

July 15, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Caerus Oil and Gas

Sample Delivery Group: L1238116
Samples Received: 07/10/2020
Project Number:
Description: LW USA 1

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



| | | |
|---|-----------|-------------|
| Cp: Cover Page | 1 | 1 Cp |
| Tc: Table of Contents | 2 | 2 Tc |
| Ss: Sample Summary | 3 | 3 Ss |
| Cn: Case Narrative | 4 | 4 Cn |
| Sr: Sample Results | 5 | 5 Sr |
| 20200709-LW USA 1-S WALL L1238116-01 | 5 | |
| 20200709-LW USA 1- SP1 30" L1238116-02 | 6 | |
| 20200709-LW USA 1-SP2 30" L1238116-03 | 7 | |
| 20200709-LW USA 1-E WALL L1238116-04 | 8 | |
| Qc: Quality Control Summary | 9 | 6 Qc |
| Wet Chemistry by Method 9045D | 9 | |
| Gl: Glossary of Terms | 10 | 7 Gl |
| Al: Accreditations & Locations | 11 | 8 Al |
| Sc: Sample Chain of Custody | 12 | 9 Sc |

SAMPLE SUMMARY



20200709-LW USA 1-S WALL L1238116-01 Solid

Collected by Blair K. Rollins
 Collected date/time 07/09/20 13:00
 Received date/time 07/10/20 08:30

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst | Location |
|-------------------------------|-----------|----------|-----------------------|--------------------|---------|----------------|
| Calculated Results | WG1507228 | 1 | 07/13/20 18:00 | 07/13/20 18:00 | EL | Mt. Juliet, TN |
| Wet Chemistry by Method 9045D | WG1508861 | 1 | 07/14/20 16:08 | 07/14/20 18:06 | JMB | Mt. Juliet, TN |

1 Cp

2 Tc

3 Ss

20200709-LW USA 1- SP1 30" L1238116-02 Solid

Collected by Blair K. Rollins
 Collected date/time 07/09/20 13:15
 Received date/time 07/10/20 08:30

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst | Location |
|-------------------------------|-----------|----------|-----------------------|--------------------|---------|----------------|
| Calculated Results | WG1507228 | 1 | 07/13/20 18:03 | 07/13/20 18:03 | EL | Mt. Juliet, TN |
| Wet Chemistry by Method 9045D | WG1508861 | 1 | 07/14/20 16:08 | 07/14/20 18:06 | JMB | Mt. Juliet, TN |

4 Cn

5 Sr

6 Qc

20200709-LW USA 1-SP2 30" L1238116-03 Solid

Collected by Blair K. Rollins
 Collected date/time 07/09/20 13:30
 Received date/time 07/10/20 08:30

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst | Location |
|-------------------------------|-----------|----------|-----------------------|--------------------|---------|----------------|
| Calculated Results | WG1507228 | 1 | 07/13/20 18:06 | 07/13/20 18:06 | EL | Mt. Juliet, TN |
| Wet Chemistry by Method 9045D | WG1508861 | 1 | 07/14/20 16:08 | 07/14/20 18:06 | JMB | Mt. Juliet, TN |

7 Gl

8 Al

9 Sc

20200709-LW USA 1-E WALL L1238116-04 Solid

Collected by Blair K. Rollins
 Collected date/time 07/09/20 13:45
 Received date/time 07/10/20 08:30

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst | Location |
|-------------------------------|-----------|----------|-----------------------|--------------------|---------|----------------|
| Calculated Results | WG1507228 | 1 | 07/13/20 18:09 | 07/13/20 18:09 | EL | Mt. Juliet, TN |
| Wet Chemistry by Method 9045D | WG1508861 | 1 | 07/14/20 16:08 | 07/14/20 18:06 | JMB | Mt. Juliet, TN |



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

Chris Ward
Project Manager

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



Calculated Results

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch |
|-------------------------|--------|-----------|----------|----------------------|-----------|
| Sodium Adsorption Ratio | 11.9 | | 1 | 07/13/2020 18:00 | WG1507228 |

1 Cp

2 Tc

Wet Chemistry by Method 9045D

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch |
|---------|--------|-----------|----------|----------------------|---------------------------|
| pH | 8.28 | <u>T8</u> | 1 | 07/14/2020 18:06 | WG1508861 |

3 Ss

4 Cn

Sample Narrative:

L1238116-01 WG1508861: 8.28 at 24.8C

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Calculated Results

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch |
|-------------------------|--------|-----------|----------|----------------------|-----------|
| Sodium Adsorption Ratio | 6.38 | | 1 | 07/13/2020 18:03 | WG1507228 |

1 Cp

2 Tc

Wet Chemistry by Method 9045D

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch |
|---------|--------|-----------|----------|----------------------|---------------------------|
| pH | 7.87 | <u>T8</u> | 1 | 07/14/2020 18:06 | WG1508861 |

3 Ss

4 Cn

Sample Narrative:

L1238116-02 WG1508861: 7.87 at 24.8C

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Calculated Results

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch |
|-------------------------|--------|-----------|----------|----------------------|-----------|
| Sodium Adsorption Ratio | 11.0 | | 1 | 07/13/2020 18:06 | WG1507228 |

¹ Cp

² Tc

Wet Chemistry by Method 9045D

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch |
|---------|--------|-----------|----------|----------------------|---------------------------|
| pH | 8.57 | <u>T8</u> | 1 | 07/14/2020 18:06 | WG1508861 |

³ Ss

⁴ Cn

Sample Narrative:

L1238116-03 WG1508861: 8.57 at 24.1C

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Calculated Results

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch |
|-------------------------|--------|-----------|----------|----------------------|-----------|
| Sodium Adsorption Ratio | 40.1 | | 1 | 07/13/2020 18:09 | WG1507228 |

1 Cp

2 Tc

Wet Chemistry by Method 9045D

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch |
|---------|--------|-----------|----------|----------------------|---------------------------|
| pH | 9.40 | <u>T8</u> | 1 | 07/14/2020 18:06 | WG1508861 |

3 Ss

4 Cn

Sample Narrative:

L1238116-04 WG1508861: 9.4 at 24.9C

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



L1238116-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1238116-01 07/14/20 18:06 • (DUP) R3549396-2 07/14/20 18:06

| Analyte | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD Limits |
|---------|-----------------|------------|----------|---------|---------------|----------------|
| | su | su | | % | | % |
| pH | 8.28 | 8.24 | 1 | 0.484 | | 1 |

Sample Narrative:

OS: 8.28 at 24.8C
DUP: 8.24 at 24.9C

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

L1239091-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1239091-04 07/14/20 18:06 • (DUP) R3549396-3 07/14/20 18:06

| Analyte | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD Limits |
|---------|-----------------|------------|----------|---------|---------------|----------------|
| | su | su | | % | | % |
| pH | 7.47 | 7.53 | 1 | 0.800 | | 1 |

Sample Narrative:

OS: 7.47 at 23C
DUP: 7.53 at 23C

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3549396-1 07/14/20 18:06

| 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: 10.04 at 22.1C



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

| | |
|------------------------------|--|
| Rec. | Recovery. |
| RPD | Relative Percent Difference. |
| SDG | Sample Delivery Group. |
| 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

| | |
|----|---|
| T8 | Sample(s) received past/too close to holding time expiration. |
|----|---|

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

| | | | |
|-------------------------|-------------|-----------------------------|------------------|
| Alabama | 40660 | Nebraska | NE-OS-15-05 |
| Alaska | 17-026 | Nevada | TN-03-2002-34 |
| Arizona | AZ0612 | New Hampshire | 2975 |
| Arkansas | 88-0469 | New Jersey-NELAP | TN002 |
| California | 2932 | New Mexico ¹ | n/a |
| Colorado | TN00003 | New York | 11742 |
| Connecticut | PH-0197 | North Carolina | Env375 |
| Florida | E87487 | North Carolina ¹ | DW21704 |
| Georgia | NELAP | North Carolina ³ | 41 |
| Georgia ¹ | 923 | North Dakota | R-140 |
| Idaho | TN00003 | Ohio-VAP | CL0069 |
| Illinois | 200008 | Oklahoma | 9915 |
| Indiana | C-TN-01 | Oregon | TN200002 |
| Iowa | 364 | Pennsylvania | 68-02979 |
| Kansas | E-10277 | Rhode Island | LA000356 |
| Kentucky ^{1,6} | 90010 | South Carolina | 84004 |
| Kentucky ² | 16 | South Dakota | n/a |
| Louisiana | AI30792 | Tennessee ^{1,4} | 2006 |
| Louisiana ¹ | LA180010 | Texas | T104704245-18-15 |
| Maine | TN0002 | Texas ⁵ | LAB0152 |
| Maryland | 324 | Utah | TN00003 |
| Massachusetts | M-TN003 | Vermont | VT2006 |
| Michigan | 9958 | Virginia | 460132 |
| Minnesota | 047-999-395 | Washington | C847 |
| Mississippi | TN00003 | West Virginia | 233 |
| Missouri | 340 | Wisconsin | 9980939910 |
| Montana | CERT0086 | Wyoming | A2LA |

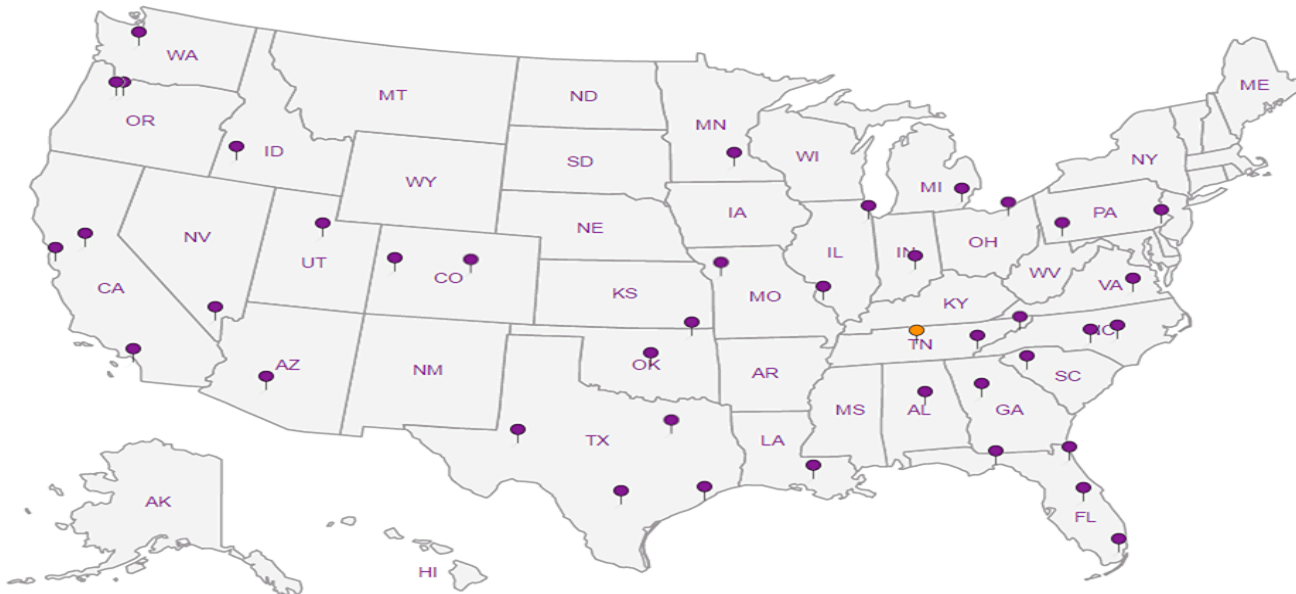
Third Party Federal Accreditations

| | | | |
|-------------------------------|---------|--------------------|---------------|
| A2LA – ISO 17025 | 1461.01 | AIHA-LAP,LLC EMLAP | 100789 |
| A2LA – ISO 17025 ⁵ | 1461.02 | DOD | 1461.01 |
| Canada | 1461.01 | USDA | P330-15-00234 |
| EPA-Crypto | TN00003 | | |

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Caerus Oil and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information:

Same as left

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



L# 123 8116
G168

Acctnum:
 Template:
 Prelogin:
 TSR:
 PB:
 Shipped Via:

| Remarks | Sample # (lab only) |
|---------|---------------------|
| | 01 |
| | 02 |
| | 03 |
| | 04 |

Report to: **Blair Rollins**
 Email To: **brollins@caerusoilandgas.com**

Project Description: **LW USA 1**
 City/State Collected: **CO**

Phone: **(970) 640-6919**
 Client Project #
 Lab Project #

Collected by (print): **Blair K. Rollins**
 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
 Date Results Needed
 Quote #
 No. of Cntrs

| Sample ID | Comp/Grab | Matrix * | Depth | Date | Time | No. of Cntrs | TPH (DRO and GRO) | BTEX | Table 910-1 metals in soil | Table 910-1 PAHs | EC, SAR, pH | SAR | pH |
|---------------------------|-----------|----------|-------|--------|------|--------------|-------------------|------|----------------------------|------------------|-------------|-----|----|
| 20200709-LW USA 1-5 WALL | G | SS | 5" | 7/9/20 | 1300 | 1 | | | | | | X | X |
| 20200709-LW USA 1-SPI 30" | | | 30" | | 1315 | 1 | | | | | | X | X |
| 20200709-LW USA 1-SP2 30" | | | 30" | | 1330 | 1 | | | | | | X | X |
| 20200709-LW USA 1-E WALL | | | | | 1345 | 1 | | | | | | X | X |

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

Remarks:

Samples returned via:
 UPS FedEx Courier

Tracking # 1676 2750 2918

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

If preservation required by Login: Date/Time

Relinquished by: (Signature) *[Signature]*

Date: 7/9/20

Time: 1545

Received by: (Signature) *[Signature]*

Trip Blank Received: Yes/No

Relinquished by: (Signature) *[Signature]*

Date: 7/9/20

Time: 1700

Received by: (Signature) *[Signature]*

Temp: 13.1/1.2 °C
 Bottles Received: 4

Relinquished by: (Signature) *[Signature]*

Date: _____

Time: _____

Received for lab by: (Signature) *[Signature]*

Date: 7/10/20 Time: 8:30

Hold: _____ Condition: NCF 10