

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	
District RP	
Facility ID	
Application ID	

## Release Notification

NVF1834753017

### Responsible Party

Responsible Party	Hilcorp Energy Company	OGRID	372171
Contact Name	Lindsay Dumas	Contact Telephone	832-839-4585
Contact email	LDUMAS@hilcorp.com	Incident # (assigned by OCD)	
Contact mailing address	1111 Travis St. Houston, TX 77002		

### Location of Release Source

Latitude 36.811607 Longitude -107.47395  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	San Juan 30-16 #4085	Site Type	Well site
Date Release Discovered	August 24, 2018	API# (if applicable)	30-039-26943

Unit Letter	Section	Township	Range	County
E	16	30N	06W	Rio Arriba

NMOCB

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

JAN 03 2019

### Nature and Volume of Release

DISTRICT III

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) <u>10 bbls</u>	Volume Recovered (bbls) <u>0 bbls</u>
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	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

Corrosion of the tank valve

State of New Mexico  
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?  	

### Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: <i>All actions above have been completed.</i>	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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: <u>Lindray Dumas</u> Signature: <u><i>Lindray Dumas</i></u> email: <u>LDUMAS@hilcorp.com</u>	Title: <u>Environmental Specialist</u> Date: <u>9-5-18</u> Telephone: <u>832-839-4585</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	

## Lindsay Dumas

---

**From:** Lisa Hunter  
**Sent:** Friday, August 24, 2018 7:38 PM  
**To:** Smith, Cory, EMNRD; 'Fields, Vanessa, EMNRD'  
**Cc:** Lindsay Dumas  
**Subject:** Release Notification - San Juan 30-6 Unit 408S - 10bbl Prod Water

This is notification that at approximately 11:45 a.m. today, August 24, 2018, it was discovered that a Produced Water Tank on the San Juan 30-6 Unit 408S, API#: 3003926943, Lat. 36.816, Long. -107.4734, Sec. 16, T30N, R06W. released 10bbls Produced Water into the earthen berm containment.

Lindsay Dumas, Environmental (281-794-9159) will follow up with a C-141 and remediation plans.

Thanks,

*Lisa Hunter*

Field Safety Specialist  
**Hilcorp Energy – L48 West**  
382 Road 3100  
Aztec, NM 87410  
[Lhunter@Hilcorp.com](mailto:Lhunter@Hilcorp.com)  
505.486.9494



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## 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?	179' (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 <b>not</b> 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

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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: Lindsay Dumas Title: Environmental Specialist  
Signature: Lindsay Dumas Date: 9-5-18  
email: LDumas@hilcorp.com Telephone: 832-839-4585

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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Application ID	

## Remediation Plan

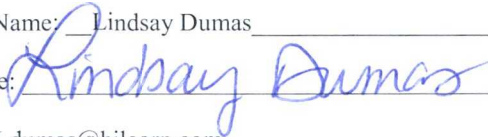
**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only:** *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: Lindsay Dumas Title: Environmental Specialist  
Signature:  Date: 12-14-18  
email: Ldumas@hilcorp.com Telephone: 832-839-4585

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	
Facility ID	
Application ID	

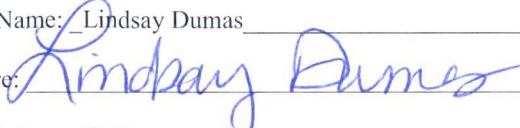
## Closure

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

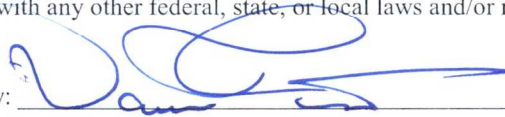
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public 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: Lindsay Dumas Title: Environmental Specialist  
Signature:  Date: 12-14-18  
email: Ldumas@hilcorp.com Telephone: 832-839-4585

**OCD Only**

Received by:  Date: 1/3/2019

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: 1/9/2019  
Printed Name: Vanessa Fields Title: Environmental Specialist



# Scaled Map



★ Impacted Area





North Sample 36.815705, -107.474603  
East Sample 36.815671, -107.474594  
South Sample 36.815651, -107.474623  
West Sample 36.815691, -107.474642

# Data table of soil contaminant concentration data


SOIL ANALYTICAL RESULTS												
SJ 30-6 408S												
HILCORP ENERGY - L48 WEST												
Soil Sample Identification	Sample Date	Chloride (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	GRO+DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
SOUTH OF TANK	9/6/2018	466	0.000618	0	0	0	0.00	0	0	0	0	0
WEST OF TANK	9/6/2018	132.0	0	0	0	0	0.00	0.0	0.0	0.0	0	0
NORTH OF TANK	9/6/2018	192	0	0	0	0	0.00	0	0.0	0	0.0	0
EAST OF TANK	9/6/2018	204.0	0	0	0	0	0.00	0.0	0	0.0	0	0
NMOCD Standards		20,000	10				50			1000		2,500



# Depth to water determination



## New Mexico Office of the State Engineer Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	SJ 00741	3	2	4	17	30N	06W	278707	4076656* 
<hr/>									
Driller License:	727	Driller Company:		AZTEC WELL SERVICING CO. INC.					
Driller Name:	SANDEL, JERRY								
Drill Start Date:	05/20/1979	Drill Finish Date:		06/12/1979		Plug Date:		12/01/1981	
Log File Date:	06/25/1979	PCW Rev Date:		08/10/1979		Source:		Artesian	
Pump Type:	SUBMER	Pipe Discharge Size:						Estimated Yield:	
Casing Size:	7.63	Depth Well:		2038 feet		Depth Water:		300 feet	
<hr/>									
Water Bearing Stratifications:					Top	Bottom	Description		
					422	2010	Sandstone/Gravel/Conglomerate		
<hr/>									
Casing Perforations:					Top	Bottom			
					422	2010			

\*UTM location was derived from PLSS - see Help

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.

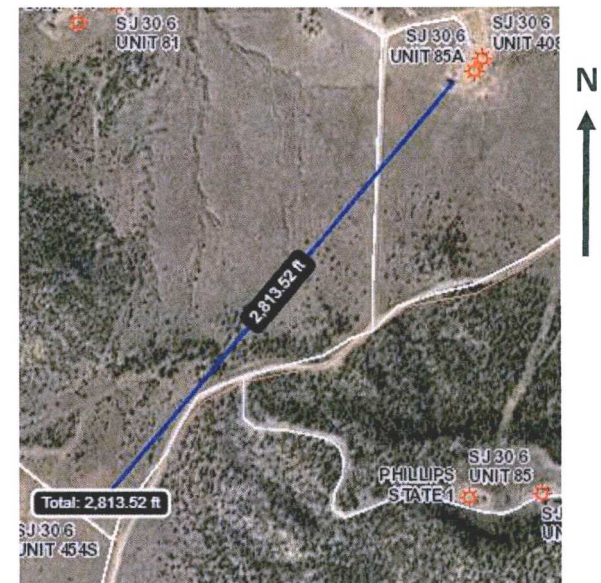
9/5/18 9:59 AM

POINT OF DIVERSION SUMMARY

San Juan 30-6 #408S elevation: 6310'

POD elevation: 6431'

Estimated GW depth: 179'



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





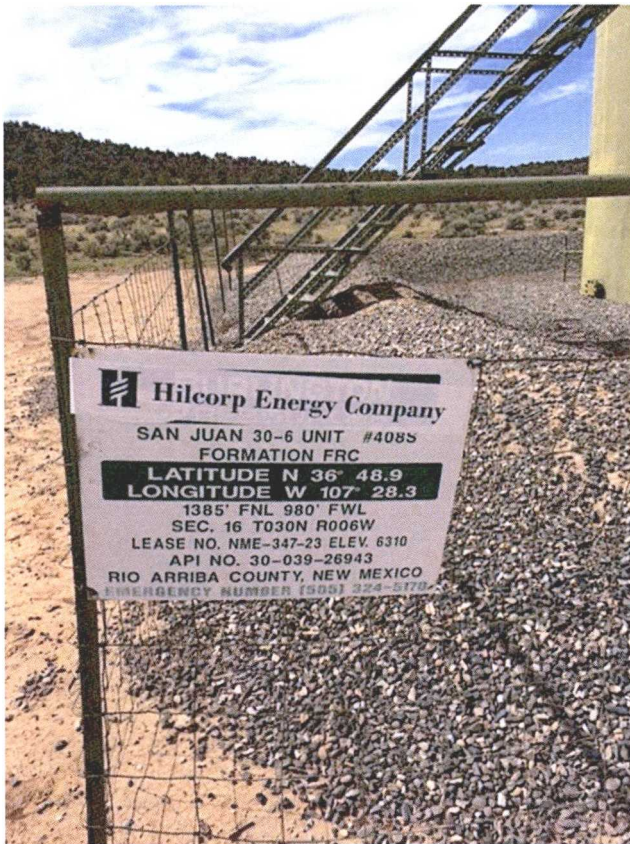
# Topographic/Aerial Maps



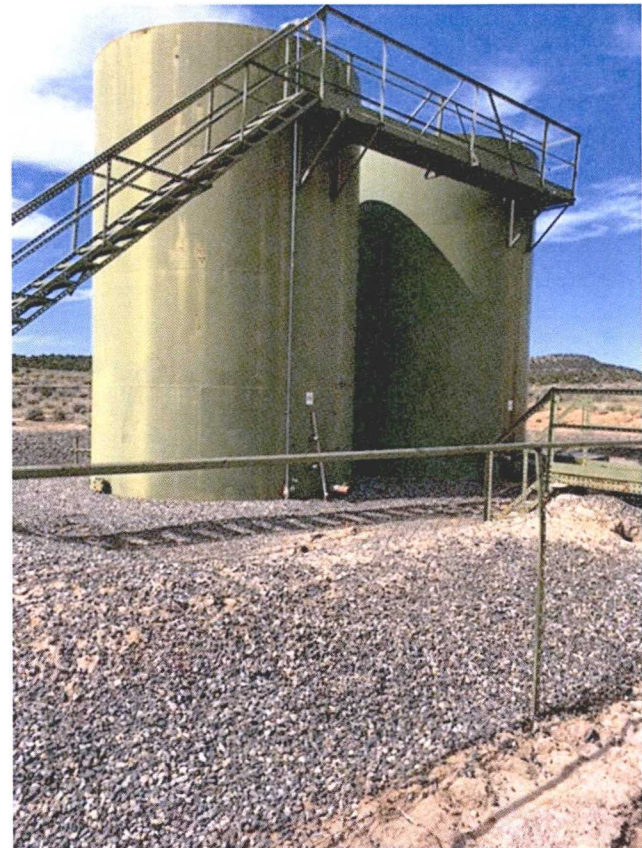


# Photographs –Sampling 9-6-18

Well Sign



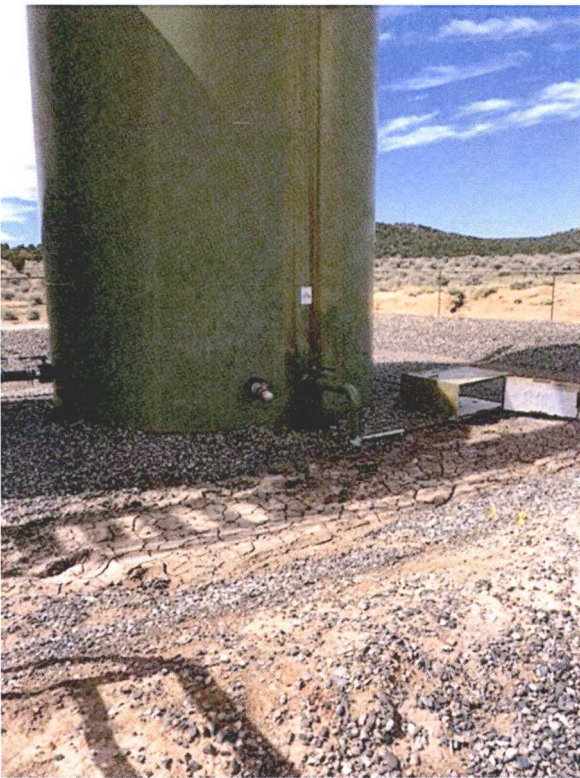
Tanks





# Photographs –Sampling 9-6-18

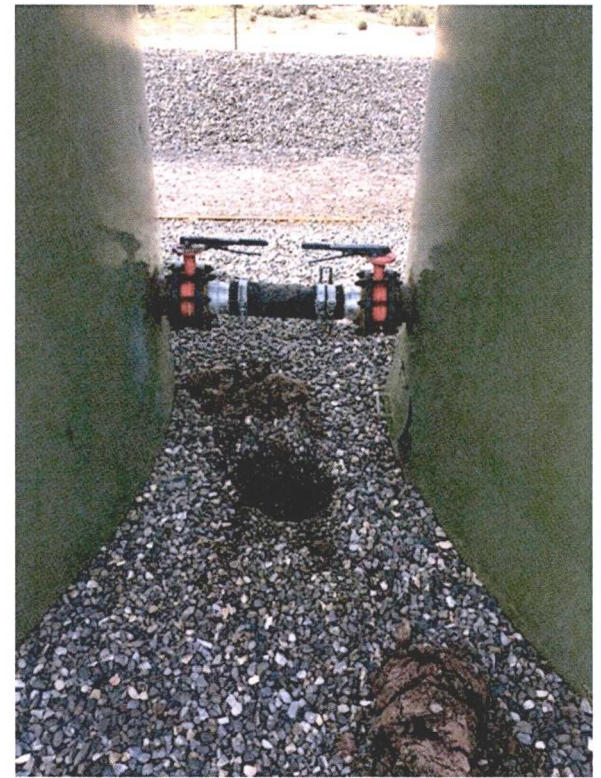
Tank



North of Tank Sample



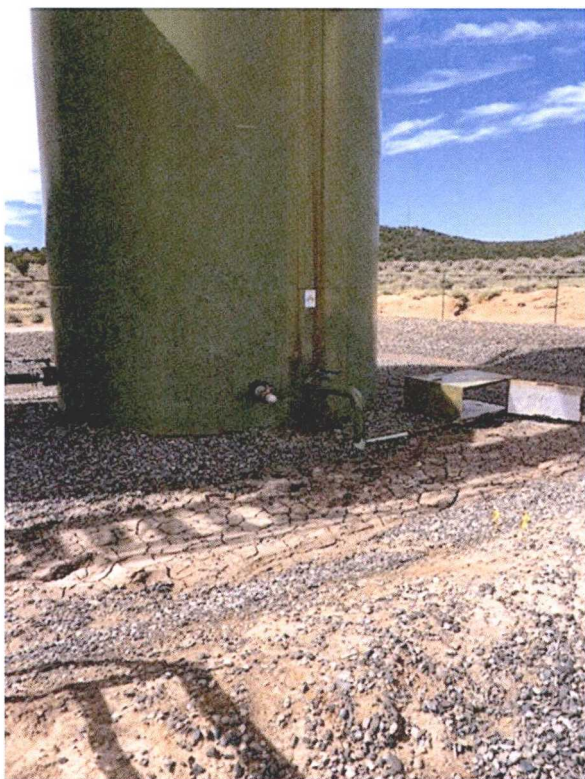
East of Tank Sample





# Photographs –Sampling 9-6-18

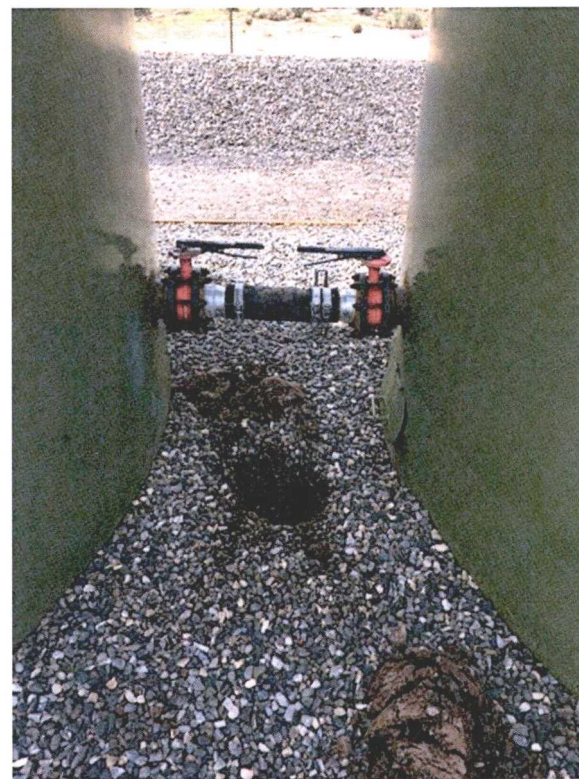
Tank



North of Tank Sample



East of Tank Sample





# Photographs –Sampling 9-6-18

South of Tank Sample



West of Tank Sample



All results are below Table 1  
Closure Criteria for Soils Impacted  
by a Release in 19.15.29. No  
further action required.

# NMOCD notification of sampling

**From:** Lindsay Dumas <[ldumas@hilcorp.com](mailto:ldumas@hilcorp.com)>

**Sent:** Tuesday, September 4, 2018 7:44 AM

**To:** Smith, Cory, EMNRD <[Cory.Smith@state.nm.us](mailto:Cory.Smith@state.nm.us)>; Fields, Vanessa, EMNRD <[Vanessa.Fields@state.nm.us](mailto:Vanessa.Fields@state.nm.us)>

**Cc:** Kurt Hoekstra <[khoekstra@hilcorp.com](mailto:khoekstra@hilcorp.com)>

**Subject:** RE: Release Notification - San Juan 30-6 Unit 408S - 10bbl Prod Water

This release will be sampled on Thursday September 6, 2018 after the sampling on the SJ 28-5 #81M (~11AM). Kurt Hoekstra will be onsite from Hilcorp.

Kind regards,

*Lindsay Dumas*  
Environmental Specialist  
Hilcorp Energy – L48 West  
Office: 832-839-4585  
Mobile: 281-794-9159




# ANALYTICAL REPORT

September 12, 2018

## HilCorp-Farmington, NM

Sample Delivery Group: L1023770  
Samples Received: 09/07/2018  
Project Number:  
Description:  
Site: SJ 30-6 UNIT 4085  
Report To: Lindsay Dumas  
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 National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





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## SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



## NORTH OF TANK L1023770-01 Solid

			Collected by	Collected date/time	Received date/time
			Kurt	09/06/18 11:42	09/07/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1162470	1	09/07/18 15:48	09/07/18 21:39	ELN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1162947	1	09/07/18 15:57	09/09/18 20:45	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1163141	1	09/07/18 17:12	09/07/18 21:26	MTJ

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## ESAT OF TANK L1023770-02 Solid

			Collected by	Collected date/time	Received date/time
			Kurt	09/06/18 11:44	09/07/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1162470	1	09/07/18 15:48	09/07/18 21:48	ELN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1162947	1	09/07/18 15:57	09/09/18 21:09	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1163141	1	09/07/18 17:12	09/07/18 21:39	MTJ

## WEST OF TANK L1023770-03 Solid

			Collected by	Collected date/time	Received date/time
			Kurt	09/06/18 11:46	09/07/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1162470	1	09/07/18 15:48	09/11/18 13:24	ELN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1162947	1	09/07/18 15:57	09/09/18 21:33	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1163141	1	09/07/18 17:12	09/07/18 21:53	MTJ

## SOUTH OF TANK L1023770-04 Solid

			Collected by	Collected date/time	Received date/time
			Kurt	09/06/18 11:50	09/07/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1162470	1	09/07/18 15:48	09/07/18 22:31	ELN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1162947	1	09/07/18 15:57	09/09/18 21:57	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1163141	1	09/07/18 17:12	09/07/18 22:06	MTJ



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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## NORTH OF TANK

Collected date/time: 09/06/18 11:42

## SAMPLE RESULTS - 01

L1023770

ONE LAB. NATIONWIDE.



## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	192		10.0	1	09/07/2018 21:39	<a href="#">WG1162470</a>

1 Cp

2 Tc

3 Ss

4 Cn

## 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	09/09/2018 20:45	<a href="#">WG1162947</a>
Toluene	ND		0.00500	1	09/09/2018 20:45	<a href="#">WG1162947</a>
Ethylbenzene	ND		0.000500	1	09/09/2018 20:45	<a href="#">WG1162947</a>
Total Xylene	ND		0.00150	1	09/09/2018 20:45	<a href="#">WG1162947</a>
TPH (GC/FID) Low Fraction	ND		0.100	1	09/09/2018 20:45	<a href="#">WG1162947</a>
(S) a,a,a-Trifluorotoluene(FID)	98.5		77.0-120		09/09/2018 20:45	<a href="#">WG1162947</a>
(S) a,a,a-Trifluorotoluene(PID)	98.8		72.0-128		09/09/2018 20:45	<a href="#">WG1162947</a>

6 Qc

7 Gl

8 Al

9 Sc

## 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	ND	<u>J3</u>	4.00	1	09/07/2018 21:26	<a href="#">WG1163141</a>
C28-C40 Oil Range	ND		4.00	1	09/07/2018 21:26	<a href="#">WG1163141</a>
(S) o-Terphenyl	67.4		18.0-148		09/07/2018 21:26	<a href="#">WG1163141</a>

## ESAT OF TANK

Collected date/time: 09/06/18 11:44

## SAMPLE RESULTS - 02

L1023770

ONE LAB. NATIONWIDE.



## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	204		10.0	1	09/07/2018 21:48	<a href="#">WG1162470</a>

1 Cp

2 Tc

3 Ss

4 Cn

## 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	09/09/2018 21:09	<a href="#">WG1162947</a>
Toluene	ND		0.00500	1	09/09/2018 21:09	<a href="#">WG1162947</a>
Ethylbenzene	ND		0.000500	1	09/09/2018 21:09	<a href="#">WG1162947</a>
Total Xylene	ND		0.00150	1	09/09/2018 21:09	<a href="#">WG1162947</a>
TPH (GC/FID) Low Fraction	ND		0.100	1	09/09/2018 21:09	<a href="#">WG1162947</a>
(S) a,a,a-Trifluorotoluene(FID)	98.4		77.0-120		09/09/2018 21:09	<a href="#">WG1162947</a>
(S) a,a,a-Trifluorotoluene(PID)	98.6		72.0-128		09/09/2018 21:09	<a href="#">WG1162947</a>

6 Qc

7 Gl

8 Al

9 Sc

## 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	ND	<u>J3</u>	4.00	1	09/07/2018 21:39	<a href="#">WG1163141</a>
C28-C40 Oil Range	ND		4.00	1	09/07/2018 21:39	<a href="#">WG1163141</a>
(S) o-Terphenyl	41.7		18.0-148		09/07/2018 21:39	<a href="#">WG1163141</a>





## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	132		10.0	1	09/11/2018 13:24	<a href="#">WG1162470</a>

1 Cp

2 Tc

3 Ss

4 Cn

## 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	09/09/2018 21:33	<a href="#">WG1162947</a>
Toluene	ND		0.00500	1	09/09/2018 21:33	<a href="#">WG1162947</a>
Ethylbenzene	ND		0.000500	1	09/09/2018 21:33	<a href="#">WG1162947</a>
Total Xylene	ND		0.00150	1	09/09/2018 21:33	<a href="#">WG1162947</a>
TPH (GC/FID) Low Fraction	ND		0.100	1	09/09/2018 21:33	<a href="#">WG1162947</a>
(S) a,a,a-Trifluorotoluene(FID)	98.6		77.0-120		09/09/2018 21:33	<a href="#">WG1162947</a>
(S) a,a,a-Trifluorotoluene(PID)	99.0		72.0-128		09/09/2018 21:33	<a href="#">WG1162947</a>

6 Qc

7 Gl

## 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	ND	<u>J3</u>	4.00	1	09/07/2018 21:53	<a href="#">WG1163141</a>
C28-C40 Oil Range	ND		4.00	1	09/07/2018 21:53	<a href="#">WG1163141</a>
(S) o-Terphenyl	61.6		18.0-148		09/07/2018 21:53	<a href="#">WG1163141</a>

8 Al

9 Sc

## SOUTH OF TANK

Collected date/time: 09/06/18 11:50

## SAMPLE RESULTS - 04

L1023770

ONE LAB. NATIONWIDE.



## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	466		10.0	1	09/07/2018 22:31	<a href="#">WG1162470</a>

1 Cp

2 Tc

3 Ss

4 Cn

## Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	0.000618	<u>B</u>	0.000500	1	09/09/2018 21:57	<a href="#">WG1162947</a>
Toluene	ND		0.00500	1	09/09/2018 21:57	<a href="#">WG1162947</a>
Ethylbenzene	ND		0.000500	1	09/09/2018 21:57	<a href="#">WG1162947</a>
Total Xylene	ND		0.00150	1	09/09/2018 21:57	<a href="#">WG1162947</a>
TPH (GC/FID) Low Fraction	ND		0.100	1	09/09/2018 21:57	<a href="#">WG1162947</a>
(S) a,a,a-Trifluorotoluene(FID)	98.4		77.0-120		09/09/2018 21:57	<a href="#">WG1162947</a>
(S) a,a,a-Trifluorotoluene(PID)	98.7		72.0-128		09/09/2018 21:57	<a href="#">WG1162947</a>

6 Qc

7 Gl

8 Al

9 Sc

## 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	ND	<u>J3</u>	4.00	1	09/07/2018 22:06	<a href="#">WG1163141</a>
C28-C40 Oil Range	ND		4.00	1	09/07/2018 22:06	<a href="#">WG1163141</a>
(S) o-Terphenyl	57.1		18.0-148		09/07/2018 22:06	<a href="#">WG1163141</a>



WG1162470

Wet Chemistry by Method 9056A

## QUALITY CONTROL SUMMARY

L1023770-01,02,03,04

ONE LAB. NATIONWIDE.



## Method Blank (MB)

(MB) R3340312-1 09/07/18 17:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	U		0.795	10.0

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn<sup>5</sup> Sr

## L1023418-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1023418-01 09/07/18 19:36 • (DUP) R3340312-4 09/07/18 19:45

	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	664	553	1	18.2	<u>J3</u>	15

## L1023770-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1023770-03 09/11/18 13:24 • (DUP) R3340913-1 09/11/18 13:33

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	132	126	1	4.49		15

<sup>7</sup> Gl<sup>8</sup> Al<sup>9</sup> Sc

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

(LCS) R3340312-2 09/07/18 17:44 • (LCSD) R3340312-3 09/07/18 17:53

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chloride	200	202	201	101	100	80.0-120			0.457	15

## L1023418-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1023418-09 09/07/18 21:13 • (MS) R3340312-5 09/07/18 21:21 • (MSD) R3340312-6 09/07/18 21:30

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chloride	644	220	847	822	97.4	93.4	1	80.0-120			3.04	15

WG1162947

Volatile Organic Compounds (GC) by Method 8015/8021

## QUALITY CONTROL SUMMARY

L1023770-01.02.03.04

ONE LAB. NATIONWIDE.



## Method Blank (MB)

(MB) R3340634-5 09/09/18 17:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.000124	U	0.000120	0.000500
Toluene	0.000390	U	0.000150	0.00500
Ethylbenzene	0.000122	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)	100			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	101			72.0-128

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

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

(LCS) R3340634-1 09/09/18 15:09 • (LCSD) R3340634-2 09/09/18 15:33

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	0.0573	0.0573	115	115	76.0-121			0.0820	20
Toluene	0.0500	0.0546	0.0546	109	109	80.0-120			0.0345	20
Ethylbenzene	0.0500	0.0565	0.0561	113	112	80.0-124			0.748	20
Total Xylene	0.150	0.173	0.172	115	114	37.0-160			0.755	20
(S) a,a,a-Trifluorotoluene(FID)				99.1	99.9	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				98.3	99.8	72.0-128				

7 Gl

8 Al

9 Sc

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

(LCS) R3340634-3 09/09/18 15:57 • (LCSD) R3340634-4 09/09/18 16:21

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	6.06	5.73	110	104	72.0-127			5.54	20
(S) a,a,a-Trifluorotoluene(FID)				103	102	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				102	102	72.0-128				



WG1162947

Volatile Organic Compounds (GC) by Method 8015/8021

## QUALITY CONTROL SUMMARY

L1023770-01,02,03,04

ONE LAB. NATIONWIDE.



## L1023368-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1023368-02 09/09/18 18:21 • (MS) R3340634-6 09/10/18 01:08 • (MSD) R3340634-7 09/10/18 01:32

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0527	0.00601	0.0433	0.0466	70.8	77.0	1	10.0-155			7.28	32
Toluene	0.0527	0.00922	0.0390	0.0401	56.5	58.5	1	10.0-160			2.67	34
Ethylbenzene	0.0527	0.00328	0.0389	0.0376	67.5	65.0	1	10.0-160			3.47	32
Total Xylene	0.158	ND	0.116	0.111	73.5	70.5	1	10.0-160	<u>J6</u>	<u>J6</u>	4.26	32
(S) a,a,a-Trifluorotoluene(FID)					98.7	98.7		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					98.6	98.6		72.0-128				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

## L1023368-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1023368-02 09/09/18 18:21 • (MS) R3340634-8 09/10/18 01:56 • (MSD) R3340634-9 09/10/18 02:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.80	0.364	3.92	2.57	61.2	38.0	1	10.0-151		<u>J3</u>	41.5	28
(S) a,a,a-Trifluorotoluene(FID)					97.9	97.6		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					99.7	98.3		72.0-128				

7 Gl

8 Al

9 Sc

WG1163141

Semi-Volatile Organic Compounds (GC) by Method 8015

## QUALITY CONTROL SUMMARY

L1023770-01,02,03,04

ONE LAB. NATIONWIDE.



## Method Blank (MB)

(MB) R3340192-1 09/07/18 20:45

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	56.2			18.0-148

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

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

(LCS) R3340192-2 09/07/18 20:59 • (LCSD) R3340192-3 09/07/18 21:12

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 %
C10-C28 Diesel Range	50.0	32.7	26.6	65.4	53.2	50.0-150		J3	20.6	20
(S) o-Terphenyl				66.7	53.9	18.0-148				

7 GI

8 AI

9 Sc





## 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.

### Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
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.
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.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>8</sup> Al

<sup>9</sup> 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 <sup>1</sup>	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>16</sup>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>14</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas <sup>5</sup>	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

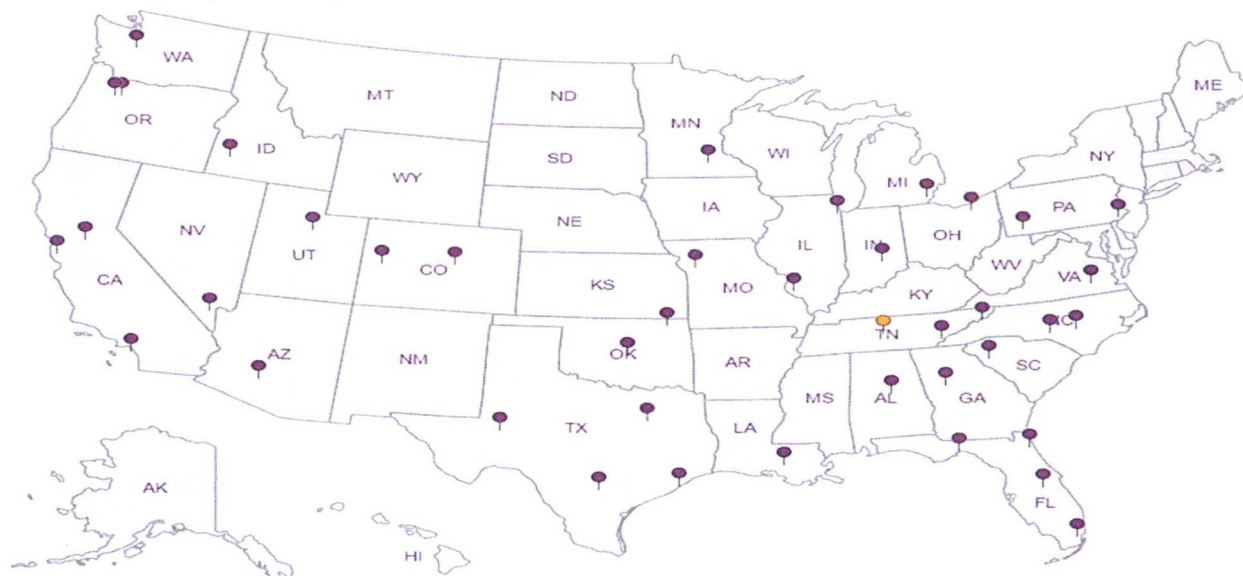
## Third Party Federal Accreditations

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

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

## 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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