

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

### Responsible Party

Responsible Party Hilcorp Energy	OGRID 372171
Contact Name Clara Cardoza	Contact Telephone 505.564.0733
Contact email ccardoza@hilcorp.com	Incident # (assigned by OCD) NCS1909331514
Contact mailing address 382 CR 3100, Aztec NM 87410	

### Location of Release Source

Latitude 36.7374039 Longitude -107.9133835  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name San Juan Nye Federal 1	Site Type Gas Well
Date Release Discovered 4/2/2019	API# (if applicable) 30-045-11994

Unit Letter	Section	Township	Range	County
L	08	29N	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 checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 85	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input 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

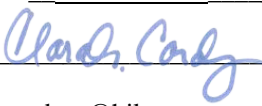
Release due to corrosion at the bottom of the BGT

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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume, excluding gases, of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? 4/3/19 to Cory Smith at 8:45 a.m. and 4/3/2019 to Emmanuel Adeloye at 8:40 a.m. by Clara Cardoza via phone to both. Email follow-up to Cory Smith, Emmanuel Adeloye and Jim Griswold 4/3/2019 @ 9:11 a.m.	

### 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:	
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>Clara Cardoza</u>	Title: <u>Environmental Specialist</u>
Signature: <u></u>	Date: <u>5/20/2019</u>
email: <u>ccardoza@hilcorp.com</u>	Telephone: <u>505.564.0733</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	

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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?	<u>&gt;100 ft</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 <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.


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

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District RP	
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Printed Name: Clara Cardoza Title: Environmental Specialist

Signature:  Date: 5/20/2019

email: ccardoza@hilcorp.com Telephone: 505.564.0733

**OCD Only**

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

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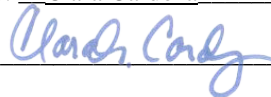
## Closure

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: Clara Cardoza Title: Environmental Specialist  
 Signature:  Date: 5/20/2019  
 email: ccardoza@hilcorp.com Telephone: 505.564.0733

### OCD Only

Received by: OCD Date: 7/9/19

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

Closure Approved by:  Date: 7/16/19  
 Printed Name: Cory Title: Environmental Spec

# Executive Summary


On April 2, 2019 Hilcorp Energy had a release of 85 bbls of produced water at the Nye Federal 1. The release was due to corrosion at the bottom of the below grade tank. The produced water was contained within the area of the pit tank. Repairs were made to the tank in place. The BGT was also brought to 2013 standards per NMAC 19.15.17.11.I.(4).

Confirmation sampling was conducted on April 12<sup>th</sup> at 10:00 a.m. in accordance with NMAC 19.15.29.12.D.

This site is ranked >100 ft per NMAC 19.15.29.12.E. Lab results came back below NMOCD action levels. Because this is a BGT there will be 4 ft of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg upon P&Aing the facility in accordance with NMAC19.15.29.13.D.(1).



 Sample Area

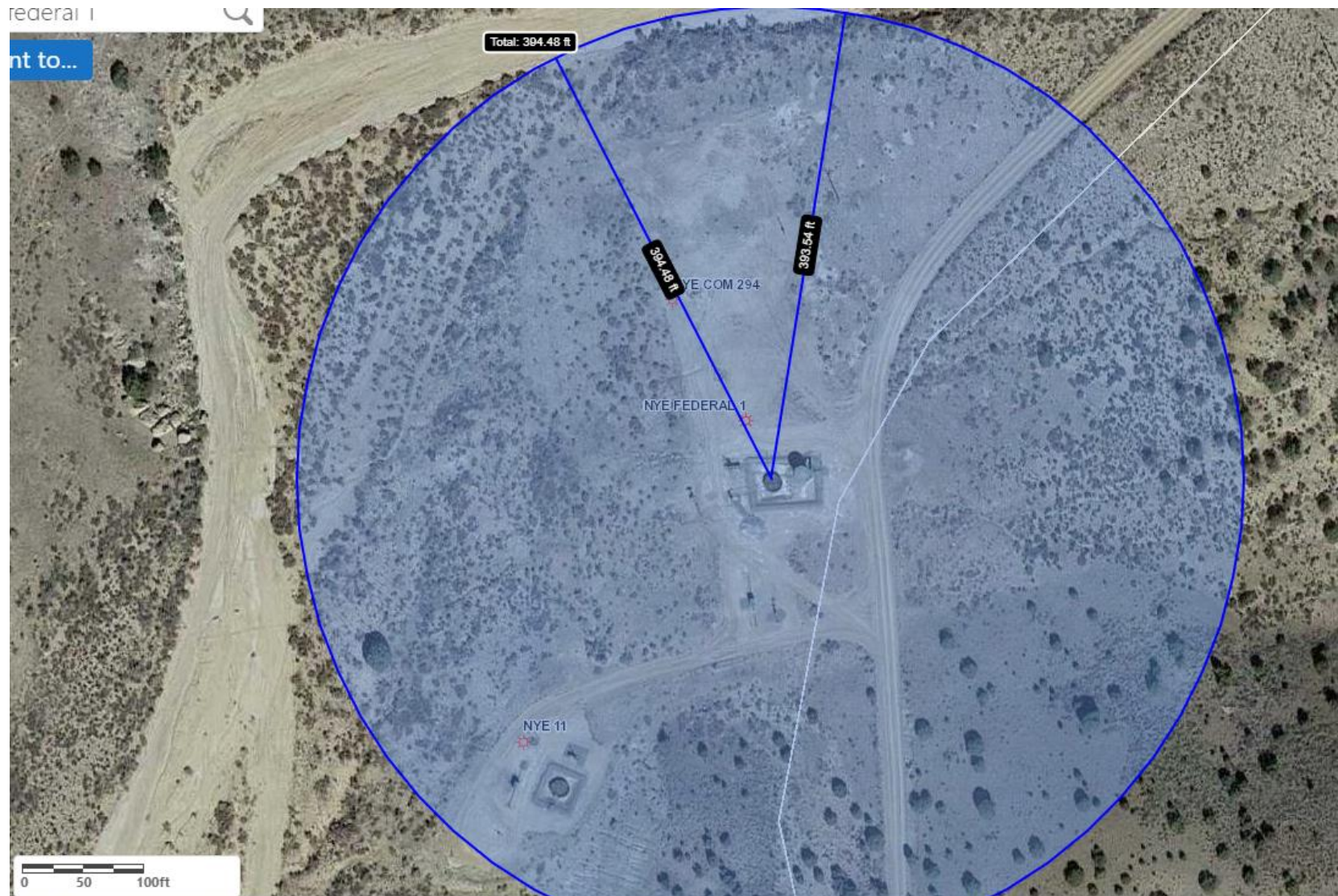
 Sample Location







# Distance to watercourse



# Depth to groundwater

# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 6	Q 4	Q 2	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
<a href="#">SJ 00785 S</a>		SJ	SJ	2	4	2	04	29N	10W	242705	4071829*	20		
<a href="#">SJ 03023</a>		SJM2	SJ	1	3	1	18	29N	10W	238077	4068756*	90	65	25
<a href="#">SJ 03081</a>		SJM2	SJ	4	1	3	18	29N	10W	238263	4068158*	20		
<a href="#">SJ 03502</a>		SJM2	SJ	1	3	1	18	29N	10W	238077	4068756*	150		

Average Depth to Water: **65 feet**  
Minimum Depth: **65 feet**  
Maximum Depth: **65 feet**

Record Count: 4

### PLSS Search:

Section(s): 4, 5, 6, 7, 8, 9, 16, 17, 18 Township: 29N Range: 10W

\*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.

6/26/19 9:56 AM

WATER COLUMN/ AVERAGE DEPTH  
TO WATER

Approximate elevation of SJ 03023 is 5644 ft. Nye Fed 1 elevation is 5681 ft. Since groundwater at the SJ 03023 is at 65 ft, the approximate groundwater depth at the Nye Fed 1 is 102 ft.



# Depth to groundwater

#SE 30-045-24056  
#2 30-045-08405

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS  
NORTHWESTERN NEW MEXICO

Operator Meridian Oil Inc. Location: Unit E Sec. 17 Twp 39 Rng 10  
Name of Well/Wells or Pipeline Served Hubbell #5E, Hubbell #2

Elevation 5760 Completion Date 7-18-95 Total Depth 392 Land Type F  
Casing Strings, Sizes, Types & Depths 100' of 8" P.O.C.

If Casing Strings are cemented, show amounts & types used 21 bags of type II

If Cement or Bentonite Plugs have been placed, show depths & amounts used no plugs

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. 140' and was clear

Depths gas encountered: no gas

Ground bed depth with type & amount of coke breeze used: 392' with 113 (50 lb) sacks of Asbury 218R

Depths anodes placed: #1 is at 360' and #15 is at 765'

Depths vent pipes placed: bottom to surface

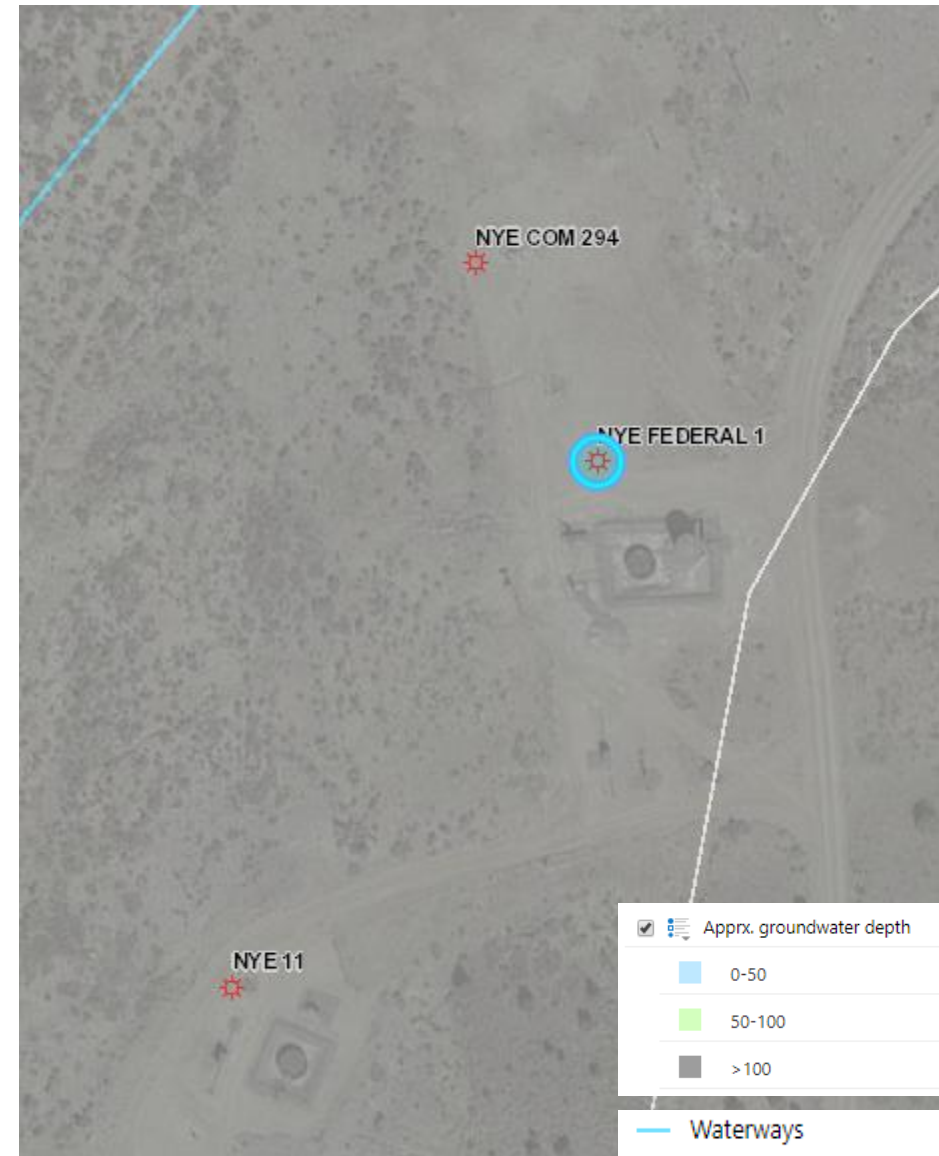
Vent pipe perforations: up to 130'

Remarks: \_\_\_\_\_

RECEIVED  
JAN 11 1996  
OIL CON. DIV.  
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

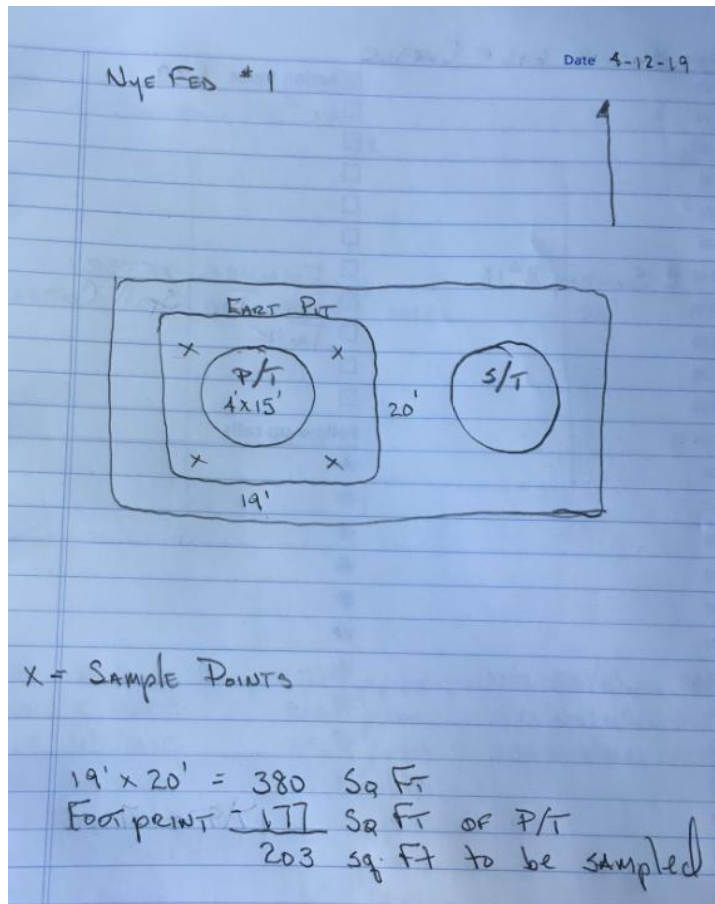
Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.  
If Federal or Indian, add Lease Number.



- Cathodic info from a nearby Hubbell 2/5E. Elevation at Hubbell 2 is 5713 ft and Nye Fed 1 is 5681 ft which puts groundwater at Nye Federal 1 approximately 108 ft.

- Internal mapping system which shows groundwater at > 100ft.

# Sample locations/field notes



- In accordance with NMAC 19.15.29.12.D (1) and NMAC 19.15.19.12.D (1)(c) – one composite sample was taken within the bermed area.

Clara Cardoza

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From: Clara Cardoza  
Sent: Wednesday, April 10, 2019 9:59 AM  
To: cory.smith@state.nm.us; Abiodun Adelaye  
Cc: Kurt Hoekstra; Patrick Hudman; whitney thomas (l1thomas@blm.gov)  
Subject: NCS1909331514 Nye Federal 1 - Confirmation Sampling

Cory/Emmanuel – please let this serve as 48 hour notification for confirmation sampling at the Nye Federal 1 for Friday April 12<sup>th</sup> at 10:00 a.m. Let me know if you have any questions or concerns.

Thank you,

*Clara M Cardoza*  
Environmental Specialist  
505-564-0733 (O)  
505-793-2784 (C)



Please consider the environment before printing this e-mail



Sample Name	Date	Sample Location	Field VOCs by PID (ppm)		Laboratory Results									
				Chloride (mg/kg)	TPH as DRO (mg/kg)	TPH as GRO (mg/kg)	TPH as MRO (mg/kg)	Total TPH (mg/kg)	GRO + DRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylene (mg/kg)	Total BTEX (mg/kg)
NMOCD Action Level				20,000	-	-	-	2,500	1,000	10	-	-	-	50
BGT PIT	4/12/19	Nye Fed 1	n/a	748	8.38	ND	7.71	16.1	8.38	0.000839	ND	ND	0.00469	0.005529

April 18, 2019

## HilCorp-Farmington, NM

Sample Delivery Group: L1088864  
Samples Received: 04/13/2019  
Project Number:  
Description: NYE FEDERAL #1  
Site: NYE FEDERAL #1  
Report To: Clara Cardoza  
382 Road 3100  
Aztec, NM 87401

Entire Report Reviewed By:



Daphne Richards  
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.



Cp: Cover Page	1	<sup>1</sup> Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	<sup>2</sup> Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	<sup>3</sup> Ss
BGT PIT L1088864-01	5	
Qc: Quality Control Summary	6	<sup>4</sup> Cn
Wet Chemistry by Method 9056A	6	<sup>5</sup> Sr
Volatile Organic Compounds (GC) by Method 8015/8021	7	
Semi-Volatile Organic Compounds (GC) by Method 8015	9	<sup>6</sup> Qc
Gl: Glossary of Terms	10	<sup>7</sup> Gl
Al: Accreditations & Locations	11	
Sc: Sample Chain of Custody	12	<sup>8</sup> Al
		<sup>9</sup> Sc



BGT PIT L1088864-01 Solid

Collected by  
Kurt Hoekstra

Collected date/time  
04/12/19 10:11

Received date/time  
04/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1266108	1	04/17/19 09:45	04/17/19 14:24	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1265882	1	04/14/19 08:39	04/14/19 13:16	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1266271	1	04/15/19 07:53	04/15/19 14:58	TJD	Mt. Juliet, TN

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



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.

Daphne Richards  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc





## Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	748		10.0	1	04/17/2019 14:24	<a href="#">WG1266108</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000839		0.000500	1	04/14/2019 13:16	<a href="#">WG1265882</a>
Toluene	ND		0.00500	1	04/14/2019 13:16	<a href="#">WG1265882</a>
Ethylbenzene	ND		0.000500	1	04/14/2019 13:16	<a href="#">WG1265882</a>
Total Xylene	0.00469		0.00150	1	04/14/2019 13:16	<a href="#">WG1265882</a>
TPH (GC/FID) Low Fraction	ND		0.100	1	04/14/2019 13:16	<a href="#">WG1265882</a>
(S) a,a,a-Trifluorotoluene(FID)	98.8		77.0-120		04/14/2019 13:16	<a href="#">WG1265882</a>
(S) a,a,a-Trifluorotoluene(PID)	92.7		72.0-128		04/14/2019 13:16	<a href="#">WG1265882</a>

## 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	8.38		4.00	1	04/15/2019 14:58	<a href="#">WG1266271</a>
C28-C40 Oil Range	7.71		4.00	1	04/15/2019 14:58	<a href="#">WG1266271</a>
(S) o-Terphenyl	58.9		18.0-148		04/15/2019 14:58	<a href="#">WG1266271</a>



Method Blank (MB)

(MB) R3402649-1 04/17/19 13:34

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	3.60	<span>⬇</span>	0.795	10.0

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L1088805-83 Original Sample (OS) • Duplicate (DUP)

(OS) L1088805-83 04/17/19 16:05 • (DUP) R3402649-6 04/17/19 16:14

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	14.6	13.4	1	8.88		15

L1088879-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1088879-09 04/17/19 17:48 • (DUP) R3402649-7 04/17/19 17:56

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	638	637	1	0.246		15

Laboratory Control Sample (LCS)

(LCS) R3402649-3 04/17/19 14:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chloride	200	196	98.0	80.0-120	

L1088864-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1088864-01 04/17/19 14:24 • (MS) R3402649-4 04/17/19 14:32 • (MSD) R3402649-5 04/17/19 14:40

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chloride	500	748	1310	1240	112	98.9	1	80.0-120	<span>E</span>	<span>E</span>	5.00	15



Method Blank (MB)

(MB) R3401729-5 04/14/19 12:15

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	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0219	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	106			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	99.8			72.0-128

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3401729-1 04/14/19 10:33 • (LCSD) R3401729-2 04/14/19 10:53

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	0.0500	0.0517	99.9	103	76.0-121			3.44	20
Toluene	0.0500	0.0482	0.0501	96.5	100	80.0-120			3.78	20
Ethylbenzene	0.0500	0.0535	0.0558	107	112	80.0-124			4.14	20
Total Xylene	0.150	0.157	0.163	105	109	37.0-160			3.50	20
(S) a,a,a-Trifluorotoluene(FID)				105	105	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				99.5	98.9	72.0-128				

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

(LCS) R3401729-3 04/14/19 11:13 • (LCSD) R3401729-4 04/14/19 11:34

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	4.90	5.08	89.1	92.3	72.0-127			3.59	20
(S) a,a,a-Trifluorotoluene(FID)				93.6	93.8	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				100	101	72.0-128				

L1088390-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1088390-07 04/14/19 18:23 • (MS) R3401729-6 04/14/19 19:24 • (MSD) R3401729-7 04/14/19 19:45

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	4.16	29.6	27.7	102	94.1	500	10.0-155			6.79	32
Toluene	0.0500	21.5	44.2	41.5	90.7	79.7	500	10.0-160			6.41	34
Ethylbenzene	0.0500	ND	54.8	51.2	219	205	500	10.0-160	J5	J5	6.78	32
Total Xylene	0.150	33.6	125	119	122	113	500	10.0-160	J5	J5 J6	5.41	32
(S) a,a,a-Trifluorotoluene(FID)					104	103		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					103	102		72.0-128				

L1088390-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1088390-07 04/14/19 18:23 • (MS) R3401729-8 04/14/19 20:05 • (MSD) R3401729-9 04/14/19 20:26

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	3150	4490	4760	48.8	58.5	500	10.0-151			5.78	28
(S) a,a,a-Trifluorotoluene(FID)					105	106		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					106	107		72.0-128				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3401835-1 04/15/19 12:49

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	71.6			18.0-148

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

(LCS) R3401835-2 04/15/19 13:05 • (LCSD) R3401835-3 04/15/19 13:21

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 %
Extractable Petroleum Hydrocarbon	50.0	33.2	29.4	66.4	58.8	50.0-150			12.1	20
C10-C28 Diesel Range	50.0	35.9	31.9	71.8	63.8	50.0-150			11.8	20
(S) o-Terphenyl				82.4	70.7	18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

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

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
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

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



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

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

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

## State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <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>1 6</sup>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T104704245-18-15
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.



