



26-Jul-2018

Brett Middleton
Caerus Oil and Gas LLC
143 Diamond Ave.
Parachute, CO 81635

Re: **Riley GV 1-8**

Work Order: **18071119**

Dear Brett,

ALS Environmental received 9 samples on 19-Jul-2018 09:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 998501

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8
Work Order: 18071119

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
18071119-01	20180718-Riley 1 Fill (3)	Soil		7/18/2018 13:20	7/19/2018 09:45	<input type="checkbox"/>
18071119-02	20180718-Riley 1 Stock (1)	Soil		7/18/2018 13:30	7/19/2018 09:45	<input type="checkbox"/>
18071119-03	20180718-Riley 1 Stock (2)	Soil		7/18/2018 13:40	7/19/2018 09:45	<input type="checkbox"/>
18071119-04	20180718-Riley 1 (N) Bot 30 (4)	Soil		7/18/2018 14:00	7/19/2018 09:45	<input type="checkbox"/>
18071119-05	20180718-Riley 1 (N) Wall 15 (5)	Soil		7/18/2018 14:20	7/19/2018 09:45	<input type="checkbox"/>
18071119-06	20180718-Riley 1 (E) Wall 15 (6)	Soil		7/18/2018 15:10	7/19/2018 09:45	<input type="checkbox"/>
18071119-07	20180718-Riley 1 (S) Wall 15 (7)	Soil		7/18/2018 16:10	7/19/2018 09:45	<input type="checkbox"/>
18071119-08	20180718-Riley 1 (SE) Bot (8)	Soil		7/18/2018 16:15	7/19/2018 09:45	<input type="checkbox"/>
18071119-09	20180718-Riley 1 Stock (9)	Soil		7/18/2018 16:20	7/19/2018 09:45	<input type="checkbox"/>

Client: Caerus Oil and Gas LLC**Project:** Riley GV 1-8**Work Order:** 18071119**Case Narrative**

Batch 121579, Method VOC_8260_S, Sample 18071119-04A: One or more VOC surrogates were above the limits due to matrix interference.

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8
WorkOrder: 18071119

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: 26-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8 20180718-
Sample ID: Riley 1 Fill (3)
Collection Date: 7/18/2018 01:20 PM

Work Order: 18071119
Lab ID: 18071119-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/19/18		Analyst: RP
DRO (C10-C28)	U		3.4	6.0	mg/Kg-dry	1	7/25/2018 13:19
Surr: 4-Terphenyl-d14	45.0			34-130	%REC	1	7/25/2018 13:19
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/19/18		Analyst: RP
GRO (C6-C10)	19		2.9	7.0	mg/Kg-dry	1	7/21/2018 22:47
Surr: Toluene-d8	120			71-123	%REC	1	7/21/2018 22:47
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/19/18		Analyst: WH
Benzene	U		0.0072	0.042	mg/Kg-dry	1	7/19/2018 13:16
Ethylbenzene	U		0.0089	0.042	mg/Kg-dry	1	7/19/2018 13:16
m,p-Xylene	U		0.020	0.085	mg/Kg-dry	1	7/19/2018 13:16
o-Xylene	U		0.016	0.042	mg/Kg-dry	1	7/19/2018 13:16
Toluene	U		0.012	0.042	mg/Kg-dry	1	7/19/2018 13:16
Xylenes, Total	U		0.036	0.13	mg/Kg-dry	1	7/19/2018 13:16
Surr: 1,2-Dichloroethane-d4	100			70-130	%REC	1	7/19/2018 13:16
Surr: 4-Bromofluorobenzene	97.0			70-130	%REC	1	7/19/2018 13:16
Surr: Dibromofluoromethane	89.8			70-130	%REC	1	7/19/2018 13:16
Surr: Toluene-d8	98.7			70-130	%REC	1	7/19/2018 13:16
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	17		0.025	0.050	% of sample	1	7/19/2018 14:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 26-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8
Sample ID: 20180718-Riley 1 Stock (1)
Collection Date: 7/18/2018 01:30 PM

Work Order: 18071119
Lab ID: 18071119-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/19/18		Analyst: RP
DRO (C10-C28)	20		3.4	5.9	mg/Kg-dry	1	7/25/2018 13:48
Surr: 4-Terphenyl-d14	42.0			34-130	%REC	1	7/25/2018 13:48
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/19/18		Analyst: RP
GRO (C6-C10)	430		3.1	7.5	mg/Kg-dry	1	7/22/2018 12:06
Surr: Toluene-d8	106			71-123	%REC	1	7/22/2018 12:06
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/19/18		Analyst: WH
Benzene	0.025	J	0.0077	0.045	mg/Kg-dry	1	7/19/2018 13:38
Ethylbenzene	0.71		0.0095	0.045	mg/Kg-dry	1	7/19/2018 13:38
m,p-Xylene	13		0.021	0.090	mg/Kg-dry	1	7/19/2018 13:38
o-Xylene	2.0		0.017	0.045	mg/Kg-dry	1	7/19/2018 13:38
Toluene	0.050		0.012	0.045	mg/Kg-dry	1	7/19/2018 13:38
Xylenes, Total	15		0.039	0.14	mg/Kg-dry	1	7/19/2018 13:38
Surr: 1,2-Dichloroethane-d4	96.1			70-130	%REC	1	7/19/2018 13:38
Surr: 4-Bromofluorobenzene	86.0			70-130	%REC	1	7/19/2018 13:38
Surr: Dibromofluoromethane	88.6			70-130	%REC	1	7/19/2018 13:38
Surr: Toluene-d8	124			70-130	%REC	1	7/19/2018 13:38
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	20		0.025	0.050	% of sample	1	7/19/2018 14:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 26-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8
Sample ID: 20180718-Riley 1 (N) Bot 30 (4)
Collection Date: 7/18/2018 02:00 PM

Work Order: 18071119
Lab ID: 18071119-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/19/18		Analyst: RP
DRO (C10-C28)	8.5		3.4	5.9	mg/Kg-dry	1	7/25/2018 14:18
Surr: 4-Terphenyl-d14	51.6			34-130	%REC	1	7/25/2018 14:18
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/19/18		Analyst: RP
GRO (C6-C10)	330		3.1	7.3	mg/Kg-dry	1	7/22/2018 12:32
Surr: Toluene-d8	101			71-123	%REC	1	7/22/2018 12:32
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/19/18		Analyst: WH
Benzene	U		0.0075	0.044	mg/Kg-dry	1	7/19/2018 14:01
Ethylbenzene	0.32		0.0093	0.044	mg/Kg-dry	1	7/19/2018 14:01
m,p-Xylene	1.6		0.021	0.088	mg/Kg-dry	1	7/19/2018 14:01
o-Xylene	0.077		0.017	0.044	mg/Kg-dry	1	7/19/2018 14:01
Toluene	U		0.012	0.044	mg/Kg-dry	1	7/19/2018 14:01
Xylenes, Total	1.6		0.038	0.13	mg/Kg-dry	1	7/19/2018 14:01
Surr: 1,2-Dichloroethane-d4	98.2			70-130	%REC	1	7/19/2018 14:01
Surr: 4-Bromofluorobenzene	95.8			70-130	%REC	1	7/19/2018 14:01
Surr: Dibromofluoromethane	87.5			70-130	%REC	1	7/19/2018 14:01
Surr: Toluene-d8	145	S		70-130	%REC	1	7/19/2018 14:01
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	19		0.025	0.050	% of sample	1	7/19/2018 14:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 26-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8
Sample ID: 20180718-Riley 1 (N) Wall 15 (5)
Collection Date: 7/18/2018 02:20 PM

Work Order: 18071119
Lab ID: 18071119-05
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/19/18		Analyst: RP
DRO (C10-C28)	U		3.6	6.2	mg/Kg-dry	1	7/25/2018 14:47
Surr: 4-Terphenyl-d14	35.0			34-130	%REC	1	7/25/2018 14:47
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/19/18		Analyst: RP
GRO (C6-C10)	21		3.3	7.8	mg/Kg-dry	1	7/22/2018 12:58
Surr: Toluene-d8	119			71-123	%REC	1	7/22/2018 12:58
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/19/18		Analyst: WH
Benzene	U		0.0080	0.047	mg/Kg-dry	1	7/19/2018 14:24
Ethylbenzene	U		0.0099	0.047	mg/Kg-dry	1	7/19/2018 14:24
m,p-Xylene	U		0.022	0.094	mg/Kg-dry	1	7/19/2018 14:24
o-Xylene	U		0.018	0.047	mg/Kg-dry	1	7/19/2018 14:24
Toluene	U		0.013	0.047	mg/Kg-dry	1	7/19/2018 14:24
Xylenes, Total	U		0.040	0.14	mg/Kg-dry	1	7/19/2018 14:24
Surr: 1,2-Dichloroethane-d4	98.3			70-130	%REC	1	7/19/2018 14:24
Surr: 4-Bromofluorobenzene	101			70-130	%REC	1	7/19/2018 14:24
Surr: Dibromofluoromethane	85.2			70-130	%REC	1	7/19/2018 14:24
Surr: Toluene-d8	98.3			70-130	%REC	1	7/19/2018 14:24
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	22		0.025	0.050	% of sample	1	7/19/2018 14:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 26-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8
Sample ID: 20180718-Riley 1 (E) Wall 15 (6)
Collection Date: 7/18/2018 03:10 PM

Work Order: 18071119
Lab ID: 18071119-06
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/19/18		Analyst: RP
DRO (C10-C28)	U		3.4	5.8	mg/Kg-dry	1	7/25/2018 15:16
Surr: 4-Terphenyl-d14	46.5			34-130	%REC	1	7/25/2018 15:16
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/19/18		Analyst: RP
GRO (C6-C10)	20		3.0	7.2	mg/Kg-dry	1	7/22/2018 01:24
Surr: Toluene-d8	121			71-123	%REC	1	7/22/2018 01:24
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/19/18		Analyst: LSY
Benzene	U		0.0074	0.043	mg/Kg-dry	1	7/19/2018 13:35
Ethylbenzene	U		0.0091	0.043	mg/Kg-dry	1	7/19/2018 13:35
m,p-Xylene	U		0.021	0.086	mg/Kg-dry	1	7/19/2018 13:35
o-Xylene	U		0.017	0.043	mg/Kg-dry	1	7/19/2018 13:35
Toluene	U		0.012	0.043	mg/Kg-dry	1	7/19/2018 13:35
Xylenes, Total	U		0.037	0.13	mg/Kg-dry	1	7/19/2018 13:35
Surr: 1,2-Dichloroethane-d4	102			70-130	%REC	1	7/19/2018 13:35
Surr: 4-Bromofluorobenzene	96.0			70-130	%REC	1	7/19/2018 13:35
Surr: Dibromofluoromethane	90.0			70-130	%REC	1	7/19/2018 13:35
Surr: Toluene-d8	98.9			70-130	%REC	1	7/19/2018 13:35
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	18		0.025	0.050	% of sample	1	7/19/2018 14:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 26-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8
Sample ID: 20180718-Riley 1 (S) Wall 15 (7)
Collection Date: 7/18/2018 04:10 PM

Work Order: 18071119
Lab ID: 18071119-07
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/19/18		Analyst: RP
DRO (C10-C28)	U		3.4	6.0	mg/Kg-dry	1	7/25/2018 15:46
Surr: 4-Terphenyl-d14	36.5			34-130	%REC	1	7/25/2018 15:46
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/19/18		Analyst: RP
GRO (C6-C10)	U		3.1	7.5	mg/Kg-dry	1	7/22/2018 01:50
Surr: Toluene-d8	120			71-123	%REC	1	7/22/2018 01:50
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/19/18		Analyst: LSY
Benzene	U		0.0077	0.045	mg/Kg-dry	1	7/19/2018 13:50
Ethylbenzene	U		0.0095	0.045	mg/Kg-dry	1	7/19/2018 13:50
m,p-Xylene	U		0.021	0.090	mg/Kg-dry	1	7/19/2018 13:50
o-Xylene	U		0.017	0.045	mg/Kg-dry	1	7/19/2018 13:50
Toluene	U		0.012	0.045	mg/Kg-dry	1	7/19/2018 13:50
Xylenes, Total	U		0.039	0.14	mg/Kg-dry	1	7/19/2018 13:50
Surr: 1,2-Dichloroethane-d4	102			70-130	%REC	1	7/19/2018 13:50
Surr: 4-Bromofluorobenzene	100			70-130	%REC	1	7/19/2018 13:50
Surr: Dibromofluoromethane	89.8			70-130	%REC	1	7/19/2018 13:50
Surr: Toluene-d8	100			70-130	%REC	1	7/19/2018 13:50
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	20		0.025	0.050	% of sample	1	7/19/2018 14:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 26-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8
Sample ID: 20180718-Riley 1 (SE) Bot (8)
Collection Date: 7/18/2018 04:15 PM

Work Order: 18071119
Lab ID: 18071119-08
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/19/18		Analyst: RP
DRO (C10-C28)	U		3.5	6.0	mg/Kg-dry	1	7/25/2018 16:15
Surr: 4-Terphenyl-d14	42.5			34-130	%REC	1	7/25/2018 16:15
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/19/18		Analyst: RP
GRO (C6-C10)	U		3.1	7.5	mg/Kg-dry	1	7/22/2018 02:16
Surr: Toluene-d8	120			71-123	%REC	1	7/22/2018 02:16
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/19/18		Analyst: LSY
Benzene	U		0.0077	0.045	mg/Kg-dry	1	7/19/2018 14:05
Ethylbenzene	U		0.0095	0.045	mg/Kg-dry	1	7/19/2018 14:05
m,p-Xylene	U		0.021	0.090	mg/Kg-dry	1	7/19/2018 14:05
o-Xylene	U		0.017	0.045	mg/Kg-dry	1	7/19/2018 14:05
Toluene	U		0.012	0.045	mg/Kg-dry	1	7/19/2018 14:05
Xylenes, Total	U		0.039	0.14	mg/Kg-dry	1	7/19/2018 14:05
Surr: 1,2-Dichloroethane-d4	102			70-130	%REC	1	7/19/2018 14:05
Surr: 4-Bromofluorobenzene	100			70-130	%REC	1	7/19/2018 14:05
Surr: Dibromofluoromethane	90.3			70-130	%REC	1	7/19/2018 14:05
Surr: Toluene-d8	102			70-130	%REC	1	7/19/2018 14:05
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	20		0.025	0.050	% of sample	1	7/19/2018 14:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 26-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley GV 1-8
Sample ID: 20180718-Riley 1 Stock (9)
Collection Date: 7/18/2018 04:20 PM

Work Order: 18071119
Lab ID: 18071119-09
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C			Prep: SW3546 / 7/19/18	Analyst: RP
DRO (C10-C28)	16		3.4	5.9	mg/Kg-dry	1	7/25/2018 18:50
Surr: 4-Terphenyl-d14	52.1			34-130	%REC	1	7/25/2018 18:50
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D			Prep: SW5035 / 7/19/18	Analyst: RP
GRO (C6-C10)	470		3.0	7.2	mg/Kg-dry	1	7/22/2018 02:42
Surr: Toluene-d8	96.5			71-123	%REC	1	7/22/2018 02:42
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C			Prep: SW5035 / 7/19/18	Analyst: LSY
Benzene	0.045		0.0074	0.043	mg/Kg-dry	1	7/19/2018 14:20
Ethylbenzene	1.2		0.0091	0.043	mg/Kg-dry	1	7/19/2018 14:20
m,p-Xylene	17		0.21	0.86	mg/Kg-dry	10	7/19/2018 15:33
o-Xylene	3.1		0.017	0.043	mg/Kg-dry	1	7/19/2018 14:20
Toluene	U		0.012	0.043	mg/Kg-dry	1	7/19/2018 14:20
Xylenes, Total	20		0.37	1.3	mg/Kg-dry	10	7/19/2018 15:33
Surr: 1,2-Dichloroethane-d4	100			70-130	%REC	1	7/19/2018 14:20
Surr: 1,2-Dichloroethane-d4	107			70-130	%REC	10	7/19/2018 15:33
Surr: 4-Bromofluorobenzene	100			70-130	%REC	1	7/19/2018 14:20
Surr: 4-Bromofluorobenzene	101			70-130	%REC	10	7/19/2018 15:33
Surr: Dibromofluoromethane	88.4			70-130	%REC	1	7/19/2018 14:20
Surr: Dibromofluoromethane	95.2			70-130	%REC	10	7/19/2018 15:33
Surr: Toluene-d8	115			70-130	%REC	1	7/19/2018 14:20
Surr: Toluene-d8	103			70-130	%REC	10	7/19/2018 15:33
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	18		0.025	0.050	% of sample	1	7/19/2018 14:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Caerus Oil and Gas LLC
Work Order: 18071119
Project: Riley GV 1-8

QC BATCH REPORT

Batch ID: **121572** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-121572-121572				Units: mg/Kg		Analysis Date: 7/25/2018 08:44 AM		
Client ID:		Run ID: GC8_180724A				SeqNo: 5167307		Prep Date: 7/19/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	U	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.3	0	3.33	0	39	34-130	0			

LCS		Sample ID: DLCSS1-121572-121572				Units: mg/Kg		Analysis Date: 7/25/2018 09:13 AM		
Client ID:		Run ID: GC8_180724A				SeqNo: 5167308		Prep Date: 7/19/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	328.1	5.0	333	0	98.5	65-122	0			
<i>Surr: 4-Terphenyl-d14</i>	1.667	0	3.33	0	50.1	34-130	0			

The following samples were analyzed in this batch:

18071119-01A	18071119-02A	18071119-04A
18071119-05A	18071119-06A	18071119-07A
18071119-08A	18071119-09A	

Client: Caerus Oil and Gas LLC
 Work Order: 18071119
 Project: Riley GV 1-8

QC BATCH REPORT

Batch ID: 121577 Instrument ID GC10 Method: SW8015D

MBLK		Sample ID: MBLK-121577-121577				Units: µg/Kg-dry		Analysis Date: 7/21/2018 07:18 PM		
Client ID:		Run ID: GC10_180721A				SeqNo: 5160185		Prep Date: 7/19/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	U	5,000								
Surr: Toluene-d8	5936	0	5000	0	119	71-123	0			

LCS		Sample ID: LCS-121577-121577				Units: µg/Kg-dry		Analysis Date: 7/21/2018 06:26 PM		
Client ID:		Run ID: GC10_180721A				SeqNo: 5160184		Prep Date: 7/19/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	485800	5,000	500000	0	97.2	71-123	0			
Surr: Toluene-d8	5660	0	5000	0	113	71-123	0			

MS		Sample ID: 18071119-06A MS				Units: µg/Kg-dry		Analysis Date: 7/22/2018 03:08 AM		
Client ID: 20180718-Riley 1 (E) Wall 15 (6)		Run ID: GC10_180721A				SeqNo: 5160198		Prep Date: 7/19/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	743400	7,200	719500	20340	100	71-123	0			
Surr: Toluene-d8	8632	0	7195	0	120	71-123	0			

MSD		Sample ID: 18071119-06A MSD				Units: µg/Kg-dry		Analysis Date: 7/22/2018 03:34 AM		
Client ID: 20180718-Riley 1 (E) Wall 15 (6)		Run ID: GC10_180721A				SeqNo: 5160199		Prep Date: 7/19/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	657100	7,200	719500	20340	88.5	71-123	743400	12.3	30	
Surr: Toluene-d8	8455	0	7195	0	118	71-123	8632	2.07	30	

The following samples were analyzed in this batch:

18071119-01A	18071119-02A	18071119-04A
18071119-05A	18071119-06A	18071119-07A
18071119-08A	18071119-09A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Caerus Oil and Gas LLC
Work Order: 18071119
Project: Riley GV 1-8

QC BATCH REPORT

Batch ID: **121579** Instrument ID **VMS9** Method: **SW8260C**

MBLK				Sample ID: MBLK-121579-121579			Units: µg/Kg-dry		Analysis Date: 7/19/2018 11:35 AM	
Client ID:		Run ID: VMS9_180719A			SeqNo: 5155679		Prep Date: 7/19/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	30	0	0	0	0-0	0			
Ethylbenzene	U	30	0	0	0	0-0	0			
m,p-Xylene	U	60	0	0	0	0-0	0			
o-Xylene	U	30	0	0	0	0-0	0			
Toluene	U	30	0	0	0	0-0	0			
Xylenes, Total	U	90	0	0	0	0-0	0			
Surr: 1,2-Dichloroethane-d4	1027	0	1000	0	103	70-130	0			
Surr: 4-Bromofluorobenzene	1018	0	1000	0	102	70-130	0			
Surr: Dibromofluoromethane	929.5	0	1000	0	93	70-130	0			
Surr: Toluene-d8	975.5	0	1000	0	97.6	70-130	0			

LCS				Sample ID: LCS-121579-121579			Units: µg/Kg-dry		Analysis Date: 7/19/2018 10:50 AM	
Client ID:		Run ID: VMS9_180719A			SeqNo: 5155678		Prep Date: 7/19/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1044	30	1000	0	104	75-125	0			
Ethylbenzene	1116	30	1000	0	112	75-125	0			
m,p-Xylene	2224	60	2000	0	111	80-125	0			
o-Xylene	1114	30	1000	0	111	75-125	0			
Toluene	996.5	30	1000	0	99.6	70-125	0			
Xylenes, Total	3338	90	3000	0	111	75-125	0			
Surr: 1,2-Dichloroethane-d4	1040	0	1000	0	104	70-130	0			
Surr: 4-Bromofluorobenzene	1029	0	1000	0	103	70-130	0			
Surr: Dibromofluoromethane	982.5	0	1000	0	98.2	70-130	0			
Surr: Toluene-d8	1025	0	1000	0	102	70-130	0			

MS				Sample ID: 18071119-06A MS			Units: µg/Kg-dry		Analysis Date: 7/19/2018 05:33 PM	
Client ID: 20180718-Riley 1 (E) Wall 15 (6)		Run ID: VMS9_180719A			SeqNo: 5157551		Prep Date: 7/19/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1486	43	1439	0	103	75-125	0			
Ethylbenzene	1689	43	1439	0	117	75-125	0			
m,p-Xylene	3252	86	2878	0	113	80-125	0			
o-Xylene	1626	43	1439	0	113	75-125	0			
Toluene	1430	43	1439	0	99.4	70-125	0			
Xylenes, Total	4878	130	4317	0	113	75-125	0			
Surr: 1,2-Dichloroethane-d4	1435	0	1439	0	99.8	70-130	0			
Surr: 4-Bromofluorobenzene	1507	0	1439	0	105	70-130	0			
Surr: Dibromofluoromethane	1376	0	1439	0	95.6	70-130	0			
Surr: Toluene-d8	1458	0	1439	0	101	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Caerus Oil and Gas LLC
Work Order: 18071119
Project: Riley GV 1-8

QC BATCH REPORT

Batch ID: **121579** Instrument ID **VMS9** Method: **SW8260C**

MSD				Sample ID: 18071119-06A MSD			Units: µg/Kg-dry		Analysis Date: 7/19/2018 05:48 PM		
Client ID: 20180718-Riley 1 (E) Wall 15 (6)			Run ID: VMS9_180719A			SeqNo: 5157552		Prep Date: 7/19/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1492	43	1439	0	104	75-125	1486	0.435	30		
Ethylbenzene	1580	43	1439	0	110	75-125	1689	6.65	30		
m,p-Xylene	3115	86	2878	0	108	80-125	3252	4.32	30		
o-Xylene	1523	43	1439	0	106	75-125	1626	6.53	30		
Toluene	1385	43	1439	0	96.2	70-125	1430	3.22	30		
Xylenes, Total	4638	130	4317	0	107	75-125	4878	5.05	30		
Surr: 1,2-Dichloroethane-d4	1446	0	1439	0	100	70-130	1435	0.749	30		
Surr: 4-Bromofluorobenzene	1461	0	1439	0	102	70-130	1507	3.15	30		
Surr: Dibromofluoromethane	1345	0	1439	0	93.4	70-130	1376	2.33	30		
Surr: Toluene-d8	1420	0	1439	0	98.6	70-130	1458	2.65	30		

The following samples were analyzed in this batch:

18071119-01A	18071119-02A	18071119-04A
18071119-05A	18071119-06A	18071119-07A
18071119-08A	18071119-09A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Caerus Oil and Gas LLC
Work Order: 18071119
Project: Riley GV 1-8

QC BATCH REPORT

Batch ID: **R240555** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R240555				Units: % of sample		Analysis Date: 7/19/2018 02:59 PM		
Client ID:		Run ID: MOIST_180719C				SeqNo: 5157665		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	0.03	0.050								J

LCS		Sample ID: LCS-R240555				Units: % of sample		Analysis Date: 7/19/2018 02:59 PM		
Client ID:		Run ID: MOIST_180719C				SeqNo: 5157664		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP		Sample ID: 18071116-02B DUP				Units: % of sample		Analysis Date: 7/19/2018 02:59 PM		
Client ID:		Run ID: MOIST_180719C				SeqNo: 5157648		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	5.94	0.050	0	0	0	0-0	6.26	5.25	10	

DUP		Sample ID: 18071137-01B DUP				Units: % of sample		Analysis Date: 7/19/2018 02:59 PM		
Client ID:		Run ID: MOIST_180719C				SeqNo: 5157662		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	23.79	0.050	0	0	0	0-0	25	4.96	10	

The following samples were analyzed in this batch:

18071119-01A	18071119-02A	18071119-04A
18071119-05A	18071119-06A	18071119-07A
18071119-08A	18071119-09A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



ALS Laboratory Group

Chain-of-Custody

Form 202d

WORKORDER #

18071119

PROJECT NAME	Riley CV 1-8	SAMPLER	Brett Middleton	DATE	7/18/18	PAGE	1 of 1
PROJECT No.		SITE ID	Riley 1	TURNAROUND	Rush	DISPOSAL	By Lab or Return to Client
COMPANY NAME	Caerus Piceance, LLC	EDD FORMAT					
SEND REPORT TO	Jake Janicek	PURCHASE ORDER					
ADDRESS	143 Diamond Ave	BILL TO COMPANY	Caerus Piceance, LLC				
CITY / STATE / ZIP	Parachute Co 81635	INVOICE ATTN TO	Jake Janicek				
PHONE	970-285-9608	ADDRESS	143 Diamond Ave				
FAX		CITY / STATE / ZIP	Parachute CO 81635				
E-MAIL	jjanicek@caerusoilandgas.com	PHONE	970-285-9608				
		FAX					
		E-MAIL	jjanicek@caerusoilandgas.com				

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	TPH/GRO/DRO	BTEX	Table 910 PAH's	EC	PH	SAR	Benzene	Table 910 Metals
	20180718-Riley 1 A11(3)	S	7/18/18	1320											
	20180718-Riley 1 Stock(1)	S		1330											
X	20180718-Riley 1 Stock(2)	S		1340											
	20180718-Riley 1 (N) Bot 30(4)	S		1400											
	20180718-Riley 1 (N) Well 15(5)	S		1420											
	20180718-Riley 1 (E) Well 15(6)	S		1510											
	20180718-Riley 1 (S) Well 15(7)	S		1610											
	20180718-Riley 1 (SE) Bot 8(8)	S		1615											
	20180718-Riley 1 Stock(9)	S		1620											

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: Same Day BTEX TPH SP2 4.6°	QC PACKAGE (check below)	SIGNATURE	PRINTED NAME	DATE	TIME
	X LEVEL II (Standard QC)	RELINQUISHED BY	Brett Middleton	7/18/18	1440
	LEVEL III (Std QC + forms)	RECEIVED BY	WJL	7-18-18	1440
	LEVEL IV (Std QC + forms + raw data)	RELINQUISHED BY	WJL	7-18-18	1440
		RECEIVED BY	Karen Wilfong	7/19/18	0945
		RELINQUISHED BY			

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9.5035

Sample Receipt Checklist

Client Name: **CAERUS**

Date/Time Received: **19-Jul-18 09:45**

Work Order: **18071119**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

19-Jul-18
Date

Reviewed by: Chad Whelton
eSignature

19-Jul-18
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.6/4.6 C</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/19/2018 10:33:34 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u></u>		

Login Notes: Sample "20180718-Riley 1 Stock (2)" was broken and could not be saved.

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: