

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	NRM2008550802
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 # NRM2008550802
Contact mailing address 382 Road 3100, Aztec NM 87410	

Location of Release Source

Latitude 36.80262 _____ Longitude -107.8956 _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Sunray D 1M	Site Type Well
Date Release Discovered 3/18/2020 @2:00pm	API# 3004530002

Unit Letter	Section	Township	Range	County
D	21	30N	10W	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 type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	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) 12bbls	Volume Recovered (bbls) 8bbls
<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 12 bbls of condensate was released due to an over the top spill on the above grade pit tank. Operations had the pit pulled. 8 bbls was recovered. OCD will be notified 48 hours prior to sampling.

Incident ID	NRM2008550802
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>188</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.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ 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.

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	NRM2008550802
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: _____ *Jennifer Deal* _____ Date: ___6/11/2020_____

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

OCD Only

Received by: _____ Date: _____

Incident ID	NRM2008550802
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: Jennifer Deal Date: 6/11/2020

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

OCD Only

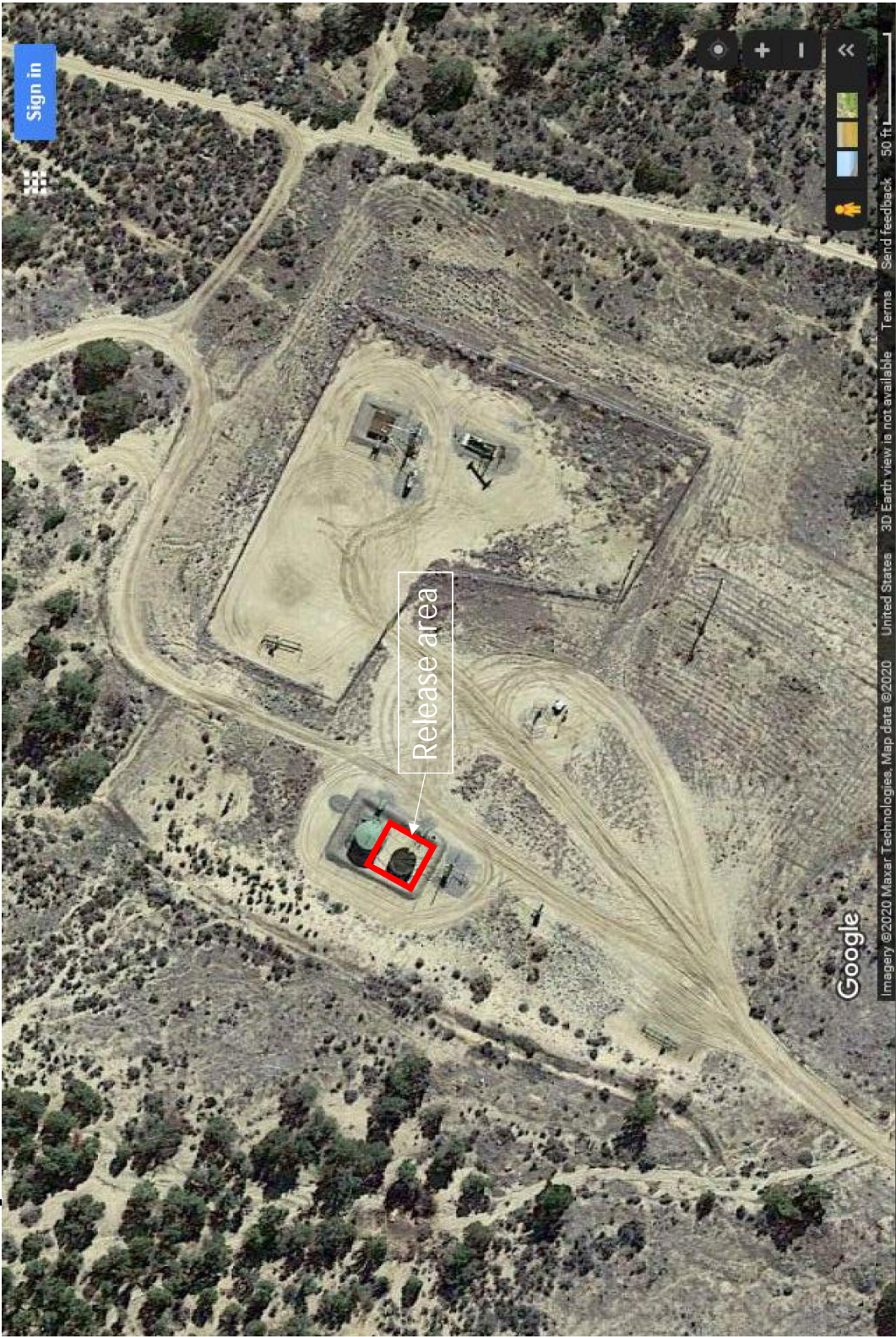
Received by: OCD Date: 6/12/2020

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: Cory Date: 10/28/2020

Printed Name: Cory Title: Environmental Specialist

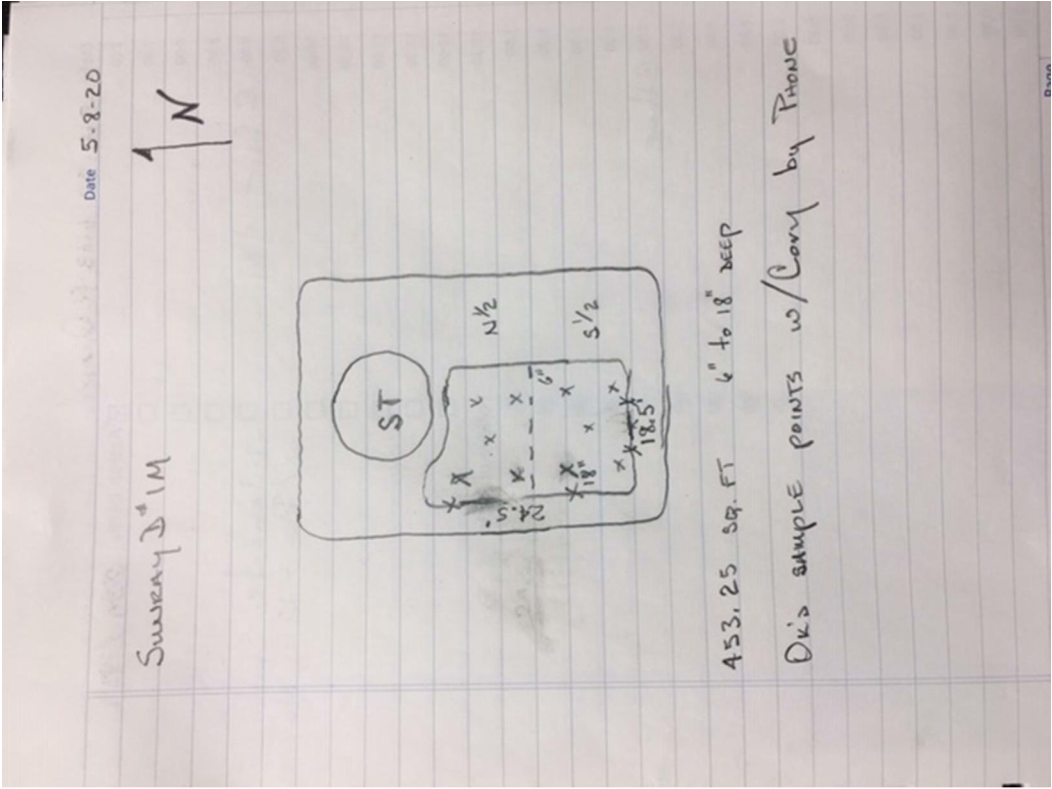
Scaled Map



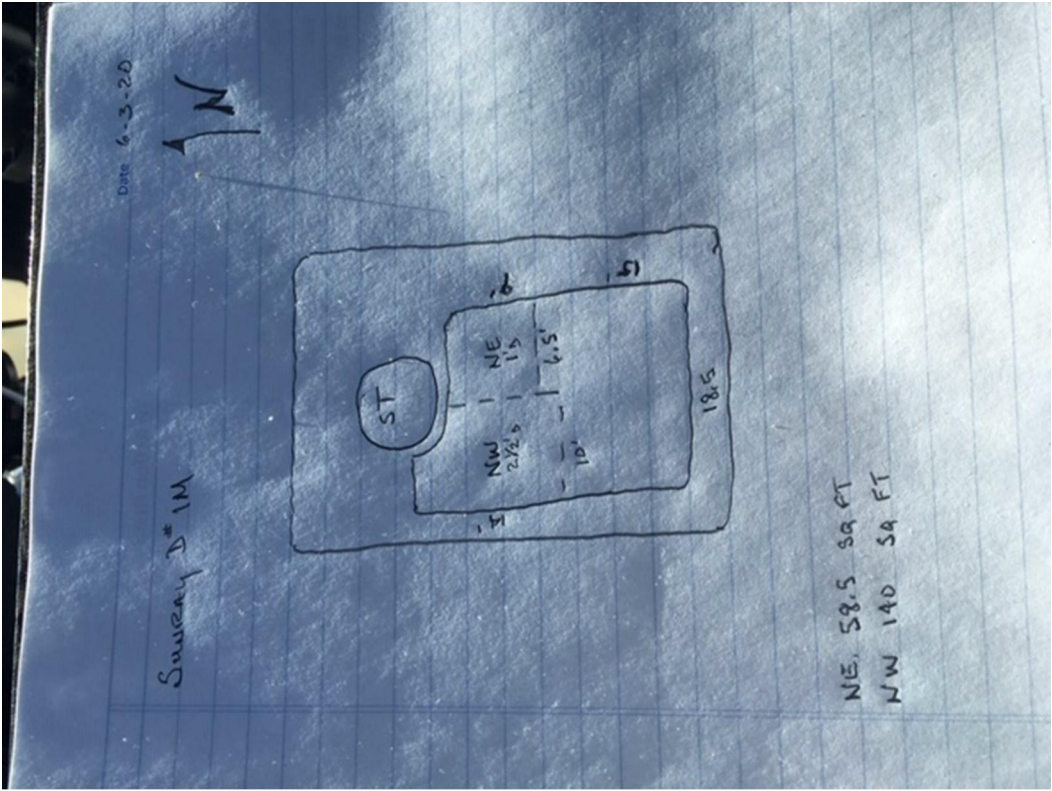
Pictures – 3/18 Initial Release



Field Data - 5/8/2020



Field Data – 6/3/2020



Data table of soil contaminant concentration data

TABLE 1

SOIL ANALYTICAL RESULTS

SUNRAY D IM

HILCORP ENERGY - L48 WEST

Soil Sample Identification	Sample Date	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)
North 1/2	5/8/2020	<0.0005	<0.005	0.00719	0.12	0.13	ND	4.5	1890.00	656.00	1894.52	2550.52
South 1/2	5/8/2020	<0.0005	<0.005	<0.0005	<0.0015	<0.005	ND	0.2	115.00	58.30	115.162	173.462
Base & E Wall	6/3/2020	<0.0005	<0.005	<0.0005	<0.0015	<0.005	ND	<0.100	15.50	<4.00	15.500	15.500
N Wall	6/3/2020	<0.0005	<0.005	<0.0005	<0.0015	<0.005	ND	<0.100	<4.00	<4.00	<4.00	<4.00
W Wall	6/3/2020	<0.0005	<0.005	<0.0005	<0.0015	<0.005	ND	<0.100	<4.00	<4.00	<4.00	<4.00
S. Wall	6/3/2020	<0.0005	<0.005	<0.0005	<0.0015	<0.005	ND	<0.100	<4.00	<4.00	<4.00	<4.00
NMOCD Standards		10	NE	NE	NE	50	600	NE	NE	NE	1,000	2,500

NOTES:

< - indicates result is less than the stated laboratory reporting limit

Bold - indicates value exceeds stated NMOCD standard

BTEX - benzene, toluene, ethylbenzene, total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

MRO - motor oil range organics

NE - Not Established

NMOCD - New Mexico Oil Conservation Division

ppm - parts per million

TPH - total petroleum hydrocarbons

Depth to water determination



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 21 **Township:** 30N **Range:** 10W

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.

3/20/20 10:21 AM

WATER COLUMN/ AVERAGE
DEPTH TO WATER

Depth to water determination – 188ft

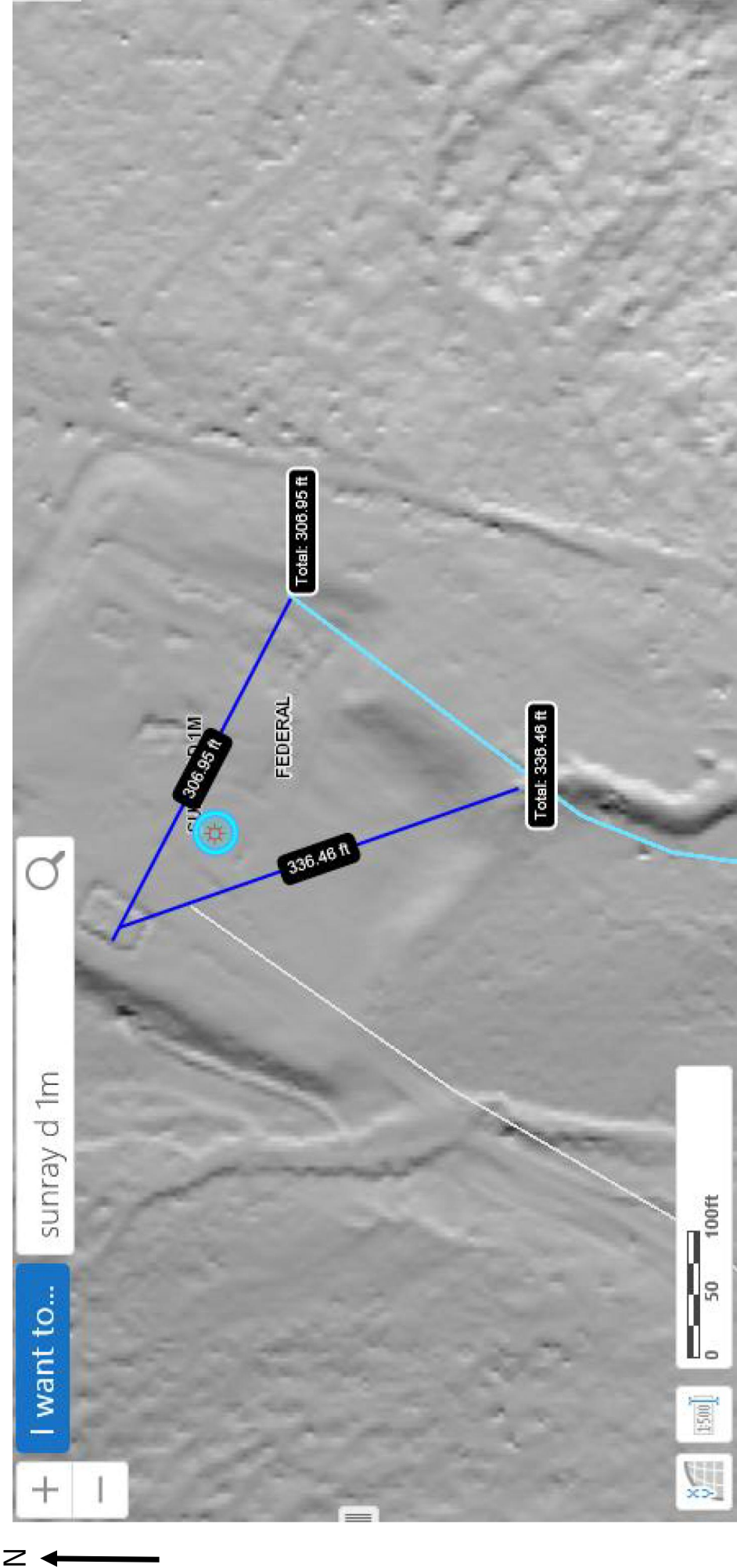
SUNRAY D 1M

Site Specific Hydrogeology

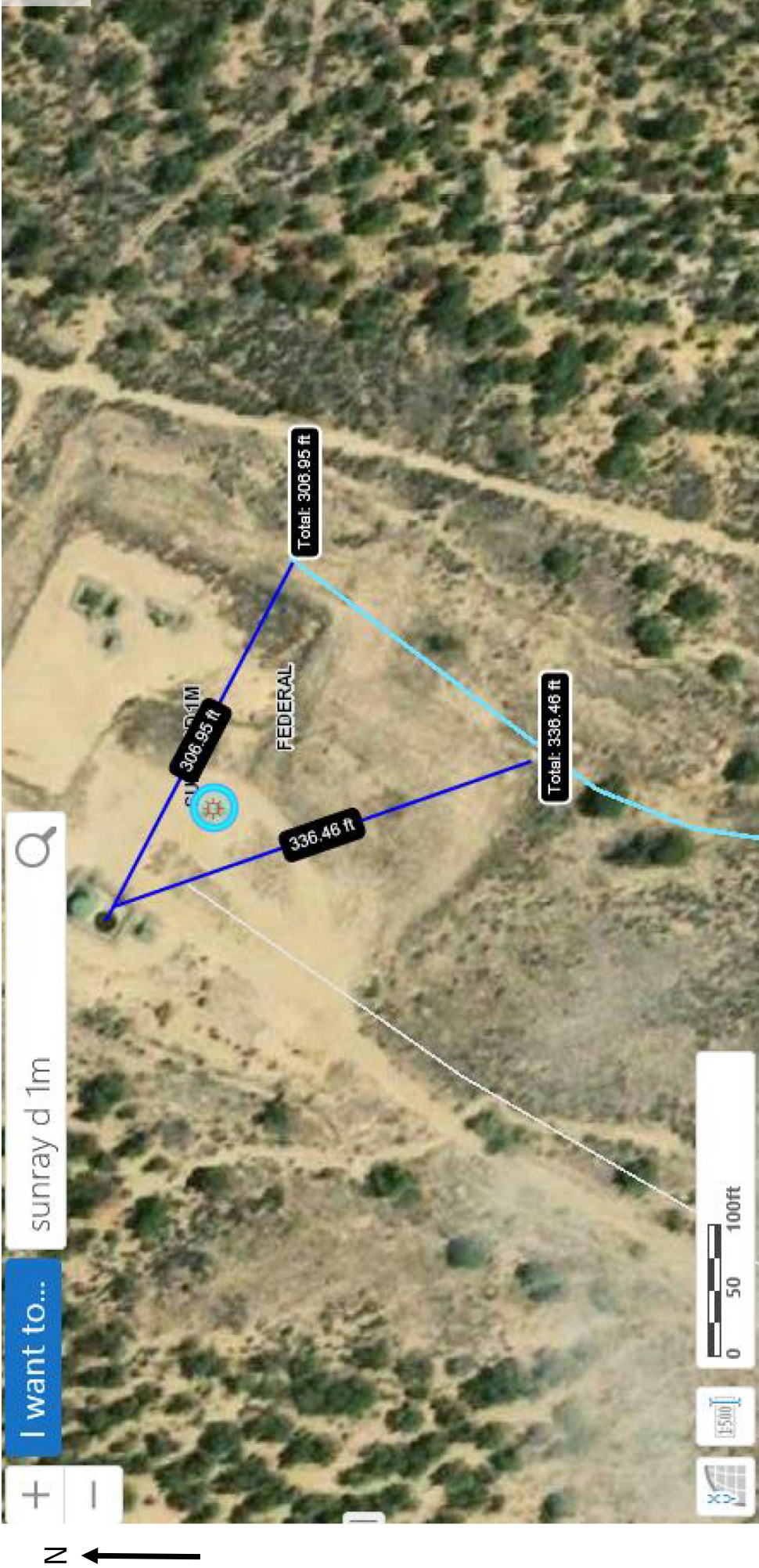
A visual site inspection confirming the information contained herein was performed on the well 'SUNRAY D 1M', which is located at 36.80262 degrees North latitude and 107.8956 degrees West longitude. This location is located on the Aztec 7.5' USGS topographic quadrangle. This location is in section 21 of Township 30 North Range 10 West of the Public Land Survey System (New Mexico Principal Meridian). This location is located in San Juan County, New Mexico. The nearest town is Aztec, located 5.6 miles to the west. The nearest large town (population greater than 10,000) is Farmington, located 17.8 miles to the west (National Atlas). The nearest highway is State Highway 173, located 0.2 miles to the south. The location is on BLM land and is 640 feet from the edge of the parcel as notated in the BLM land status layer updated January 2008. This location is in the Upper San Juan, Colorado, New Mexico, Sub-basin. This location is located 1946 meters or 6382 feet above sea level and receives 14 inches of rain each year. The vegetation at this location is classified as Inter-Mountain Basins Big Sagebrush Shrubland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is 188 feet. This estimation is based on the data published on the New Mexico Engineer's Waters Database website and water depth data from ConocoPhillips' Cathodic wells. Groundwater data available from the NM State Engineer's Waters Database for wells near the proposed site are attached. The nearest stream is 28 feet to the northwest and is classified by the USGS as an intermittent stream. The nearest perennial stream is 4,360 feet to the east. The nearest water body is 4,352 feet to the east. It is classified by the USGS as a perennial lake and is 8.9 acres in size. The nearest spring is 15,344 feet to the east. All stream, river, water body and spring information was determined as per the USGS Hydrographic Dataset (High Resolution), downloaded 3/2008. The nearest water well is 2,055 feet to the west. The nearest wetland is a 0.3 acre other located 5,005 feet to the northeast. The slope at this location is 3 degrees to the west as calculated from USGS 30M National Elevation Dataset. This information is also discerned from the aerial and topographic map included. The surface geology at this location is SAN JOSE FORMATION—Siltstone, shale, and sandstone with a Sandstone dominated formations of all ages substrate. The soil at this location is 'Stumble-Fruitland association, gently sloping' and is somewhat excessively drained and not hydric with slight erosion potential as taken from the NRCS SSURGO map unit, downloaded January 2008. The nearest underground mine is 11.1 miles to the north as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

Determination of water sources and significant watercourses within 1/2 mile of the lateral extent of the release

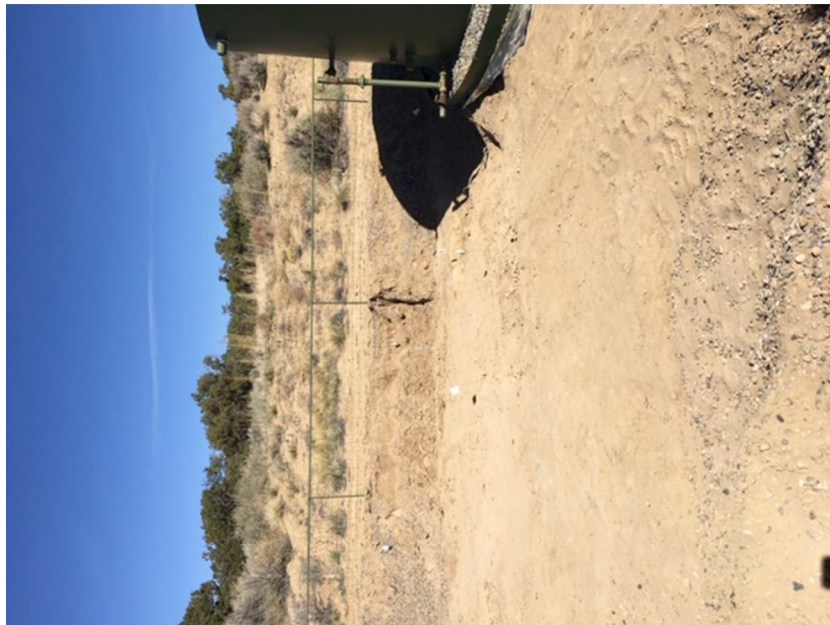


Determination of water sources and significant watercourses within ½ mile of the lateral extent of the release



Photographs – 5/8/2020 Sampling Event

North Half & West Wall



North Half



South Half & South Wall



Photographs – 5/8/2020 Sampling Event

South Half



South Half



South Half & West Wall



Photographs – 6/3/2020 Sampling Event

Base & Northwest Wall



North Wall



South Wall



Photographs – 6/3/2020 Sampling Event

East Wall & Base



South Wall



Southeast Wall



Topographic/Aerial Maps



N ↑

Summary of events

- 12 bbl condensate release on 3/18/2020
 - ~27 yds/3 of contaminated soil was hauled to IEI for disposal
 - ~27 yds/3 of clean soil was brought in
 - Final size of excavation = 18.5' width x 24' length x 1'-2 ½' deep
- Confirmation sampling occurred on 5/8/2020 & 6/3/2020
 - Kurt completed sampling on both days with phone conversation with Cory each day

Jennifer Deal

From: Jennifer Deal
Sent: Thursday, May 7, 2020 10:32 AM
To: cory.smith@state.nm.us
Subject: FW: Confirmation Sampling - Sunray D 1M

I think I'm losing my mind. The incident number is NRM2008550802. Sorry for any confusion.

Jennifer Deal
Environmental Specialist
Hilcorp Energy – L48 West
jdeal@hilcorp.com
Office: (505) 324-5128
Cell: 505-801-6517

From: Jennifer Deal
Sent: Tuesday, May 5, 2020 3:01 PM
To: 'cory.smith@state.nm.us' <cory.smith@state.nm.us>
Cc: Kurt Hoekstra <khoekstra@hilcorp.com>; Jeremy Brooks <jbrooks@hilcorp.com>; Bobby Spearman <bspearman@hilcorp.com>
Subject: Confirmation Sampling - Sunray D 1M

Good afternoon,

Please disregard the last email I sent. It was for the wrong location.

Hilcorp is providing 48 hour notice of confirmation sampling to occur on Friday, May 8th at 9:00am at the Sunray D 1M (Incident Number OVWC3-200323-C1410). Please let me know if you have any questions.

Sorry for any confusion.

Thank you,

Jennifer Deal
Environmental Specialist
Hilcorp Energy – L48 West
jdeal@hilcorp.com
Office: (505) 324-5128
Cell: 505-801-6517

From: Jennifer Deal
Sent: Tuesday, May 5, 2020 2:55 PM
To: cory.smith@state.nm.us
Cc: Kurt Hoekstra <khoekstra@hilcorp.com>; Jeremy Brooks <jbrooks@hilcorp.com>; Bobby Spearman <bspearman@hilcorp.com>
Subject: Confirmation Sampling - Hubbard 4A

Good afternoon,

Hilcorp is providing 48 hour notice of confirmation sampling to occur on Friday, May 8th at 9:00am at the Hubbard 4A (Incident Number QLFPB-200416-C1410). 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

Jennifer Deal

From: Jennifer Deal
Sent: Monday, June 1, 2020 9:01 AM
To: cory.smith@state.nm.us
Cc: Kurt Hoekstra; Bobby Spearman; Jeremy Brooks
Subject: Confirmation Sampling - Sunray D 1M

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning,

Hilcorp Energy is providing 48 hour notice of confirmation sampling to occur at the Sunray D 1M on Wednesday at 9:00am. The Incident number is listed below. Let me know if you have any questions.

Thank you,

Jennifer Deal
Environmental Specialist
Hilcorp Energy – L48 West
jdeal@hilcorp.com
Office: (505) 324-5128
Cell: 505-801-6517

From: Jennifer Deal
Sent: Thursday, May 7, 2020 10:32 AM
To: cory.smith@state.nm.us
Subject: FW: Confirmation Sampling - Sunray D 1M

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From: Jennifer Deal
Sent: Tuesday, May 5, 2020 3:01 PM
To: 'cory.smith@state.nm.us' <cory.smith@state.nm.us>
Cc: Kurt Hoekstra <khoekstra@hilcorp.com>; Jeremy Brooks <jbrooks@hilcorp.com>; Bobby Spearman <bspearman@hilcorp.com>
Subject: Confirmation Sampling - Sunray D 1M

Good afternoon,

Please disregard the last email I sent. It was for the wrong location.

Hilcorp is providing 48 hour notice of confirmation sampling to occur on Friday, May 8th at 9:00am at the Sunray D 1M (Incident Number OVWC3-200323-C1410). Please let me know if you have any questions.

Sorry for any confusion.

Thank you,

Jennifer Deal
Environmental Specialist
Hilcorp Energy – L48 West
jdeal@hilcorp.com
Office: (505) 324-5128
Cell: 505-801-6517

From: Jennifer Deal
Sent: Tuesday, May 5, 2020 2:55 PM
To: cory.smith@state.nm.us
Cc: Kurt Hoekstra <khoekstra@hilcorp.com>; Jeremy Brooks <jbrooks@hilcorp.com>; Bobby Spearman <bspearman@hilcorp.com>
Subject: Confirmation Sampling - Hubbard 4A

Good afternoon,

Hilcorp is providing 48 hour notice of confirmation sampling to occur on Friday, May 8th at 9:00am at the Hubbard 4A (Incident Number QLFPB-200416-C1410). 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



ANALYTICAL REPORT

May 15, 2020

HilCorp-Farmington, NM

Sample Delivery Group: L1216921
Samples Received: 05/09/2020
Project Number:
Description: Sunray D #1M
Site: SUNRAY D 31M
Report To: Jennifer Deal
382 Road 3100
Aztec, NM 87410

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

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
NORTH 1/2 L1216921-01	5	
SOUTH 1/2 L1216921-02	6	⁴ Cn
Qc: Quality Control Summary	7	⁵ Sr
Wet Chemistry by Method 300.0	7	
Volatile Organic Compounds (GC) by Method 8015/8021	8	⁶ Qc
Semi-Volatile Organic Compounds (GC) by Method 8015	10	
Gl: Glossary of Terms	11	⁷ Gl
Al: Accreditations & Locations	12	⁸ Al
Sc: Sample Chain of Custody	13	⁹ Sc

NORTH 1/2 L1216921-01 Solid

Collected by Kurt Hoekstra
Collected date/time 05/08/20 09:25
Received date/time 05/09/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1473712	1	05/11/20 22:25	05/12/20 10:18	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1475125	1	05/12/20 17:00	05/13/20 18:45	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1474603	10	05/12/20 23:20	05/14/20 01:46	KME	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1474603	5	05/12/20 23:20	05/13/20 21:48	KME	Mt. Juliet, TN

SOUTH 1/2 L1216921-02 Solid

Collected by Kurt Hoekstra
Collected date/time 05/08/20 09:35
Received date/time 05/09/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1473712	1	05/11/20 22:25	05/12/20 10:36	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1475125	1	05/12/20 17:00	05/13/20 19:08	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1474603	1	05/12/20 23:20	05/13/20 20:56	FM	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	ND		20.0	1	05/12/2020 10:18	WG1473712

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	05/13/2020 18:45	WG1475125
Toluene	ND		0.00500	1	05/13/2020 18:45	WG1475125
Ethylbenzene	0.00719		0.000500	1	05/13/2020 18:45	WG1475125
Total Xylene	0.120		0.00150	1	05/13/2020 18:45	WG1475125
TPH (GC/FID) Low Fraction	4.52		0.100	1	05/13/2020 18:45	WG1475125
(S) a,a,a-Trifluorotoluene(FID)	91.5		77.0-120		05/13/2020 18:45	WG1475125
(S) a,a,a-Trifluorotoluene(PID)	98.7		72.0-128		05/13/2020 18:45	WG1475125

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	1890		40.0	10	05/14/2020 01:46	WG1474603
C28-C40 Oil Range	656		20.0	5	05/13/2020 21:48	WG1474603
(S) o-Terphenyl	70.5		18.0-148		05/14/2020 01:46	WG1474603
(S) o-Terphenyl	256	J1	18.0-148		05/13/2020 21:48	WG1474603

Sample Narrative:

L1216921-01 WG1474603: Surrogate failure due to matrix interference

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Collected date/time: 05/08/20 09:35

L1216921

Wet Chemistry by Method 300.0

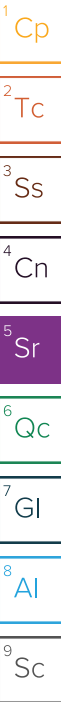
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		20.0	1	05/12/2020 10:36	WG1473712

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	05/13/2020 19:08	WG1475125
Toluene	ND		0.00500	1	05/13/2020 19:08	WG1475125
Ethylbenzene	ND		0.000500	1	05/13/2020 19:08	WG1475125
Total Xylene	ND		0.00150	1	05/13/2020 19:08	WG1475125
TPH (GC/FID) Low Fraction	0.162	B	0.100	1	05/13/2020 19:08	WG1475125
(S) a,a,a-Trifluorotoluene(FID)	92.2		77.0-120		05/13/2020 19:08	WG1475125
(S) a,a,a-Trifluorotoluene(PID)	101		72.0-128		05/13/2020 19:08	WG1475125

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	115		4.00	1	05/13/2020 20:56	WG1474603
C28-C40 Oil Range	58.3		4.00	1	05/13/2020 20:56	WG1474603
(S) o-Terphenyl	64.7		18.0-148		05/13/2020 20:56	WG1474603



Method Blank (MB)

(MB) R3526936-1 05/12/20 01:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1215664-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1215664-01 05/12/20 04:03 • (DUP) R3526936-3 05/12/20 04:20

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	108	108	1	0.285		20

L1216921-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1216921-02 05/12/20 10:36 • (DUP) R3526936-6 05/12/20 10:54

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3526936-2 05/12/20 03:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	206	103	90.0-110	

L1216478-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1216478-01 05/12/20 05:32 • (MS) R3526936-4 05/12/20 05:49 • (MSD) R3526936-5 05/12/20 06:43

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 %
Chloride	500	396	856	848	92.2	90.4	1	80.0-120		1.04	20	



Method Blank (MB)

(MB) R3527492-3 05/13/20 11:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.000500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0441	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	95.0			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	101			72.0-128

Laboratory Control Sample (LCS)

(LCS) R3527492-1 05/13/20 10:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0505	101	76.0-121	
Toluene	0.0500	0.0466	93.2	80.0-120	
Ethylbenzene	0.0500	0.0484	96.8	80.0-124	
Total Xylene	0.150	0.150	100	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			94.9	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			102	72.0-128	

Laboratory Control Sample (LCS)

(LCS) R3527492-2 05/13/20 10:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.96	90.2	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			98.9	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			109	72.0-128	

L1215899-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1215899-01 05/13/20 21:22 • (MS) R3527492-4 05/13/20 22:06 • (MSD) R3527492-5 05/13/20 22:28

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 %
Benzene	25.0	ND	23.7	22.5	94.8	90.0	500	10.0-155			5.19	32
Toluene	25.0	ND	21.6	21.1	86.4	84.4	500	10.0-160			2.34	34
Ethylbenzene	25.0	ND	22.8	21.7	91.2	86.8	500	10.0-160			4.94	32
Total Xylene	75.0	1.50	70.6	67.6	92.1	88.1	500	10.0-160			4.34	32
(S) a,a,a-Trifluorotoluene(FID)					95.8	94.7		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					102	101		72.0-128				

Sample Narrative:

OS: Nontarget compounds are too large to run at a lower dilution.

L1215899-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1215899-01 05/13/20 21:22 • (MS) R3527492-6 05/13/20 22:51 • (MSD) R3527492-7 05/13/20 23:13

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 %
TPH (GC/FID) Low Fraction	2750	410	2470	2610	74.9	80.0	500	10.0-151			5.51	28
(S) a,a,a-Trifluorotoluene(FID)					97.8	98.2		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					108	109		72.0-128				

Sample Narrative:

OS: Nontarget compounds are too large to run at a lower dilution.

Method Blank (MB)

(MB) R3527620-1 05/13/20 17:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U	1.61	4.00	4.00
C28-C40 Oil Range	U	0.274	4.00	4.00
(S) o-Terphenyl	69.8		18.0-148	

Laboratory Control Sample (LCS)

(LCS) R3527620-2 05/13/20 17:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	30.8	61.6	50.0-150	
(S) o-Terphenyl		81.7		18.0-148	

L1216265-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1216265-07 05/13/20 18:04 • (MS) R3527620-3 05/13/20 18:17 • (MSD) R3527620-4 05/13/20 18:30

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	MSD Result mg/kg	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	ND	30.2	60.4	24.5	49.0	1	50.0-150		J3 J6	20.8	20
(S) o-Terphenyl			61.3	61.3	52.6	52.6		18.0-148				

Guide to Reading and Understanding Your Laboratory Report

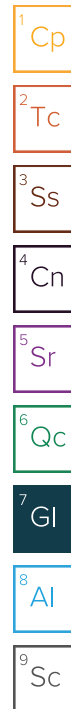
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
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.



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

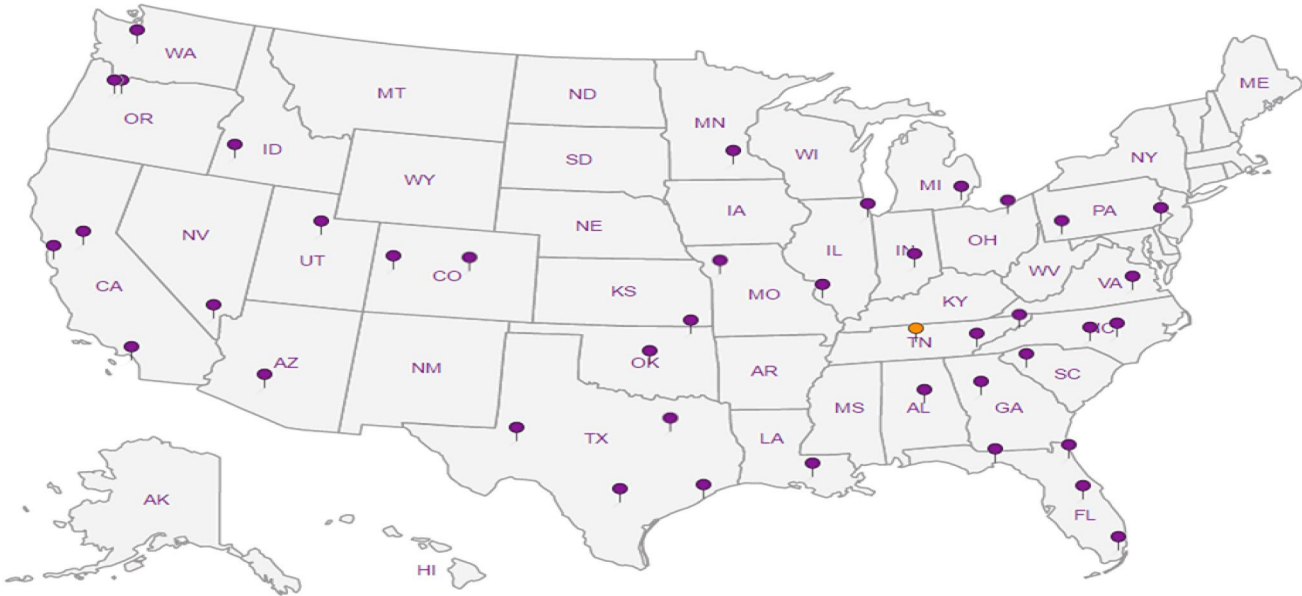
Third Party Federal Accreditations

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.



Chain of Custody Page <u> </u> of <u> </u>		 Pace Analytical <small>National Center for Testing & Investigation</small>		12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859		 L # <u>L1216921</u> Ta <u>B013</u>		Accnum: HILCORANM Template: Prelogin: TSR: PB: Shipped Via: Remarks: <u>-01</u> <u>-02</u>		Sample # (lab only)	
Billing Information: ATTN: Jennifer Deal Email To: <u>jdeal@hilcorp.com; khoekstra@hilcorp</u>		Project Description: Sunray D # 1M Phone: 505-324-5128 Fax:		Client Project # Site/Facility ID # Sunray D # 1M Rush? (Lab MUST Be Notified) Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input checked="" type="checkbox"/> Three Day <input type="checkbox"/> Immediately <input type="checkbox"/> Packed on Ice <input type="checkbox"/> N <input type="checkbox"/> Y <input checked="" type="checkbox"/>		Quote # Date Results Needed No. of Cntrs		Date Time		Date Time	
Report to: Jennifer Deal Description: Sunray D # 1M		Sample ID North 1/2 South 1/2		Comp/Grab Comp Comp		Matrix * SS SS		Depth 5-8-20 5-8-20		Date 9:25 9:35	
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ANALYTICAL REPORT

June 10, 2020

HilCorp-Farmington, NM

Sample Delivery Group: L1225863
Samples Received: 06/05/2020
Project Number:
Description: SUNRAY D#1M
Site: SUNRAY D#1M
Report To: Jennifer Deal
382 Road 3100
Aztec, NM 87410

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
BASE & E WALL L1225863-01	5	
N WALL L1225863-02	6	⁴ Cn
W WALL L1225863-03	7	⁵ Sr
S WALL L1225863-04	8	
Qc: Quality Control Summary	9	⁶ Qc
Wet Chemistry by Method 300.0	9	
Volatile Organic Compounds (GC) by Method 8015/8021	10	⁷ Gl
Semi-Volatile Organic Compounds (GC) by Method 8015	12	⁸ Al
Gl: Glossary of Terms	13	
Al: Accreditations & Locations	14	⁹ Sc
Sc: Sample Chain of Custody	15	

BASE & E WALL L1225863-01 Solid

Collected by K. Hoekstra
Collected date/time 06/03/20 09:08
Received date/time 06/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1488821	1	06/09/20 14:39	06/09/20 19:13	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1488060	1	06/05/20 15:26	06/06/20 09:07	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1488541	1	06/09/20 04:05	06/09/20 15:18	JN	Mt. Juliet, TN

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

N WALL L1225863-02 Solid

Collected by K. Hoekstra
Collected date/time 06/03/20 09:13
Received date/time 06/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1488821	1	06/09/20 14:39	06/09/20 19:42	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1488060	1	06/05/20 15:26	06/06/20 09:28	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1488541	1	06/09/20 04:05	06/09/20 15:31	JN	Mt. Juliet, TN

W WALL L1225863-03 Solid

Collected by K. Hoekstra
Collected date/time 06/03/20 09:18
Received date/time 06/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1488821	1	06/09/20 14:39	06/09/20 19:51	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1488060	1.01	06/05/20 15:26	06/06/20 09:48	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1488541	1	06/09/20 04:05	06/09/20 15:45	JN	Mt. Juliet, TN

S WALL L1225863-04 Solid

Collected by K. Hoekstra
Collected date/time 06/03/20 09:23
Received date/time 06/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1488821	1	06/09/20 14:39	06/09/20 20:10	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1488060	1	06/05/20 15:26	06/06/20 10:09	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1488541	1	06/09/20 04:05	06/09/20 15:59	JN	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.



Olivia Studebaker
Project Manager

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

Collected date/time: 06/03/20 09:08

L1225863

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		20.0	1	06/09/2020 19:13	WG1488821

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/06/2020 09:07	WG1488060
Toluene	ND		0.00500	1	06/06/2020 09:07	WG1488060
Ethylbenzene	ND		0.000500	1	06/06/2020 09:07	WG1488060
Total Xylene	ND		0.00150	1	06/06/2020 09:07	WG1488060
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2020 09:07	WG1488060
(S) a,a,a-Trifluorotoluene(FID)	101		77.0-120		06/06/2020 09:07	WG1488060
(S) a,a,a-Trifluorotoluene(PID)	98.6		72.0-128		06/06/2020 09:07	WG1488060

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	15.5		4.00	1	06/09/2020 15:18	WG1488541
C28-C40 Oil Range	ND		4.00	1	06/09/2020 15:18	WG1488541
(S) o-Terphenyl	36.0		18.0-148		06/09/2020 15:18	WG1488541

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Collected date/time: 06/03/20 09:13

L1225863

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		20.0	1	06/09/2020 19:42	WG1488821

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/06/2020 09:28	WG1488060
Toluene	ND		0.00500	1	06/06/2020 09:28	WG1488060
Ethylbenzene	ND		0.000500	1	06/06/2020 09:28	WG1488060
Total Xylene	ND		0.00150	1	06/06/2020 09:28	WG1488060
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2020 09:28	WG1488060
(S) a,a,a-Trifluorotoluene(FID)	103		77.0-120		06/06/2020 09:28	WG1488060
(S) a,a,a-Trifluorotoluene(PID)	100		72.0-128		06/06/2020 09:28	WG1488060

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/09/2020 15:31	WG1488541
C28-C40 Oil Range	ND		4.00	1	06/09/2020 15:31	WG1488541
(S) o-Terphenyl	70.9		18.0-148		06/09/2020 15:31	WG1488541

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Collected date/time: 06/03/20 09:18

L1225863

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		20.0	1	06/09/2020 19:51	WG1488821

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000505	1.01	06/06/2020 09:48	WG1488060
Toluene	ND		0.00505	1.01	06/06/2020 09:48	WG1488060
Ethylbenzene	ND		0.000505	1.01	06/06/2020 09:48	WG1488060
Total Xylene	ND		0.00152	1.01	06/06/2020 09:48	WG1488060
TPH (GC/FID) Low Fraction	ND		0.101	1.01	06/06/2020 09:48	WG1488060
(S) a,a,a-Trifluorotoluene(FID)	105		77.0-120		06/06/2020 09:48	WG1488060
(S) a,a,a-Trifluorotoluene(PID)	100		72.0-128		06/06/2020 09:48	WG1488060

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/09/2020 15:45	WG1488541
C28-C40 Oil Range	ND		4.00	1	06/09/2020 15:45	WG1488541
(S) o-Terphenyl	69.9		18.0-148		06/09/2020 15:45	WG1488541

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Collected date/time: 06/03/20 09:23

L1225863

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		20.0	1	06/09/2020 20:10	WG1488821

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	06/06/2020 10:09	WG1488060
Toluene	ND		0.00500	1	06/06/2020 10:09	WG1488060
Ethylbenzene	ND		0.000500	1	06/06/2020 10:09	WG1488060
Total Xylene	ND		0.00150	1	06/06/2020 10:09	WG1488060
TPH (GC/FID) Low Fraction	ND		0.100	1	06/06/2020 10:09	WG1488060
(S) a,a,a-Trifluorotoluene(FID)	103		77.0-120		06/06/2020 10:09	WG1488060
(S) a,a,a-Trifluorotoluene(PID)	99.3		72.0-128		06/06/2020 10:09	WG1488060

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/09/2020 15:59	WG1488541
C28-C40 Oil Range	ND		4.00	1	06/09/2020 15:59	WG1488541
(S) o-Terphenyl	69.8		18.0-148		06/09/2020 15:59	WG1488541

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3536836-1 06/09/20 15:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U	9.20	20.0	

L1224580-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1224580-02 06/09/20 16:39 • (DUP) R3536836-3 06/09/20 16:49

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1980	1970	5	0.395		20

L1225863-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1225863-03 06/09/20 19:51 • (DUP) R3536836-6 06/09/20 20:01

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3536836-2 06/09/20 15:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	200	100	90.0-110	

L1224580-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1224580-06 06/09/20 17:47 • (MS) R3536836-4 06/09/20 17:56 • (MSD) R3536836-5 06/09/20 18:05

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 %
Chloride	50.0	ND	359	444	71.8	88.8	10	80.0-120	J6	J3	21.2	20

Sample Narrative:

OS: Diluted @ 10x due to matrix

Method Blank (MB)

(MB) R3536214-5 06/06/20 07:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.000500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	105			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	103			72.0-128

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

(LCS) R3536214-1 06/06/20 06:12 • (LCSD) R3536214-2 06/06/20 06:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0491	0.0493	98.2	98.6	76.0-121			0.407	20
Toluene	0.0500	0.0503	0.0500	101	100	80.0-120			0.598	20
Ethylbenzene	0.0500	0.0494	0.0497	98.8	99.4	80.0-124			0.605	20
Total Xylene	0.150	0.152	0.154	101	103	37.0-160			1.31	20
(S) a,a,a-Trifluorotoluene(FID)				105	108	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				101	100	72.0-128				

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

(LCS) R3536214-3 06/06/20 06:53 • (LCSD) R3536214-4 06/06/20 07:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.75	5.79	105	105	72.0-127			0.693	20
(S) a,a,a-Trifluorotoluene(FID)				100	99.5	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				108	108	72.0-128				



Received by OCD: 6/12/2020 8:00:01 AM

L1225863-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1225863-02 06/06/20 09:28 • (MS) R3536214-6 06/06/20 12:54 • (MSD) R3536214-7 06/06/20 13:15

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	ND	0.0465	0.0444	93.0	88.8	1	10.0-155		4.62	4.62	32
Toluene	0.0500	ND	0.0461	0.0436	92.2	87.2	1	10.0-160		5.57	5.57	34
Ethylbenzene	0.0500	ND	0.0439	0.0407	87.8	81.4	1	10.0-160		7.57	7.57	32
Total Xylene	0.150	ND	0.135	0.124	90.0	82.7	1	10.0-160		8.49	8.49	32
(S) a,a,a-Trifluorotoluene(PID)				104	104	104		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				98.4	98.4	99.2		72.0-128				

L1225863-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1225863-02 06/06/20 09:28 • (MS) R3536214-8 06/06/20 13:35 • (MSD) R3536214-9 06/06/20 13:56

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 %
TPH (GC/FID) Low Fraction	5.50	ND	3.61	4.71	65.6	85.6	1	10.0-151		26.4	26.4	28
(S) a,a,a-Trifluorotoluene(FID)				92.4	92.4	94.3		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				100	100	103		72.0-128				

Method Blank (MB)

(MB) R3536639-1 06/09/20 11:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U	1.61	1.61	4.00
C28-C40 Oil Range	U	0.274	0.274	4.00
(S) o-Terphenyl	65.5			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3536639-2 06/09/20 11:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	36.8	73.6	50.0-150	
(S) o-Terphenyl			61.1	18.0-148	

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Guide to Reading and Understanding Your Laboratory Report

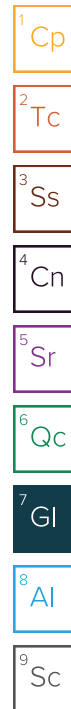
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
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.



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

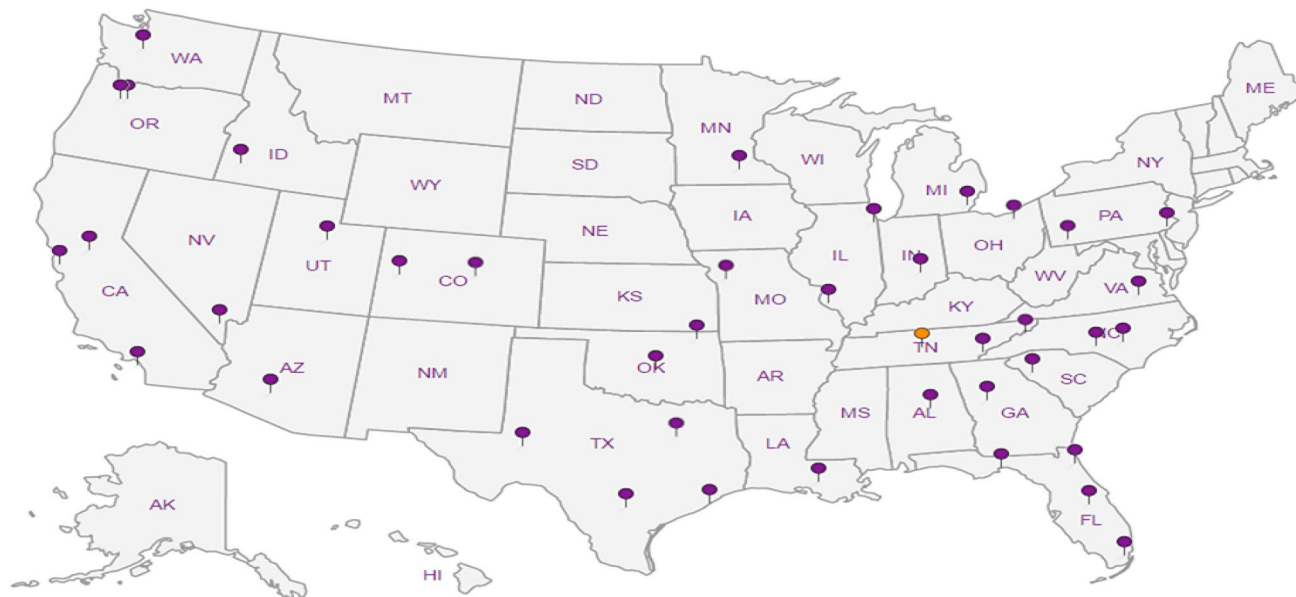
Third Party Federal Accreditations

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.



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