1,3,5-Trimethylbenzene	ND		0.00100	1	01/04/2018 15:58	WG1059659
Vinyl chloride	ND		0.00100	1	01/04/2018 15:58	WG1059659
Xylenes, Total	ND		0.00300	1	01/04/2018 15:58	WG1059659
(S) Toluene-d8	104		80.0-120		01/04/2018 15:58	WG1059659
(S) Dibromofluoromethane	102		76.0-123		01/04/2018 15:58	WG1059659
(S) 4-Bromofluorobenzene	103		80.0-120		01/04/2018 15:58	WG1059659

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	15.2		0.500	5	01/09/2018 16:30	WG1059616
(S) o-Terphenyl	124		31.0-160		01/09/2018 16:30	WG1059616

Method Blank (MB)

(MB) R3277858-3 01/04/18 11:36

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
TPH (GC/FID) Low Fraction	U		0.0314	0.100
(S) a,a,a-Trifluorotoluene(FID)	99.4			77.0-122

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

(LCS) R3277858-1 01/04/18 10:29 • (LCSD) R3277858-2 01/04/18 10:52

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
TPH (GC/FID) Low Fraction	5.50	5.98	6.10	109	111	71.0-136			2.01	20
(S) a,a,a-Trifluorotoluene(FID)				106	108	77.0-122				

L960959-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L960959-01 01/04/18 13:32 • (MS) R3277858-4 01/04/18 12:25 • (MSD) R3277858-5 01/04/18 12:47

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
TPH (GC/FID) Low Fraction	5.50	ND	6.84	6.11	123	110	1	18.0-160			11.3	20
(S) a,a,a-Trifluorotoluene(FID)					107	107		77.0-122				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3278079-2 01/04/18 13:57

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0100	0.0500
Acrolein	U		0.00887	0.0500
Acrylonitrile	U		0.00187	0.0100
Benzene	U		0.000331	0.00100
Bromobenzene	U		0.000352	0.00100
Bromodichloromethane	U		0.000380	0.00100
Bromoform	U		0.000469	0.00100
Bromomethane	U		0.000866	0.00500
n-Butylbenzene	U		0.000361	0.00100
sec-Butylbenzene	U		0.000365	0.00100
tert-Butylbenzene	U		0.000399	0.00100
Carbon tetrachloride	U		0.000379	0.00100
Chlorobenzene	U		0.000348	0.00100
Chlorodibromomethane	U		0.000327	0.00100
Chloroethane	U		0.000453	0.00500
Chloroform	U		0.000324	0.00500
Chloromethane	U		0.000276	0.00250
2-Chlorotoluene	U		0.000375	0.00100
4-Chlorotoluene	U		0.000351	0.00100
1,2-Dibromo-3-Chloropropane	U		0.00133	0.00500
1,2-Dibromoethane	U		0.000381	0.00100
Dibromomethane	U		0.000346	0.00100
1,2-Dichlorobenzene	U		0.000349	0.00100
1,3-Dichlorobenzene	U		0.000220	0.00100
1,4-Dichlorobenzene	U		0.000274	0.00100
Dichlorodifluoromethane	U		0.000551	0.00500
1,1-Dichloroethane	U		0.000259	0.00100
1,2-Dichloroethane	U		0.000361	0.00100
1,1-Dichloroethene	U		0.000398	0.00100
cis-1,2-Dichloroethene	U		0.000260	0.00100
trans-1,2-Dichloroethene	U		0.000396	0.00100
1,2-Dichloropropane	U		0.000306	0.00100
1,1-Dichloropropene	U		0.000352	0.00100
1,3-Dichloropropane	U		0.000366	0.00100
cis-1,3-Dichloropropene	U		0.000418	0.00100
trans-1,3-Dichloropropene	U		0.000419	0.00100
2,2-Dichloropropane	U		0.000321	0.00100
Di-isopropyl ether	U		0.000320	0.00100
Ethylbenzene	U		0.000384	0.00100
Hexachloro-1,3-butadiene	U		0.000256	0.00100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3278079-2 01/04/18 13:57

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
p-Isopropyltoluene	U		0.000350	0.00100
2-Butanone (MEK)	U		0.00393	0.0100
Isopropylbenzene	U		0.000326	0.00100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100
Methyl tert-butyl ether	U		0.000367	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.000349	0.00100
Styrene	U		0.000307	0.00100
1,1,1,2-Tetrachloroethane	U		0.000385	0.00100
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100
Tetrachloroethene	U		0.000372	0.00100
1,1,2-Trichlorotrifluoroethane	U		0.000303	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
Toluene	U		0.000412	0.00100
1,2,4-Trichlorobenzene	U		0.000355	0.00100
1,1,1-Trichloroethane	U		0.000319	0.00100
1,1,2-Trichloroethane	U		0.000383	0.00100
Trichloroethene	U		0.000398	0.00100
Trichlorofluoromethane	U		0.00120	0.00500
1,2,3-Trichloropropane	U		0.000807	0.00250
1,2,3-Trimethylbenzene	U		0.000321	0.00100
1,2,4-Trimethylbenzene	U		0.000373	0.00100
1,3,5-Trimethylbenzene	U		0.000387	0.00100
Vinyl chloride	U		0.000259	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	107			80.0-120
(S) Dibromofluoromethane	104			76.0-123
(S) 4-Bromofluorobenzene	103			80.0-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3278079-1 01/04/18 12:59

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.125	0.158	126	10.0-160	
Acrolein	0.125	0.0181	14.5	10.0-160	
Acrylonitrile	0.125	0.124	99.2	60.0-142	
Bromobenzene	0.0250	0.0277	111	79.0-120	



Laboratory Control Sample (LCS)

(LCS) R3278079-1 01/04/18 12:59

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromodichloromethane	0.0250	0.0286	115	76.0-120	
Bromoform	0.0250	0.0298	119	67.0-132	
Bromomethane	0.0250	0.0374	150	18.0-160	
n-Butylbenzene	0.0250	0.0308	123	72.0-126	
sec-Butylbenzene	0.0250	0.0288	115	74.0-121	
tert-Butylbenzene	0.0250	0.0290	116	75.0-122	
Carbon tetrachloride	0.0250	0.0275	110	63.0-122	
Benzene	0.0250	0.0269	108	69.0-123	
Chlorobenzene	0.0250	0.0306	123	79.0-121	J4
Chlorodibromomethane	0.0250	0.0313	125	75.0-125	
Chloroethane	0.0250	0.0227	90.9	47.0-152	
Chloroform	0.0250	0.0280	112	72.0-121	
Chloromethane	0.0250	0.0333	133	48.0-139	
2-Chlorotoluene	0.0250	0.0283	113	74.0-122	
4-Chlorotoluene	0.0250	0.0291	116	79.0-120	
1,2-Dibromo-3-Chloropropane	0.0250	0.0248	99.1	64.0-127	
1,2-Dibromoethane	0.0250	0.0298	119	77.0-123	
Dibromomethane	0.0250	0.0276	110	78.0-120	
1,2-Dichlorobenzene	0.0250	0.0291	116	80.0-120	
1,3-Dichlorobenzene	0.0250	0.0283	113	72.0-123	
1,4-Dichlorobenzene	0.0250	0.0279	112	77.0-120	
Dichlorodifluoromethane	0.0250	0.0252	101	49.0-155	
1,1-Dichloroethane	0.0250	0.0269	108	70.0-126	
1,2-Dichloroethane	0.0250	0.0288	115	67.0-126	
1,1-Dichloroethene	0.0250	0.0248	99.4	64.0-129	
cis-1,2-Dichloroethene	0.0250	0.0277	111	73.0-120	
trans-1,2-Dichloroethene	0.0250	0.0265	106	71.0-121	
1,2-Dichloropropane	0.0250	0.0259	104	75.0-125	
1,1-Dichloropropene	0.0250	0.0283	113	71.0-129	
1,3-Dichloropropane	0.0250	0.0289	115	80.0-121	
cis-1,3-Dichloropropene	0.0250	0.0299	120	79.0-123	
trans-1,3-Dichloropropene	0.0250	0.0307	123	74.0-127	
2,2-Dichloropropane	0.0250	0.0305	122	60.0-125	
Di-isopropyl ether	0.0250	0.0231	92.3	59.0-133	
Hexachloro-1,3-butadiene	0.0250	0.0326	130	64.0-131	
p-Isopropyltoluene	0.0250	0.0304	122	74.0-126	
2-Butanone (MEK)	0.125	0.134	107	37.0-158	
Methylene Chloride	0.0250	0.0235	93.9	66.0-121	
4-Methyl-2-pentanone (MIBK)	0.125	0.135	108	59.0-143	
Ethylbenzene	0.0250	0.0290	116	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Laboratory Control Sample (LCS)

(LCS) R3278079-1 01/04/18 12:59

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
n-Propylbenzene	0.0250	0.0289	116	79.0-120	
Styrene	0.0250	0.0298	119	78.0-124	
1,1,1,2-Tetrachloroethane	0.0250	0.0309	124	75.0-122	J4
1,1,2,2-Tetrachloroethane	0.0250	0.0278	111	71.0-122	
Isopropylbenzene	0.0250	0.0288	115	75.0-120	
Tetrachloroethene	0.0250	0.0307	123	70.0-127	
1,1,2-Trichlorotrifluoroethane	0.0250	0.0128	51.2	61.0-136	J4
1,2,3-Trichlorobenzene	0.0250	0.0299	120	61.0-133	
1,2,4-Trichlorobenzene	0.0250	0.0308	123	69.0-129	
1,1,1-Trichloroethane	0.0250	0.0263	105	68.0-122	
Methyl tert-butyl ether	0.0250	0.0189	75.8	64.0-123	
1,1,2-Trichloroethane	0.0250	0.0305	122	78.0-120	J4
Trichloroethene	0.0250	0.0284	113	78.0-120	
Naphthalene	0.0250	0.0273	109	62.0-128	
Trichlorofluoromethane	0.0250	0.0242	96.7	56.0-137	
1,2,3-Trichloropropane	0.0250	0.0277	111	72.0-124	
1,2,3-Trimethylbenzene	0.0250	0.0286	115	75.0-120	
Vinyl chloride	0.0250	0.0291	117	64.0-133	
Toluene	0.0250	0.0293	117	77.0-120	
1,2,4-Trimethylbenzene	0.0250	0.0293	117	75.0-120	
1,3,5-Trimethylbenzene	0.0250	0.0286	114	75.0-120	
Xylenes, Total	0.0750	0.0880	117	77.0-120	
(S) Toluene-d8			105	80.0-120	
(S) Dibromofluoromethane			102	76.0-123	
(S) 4-Bromofluorobenzene			97.4	80.0-120	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3277707-1 01/05/18 13:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/FID) High Fraction	U		0.0247	0.100
(S) o-Terphenyl	95.7			31.0-160

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

(LCS) R3277707-2 01/05/18 14:02 • (LCSD) R3277707-3 01/05/18 14:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	1.50	1.71	1.62	114	108	50.0-150			5.24	20
(S) o-Terphenyl				117	118	31.0-160				

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, 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

J4	The associated batch QC was outside the established quality control range for accuracy.
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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

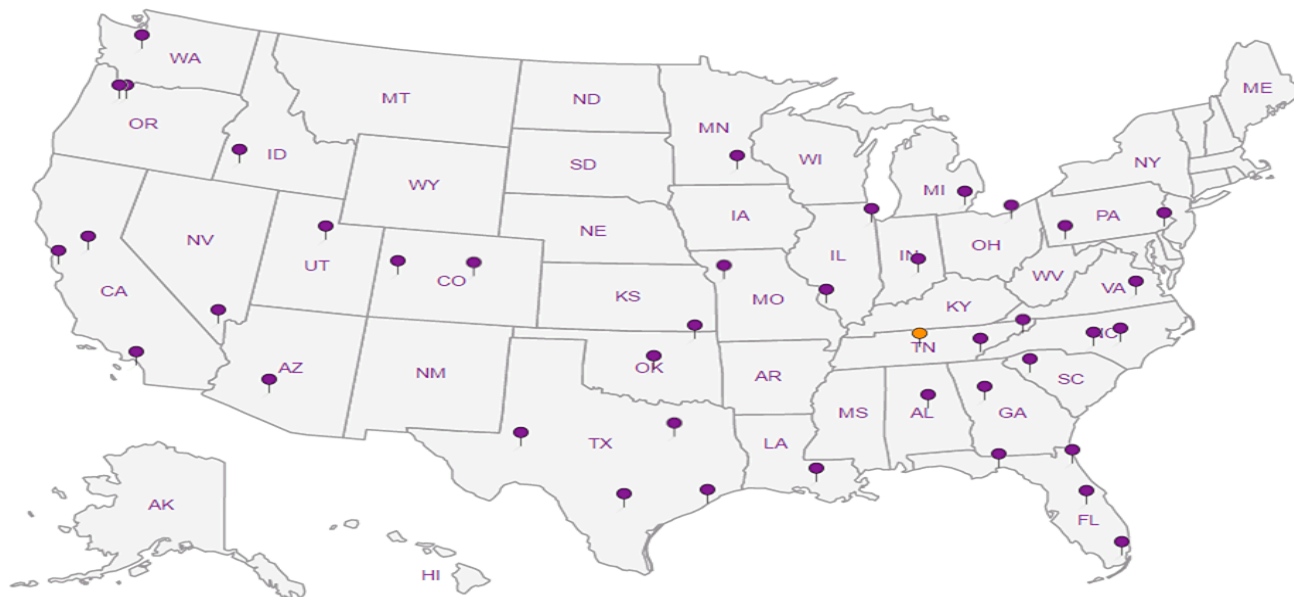
9 Sc

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

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		


A2LA – ISO 17025	1461.01	AIHA-LAP, LLC	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	IN00003		

Our Locations



[illegible]

ESC LAB SCIENCES Cooler Receipt Form

Client: <u>COILGAS RCD</u>	SDG#	<u>960978</u>	
Cooler Received/Opened On: <u>01/4 /18</u>	Temperature:	<u>3.6</u>	<u>°C</u>
Received by : Kevin Turner			
Signature: 			
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?			