

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

| | |
|----------------|---------------|
| Incident ID | NCS1928253438 |
| District RP | |
| Facility ID | |
| Application ID | |

Release Notification

Responsible Party

| | |
|---|--------------------------------|
| Responsible Party Hilcorp Energy Company | OGRID 372171 |
| Contact Name Jennifer Deal | Contact Telephone 505-801-6517 |
| Contact email jdeal@hilcorp.com | Incident # NCS1928253438 |
| Contact mailing address 382 Road 3100, Aztec NM 87410 | |

Location of Release Source

Latitude 36.8973885 _____ Longitude -108.1063614 _____
(NAD 83 in decimal degrees to 5 decimal places)

| | |
|---|--------------------|
| Site Name State Gas Com BB 4 | Site Type Gas Well |
| Date Release Discovered 9/8/2019 @ 2:00pm | API# 30-045-33144 |

| Unit Letter | Section | Township | Range | County |
|-------------|---------|----------|-------|----------|
| L | 16 | 31N | 12W | San Juan |

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

| | | |
|--|--|--|
| <input type="checkbox"/> Crude Oil | Volume Released (bbls) | Volume Recovered (bbls) |
| <input checked="" type="checkbox"/> Produced Water | Volume Released (bbls) 20 | Volume Recovered (bbls) 20 |
| | Is the concentration of dissolved chloride in the produced water >10,000 mg/l? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| <input checked="" type="checkbox"/> Condensate | Volume Released (bbls) 0.12 | Volume Recovered (bbls) |
| <input type="checkbox"/> Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| <input type="checkbox"/> Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |

Cause of Release

A release of 20 bbls of Produced water and 0.12 bbl of condensate was released due to the below grade tank overfilling. Operations shut in the well and recovered 20 bbls of liquids with a vac truck. Hilcorp will notify OCD 48 hours in advance for sampling.

| | |
|----------------|--------------|
| Incident ID | NCS192853438 |
| District RP | |
| Facility ID | |
| Application ID | |

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

| | |
|---|---|
| What is the shallowest depth to groundwater beneath the area affected by the release? | <u>~64</u> (ft bgs) |
| Did this release impact groundwater or surface water? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release within 300 feet of a wetland? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release overlying a subsurface mine? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Are the lateral extents of the release within a 100-year floodplain? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Did the release impact areas not on an exploration, development, production, or storage site? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

| |
|--|
| <p>Characterization Report Checklist: <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"><input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.<input checked="" type="checkbox"/> Field data<input checked="" type="checkbox"/> Data table of soil contaminant concentration data<input checked="" type="checkbox"/> Depth to water determination<input checked="" type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release<input type="checkbox"/> Boring or excavation logs<input checked="" type="checkbox"/> Photographs including date and GIS information<input checked="" type="checkbox"/> Topographic/Aerial maps<input checked="" type="checkbox"/> Laboratory data including chain of custody |
|--|

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

| | |
|----------------|--------------|
| Incident ID | NCS192853438 |
| District RP | |
| Facility ID | |
| Application ID | |

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: ___Jennifer Deal_____ Title: ___Environmental Specialist_____

Signature: _____ Date: ___10/9/2019_____

email: ___jdeal@hilcorp.com_____ Telephone: ___(505) 324-5128_____

OCD Only

Received by: _____ Date: _____

| | |
|----------------|--------------|
| Incident ID | NCS192853438 |
| District RP | |
| Facility ID | |
| Application ID | |

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Jennifer Deal Title: Environmental Specialist


Signature: _____ Date: 10/9/2019

email: jdeal@hilcorp.com Telephone: 505-801-6517

OCD Only

Received by: OCD Date: 10/9/19

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

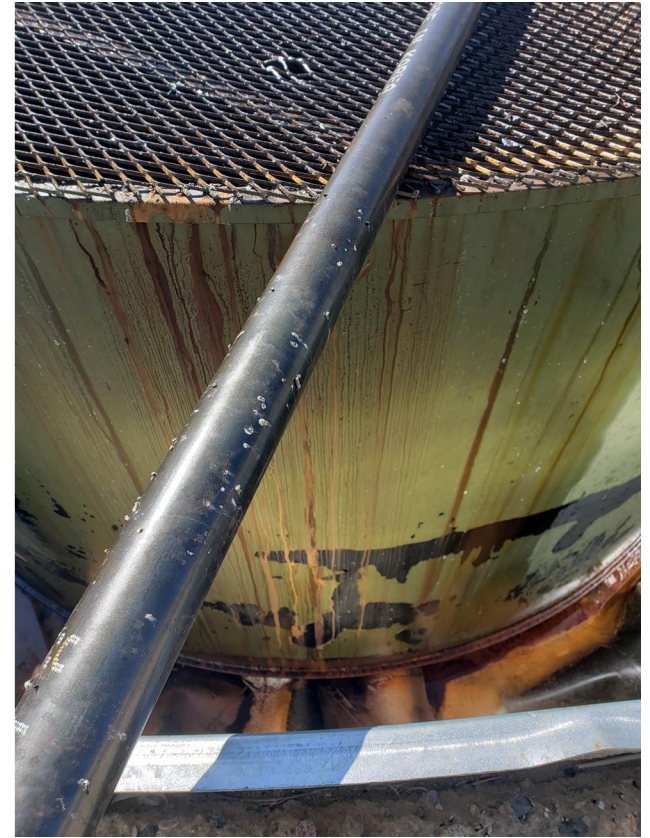
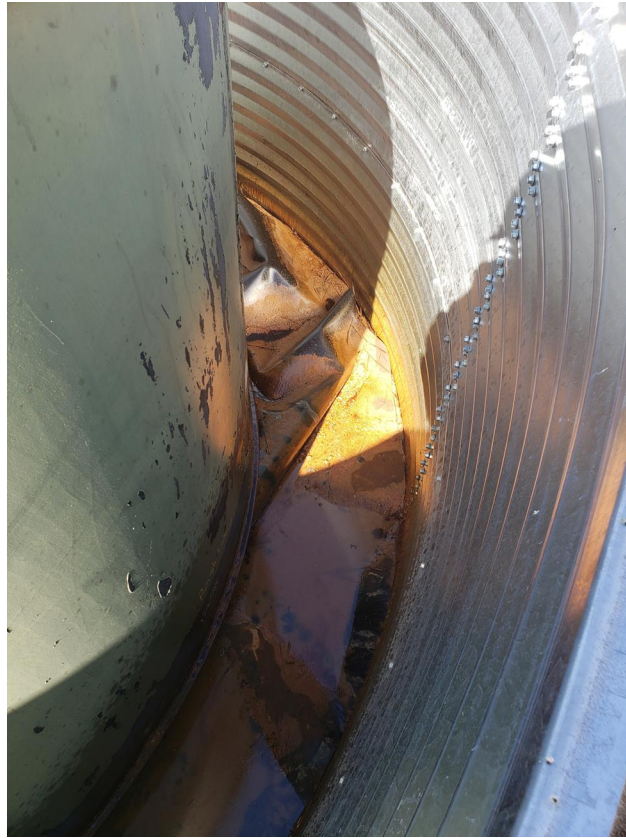
Closure Approved by:  Date: 12/10/19

Printed Name: Cory Title: Environmental Specialist

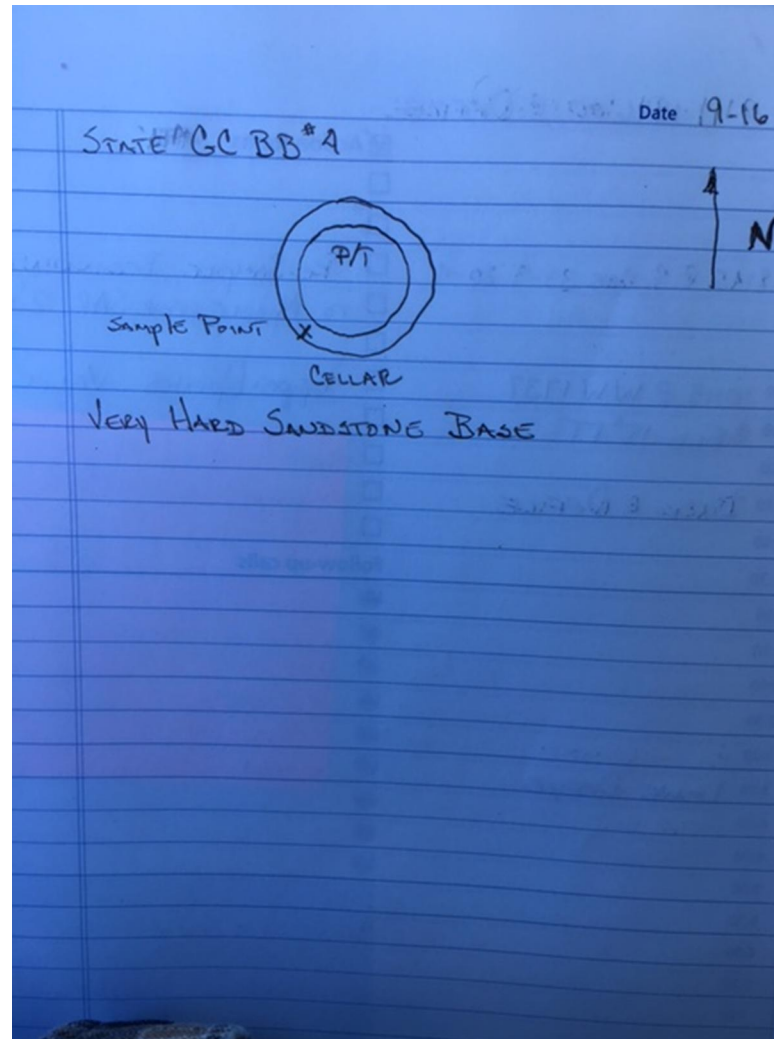
Scaled Map



Photographs – 9/8/2019 Initial Release



Field Data



Data table of soil contaminant concentration data

| TABLE 1 | | | | | | | | | | | | | |
|----------------------------|-------------|-----------------|-----------------|-----------------|----------------------|---------------|------------|-------------------|-------------|-------------|-------------|-----------------|-------------|
| SOIL ANALYTICAL RESULTS | | | | | | | | | | | | | |
| STATE GAS COM BB 4 | | | | | | | | | | | | | |
| HILCORP ENERGY - L48 WEST | | | | | | | | | | | | | |
| Soil Sample Identification | Sample Date | Field Headspace | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Total Xylenes | Total BTEX | Chlorides (mg/kg) | GRO (mg/kg) | DRO (mg/kg) | MRO (mg/kg) | GRO+DRO (mg/kg) | TPH (mg/kg) |
| BGT Cellar | 9/25/2019 | | <0.0005 | <0.005 | <0.0005 | <0.0015 | <0.005 | 2190 | 0 | 282 | 870 | 282 | 1152 |
| NMOCD Standards | | NE | 10 | NE | NE | NE | 50 | 10,000 | NE | NE | NE | 1,000 | 2,500 |

Depth to water determination

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

| POD Number | Code | POD Sub-basin | County | Q 64 | Q 16 | Q 4 | Sec | Tws | Rng | X | Y | DepthWell | DepthWater | Water Column |
|--------------------------------|------|---------------|--------|------|------|-----|-----|-----|-----|--------|---------|-----------|------------|--------------|
| SJ 04111 POD18 | | SJ | SJ | 4 | 1 | 16 | 31N | 12W | | 224100 | 4088379 | 86 | 64 | 22 |
| SJ 04111 POD19 | | SJ | SJ | 4 | 1 | 16 | 31N | 12W | | 224108 | 4088363 | 88 | 70 | 18 |
| SJ 04111 POD20 | | SJ | SJ | 4 | 1 | 16 | 31N | 12W | | 224116 | 4088340 | 89 | 88 | 1 |

Average Depth to Water: 74 feet

Minimum Depth: 64 feet

Maximum Depth: 88 feet

Record Count: 3

PLSS Search:

Section(s): 16

Township: 31N

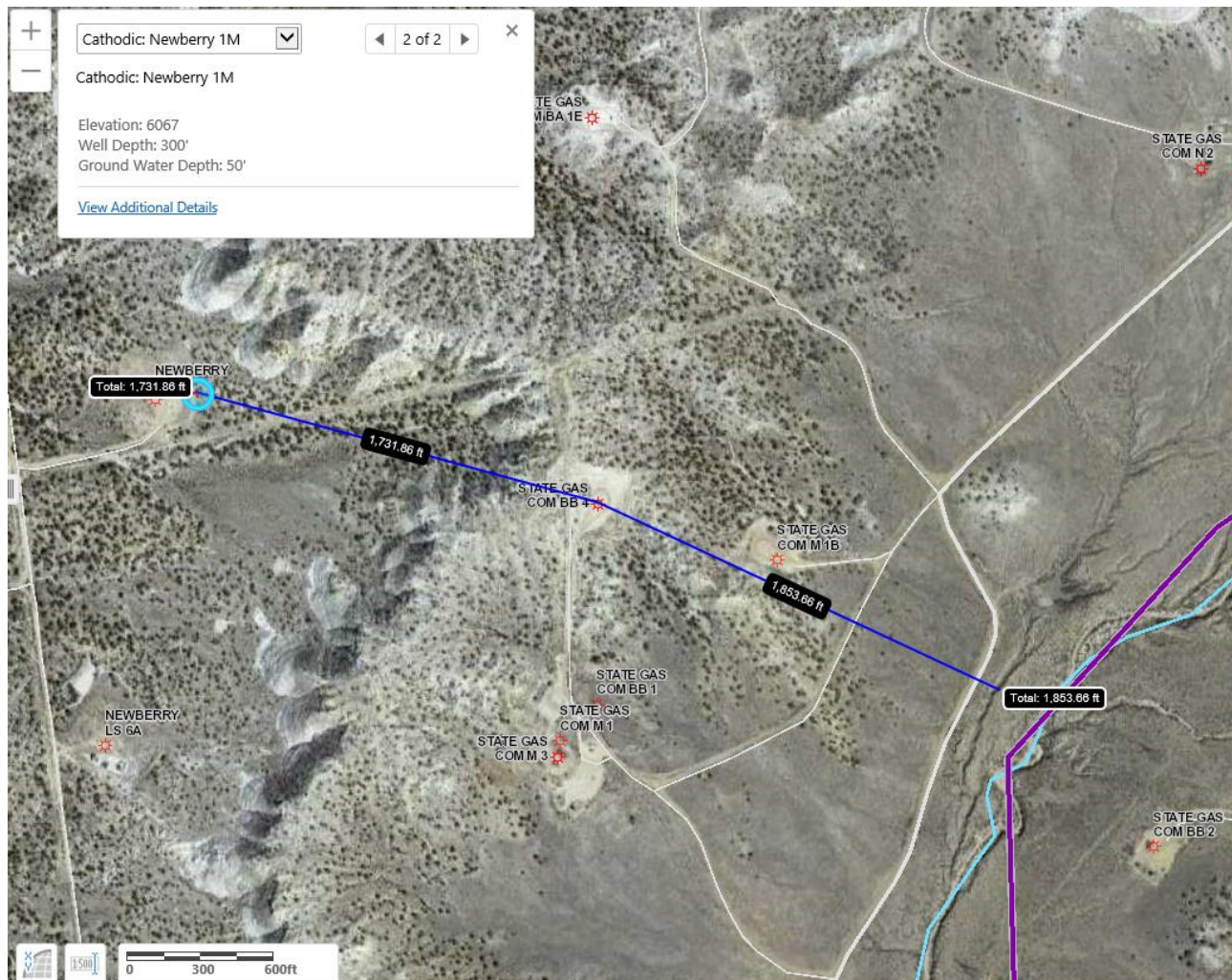
Range: 12W

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

9/10/19 8:33 AM

WATER COLUMN/ AVERAGE DEPTH
TO WATER

Determination of water sources and significant watercourses within ½ mile of the lateral extent of the release

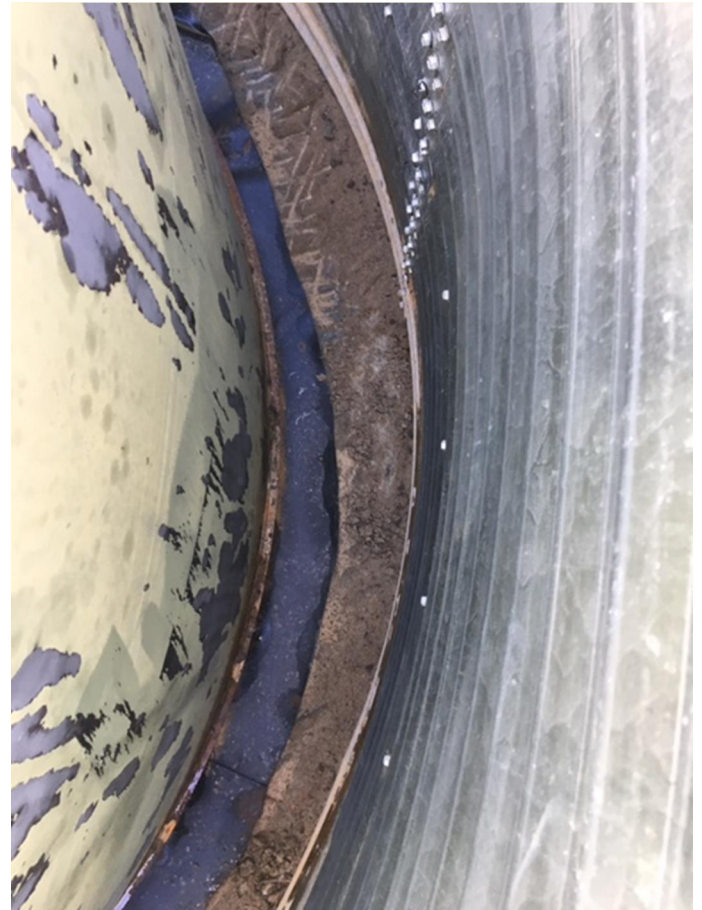


Photographs – 9/25/19 Sampling Event

BGT



Inside Cribbing



Topographic/Aerial Maps



NMAC 19.15.29.13 Comment

- Because the remediated area is currently used for production operations, HEC will restore the pad in compliance with NMAC 19.15.29.13(D) upon P&A

State Gas Com BB 4

- Release occurred on September 8, 2019
- Operations steam cleaned the pit tank and cribbing area
- Confirmation sampling occurred on September 25th at 9:00am

Jennifer Deal

From: Jennifer Deal
Sent: Friday, September 20, 2019 2:32 PM
To: cory.smith@state.nm.us; 'bfoley@slo.state.nm.us'
Cc: Kurt Hoekstra; Joey Becker; Josh Jones
Subject: State Gas Com BB 4 - Confirmation Sampling

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon,

Hilcorp Energy is providing 48 hour notice of confirmation sampling to occur on September 25 at 9am for the release that occurred at the State Gas Com BB 4. Please let me know if you have any questions.

Thank you,

Jennifer Deal
Environmental Specialist
Hilcorp Energy – L48 West
jdeal@hilcorp.com
382 Road 3100
Aztec, NM 87410
Office: (505) 324-5128
Cell: (505) 801-6517

October 01, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

HilCorp-Farmington, NM

Sample Delivery Group: L1143797
Samples Received: 09/27/2019
Project Number:
Description: State Gas Com BB #4
Site: STATE GAS COM BB#4
Report To: Jennifer Deal
382 Road 3100
Aztec, NM 87401

Entire Report Reviewed By:



Olivia Studebaker
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 | |
| Ss: Sample Summary | 3 | ² Tc |
| Cn: Case Narrative | 4 | |
| Sr: Sample Results | 5 | ³ Ss |
| BGT CELLAR L1143797-01 | 5 | |
| Qc: Quality Control Summary | 6 | ⁴ Cn |
| Wet Chemistry by Method 300.0 | 6 | ⁵ Sr |
| Volatile Organic Compounds (GC) by Method 8015/8021 | 7 | |
| Semi-Volatile Organic Compounds (GC) by Method 8015 | 9 | ⁶ Qc |
| Gl: Glossary of Terms | 10 | ⁷ Gl |
| Al: Accreditations & Locations | 11 | |
| Sc: Sample Chain of Custody | 12 | ⁸ Al |
| | | ⁹ Sc |



BGT CELLAR L1143797-01 Solid

Collected by
K. Hoekstra

Collected date/time
09/25/19 09:10

Received date/time
09/27/19 08:45

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst | Location |
|---|-----------|----------|-----------------------|--------------------|---------|----------------|
| Wet Chemistry by Method 300.0 | WG1353343 | 10 | 09/28/19 10:20 | 09/28/19 16:30 | ST | Mt. Juliet, TN |
| Volatile Organic Compounds (GC) by Method 8015/8021 | WG1354044 | 1 | 09/27/19 13:30 | 09/29/19 00:56 | JHH | Mt. Juliet, TN |
| Semi-Volatile Organic Compounds (GC) by Method 8015 | WG1353632 | 1 | 09/28/19 05:43 | 09/28/19 18:15 | KME | Mt. Juliet, TN |
| Semi-Volatile Organic Compounds (GC) by Method 8015 | WG1353632 | 10 | 09/28/19 05:43 | 09/29/19 13:16 | KME | Mt. Juliet, TN |

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



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.

Olivia Studebaker
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 300.0

| Analyte | Result | Qualifier | RDL | Dilution | Analysis | Batch |
|----------|--------|-----------|-------|----------|------------------|---------------------------|
| | mg/kg | | mg/kg | | date / time | |
| Chloride | 2190 | B | 100 | 10 | 09/28/2019 16:30 | WG1353343 |

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method 8015/8021

| Analyte | Result | Qualifier | RDL | Dilution | Analysis | Batch |
|---------------------------------|--------|-----------|----------|----------|------------------|---------------------------|
| | mg/kg | | mg/kg | | date / time | |
| Benzene | ND | | 0.000500 | 1 | 09/29/2019 00:56 | WG1354044 |
| Toluene | ND | | 0.00500 | 1 | 09/29/2019 00:56 | WG1354044 |
| Ethylbenzene | ND | | 0.000500 | 1 | 09/29/2019 00:56 | WG1354044 |
| Total Xylene | ND | | 0.00150 | 1 | 09/29/2019 00:56 | WG1354044 |
| TPH (GC/FID) Low Fraction | 0.212 | B | 0.100 | 1 | 09/29/2019 00:56 | WG1354044 |
| (S) a,a,a-Trifluorotoluene(FID) | 93.1 | | 77.0-120 | | 09/29/2019 00:56 | WG1354044 |
| (S) a,a,a-Trifluorotoluene(PID) | 96.6 | | 72.0-128 | | 09/29/2019 00:56 | WG1354044 |

Semi-Volatile Organic Compounds (GC) by Method 8015

| Analyte | Result | Qualifier | RDL | Dilution | Analysis | Batch |
|----------------------|--------|-----------|----------|----------|------------------|---------------------------|
| | mg/kg | | mg/kg | | date / time | |
| C10-C28 Diesel Range | 282 | | 4.00 | 1 | 09/28/2019 18:15 | WG1353632 |
| C28-C40 Oil Range | 870 | | 40.0 | 10 | 09/29/2019 13:16 | WG1353632 |
| (S) o-Terphenyl | 67.1 | | 18.0-148 | | 09/28/2019 18:15 | WG1353632 |
| (S) o-Terphenyl | 80.9 | | 18.0-148 | | 09/29/2019 13:16 | WG1353632 |



Method Blank (MB)

(MB) R3455690-1 09/28/19 12:01

| | MB Result | MB Qualifier | MB MDL | MB RDL |
|----------|-----------|--------------|--------|--------|
| Analyte | mg/kg | | mg/kg | mg/kg |
| Chloride | 24.9 | | 0.795 | 10.0 |

L1143080-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1143080-01 09/28/19 14:16 • (DUP) R3455690-3 09/28/19 14:26

| | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD Limits |
|----------|-----------------|------------|----------|---------|---------------|----------------|
| Analyte | mg/kg | mg/kg | | % | | % |
| Chloride | 5650 | 5570 | 50 | 1.43 | | 20 |

Laboratory Control Sample (LCS)

(LCS) R3455690-2 09/28/19 12:11

| | Spike Amount | LCS Result | LCS Rec. | Rec. Limits | LCS Qualifier |
|----------|--------------|------------|----------|-------------|---------------|
| Analyte | mg/kg | mg/kg | % | % | |
| Chloride | 200 | 220 | 110 | 90.0-110 | |

L1143158-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1143158-05 09/28/19 15:04 • (MS) R3455690-4 09/28/19 15:14 • (MSD) R3455690-5 09/28/19 15:42

| | Spike Amount | Original Result | MS Result | MSD Result | MS Rec. | MSD Rec. | Dilution | Rec. Limits | MS Qualifier | MSD Qualifier | RPD | RPD Limits |
|----------|--------------|-----------------|-----------|------------|---------|----------|----------|-------------|--------------|---------------|------|------------|
| Analyte | mg/kg | mg/kg | mg/kg | mg/kg | % | % | | % | | | % | % |
| Chloride | 50.0 | 438 | 946 | 926 | 102 | 97.6 | 10 | 80.0-120 | | | 2.18 | 20 |

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3455957-3 09/28/19 16:15

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|------------------------------------|--------------------|--------------|-----------------|-----------------|
| Benzene | U | | 0.000120 | 0.000500 |
| Toluene | 0.000169 | ⬇ | 0.000150 | 0.00500 |
| Ethylbenzene | U | | 0.000110 | 0.000500 |
| Total Xylene | U | | 0.000460 | 0.00150 |
| TPH (GC/FID) Low Fraction | 0.0566 | ⬇ | 0.0217 | 0.100 |
| (S) a,a,a-Trifluorotoluene(FID) | 93.5 | | | 77.0-120 |
| (S) a,a,a-Trifluorotoluene(PID) | 95.7 | | | 72.0-128 |

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS)

(LCS) R3455957-1 09/28/19 15:13

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCS Rec. % | Rec. Limits % | LCS Qualifier |
|------------------------------------|-----------------------|---------------------|---------------|------------------|---------------|
| Benzene | 0.0500 | 0.0454 | 90.9 | 76.0-121 | |
| Toluene | 0.0500 | 0.0440 | 88.0 | 80.0-120 | |
| Ethylbenzene | 0.0500 | 0.0449 | 89.7 | 80.0-124 | |
| Total Xylene | 0.150 | 0.143 | 95.0 | 37.0-160 | |
| (S) a,a,a-Trifluorotoluene(FID) | | | 93.6 | 77.0-120 | |
| (S) a,a,a-Trifluorotoluene(PID) | | | 95.3 | 72.0-128 | |

Laboratory Control Sample (LCS)

(LCS) R3455957-2 09/28/19 15:34

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCS Rec. % | Rec. Limits % | LCS Qualifier |
|------------------------------------|-----------------------|---------------------|---------------|------------------|---------------|
| TPH (GC/FID) Low Fraction | 5.50 | 5.09 | 92.6 | 72.0-127 | |
| (S) a,a,a-Trifluorotoluene(FID) | | | 105 | 77.0-120 | |
| (S) a,a,a-Trifluorotoluene(PID) | | | 106 | 72.0-128 | |



L1143785-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1143785-21 09/28/19 22:53 • (MS) R3455957-4 09/29/19 01:16 • (MSD) R3455957-5 09/29/19 01:37

| Analyte | Spike Amount mg/kg | Original Result mg/kg | MS Result mg/kg | MSD Result mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|------------------------------------|-----------------------|--------------------------|--------------------|---------------------|--------------|---------------|----------|------------------|--------------|---------------|----------|-----------------|
| Benzene | 0.0500 | 0.00193 | 0.0388 | 0.0408 | 73.8 | 77.7 | 1 | 10.0-155 | | | 4.88 | 32 |
| Toluene | 0.0500 | ND | 0.0338 | 0.0375 | 66.3 | 73.7 | 1 | 10.0-160 | | | 10.5 | 34 |
| Ethylbenzene | 0.0500 | ND | 0.0299 | 0.0372 | 59.8 | 74.4 | 1 | 10.0-160 | | | 21.7 | 32 |
| Total Xylene | 0.150 | ND | 0.0904 | 0.106 | 59.9 | 70.4 | 1 | 10.0-160 | J6 | J6 | 16.1 | 32 |
| (S) a,a,a-Trifluorotoluene(FID) | | | | | 90.2 | 91.5 | | 77.0-120 | | | | |
| (S) a,a,a-Trifluorotoluene(PID) | | | | | 91.8 | 93.3 | | 72.0-128 | | | | |

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3455614-1 09/28/19 13:53

| Analyte | MB Result mg/kg | MB Qualifier | MB MDL mg/kg | MB RDL mg/kg |
|----------------------|--------------------|--------------|-----------------|-----------------|
| C10-C28 Diesel Range | U | | 1.61 | 4.00 |
| C28-C40 Oil Range | U | | 0.274 | 4.00 |
| (S) o-Terphenyl | 80.8 | | | 18.0-148 |

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3455614-2 09/28/19 14:14

| Analyte | Spike Amount mg/kg | LCS Result mg/kg | LCS Rec. % | Rec. Limits % | LCS Qualifier |
|----------------------|-----------------------|---------------------|---------------|------------------|---------------|
| C10-C28 Diesel Range | 50.0 | 39.5 | 79.0 | 50.0-150 | |
| (S) o-Terphenyl | | | 77.9 | 18.0-148 | |

L1142882-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1142882-03 09/28/19 14:59 • (MS) R3455614-3 09/28/19 15:13 • (MSD) R3455614-4 09/28/19 15:28

| Analyte | Spike Amount mg/kg | Original Result mg/kg | MS Result mg/kg | MSD Result mg/kg | MS Rec. % | MSD Rec. % | Dilution | Rec. Limits % | MS Qualifier | MSD Qualifier | RPD % | RPD Limits % |
|----------------------|-----------------------|--------------------------|--------------------|---------------------|--------------|---------------|----------|------------------|--------------|---------------|----------|-----------------|
| C10-C28 Diesel Range | 47.7 | U | 42.2 | 32.6 | 88.5 | 66.8 | 1 | 50.0-150 | | J3 | 25.7 | 20 |
| (S) o-Terphenyl | | | | | 81.6 | 63.8 | | 18.0-148 | | | | |



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. |
| ND | Not detected at the Reporting Limit (or MDL where applicable). |
| 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

| | |
|----|---|
| B | The same analyte is found in the associated blank. |
| J | The identification of the analyte is acceptable; the reported value is an estimate. |
| J3 | The associated batch QC was outside the established quality control range for precision. |
| J6 | The sample matrix interfered with the ability to make any accurate determination; spike value is low. |

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.



[illegible]