

**Terra Energy Partners**

Sample Delivery Group: L1429942  
Samples Received: 10/28/2021  
Project Number:  
Description:  
Site: RISER SPILL-EXCAVATION  
Report To: Mike Gardner  
1058 County Road 215  
Parachute, CO 81635

Entire Report Reviewed By:



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.

**Pace Analytical National**12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [www.pacenational.com](http://www.pacenational.com)

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|   |           | <b><sup>9</sup>Sc</b> |

# SAMPLE SUMMARY

EXC-SP 2 L1429942-01 Solid

Collected by: Kris Rowe  
 Collected date/time: 10/27/21 14:15  
 Received date/time: 10/28/21 09:30

| Method                           | Batch     | Dilution | Preparation date/time | Analysis date/time | Analyst | Location       |
|----------------------------------|-----------|----------|-----------------------|--------------------|---------|----------------|
| Calculated Results               | WG1775527 | 1        | 11/18/21 13:26        | 11/18/21 13:26     | CCE     | Mt. Juliet, TN |
| Wet Chemistry by Method 9045D    | WG1774049 | 1        | 11/14/21 11:00        | 11/14/21 11:00     | BMD     | Mt. Juliet, TN |
| Wet Chemistry by Method 9050AMod | WG1774233 | 1        | 11/15/21 09:37        | 11/16/21 04:26     | ARD     | Mt. Juliet, TN |

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

# 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

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

Calculated Results

| Analyte                 | Result | Qualifier | Dilution | Analysis date / time | Batch     |
|-------------------------|--------|-----------|----------|----------------------|-----------|
| Sodium Adsorption Ratio | 21.9   |           | 1        | 11/18/2021 13:26     | WG1775527 |

1 Cp

2 Tc

Wet Chemistry by Method 9045D

| Analyte | Result | Qualifier | Dilution | Analysis date / time | Batch                     |
|---------|--------|-----------|----------|----------------------|---------------------------|
| pH      | 8.98   | <u>T8</u> | 1        | 11/14/2021 11:00     | <a href="#">WG1774049</a> |

3 Ss

4 Cn

Sample Narrative:

L1429942-01 WG1774049: 8.98 at 18.8C

5 Sr

Wet Chemistry by Method 9050AMod

| Analyte              | Result | Qualifier | RDL  | Dilution | Analysis date / time | Batch                     |
|----------------------|--------|-----------|------|----------|----------------------|---------------------------|
| Specific Conductance | 3130   |           | 10.0 | 1        | 11/16/2021 04:26     | <a href="#">WG1774233</a> |

6 Qc

7 Gl

Sample Narrative:

L1429942-01 WG1774233: at 25C

8 Al

9 Sc

L1427663-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1427663-07 11/14/21 11:00 • (DUP) R3729230-2 11/14/21 11:00

| Analyte | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD Limits |
|---------|-----------------|------------|----------|---------|---------------|----------------|
|         | su              | su         |          | %       |               | %              |
| pH      | 8.45            | 8.48       | 1        | 0.354   |               | 1              |

Sample Narrative:

OS: 8.45 at 20C  
DUP: 8.48 at 19.8C

L1427663-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1427663-16 11/14/21 11:00 • (DUP) R3729230-3 11/14/21 11:00

| Analyte | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD Limits |
|---------|-----------------|------------|----------|---------|---------------|----------------|
|         | su              | su         |          | %       |               | %              |
| pH      | 8.27            | 8.25       | 1        | 0.242   |               | 1              |

Sample Narrative:

OS: 8.27 at 19.7C  
DUP: 8.25 at 19.5C

Laboratory Control Sample (LCS)

(LCS) R3729230-1 11/14/21 11:00

| 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 18.4C

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3729793-1 11/16/21 04:26

| Analyte              | MB Result | MB Qualifier | MB MDL | MB RDL |
|----------------------|-----------|--------------|--------|--------|
| Specific Conductance | U         |              | 10.0   | 10.0   |

Sample Narrative:

BLANK: at 25C

L1428769-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1428769-09 11/16/21 04:26 • (DUP) R3729793-3 11/16/21 04:26

| Analyte              | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD Limits |
|----------------------|-----------------|------------|----------|---------|---------------|----------------|
| Specific Conductance | 93.6            | 89.2       | 1        | 4.81    |               | 20             |

Sample Narrative:

OS: at 25C  
DUP: at 25C

L1428769-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1428769-11 11/16/21 04:26 • (DUP) R3729793-4 11/16/21 04:26

| Analyte              | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD Limits |
|----------------------|-----------------|------------|----------|---------|---------------|----------------|
| Specific Conductance | 212             | 195        | 1        | 8.66    |               | 20             |

Sample Narrative:

OS: at 25C  
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3729793-2 11/16/21 04:26

| Analyte              | Spike Amount | LCS Result | LCS Rec. | Rec. Limits | LCS Qualifier |
|----------------------|--------------|------------|----------|-------------|---------------|
| Specific Conductance | 268          | 270        | 101      | 85.0-115    |               |

Sample Narrative:

LCS: at 25C



# 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.

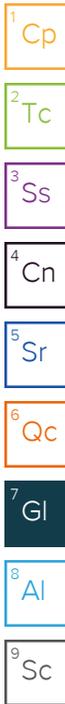
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

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



# ACCREDITATIONS & LOCATIONS

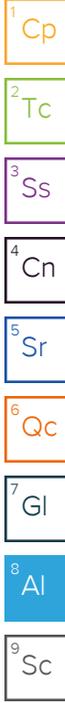
## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

|                               |             |                             |                  |
|-------------------------------|-------------|-----------------------------|------------------|
| 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 <sup>1</sup>     | TN00003          |
| Colorado                      | TN00003     | New York                    | 11742            |
| Connecticut                   | PH-0197     | North Carolina              | Env375           |
| Florida                       | E87487      | North Carolina <sup>1</sup> | DW21704          |
| Georgia                       | NELAP       | North Carolina <sup>3</sup> | 41               |
| Georgia <sup>1</sup>          | 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 <sup>1,6</sup>       | KY90010     | South Carolina              | 84004002         |
| Kentucky <sup>2</sup>         | 16          | South Dakota                | n/a              |
| Louisiana                     | AI30792     | Tennessee <sup>1,4</sup>    | 2006             |
| Louisiana                     | LA018       | Texas                       | T104704245-20-18 |
| Maine                         | TN00003     | Texas <sup>5</sup>          | 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 <sup>5</sup> | 1461.02     | DOD                         | 1461.01          |
| Canada                        | 1461.01     | USDA                        | P330-15-00234    |
| EPA–Crypto                    | TN00003     |                             |                  |

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

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

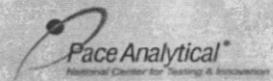
\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Client:  
**HRL Compliance Solutions Inc.**  
 2385 F 1/2 RD  
 Grand Junction, CO 81505

Billing Info:  
**Terra Energy Partners**  
 Attn: Tammi Gose  
 1058 County Road 215  
 Parachute, CO 81650  
 Acct #: TERENGPCO

Analysis / Container / Preservative



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

L1423565  
 N  
 11/11/12

Report To:  
 Mike Gardner & Kris Rowe

E-Mail:  
 mgardner@terraep.com  
 krowe@hrlcomp.com

Project Description:  
**Terra Energy Partners - River Ranch A - Riser Spill**

City/State Collected:  
**COLORADO**

Phone: 970-243-3271  
 Fax: 970-243-4380

Client Project #:  
**TEP - River Ranch A**

Lab Project #

Collected By:  
**Kris Rowe**

Site/Facility ID:  
**Riser Spill - Excavation**

P.O. #

Collected By (Signature):  
  
 Immediately Packed on Ice N    Y X

Rush? (lab must be notified)  
 Same Day (200%)  
 Next Day (100%)  
 Two Day (50%)  
 Three Day (25%)

Date Results Needed  
 Quickest Rush Possible  
 Email? No X Yes  
 Fax? X No    Yes

| Sample ID  | Comp/Grab | Matrix* | Depth | Date       | Time  | No. Of Cntrs | COGCC Table 915-1 | TPH (DRO/GRO/ORO) | BTEX | 1,2,4-TRIMETHYLBENZENE | 1,3,5-TRIMETHYLBENZENE | 1-METHYLNAPHTHALENE | 2-METHYLNAPHTHALENE | NAPHTHALENE | SAR/EC/pH |                 |          |
|------------|-----------|---------|-------|------------|-------|--------------|-------------------|-------------------|------|------------------------|------------------------|---------------------|---------------------|-------------|-----------|-----------------|----------|
|            |           |         |       |            |       |              |                   |                   |      |                        |                        |                     |                     |             |           | Rem/Contaminant | Sample # |
| EXC - SP 1 | Grab      | Soil    | 0-6"  | 10/27/2021 | 14:00 | 2            |                   |                   | X    | X                      |                        | X                   | X                   | X           | X         |                 | 01       |
| EXC - SP 2 | Grab      | Soil    | 0-6"  | 10/27/2021 | 14:15 | 2            |                   |                   | X    | X                      |                        | X                   |                     | X           |           |                 | 02       |
| EXC - SP 3 | Grab      | Soil    | 0-6"  | 10/27/2021 | 14:20 | 2            |                   | X                 | X    | X                      | X                      | X                   | X                   | X           | X         |                 | 03       |
| EXC - SP 4 | Grab      | Soil    | 0-6"  | 10/27/2021 | 14:25 | 2            |                   |                   | X    | X                      |                        |                     |                     | X           | X         |                 | 04       |
| EXC - SP 5 | Grab      | Soil    | 0-6"  | 10/27/2021 | 14:35 | 2            |                   |                   | X    | X                      |                        | X                   |                     |             | X         |                 | 05       |
| EXC - SP 6 | Grab      | Soil    | 0-6"  | 10/27/2021 | 14:45 | 2            | X                 |                   |      |                        |                        |                     |                     |             |           |                 | 06       |

L# **C008**  
 Table # **L1423565**  
 Acct # **L1429942**  
 Template:  
 Prelogin:  
 PM: 824 - Chris Ward  
 PB:

Shipped Via: FedEx Ground

Sample Receipt Checklist

COCC Seal Present/Intact:    N    Y If Applicable  
 COCC Signed/Accurate:    N    Y VCA Zero Headspace:    N    Y  
 Bottles arrive intact:    N    Y Pres. Correct/Check:    N    Y  
 Correct bottles used:    N    Y  
 Sufficient volume sent:    N    Y  
 RAD Screen <0.5 nR/hr:    N    Y

\*Matrix SS-Soil GW-Groundwater WW-WasteWater DW-Drinking Water OT-Other

| Remarks:                              |          |       |                            | pH                            | Temp             | Hold #                  |
|---------------------------------------|----------|-------|----------------------------|-------------------------------|------------------|-------------------------|
| Run COGCC protection to GW thresholds |          |       |                            | Flow                          | Other            |                         |
| Relinquished by (Sign)                | Date:    | Time: | Relinquished by (Sign)     | Samples Returned Via          | Condition:       | (Lab Use)               |
|                                       | 10/27/21 | 16:30 |                            | UPS <u>  </u> FedEx <u>  </u> |                  |                         |
| Relinquished by (Sign)                | Date:    | Time: | Relinquished by (Sign)     | Temp: <u>  </u> #Bot          | COCC Seal Intact | <u>  </u> Y <u>  </u> N |
|                                       | 10/27/21 | 17:00 |                            | 21±0.2 N                      |                  |                         |
| Relinquished by (Sign)                | Date:    | Time: | Received for lab by (Sign) | Date                          | Time             | pH Checked              |
|                                       |          |       |                            | 10/27/21                      | 9:30             | NCF:                    |

**L1423565 \*TERENGPCCO\* Relog R4**

**R3/R4/RX/EX**

Please relog -02 to a new SDG for

SAR,

SPCON

PH

Three day TAT R4

\*\_\*\_\*

**\*Please note that email addresses for staff at the Pace Analytical National Center for Testing & Innovation have changed.\***

**\_My new email address is <u>Chris.Ward@pacelabs.com</u>. Please update your records accordingly.**

—  
\*\*

**\*Thanks,\***

**\*\_\*Chris  
Ward**

*Project Manager2\_*

**\_\*Pace Analytical National**

**\***

12065 Lebanon Road | Mt. Juliet, TN 37122\*\*

Chris.ward@pacelabs.com  
| www.pacenational.com

<u>615.773.9712</u>

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**Time estimate:** oh      **Time spent:** oh

**Members**

 Chris Ward (responsible)