

Caerus Oil and Gas

Sample Delivery Group: L1773294

Samples Received: 08/30/2024

Project Number:

Description: PI15-D 909J

Report To: Jake J. / Brett M. / Blair R. / Andy V.
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward
Project Manager

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Pace Analytical National

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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

20240829-SPSOURCE-(PI15-T-D) L1773294-01 GW

Collected by: Nora Oviatt
 Collected date/time: 08/29/24 11:00
 Received date/time: 08/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2354509	1	09/01/24 12:18	09/01/24 12:18	BJM	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2354780	1	09/02/24 12:52	09/02/24 12:52	LAS	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2355519	1	09/03/24 10:00	09/03/24 19:13	AEC	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2354322	1	08/31/24 21:00	08/31/24 21:00	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG2354343	1	08/31/24 16:30	08/31/24 16:30	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2354201	10	08/31/24 19:42	08/31/24 19:42	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2354201	100	08/31/24 19:59	08/31/24 19:59	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2357372	1	09/09/24 14:02	09/09/24 17:33	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2357372	10	09/09/24 14:02	09/09/24 22:26	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2357598	20	09/06/24 21:51	09/06/24 21:51	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2357586	50	09/06/24 23:57	09/06/24 23:57	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2358514	1	09/09/24 09:19	09/10/24 03:10	DMG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

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



Chris Ward
Project Manager

Sample Delivery Group (SDG) Narrative

The Laboratory is not accredited for specific analytes on the associated Sample/Method. These analytes are flagged in the Sample Results section of the report with an asterisk (*).

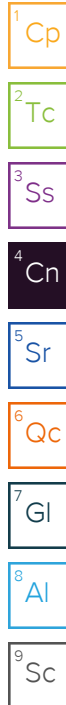
<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1773294-01	20240829-SPSOURCE-(PI15-T-D)	9056A

pH outside of method requirement.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1773294-01	20240829-SPSOURCE-(PI15-T-D)	8015M

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1773294-01	20240829-SPSOURCE-(PI15-T-D)	365.4



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Alkalinity	621		8.45	20.0	1	09/01/2024 12:18	WG2354509
Alkalinity,Bicarbonate	621		8.45	20.0	1	09/01/2024 12:18	WG2354509
Alkalinity,Carbonate	U		8.45	20.0	1	09/01/2024 12:18	WG2354509

Sample Narrative:

L1773294-01 WG2354509: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	U		0.0500	0.100	1	09/02/2024 12:52	WG2354780

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus>Total	0.123		0.0350	0.100	1	09/03/2024 19:13	WG2355519

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	pH			date / time	
pH	7.76	T8	1	08/31/2024 21:00	WG2354322

Sample Narrative:

L1773294-01 WG2354322: 7.76 at 21.6C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	umhos/cm		umhos/cm		date / time	
Specific Conductance	29100		10.0	1	08/31/2024 16:30	WG2354343

Sample Narrative:

L1773294-01 WG2354343: at 25C

Wet Chemistry by Method 9056A

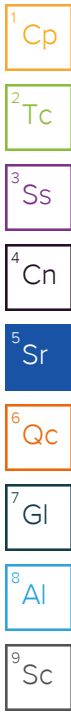
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
*Bromide	79.6		6.80	10.0	10	08/31/2024 19:42	WG2354201
Chloride	10600		54.7	100	100	08/31/2024 19:59	WG2354201
Fluoride	U		0.761	1.50	10	08/31/2024 19:42	WG2354201
Nitrate as (N)	U	Q	0.884	1.00	10	08/31/2024 19:42	WG2354201
Nitrite as (N)	U	Q	0.794	1.00	10	08/31/2024 19:42	WG2354201
Sulfate	U		6.37	50.0	10	08/31/2024 19:42	WG2354201

Sample Narrative:

L1773294-01 WG2354201: Dilution due to matrix impact on instrumentation at lower dilution

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Barium	68.3		0.00736	0.0500	10	09/09/2024 22:26	WG2357372
Boron	5.27		0.0200	0.200	1	09/09/2024 17:33	WG2357372
Calcium	172		0.0793	1.00	1	09/09/2024 17:33	WG2357372
Iron	48.5		0.0180	0.100	1	09/09/2024 17:33	WG2357372



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Magnesium	19.1		0.0853	1.00	1	09/09/2024 17:33	WG2357372
Manganese	0.525		0.000934	0.0100	1	09/09/2024 17:33	WG2357372
Potassium	48.9		0.261	2.00	1	09/09/2024 17:33	WG2357372
Selenium	U		0.0735	0.100	10	09/09/2024 22:26	WG2357372
Sodium	5720		5.04	30.0	10	09/09/2024 22:26	WG2357372
Strontium	25.3		0.00640	0.100	10	09/09/2024 22:26	WG2357372

1 Cp
2 Tc
3 Ss
4 Cn

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH (GC/FID) Low Fraction	141		0.628	2.00	20	09/06/2024 21:51	WG2357598
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		09/06/2024 21:51	WG2357598

5 Sr
6 Qc
7 Gl

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	6.24		0.00471	0.0500	50	09/06/2024 23:57	WG2357586
Toluene	8.41		0.0139	0.0500	50	09/06/2024 23:57	WG2357586
Ethylbenzene	0.766		0.00685	0.0500	50	09/06/2024 23:57	WG2357586
Xylenes, Total	9.42		0.00870	0.150	50	09/06/2024 23:57	WG2357586
Naphthalene	0.0586	J	0.0500	0.250	50	09/06/2024 23:57	WG2357586
(S) Toluene-d8	103			80.0-120		09/06/2024 23:57	WG2357586
(S) 4-Bromofluorobenzene	100			77.0-126		09/06/2024 23:57	WG2357586
(S) 1,2-Dichloroethane-d4	80.8			70.0-130		09/06/2024 23:57	WG2357586

8 Al
9 Sc

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
C10-C28 Diesel Range	3.78		0.0222	0.100	1	09/10/2024 03:10	WG2358514
C28-C36 Motor Oil Range	0.0362	J	0.0118	0.100	1	09/10/2024 03:10	WG2358514
(S) o-Terphenyl	94.7			52.0-156		09/10/2024 03:10	WG2358514

Method Blank (MB)

(MB) R4114475-2 09/01/24 11:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Alkalinity	U		8.45	20.0
Alkalinity,Bicarbonate	U		8.45	20.0
Alkalinity,Carbonate	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1772495-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1772495-06 09/01/24 11:29 • (DUP) R4114475-4 09/01/24 11:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Alkalinity	80.9	80.4	1	0.592		20
Alkalinity,Bicarbonate	80.9	80.4	1	0.592		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1773517-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773517-01 09/01/24 13:31 • (DUP) R4114475-6 09/01/24 13:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Alkalinity	145	146	1	0.703		20
Alkalinity,Bicarbonate	145	146	1	0.703		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5



Laboratory Control Sample (LCS)

(LCS) R4114475-1 09/01/24 11:12

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Alkalinity	100	104	104	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4114614-1 09/02/24 12:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Nitrate-Nitrite	U		0.0500	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1772442-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1772442-02 09/02/24 12:20 • (DUP) R4114614-8 09/02/24 12:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Nitrate-Nitrite	1.27	1.26	1	0.791		20

L1772442-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1772442-04 09/02/24 12:29 • (DUP) R4114614-10 09/02/24 12:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Nitrate-Nitrite	1.28	1.29	1	0.778		20

Laboratory Control Sample (LCS)

(LCS) R4114614-2 09/02/24 12:14

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Nitrate-Nitrite	2.50	2.45	98.0	90.0-110	

L1772442-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1772442-01 09/02/24 12:16 • (MS) R4114614-5 09/02/24 12:17 • (MSD) R4114614-7 09/02/24 12:19

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Nitrate-Nitrite	2.50	1.36	4.34	4.38	119	121	1	90.0-110	<u>J5</u>	<u>J5</u>	0.917	20

L1772442-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1772442-03 09/02/24 12:22 • (MS) R4114614-9 09/02/24 12:28

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Nitrate-Nitrite	2.50	1.41	4.39	119	1	90.0-110	<u>J5</u>

Method Blank (MB)

(MB) R4115026-1 09/03/24 19:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Phosphorus,Total	U		0.0350	0.100

¹Cp

²Tc

³Ss

L1773345-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773345-01 09/03/24 19:16 • (DUP) R4115026-3 09/03/24 19:17

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Phosphorus,Total	4.34	4.47	1	2.95		20

⁴Cn

⁵Sr

Laboratory Control Sample (LCS)

(LCS) R4115026-2 09/03/24 19:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Phosphorus,Total	1.81	1.85	102	85.0-115	

⁶Qc

⁷Gl

L1773345-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773345-01 09/03/24 19:16 • (MS) R4115026-4 09/03/24 19:18 • (MSD) R4115026-5 09/03/24 19:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Phosphorus,Total	2.50	4.34	7.10	6.95	110	104	1	90.0-110	<u>E</u>	<u>E</u>	2.14	20

⁸Al

⁹Sc

L1772806-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1772806-01 08/31/24 21:00 • (DUP) R4114410-2 08/31/24 21:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.99	8.01	1	0.250		1

Sample Narrative:

OS: 7.99 at 22.3C

DUP: 8.01 at 22C

L1773431-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773431-01 08/31/24 21:00 • (DUP) R4114410-3 08/31/24 21:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.96	7.95	1	0.126		1

Sample Narrative:

OS: 7.96 at 21.2C

DUP: 7.95 at 21.3C

Laboratory Control Sample (LCS)

(LCS) R4114410-1 08/31/24 21:00

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

Sample Narrative:

LCS: 9.99 at 22.8C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4114379-1 08/31/24 16:30

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

Sample Narrative:

BLANK: at 25C

L1773238-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773238-01 08/31/24 16:30 • (DUP) R4114379-3 08/31/24 16:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP RPD Limits	DUP Qualifier
Specific Conductance	112	112	1	0.0894	20	

Sample Narrative:

OS: at 25C
DUP: at 25C

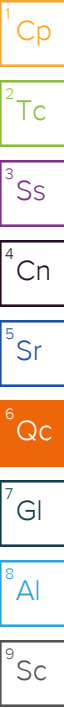
Laboratory Control Sample (LCS)

(LCS) R4114379-2 08/31/24 16:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	733	718	98.0	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R4114958-1 08/31/24 17:22

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.680	1.00
Chloride	U		0.547	1.00
Fluoride	U		0.0761	0.150
Nitrate as (N)	U		0.0884	0.100
Nitrite as (N)	U		0.0794	0.100
Sulfate	U		0.637	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1773199-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773199-01 08/31/24 17:57 • (DUP) R4114958-3 08/31/24 18:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	1	0.000		15
Chloride	21.7	21.8	1	0.324		15
Fluoride	0.127	0.129	1	1.49	U	15
Nitrate as (N)	0.302	0.317	1	4.84		15
Nitrite as (N)	U	U	1	0.000		15
Sulfate	49.2	48.9	1	0.734		15

L1773330-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773330-01 08/31/24 21:26 • (DUP) R4114958-6 08/31/24 21:44

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	1	0.000		15
Chloride	2.32	2.32	1	0.121		15
Fluoride	0.136	0.141	1	3.67	U	15
Nitrate as (N)	U	U	1	0.000		15
Nitrite as (N)	U	U	1	0.000		15
Sulfate	0.833	0.877	1	5.16	U	15

Laboratory Control Sample (LCS)

(LCS) R4114958-2 08/31/24 17:40

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromide	40.0	36.3	90.6	80.0-120	
Chloride	40.0	37.0	92.4	80.0-120	
Fluoride	8.00	7.76	97.0	80.0-120	
Nitrate as (N)	8.00	7.40	92.5	80.0-120	
Nitrite as (N)	8.00	7.97	99.6	80.0-120	
Sulfate	40.0	37.5	93.8	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

L1773199-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773199-01 08/31/24 17:57 • (MS) R4114958-4 08/31/24 18:32 • (MSD) R4114958-5 08/31/24 18:50

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Bromide	40.0	U	33.8	34.5	84.4	86.3	1	80.0-120			2.23	15
Chloride	40.0	21.7	51.9	52.9	75.3	77.9	1	80.0-120	<u>J6</u>	<u>J6</u>	2.01	15
Fluoride	8.00	0.127	7.35	7.37	90.3	90.5	1	80.0-120			0.158	15
Nitrate as (N)	8.00	0.302	7.19	7.39	86.1	88.7	1	80.0-120			2.77	15
Nitrite as (N)	8.00	U	7.47	7.61	93.4	95.2	1	80.0-120			1.87	15
Sulfate	40.0	49.2	74.7	76.3	63.6	67.7	1	80.0-120	<u>J6</u>	<u>J6</u>	2.18	15

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1773330-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1773330-01 08/31/24 21:26 • (MS) R4114958-7 08/31/24 22:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Bromide	40.0	U	31.6	79.0	1	80.0-120	<u>J6</u>
Chloride	40.0	2.32	34.0	79.1	1	80.0-120	<u>J6</u>
Fluoride	8.00	0.136	6.82	83.5	1	80.0-120	
Nitrate as (N)	8.00	U	6.43	80.3	1	80.0-120	
Nitrite as (N)	8.00	U	6.99	87.3	1	80.0-120	
Sulfate	40.0	0.833	32.9	80.1	1	80.0-120	

Method Blank (MB)

(MB) R4117446-1 09/09/24 17:11

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Barium	U		0.000736	0.00500
Boron	U		0.0200	0.200
Calcium	U		0.0793	1.00
Iron	U		0.0180	0.100
Magnesium	U		0.0853	1.00
Manganese	U		0.000934	0.0100
Potassium	U		0.261	2.00
Selenium	U		0.00735	0.0100
Sodium	U		0.504	3.00
Strontium	U		0.000640	0.0100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R4117446-2 09/09/24 17:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	1.00	1.01	101	80.0-120	
Boron	1.00	0.989	98.9	80.0-120	
Calcium	10.0	10.3	103	80.0-120	
Iron	10.0	10.2	102	80.0-120	
Magnesium	10.0	9.89	98.9	80.0-120	
Manganese	1.00	0.995	99.5	80.0-120	
Potassium	10.0	10.6	106	80.0-120	
Selenium	1.00	0.905	90.5	80.0-120	
Sodium	10.0	10.4	104	80.0-120	
Strontium	1.00	1.02	102	80.0-120	

⁷Gl

⁸Al

⁹Sc

L1773292-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773292-01 09/09/24 17:14 • (MS) R4117446-4 09/09/24 17:18 • (MSD) R4117446-5 09/09/24 17:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	1.00	67.4	66.8	67.0	0.000	0.000	1	75.0-125	<u>EV</u>	<u>EV</u>	0.242	20
Boron	1.00	5.21	6.07	6.14	85.7	92.6	1	75.0-125			1.13	20
Calcium	10.0	172	177	177	57.1	54.0	1	75.0-125	<u>V</u>	<u>V</u>	0.178	20
Iron	10.0	48.1	56.4	57.3	82.8	91.6	1	75.0-125			1.54	20
Magnesium	10.0	18.9	27.4	27.9	85.0	89.4	1	75.0-125			1.60	20
Manganese	1.00	0.534	1.46	1.48	92.8	94.4	1	75.0-125			1.07	20
Potassium	10.0	48.6	58.0	58.9	93.7	102	1	75.0-125			1.47	20

L1773292-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773292-01 09/09/24 17:14 • (MS) R4117446-4 09/09/24 17:18 • (MSD) R4117446-5 09/09/24 17:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Selenium	1.00	U	0.817	0.847	81.7	84.7	1	75.0-125			3.63	20
Sodium	10.0	6810	6620	6630	0.000	0.000	1	75.0-125	<u>EV</u>	<u>EV</u>	0.278	20
Strontium	1.00	28.3	28.6	28.9	26.6	52.2	1	75.0-125	<u>EV</u>	<u>EV</u>	0.891	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R4117051-2 09/06/24 12:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/FID) Low Fraction	U		0.0314	0.100
^(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120

Laboratory Control Sample (LCS)

(LCS) R4117051-1 09/06/24 11:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.00	5.62	112	72.0-127	
^(S) a,a,a-Trifluorotoluene(FID)			113	78.0-120	

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

Method Blank (MB)

(MB) R4117252-3 09/06/24 18:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
Ethylbenzene	U		0.000137	0.00100
Xylenes, Total	U		0.000174	0.00300
Naphthalene	U		0.00100	0.00500
(S) Toluene-d8	102			80.0-120
(S) 4-Bromofluorobenzene	109			77.0-126
(S) 1,2-Dichloroethane-d4	89.9			70.0-130

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

(LCS) R4117252-1 09/06/24 17:35 • (LCSD) R4117252-2 09/06/24 17:55

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	%	%	%			%	%
Benzene	0.00500	0.00497	0.00501	99.4	100	70.0-123			0.802	20
Toluene	0.00500	0.00513	0.00514	103	103	79.0-120			0.195	20
Ethylbenzene	0.00500	0.00512	0.00510	102	102	79.0-123			0.391	20
Xylenes, Total	0.0150	0.0156	0.0156	104	104	79.0-123			0.000	20
Naphthalene	0.00500	0.00422	0.00430	84.4	86.0	54.0-135	↓	↓	1.88	20
(S) Toluene-d8				99.2	97.9	80.0-120				
(S) 4-Bromofluorobenzene				106	105	77.0-126				
(S) 1,2-Dichloroethane-d4				92.4	91.7	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4117638-1 09/09/24 20:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
C10-C28 Diesel Range	U		0.0222	0.100
C28-C36 Motor Oil Range	U		0.0118	0.100
<i>(S) o-Terphenyl</i>	76.0			52.0-156

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

(LCS) R4117638-2 09/09/24 20:27 • (LCSD) R4117638-3 09/09/24 20:48

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 %
C10-C28 Diesel Range	1.50	1.11	1.08	74.0	72.0	50.0-150			2.74	20
<i>(S) o-Terphenyl</i>				85.0	84.0	52.0-156				

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

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
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.
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Company Name/Address:

Caerus Oil and Gas

143 Diamond Avenue
Parachute, CO 81635

Billing Information:

Accounts Payable
1001 17th St., Ste. 1600
Denver, CO 80202

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody
constitutes acknowledgment and acceptance of the
Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

SDG # **L1773294**
L-184

Acctnum: CAERUSPCO

Template: T215555

Prelogin: P1092647

PM: 824 - Chris Ward

PB:

Shipped Via: FedEX Saver

Remarks Sample # (lab only)

Report to:
Jake J. / Brett M. / Blair R. / Andy V.

Email To: labreports@caerusoilandgas.com

Project Description:
PI15-D 909J

City/State
Collected: **Parachute CO**

Please Circle:
PT MT CT ET

Phone: 970-285-2653

Client Project #

Lab Project #
CAERUSPCO-909

Collected by (print):
Nora Ouellet

Site/Facility ID #

P.O. #

Collected by (signature):
Nora Ouellet

Rush? (Lab MUST Be Notified)

Quote #

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Date Results Needed

No.
of
Ctrs

Immediately
Packed on Ice N Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Ctrs	ALK, ALKBI, ALKCA 250mlHDPE-NoPres	Br, Cl, F, SO4 250mlHDPE-NoPres	DRONMLVI 40mlAmb-HCl-BT	GRO 40mlAmb HCl	PT 250mlHDPE-H2SO4	RA-226/228 1L-HDPE-Add-HNO3	SPCON 250mlHDPE-NoPres	TDS 1L-HDPE NoPres	TSS 1L-HDPE NoPres	Total Metals 250mlHDPE-HNO3	Remarks	Sample # (lab only)	
20240829-SPSource-(PIBTD) grab		GW	Surface	8/29/2024	1100	17	X	X	X	X	X	X	X	X	X	X			01

* Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: Metals - Ba, B, Ca, Fe, K, Mg, Mn, Na, Se, Sr

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: NP Y N

COC Signed/Accurate: Y N

Bottles arrive intact: Y N

Correct bottles used: Y N

Sufficient volume sent: Y N

If Applicable

VOA Zero Headspace: Y N

Preservation Correct/Checked: Y N

RAD Screen <0.5 mR/hr: Y N

Samples returned via:
 UPS FedEx Courier

Tracking # **W42U 8306 9086**

Relinquished by: (Signature)
Nora Ouellet

Date: **8/29/24** Time: **1440**

Received by: (Signature)
[Signature]

Trip Blank Received: Yes / No
Bottles Received: MeOH TBR

Relinquished by: (Signature)
[Signature]

Date: **8/29/24** Time: **1700**

Received by: (Signature)
[Signature]

Temp: **54.0-3.57**
Date: **TLA9** Time: **17**

PH-10BDH6021
TRC-3223A229

Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature)
CRABER

Date: **08/30/24** Time: **0900**

Hold: Condition: **NCF / OK**

Company Name/Address:

Caerus Oil and Gas

143 Diamond Avenue
Parachute, CO 81635

Billing Information:

Accounts Payable
1001 17th St., Ste. 1600
Denver, CO 80202

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody
constitutes acknowledgment and acceptance of the
Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

SDG # L7773294

Table #

Acctnum: CAERUSPCO

Template: T215555

Prelogin: P1092647

PM: 824 - Chris Ward

PB:

Shipped Via: FedEX Saver

Remarks Sample # (lab only)

Report to:
Jake J. / Brett M. / Blair R. / Andy V.

Email To: labreports@caerusoilandgas.com

Project Description:

PI 15-P 909 J

City/State

Collected: parachute CO

Please Circle:

PT MT CT ET

Phone: 970-285-2653

Client Project #

Lab Project #

CAERUSPCO-909

Collected by (print):

Noa Oriant

Site/Facility ID #

P.O. #

Collected by (signature):

Noa Oriant

Rush? (Lab MUST Be Notified)

Quote #

___ Same Day ___ Five Day

___ Next Day ___ 5 Day (Rad Only)

___ Two Day ___ 10 Day (Rad Only)

___ Three Day

Date Results Needed

No.
of
Cntrs

Immediately

Packed on Ice N ___ Y ___

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

No.
of
Cntrs

20240829-SSource-(PI15TP) grab

GW

surface

8/29/2024

1100

17

X

X

V8250BTEXN 40mlAmb-HCl

pH 125mlHDPE-NoPres

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: Metals - Ba,B,Ca,Fe,K,Mg,Mn,Na,Se,Sr

pH ___ Temp ___

Flow ___ Other ___

Samples returned via:

___ UPS ___ FedEx ___ Courier

Tracking #

10424 8304 9086

Relinquished by: (Signature)

Noa Oriant

Date:

8/29/24

Time:

1440

Received by: (Signature)

[Signature]

Trip Blank Received: Yes / No

HCL / MeOH
TBR

Relinquished by: (Signature)

[Signature]

Date:

8/29/24

Time:

1600

Received by: (Signature)

[Signature]

Temp: 54 + 0.357

Bottles Received:

TLA2

Relinquished by: (Signature)

[Signature]

Date:

08-30-24

Time:

0900

Received for lab by: (Signature)

Date: 08-30-24

Time: 0900

Hold:

Condition:
NCF / OK

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N