ANALYTICAL REPORT

May 11, 2023

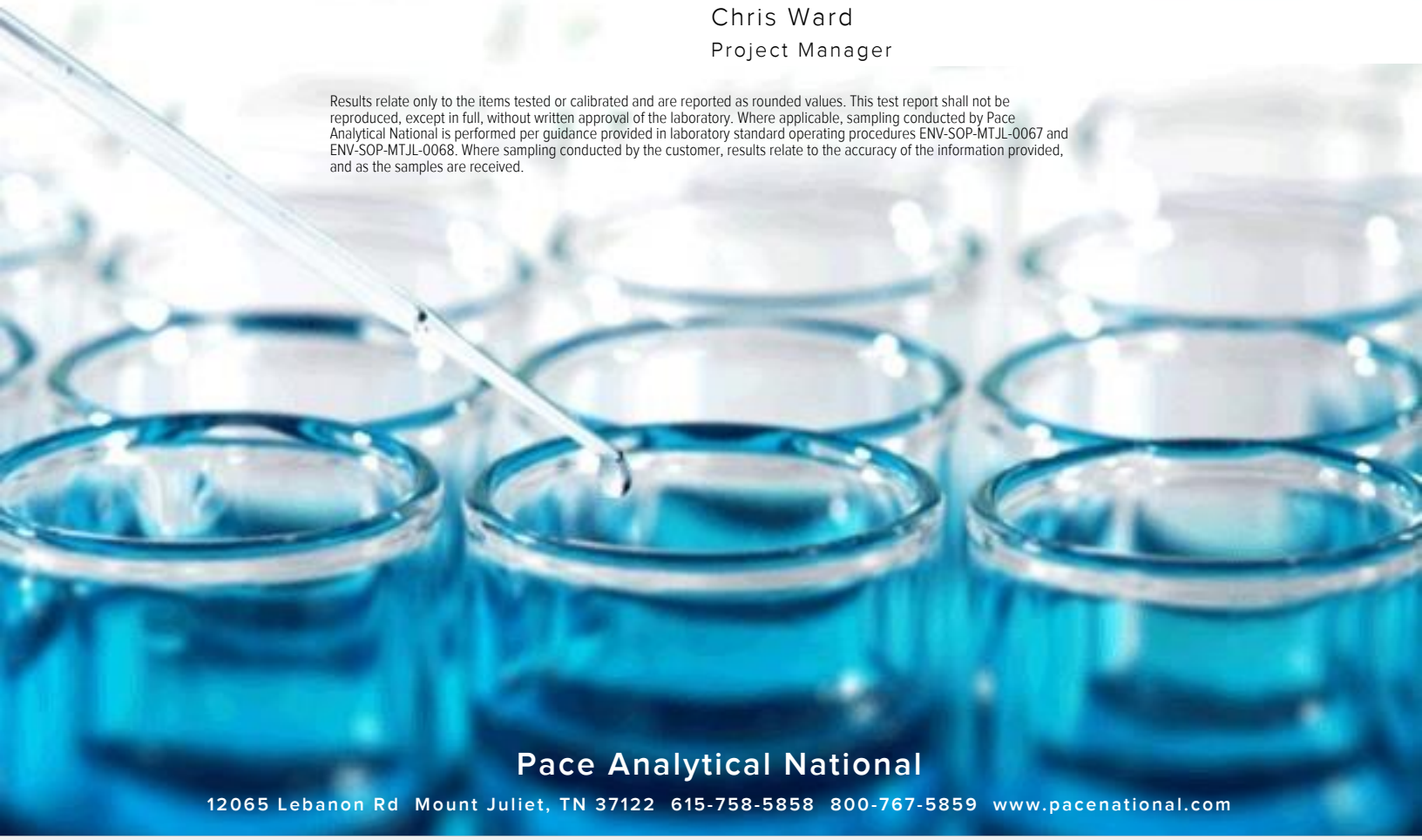
Caerus Oil and Gas

Sample Delivery Group:	L1612505
Samples Received:	05/04/2023
Project Number:	
Description:	909 J

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

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

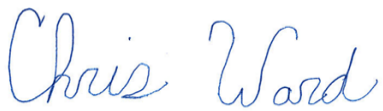
20230503-SPSOURCE-(PK36-T) L1612505-01 GW

Collected by: Will Harmon
Collected date/time: 05/03/23 10:40
Received date/time: 05/04/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2055902	1	05/08/23 15:25	05/08/23 15:25	ARD	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2054294	1	05/05/23 19:40	05/05/23 19:40	AEC	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG2055175	1	05/05/23 08:49	05/05/23 17:27	UNP	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2055305	1	05/09/23 14:22	05/09/23 14:22	DB	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG2055362	1	05/11/23 10:16	05/11/23 10:16	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2054446	10	05/05/23 01:33	05/05/23 01:33	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2054446	100	05/05/23 01:45	05/05/23 01:45	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2055065	1	05/07/23 12:34	05/07/23 18:29	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2055065	10	05/07/23 12:34	05/07/23 21:04	ABL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2055779	100	05/08/23 13:03	05/08/23 13:03	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2055551	50	05/06/23 23:49	05/06/23 23:49	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2056817	500	05/10/23 00:42	05/10/23 00:42	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2057129	1	05/10/23 16:36	05/11/23 08:36	MWS	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	1230		8.45	20.0	1	05/08/2023 15:25	WG2055902
Alkalinity,Bicarbonate	1230		8.45	20.0	1	05/08/2023 15:25	WG2055902
Alkalinity,Carbonate	U		8.45	20.0	1	05/08/2023 15:25	WG2055902

Sample Narrative:
L1612505-01 WG2055902: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	U		0.0500	0.100	1	05/05/2023 19:40	WG2054294

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.662		0.0350	0.100	1	05/05/2023 17:27	WG2055175

Wet Chemistry by Method 9040C

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.40	T8	1	05/09/2023 14:22	WG2055305

Sample Narrative:
L1612505-01 WG2055305: 7.4 at 20.9C

Wet Chemistry by Method 9050A

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	20900		10.0	1	05/11/2023 10:16	WG2055362

Sample Narrative:
L1612505-01 WG2055362: at 25C

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	32.6		3.53	10.0	10	05/05/2023 01:33	WG2054446
Chloride	6800		37.9	100	100	05/05/2023 01:45	WG2054446
Fluoride	1.32	J	0.640	1.50	10	05/05/2023 01:33	WG2054446
Nitrate as (N)	U		0.480	1.00	10	05/05/2023 01:33	WG2054446
Nitrite as (N)	U		0.420	1.00	10	05/05/2023 01:33	WG2054446
Sulfate	U		5.94	50.0	10	05/05/2023 01:33	WG2054446

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	39.2		0.000736	0.00500	1	05/07/2023 18:29	WG2055065
Boron	3.01		0.0200	0.200	1	05/07/2023 18:29	WG2055065
Calcium	50.2		0.0793	1.00	1	05/07/2023 18:29	WG2055065
Iron	35.8		0.0180	0.100	1	05/07/2023 18:29	WG2055065
Magnesium	9.02		0.0853	1.00	1	05/07/2023 18:29	WG2055065
Manganese	0.391		0.000934	0.0100	1	05/07/2023 18:29	WG2055065
Potassium	38.9		0.261	2.00	1	05/07/2023 18:29	WG2055065

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Selenium	U		0.00735	0.0100	1	05/07/2023 18:29	WG2055065
Sodium	4610		5.04	30.0	10	05/07/2023 21:04	WG2055065
Strontium	9.38		0.000640	0.0100	1	05/07/2023 18:29	WG2055065

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	107		3.14	10.0	100	05/08/2023 13:03	WG2055779
(S) a,a,a-Trifluorotoluene(FID)	*89.8*			*78.0-120*		*05/08/2023 13:03*	WG2055779

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	5.10		0.00471	0.0500	50	05/06/2023 23:49	WG2055551
Toluene	17.8		0.139	0.500	500	05/10/2023 00:42	WG2056817
Ethylbenzene	0.709		0.00685	0.0500	50	05/06/2023 23:49	WG2055551
Xylenes, Total	12.6		0.00870	0.150	50	05/06/2023 23:49	WG2055551
Naphthalene	0.0967	J	0.0500	0.250	50	05/06/2023 23:49	WG2055551
(S) Toluene-d8	*104*			*80.0-120*		*05/06/2023 23:49*	WG2055551
(S) Toluene-d8	*97.8*			*80.0-120*		*05/10/2023 00:42*	WG2056817
(S) 4-Bromofluorobenzene	*109*			*77.0-126*		*05/06/2023 23:49*	WG2055551
(S) 4-Bromofluorobenzene	*94.8*			*77.0-126*		*05/10/2023 00:42*	WG2056817
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*05/06/2023 23:49*	WG2055551
(S) 1,2-Dichloroethane-d4	*98.9*			*70.0-130*		*05/10/2023 00:42*	WG2056817

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	4.94		0.0222	0.100	1	05/11/2023 08:36	WG2057129
C28-C36 Motor Oil Range	0.725		0.0118	0.100	1	05/11/2023 08:36	WG2057129
(S) o-Terphenyl	*119*			*52.0-156*		*05/11/2023 08:36*	WG2057129

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

Method Blank (MB)

(MB) R3922608-2 05/08/23 14:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL 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

L1612200-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1612200-01 05/08/23 15:01 • (DUP) R3922608-3 05/08/23 15:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	8.57	U	1	200	P1	20
Alkalinity,Bicarbonate	8.57	U	1	200	P1	20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1612868-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1612868-04 05/08/23 17:09 • (DUP) R3922608-4 05/08/23 17:14

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	1340	1370	1	1.94		20
Alkalinity,Bicarbonate	1340	1370	1	1.94		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) R3922608-1 05/08/23 14:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100	99.2	99.2	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3921605-1 05/05/23 19:17

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

L1612482-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1612482-02 05/05/23 19:23 • (DUP) R3921605-3 05/05/23 19:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.387	0.384	1	0.778		20

L1612621-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1612621-04 05/05/23 21:29 • (DUP) R3921605-11 05/05/23 21:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	3.12	3.10	2	0.643		20

Laboratory Control Sample (LCS)

(LCS) R3921605-2 05/05/23 19:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.61	104	90.0-110	

L1612482-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1612482-02 05/05/23 19:23 • (MS) R3921605-4 05/05/23 19:26

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	0.387	3.11	109	1	90.0-110	

L1612621-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1612621-04 05/05/23 21:29 • (MS) R3921605-12 05/05/23 21:31 • (MSD) R3921605-13 05/05/23 21:33

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 %
Nitrate-Nitrite	2.50	3.12	5.66	5.82	102	108	2	90.0-110			2.79	20

Method Blank (MB)

(MB) R3921583-1 05/05/23 17:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphorus,Total	0.0401	J	0.0350	0.100

L1610942-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1610942-01 05/05/23 17:07 • (DUP) R3921583-3 05/05/23 17:08

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	0.178	0.201	1	12.1		20

L1611998-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1611998-01 05/05/23 17:12 • (DUP) R3921583-6 05/05/23 17:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Phosphorus,Total	3.83	3.77	1	1.58		20

Laboratory Control Sample (LCS)

(LCS) R3921583-2 05/05/23 17:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphorus,Total	4.66	4.31	92.5	83.2-116	

L1610942-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1610942-01 05/05/23 17:07 • (MS) R3921583-4 05/05/23 17:09 • (MSD) R3921583-5 05/05/23 17:11

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 %
Phosphorus,Total	2.50	0.178	2.51	2.40	93.3	88.9	1	90.0-110		J6	4.48	20

Sample Narrative:

MSD: Matrix spike failure due to matrix.

Laboratory Control Sample (LCS)

(LCS) R3922628-1 05/09/23 14:22

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

Sample Narrative:

LCS: 10 at 20.6C

Method Blank (MB)

(MB) R3923490-1 05/11/23 10:16

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

L1612496-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1612496-01 05/11/23 10:16 • (DUP) R3923490-3 05/11/23 10:16

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	50700	50200	1	0.991		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3923490-2 05/11/23 10:16

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1090	97.1	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3921482-1 05/04/23 21:37

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.353	1.00
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Nitrate	U		0.0480	0.100
Nitrite	U		0.0420	0.100
Sulfate	U		0.594	5.00

L1610177-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1610177-04 05/05/23 02:24 • (DUP) R3921482-3 05/05/23 02:37

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	2.20	2.16	1	1.81		15
Fluoride	0.288	0.294	1	2.06		15
Nitrate	0.899	0.885	1	1.64		15
Nitrite	U	U	1	0.000		15
Sulfate	4.70	4.58	1	2.49	J	15

L1610177-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1610177-11 05/05/23 04:58 • (DUP) R3921482-6 05/05/23 05:10

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	4.75	4.73	1	0.333		15
Fluoride	0.202	0.208	1	3.07		15
Nitrate	0.773	0.767	1	0.701		15
Nitrite	U	U	1	0.000		15
Sulfate	8.13	8.08	1	0.580		15

Laboratory Control Sample (LCS)

(LCS) R3921482-2 05/04/23 21:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	38.1	95.1	80.0-120	
Chloride	40.0	38.0	95.0	80.0-120	
Fluoride	8.00	7.77	97.1	80.0-120	
Nitrate	8.00	7.60	95.0	80.0-120	
Nitrite	8.00	7.82	97.7	80.0-120	
Sulfate	40.0	37.8	94.4	80.0-120	

L1610177-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1610177-04 05/05/23 02:24 • (MS) R3921482-4 05/05/23 02:49 • (MSD) R3921482-5 05/05/23 03:02

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 %
Bromide	50.0	U	45.1	46.0	90.3	92.0	1	80.0-120			1.86	15
Chloride	50.0	2.20	49.2	50.1	94.0	95.8	1	80.0-120			1.85	15
Fluoride	5.00	0.288	4.92	5.02	92.6	94.7	1	80.0-120			2.10	15
Nitrate	5.00	0.899	5.53	5.61	92.6	94.2	1	80.0-120			1.46	15
Nitrite	5.00	U	4.94	5.03	98.8	101	1	80.0-120			1.91	15
Sulfate	50.0	4.70	50.7	51.8	92.0	94.2	1	80.0-120			2.11	15

L1610177-11 Original Sample (OS) • Matrix Spike (MS)

(OS) L1610177-11 05/05/23 04:58 • (MS) R3921482-7 05/05/23 05:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	U	46.4	92.9	1	80.0-120	
Chloride	50.0	4.75	52.9	96.3	1	80.0-120	
Fluoride	5.00	0.202	5.01	96.1	1	80.0-120	
Nitrate	5.00	0.773	5.55	95.6	1	80.0-120	
Nitrite	5.00	U	5.08	102	1	80.0-120	
Sulfate	50.0	8.13	55.6	95.0	1	80.0-120	

Method Blank (MB)

(MB) R3921855-1 05/07/23 17:55

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	0.0361	J	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	0.927	J	0.504	3.00
Strontium	U		0.000640	0.0100

Laboratory Control Sample (LCS)

(LCS) R3921855-2 05/07/23 17:58

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	1.00	0.988	98.8	80.0-120	
Boron	1.00	0.948	94.8	80.0-120	
Calcium	10.0	9.64	96.4	80.0-120	
Iron	10.0	9.75	97.5	80.0-120	
Magnesium	10.0	9.58	95.8	80.0-120	
Manganese	1.00	0.925	92.5	80.0-120	
Potassium	10.0	9.05	90.5	80.0-120	
Selenium	1.00	0.988	98.8	80.0-120	
Sodium	10.0	9.78	97.8	80.0-120	
Strontium	1.00	0.936	93.6	80.0-120	

L1612892-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1612892-04 05/07/23 18:00 • (MS) R3921855-4 05/07/23 18:06 • (MSD) R3921855-5 05/07/23 18:08

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	0.0171	1.01	1.00	99.4	98.5	1	75.0-125			0.921	20
Boron	1.00	0.0412	1.03	1.02	99.2	98.1	1	75.0-125			1.10	20
Calcium	10.0	149	158	157	96.6	87.8	1	75.0-125			0.554	20
Iron	10.0	0.180	9.96	9.82	97.8	96.4	1	75.0-125			1.35	20
Magnesium	10.0	10.7	20.2	20.0	95.1	93.8	1	75.0-125			0.637	20
Manganese	1.00	0.0661	0.999	0.990	93.3	92.4	1	75.0-125			0.930	20
Potassium	10.0	5.45	15.1	15.1	96.4	96.4	1	75.0-125			0.0383	20

L1612892-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1612892-04 05/07/23 18:00 • (MS) R3921855-4 05/07/23 18:06 • (MSD) R3921855-5 05/07/23 18:08

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	1.03	1.03	103	103	1	75.0-125			0.206	20
Sodium	10.0	18.7	27.0	26.7	83.3	80.3	1	75.0-125			1.10	20
Strontium	1.00	0.985	1.96	1.96	97.6	97.8	1	75.0-125			0.0923	20

Method Blank (MB)

(MB) R3923660-2 05/08/23 06:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/FID) Low Fraction	0.0342	J	0.0314	0.100
(S) a,a,a-Trifluorotoluene(FID)	*88.2*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3923660-1 05/08/23 05:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.46	99.3	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*93.4*	*78.0-120*	

Method Blank (MB)

(MB) R3922650-5 05/06/23 16:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Ethylbenzene	U		0.000137	0.00100
Xylenes, Total	U		0.000174	0.00300
Naphthalene	U		0.00100	0.00500
(S) Toluene-d8	*106*			*80.0-120*
(S) 4-Bromofluorobenzene	*100*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*

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

(LCS) R3922650-1 05/06/23 14:19 • (LCSD) R3922650-2 05/06/23 14:39

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 %
Benzene	0.00500	0.00544	0.00553	109	111	70.0-123			1.64	20
Ethylbenzene	0.00500	0.00462	0.00468	92.4	93.6	79.0-123			1.29	20
Xylenes, Total	0.0150	0.0138	0.0142	92.0	94.7	79.0-123			2.86	20
Naphthalene	0.00500	0.00405	0.00450	81.0	90.0	54.0-135			10.5	20
(S) Toluene-d8				*104*	*105*	*80.0-120*				
(S) 4-Bromofluorobenzene				*98.3*	*97.9*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*107*	*110*	*70.0-130*				

Method Blank (MB)

(MB) R3923184-3 05/09/23 19:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Toluene	U		0.000278	0.00100
(S) Toluene-d8	*97.3*			*80.0-120*
(S) 4-Bromofluorobenzene	*90.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*98.9*			*70.0-130*

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

(LCS) R3923184-1 05/09/23 18:05 • (LCSD) R3923184-2 05/09/23 18:26

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 %
Toluene	0.00500	0.00476	0.00458	95.2	91.6	79.0-120			3.85	20
(S) Toluene-d8				*95.9*	*96.7*	*80.0-120*				
(S) 4-Bromofluorobenzene				*93.6*	*96.6*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*98.4*	*101*	*70.0-130*				

Method Blank (MB)

(MB) R3923522-3 05/11/23 02:12

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
(S) o-Terphenyl	*108*			*52.0-156*

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

(LCS) R3923522-1 05/11/23 01:32 • (LCSD) R3923522-2 05/11/23 01:52

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	1.55	1.59	103	106	50.0-150			2.55	20
(S) o-Terphenyl				*110*	*108*	*52.0-156*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.

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	LAO000356
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.

Company Name/Address:	Billing Information:	Pres Chk
Caerus Oil and Gas 143 Diamond Avenue Parachute, CO 81635	**Accounts Payable** 1001 17th St., Ste. 1600 Denver, CO 80202	

Chain of Custody Page ___ of ___

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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/hubfs/pas-standard-terms.pdf

Report to: **Blair Rollins**	Email To: JJanicek@caerusoilandgas.com;brollins@caerus		
Project Description: 909J	City/State Collected: Parachute CO	Please Circle: PT (MT) CT ET	
Phone: **970-285-2653**	Client Project #	Lab Project #	
Collected by (print): Will Harmon	Site/Facility ID #	P.O. #	
Collected by (signature): [signature]	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day	Quote # Date Results Needed ASAP	No. of Cntrs
Immediately Packed on Ice N ___ Y ✓			

SDG # L1612505

L-052

Acctnum: **CAERUSPCO**
Template: **T215555**
Prelogin: **P974370**
PM: **824 - Chris Ward**
PB:
Shipped Via: **FedEX Ground**

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK,ALKBI,ALKCA 250mlHDPE-NoPres	Br,Cl,F,SO4 250mlHDPE-NoPres	DRONMLVI 40mlAmb-HCl-BT	GRO 40mlAmb HCl	PT 250mlHDPE-H2SO4 <2	RA-226/228 1L-HDPE-Add-HNO3 <2	SPCON 250mlHDPE-NoPres	TDS 1L-HDPE NoPres	TSS 1L-HDPE NoPres	Total Metals 250mlHDPE-HNO3 <2	Remarks	Sample # (lab only)
20230503-SPSOURCE-(PK36-T)	grab	GW	surface	5/3/23	1040	17	X	X	X	X	X	X	X	X	X	X		-01
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		

* 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 # 6126 6537 5971

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR	
[signature]	5/2/23	1600	[signature]		
Relinquished by : (Signature) [signature]	Date: 5223	Time: 1700	Received by: (Signature)	Temp: NSA °C 3.8+0=3.8	Bottles Received: 17	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature] (17)	Date: 5/4/23	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

Report to:
Brett Middleton

Email To:
JJanicek@caerusoilandgas.com;brollins@caerus

Project Description: 909J

City/State Collected: parachute CO

Please Circle: PT (MT) CT ET

Phone: **970-285-2653**

Client Project #

Lab Project #

Collected by (print): WILL HARMON

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: ASAP

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260BTEXN 40mlAmb-HCl	V8260BTEXN 40mlAmb-HCl-Blk	pH 125mlHDPE-NoPres						Remarks	Sample # (lab only)
20230503-SPSOURCE-(PK36-T)	grab	GW	surface	5/3/23	1040	17	X		X							-01
		GW				17	X		X							
		GW				17	X		X							
		GW				17	X		X							
		GW				17	X		X							
		GW				17	X		X							
		GW				17	X		X							
		GW				17	X		X							
		GW				17	X		X							
		GW				17	X		X							
		GW				17	X		X							

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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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/hubfs/pas-standard-terms.pdf

SDG # L1612505

Table #

Acctnum: **CAERUSPCO**

Template: **T215555**

Prelogin: **P963757**

PM: **824 - Chris Ward**

PB:

Shipped Via: **FedEX Ground**

* 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 #

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

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	5/3/23	1600			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.5+1 °C Bottles Received: 3.8+0=3.8 17	
	5/3/23	1700			
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/4/23 Time: 0900	Hold: Condition: NCF / OK

L1612505

Tracking Numbers	NSM7 Temperature
6126 6537 5971	3.8 to=3.8
5755 8085 1657	.1 to=.1
5755 8085 1668	3.7 to=3.7