



Pima Environmental Services, LLC  
1601 N. Turner Ste 500  
Hobbs, NM 88240  
575-964-7740

March 19<sup>th</sup>, 2021

NMOCD District 2  
Mr. Mike Bratcher  
811 S. First Street  
Artesia, NM 88210

Bureau of Land Management  
Mr. Jim Amos  
620 East Green Street  
Carlsbad, NM 88220

**Re: Site Remediation and Closure Report  
Onyx PWU 29 #3H  
API No. 30-015-39373  
GPS: Latitude 32.630019 Longitude -104.104116  
UL "L", Sec. 29, T19S, R29E  
Eddy County, NM  
NMOCD Ref. No. NAB1601137117 (2RP-3481)**

Dear Mr. Bratcher and Mr. Amos,

Pima Environmental Services, LLC (Pima) has been contracted by Devon Energy Production Company (Devon) to perform a spill assessment and remediation activities for an oil release that occurred at the Onyx PWU 29 #3H (Onyx). The initial C-141 was submitted on January 5<sup>th</sup>, 2016 (Appendix C). This incident was assigned Incident ID NAB1601137117 (2RP-3481), by the New Mexico Oil Conservation Division (NMOCD).

**Site Characterization**

The Onyx is located approximately sixteen (16) miles northeast of Carlsbad, NM. This spill site is in Unit L, Section 29, Township 19S, Range 29E, Latitude 32.630019, Longitude -104.104116, Eddy County, NM. Figure 1 references a location map.

Per the New Mexico Bureau of Geology and Mineral Resources, the geology is in the Quaternary Formation- Eolian and piedmont deposits (Holocene to middle Pleistocene) interlayered eolian sands and piedmont-slope deposits (QEP). The soil in this area is made up of Simona-Bippus complex, 0 to 5 percent slopes according to the United States Department of Agriculture Natural Resources Conservation Service soil survey (Appendix B). The drainage courses in this area are well-drained. There is a high potential for karst geology to be present in the area of the Onyx (Figure 3).

According to the New Mexico Office of the State Engineer, depth to the nearest groundwater in this area is 75 feet below grade surface (BGS). According to the United States Geological Survey (USGS), the nearest groundwater is greater than 100 feet BGS. The closest waterway and is a playa located approximately 6.4 miles to the southeast of this location. See Appendix A for referenced water surveys.

Table 1 NMAC and Closure Criteria 19.15.29					
Depth to Groundwater (Appendix A)	Constituent & Limits				
	Chlorides	Total TPH	GRO+DRO	BTEX	Benzene
75'	10,000 mg/kg	2,500 mg/kg	1,000 mg/kg	50 mg/kg	10 mg/kg
If the release occurred within any of the following areas, the responsible party would treat the release as if the groundwater was less than 50 feet per Rule 19.15.29					
Water Issues				Yes	No
Within <b>300</b> feet of any continuously flowing watercourse or any other significant watercourse					x
Within <b>200</b> feet of any lakebed, sinkhole, or playa lake (measures from the ordinary high-water mark)					x
Within <b>300</b> feet from an occupied permanent residence, school, hospital, institution, or church					x
Within <b>500</b> feet of a spring or a private, domestic freshwater well used by less than five households for domestic or stock water purposes					x
Within <b>1000</b> feet of any freshwater well or spring					x
Within incorporated municipal boundaries or within a defined municipal freshwater well field					x
Within <b>300</b> feet of a wetlands					x
Within the area overlying a subsurface mine					x
Within an unstable area (Karst)				x	
Within a 100-year floodplain					x

Reference Figure 2 for a TOPO Map.

**Release Information**

2RP-3481: On January 4<sup>th</sup>, 2016, a leak was discovered around the LACT unit. Due to snow cover, and inclement weather, the exact source of the leak could not be determined. The well was shut in immediately. The released fluids were calculated to be approximately 5 barrels (bbls) of oil. No fluids were recovered from the area due to the inclement weather.

**Site Assessment and Soil Sampling Results**

On March 7<sup>th</sup>, 2016, a remediation work plan was submitted to NMOCD via email by Hungry Horse, LLC (Appendix F). The NMOCD approved the remediation work plan on March 10<sup>th</sup>, 2016. Confirmation of the site being cleaned up around that time could not be found.

On October 21<sup>st</sup>, 2020, Pima Environmental mobilized personnel to the site in order to assess the area and try to determine if the remediation work plan had been carried out. We sampled the 2 areas pointed out in the work plan. Laboratory results of this sampling event can be found in the following data table.

10-21-20 Soil Sample Results

NMOCD Table 1 Closure Criteria 19.15.29 NMAC (Depth to Groundwater is >100')								
Devon Energy - Onyx PWU 29 #3H								
Sample Date 10/21/20		NM Approved Laboratory Results						
Sample ID	Depth (BGS)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
S-1	6"	ND	ND	ND	64	180	244	ND
S-2	6"	ND	ND	ND	44	110	154	ND

ND- Analyte Not Detected

**Remediation Activities**

On August 20<sup>th</sup>, 2020, Pima mobilized personnel and equipment to conduct remedial activities. We treated the areas around the LACT unit with a Micro-Blaze solution. After 60 days, we gathered confirmation samples. These samples were collected on March 10<sup>th</sup>, 2021. See Appendix D for photographic documentation. The laboratory results of this sampling event can be found in the following data table.

3-10-21 Confirmation Soil Sample Results								
NMOCD Table 1 Closure Criteria 19.15.29 NMAC (Depth to Groundwater is >100')								
Devon Energy - Onyx PWU 29 #3H								
Sample Date 3/10/21		NM Approved Laboratory Results						
Sample ID	Depth (BGS)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
CS-1	6"	ND	ND	ND	ND	ND	0	ND
CS-2	6"	ND	ND	ND	ND	ND	0	ND

ND- Analyte Not Detected

Complete Laboratory Reports are attached in Appendix E.

Based on the sample results, the bottom and sidewalls were below NMOCD Closure Criteria 19.15.29 NMAC.

**Closure Request**

After careful review, Pima requests that this incident, NAB1601137117 (2RP-3481), be closed. Devon has complied with the applicable closure requirements set forth in rule 19.15.19.12 NMAC.

Should you have any questions or need additional information, please feel free to contact Tom Bynum at 575-964-7740 or tom@pimaoil.com.

Respectfully,

*Tom Bynum*

Tom Bynum  
Environmental Project Manager  
Pima Environmental Services, LLC

**Attachments**

Figures:

- 1- Location Map
- 2- TOPO Map
- 3- Karst Map
- 4- Site Map

Appendices:

- Appendix A – Referenced Water Surveys
- Appendix B – Soil Survey and Geological Data
- Appendix C – C-141's
- Appendix D – Photographic Documentation
- Appendix E – Laboratory Reports
- Appendix F – NMOCD Approved Remediation Work Plan



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**Figures:**

1-Location Map

2-TOPO Map

3-Karst Map

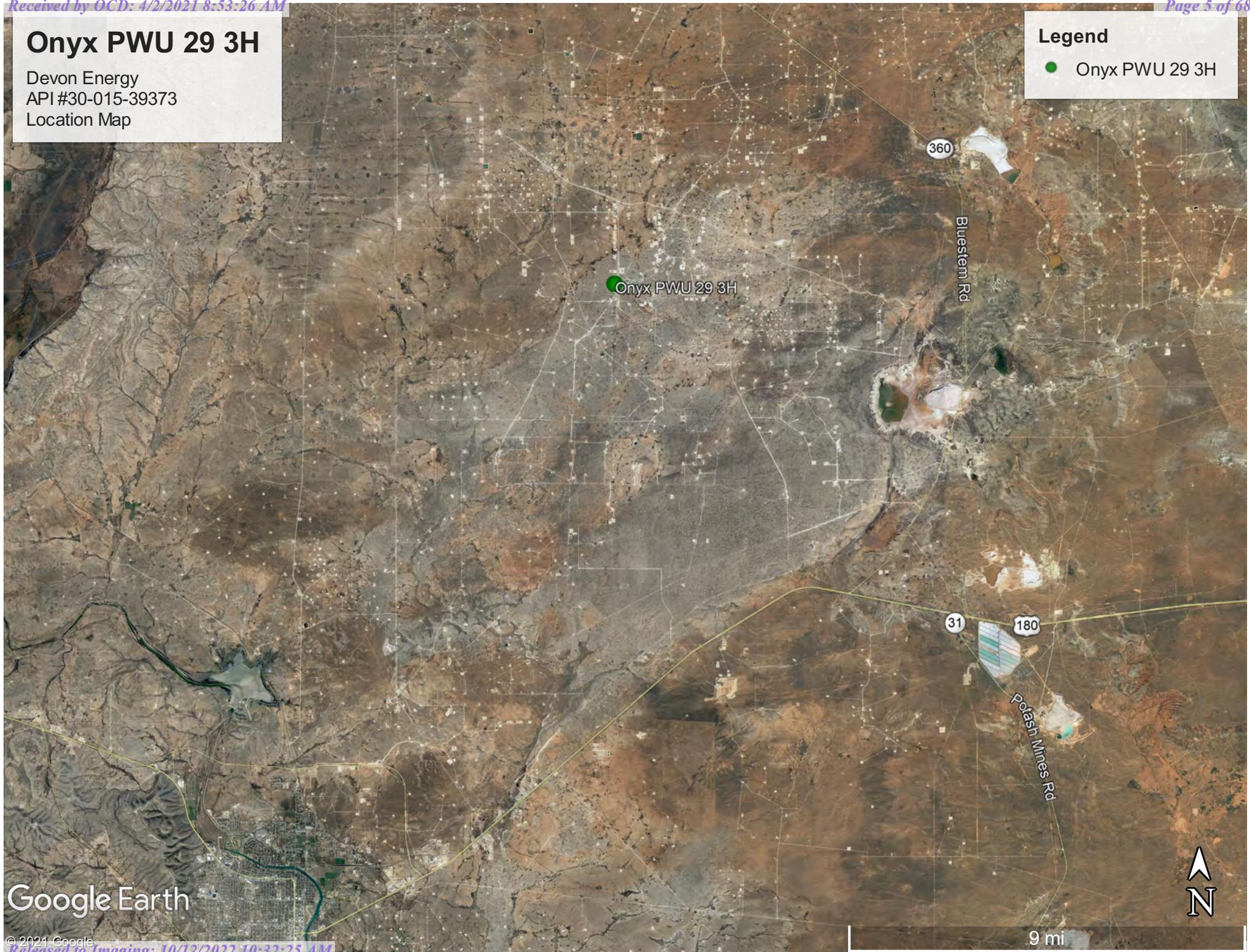
4-Site Map

# Onyx PWU 29 3H

Devon Energy  
API #30-015-39373  
Location Map

## Legend

● Onyx PWU 29 3H



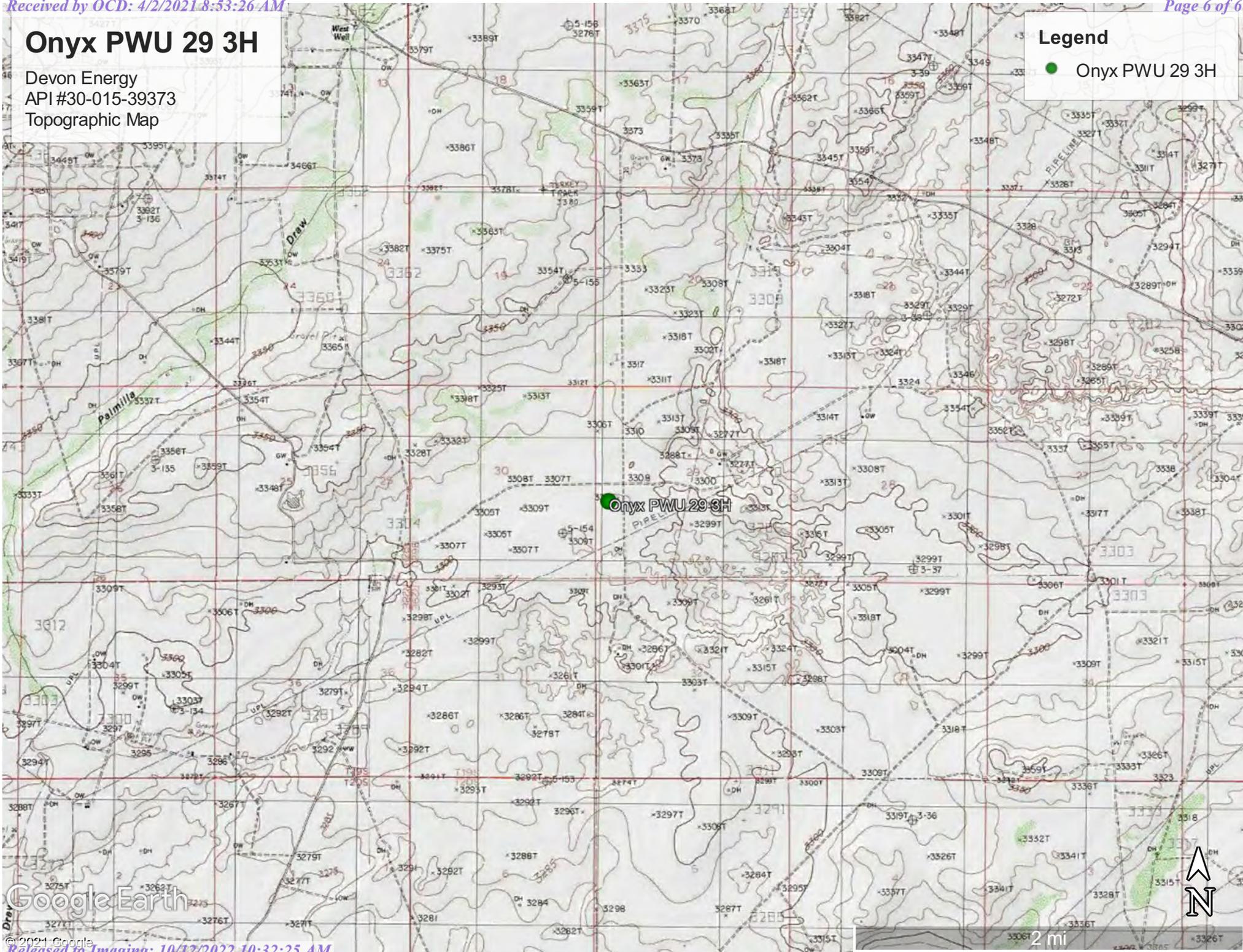
Google Earth

# Onyx PWU 29 3H

Devon Energy  
API #30-015-39373  
Topographic Map

## Legend

● Onyx PWU 29 3H



Google Earth

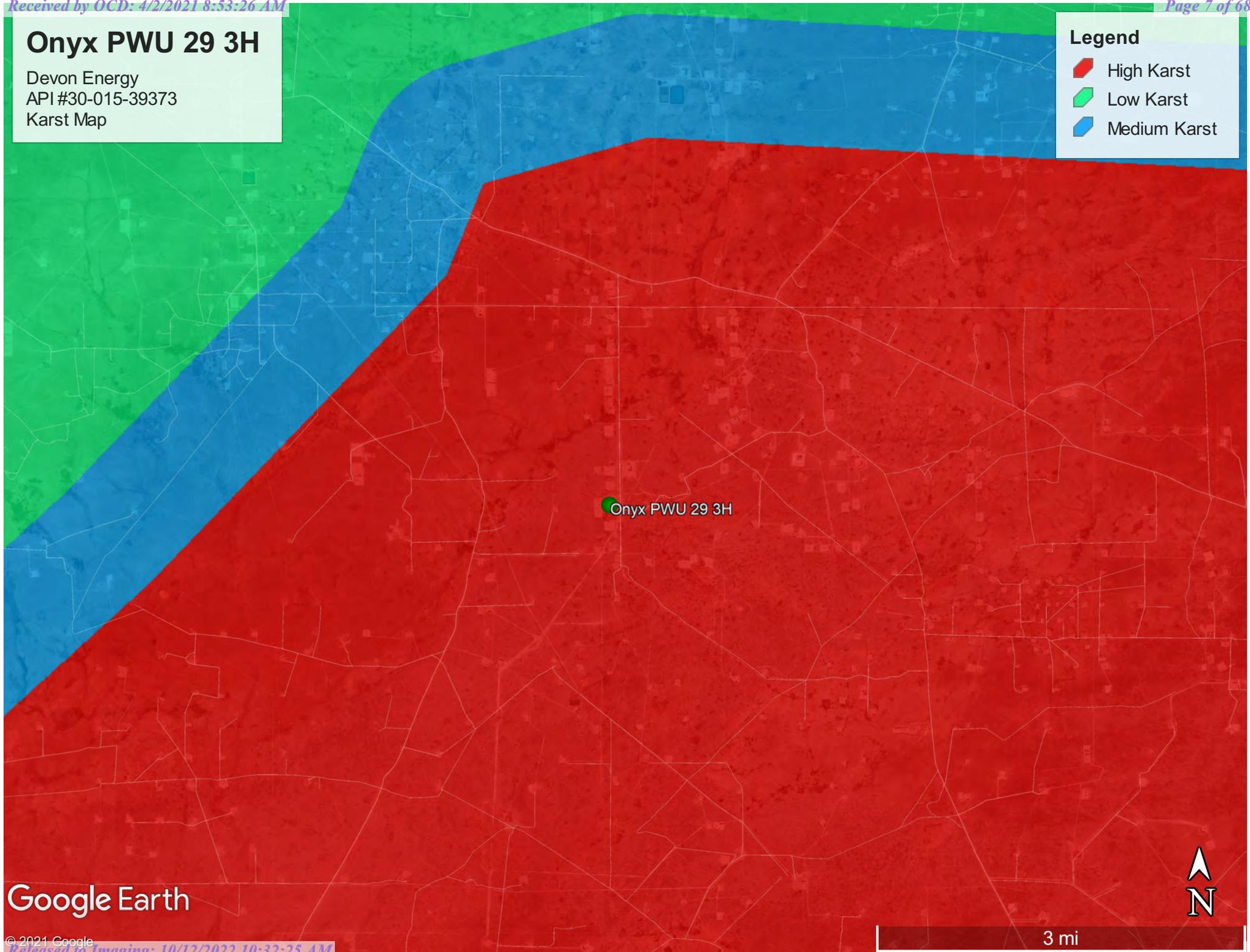


# Onyx PWU 29 3H

Devon Energy  
API #30-015-39373  
Karst Map

**Legend**

-  High Karst
-  Low Karst
-  Medium Karst



Google Earth



# Onyx PWU 29 3H

Devon Energy  
API #30-015-39373  
Site Map

**Legend**

-  32.630019, -104.104116
-  Onyx PWU 29 3H
-  Remediated Area
-  Samples



Google Earth



200 ft



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**Appendix A**

Water Surveys:

OSE

USGS

Surface Water Map



# 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	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec 36	Tws 19S	Rng 28E	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">CP 01231 POD1</a>	CP	ED	ED	4	4	2	36	19S	28E	582311	3609372	2131	300	75	225
<a href="#">CP 00830 POD1</a>	CP	LE	LE	2	1	04	20S	29E	586118	3608193*	3257	120			
<a href="#">CP 00743 POD1</a>	CP	ED	ED	2	4	05	20S	29E	585319	3607382*	3541	160			
<a href="#">CP 00681</a>	CP	ED	ED	1	1	3	34	19S	29E	587230	3609127*	3577			
<a href="#">CP 00926 POD1</a>	CP	LE	LE	2	1	4	01	20S	28E	581793	3607405	3941	300		
<a href="#">CP 00741</a>	CP	ED	ED	1	3	2	34	19S	29E	588030	3609533*	4185	230	60	170
<a href="#">CP 00698 POD1</a>	CP	ED	ED	3	1	03	20S	29E	587393	3608010	4309				
<a href="#">CP 00646</a>	CP	ED	ED	1	1	4	07	19S	29E	583155	3615551	4955	199	150	49

Average Depth to Water: **95 feet**  
 Minimum Depth: **60 feet**  
 Maximum Depth: **150 feet**

**Record Count:** 8

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 584002.28

**Northing (Y):** 3610669.87

**Radius:** 5000

\*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.

3/9/21 9:36 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



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## National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

GO

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#) 

Groundwater levels for the Nation

\* IMPORTANT: [Next Generation Station Page](#)

### Search Results -- 1 sites found

site\_no list =

- 323845104075601

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

### USGS 323845104075601 19S.28E.24.32233

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°38'45", Longitude 104°07'56" NAD27

Land-surface elevation 3,352 feet above NAVD88

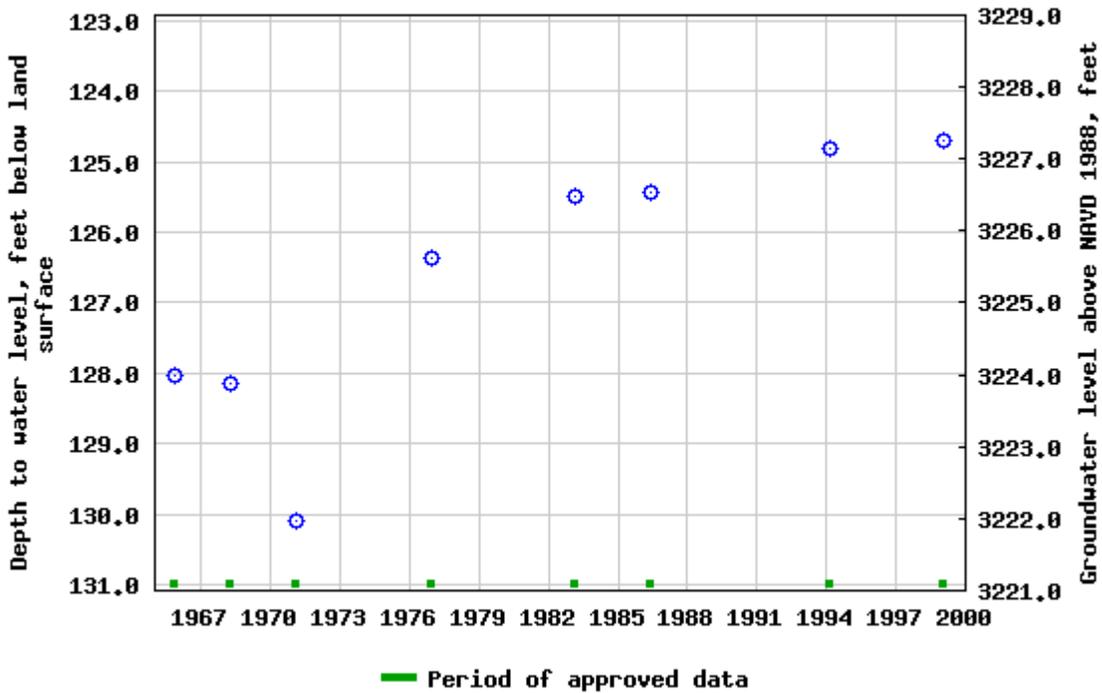
This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Rustler Formation (312RSLR) local aquifer.

#### Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
<a href="#">Reselect period</a>

USGS 323845104075601 19S.28E.24.32233



Breaks in the plot represent a gap of at least one year between field measurements.  
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**Title: Groundwater for USA: Water Levels**

**URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>**



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2021-03-09 11:38:40 EST

0.7 0.61 nadww01



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Contact USGS  
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## National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

GO

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#) 

Groundwater levels for the Nation

\* IMPORTANT: [Next Generation Station Page](#)

### Search Results -- 1 sites found

site\_no list =

- 323900104052901

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

### USGS 323900104052901 19S.29E.20.24111 RATLSNAKE

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°39'00", Longitude 104°05'29" NAD27

Land-surface elevation 3,306 feet above NAVD88

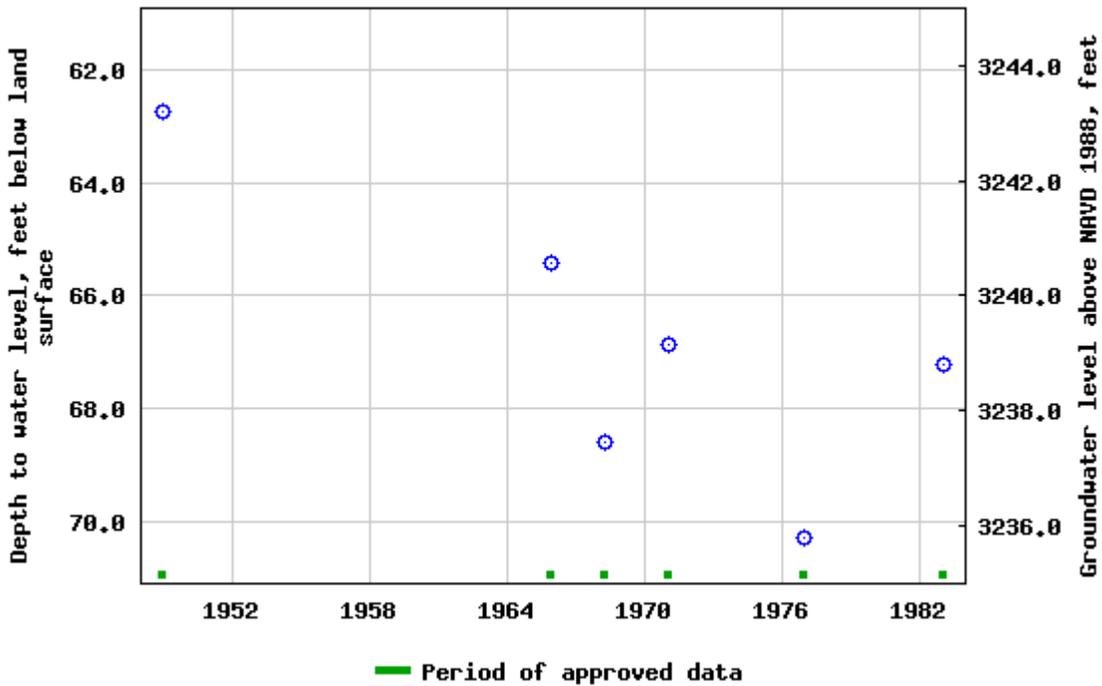
This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Rustler Formation (312RSLR) local aquifer.

#### Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
<a href="#">Reselect period</a>

USGS 323900104052901 19S.29E.20.24111 RATLSNAKE



Breaks in the plot represent a gap of at least one year between field measurements.  
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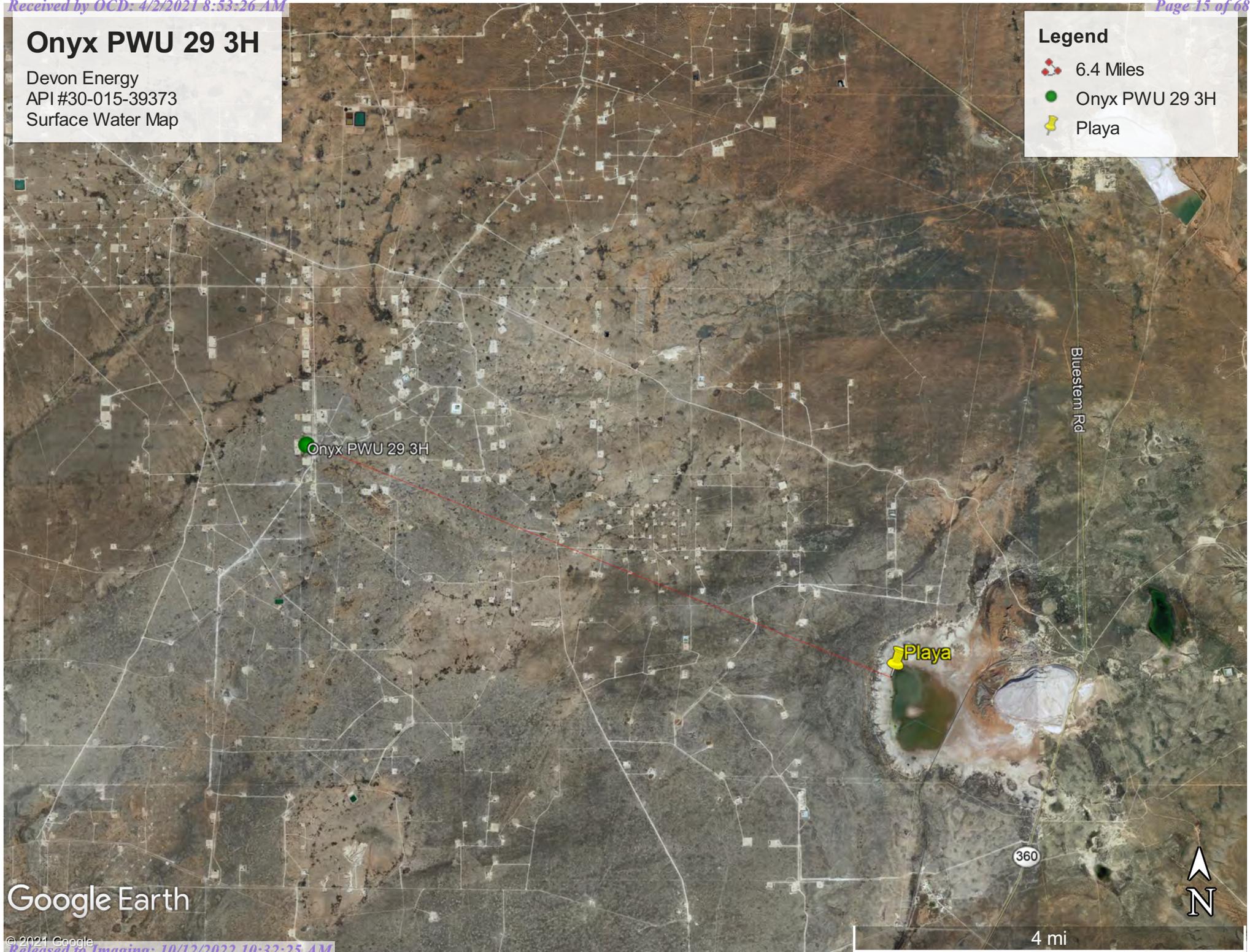
0.64 0.56 nadww01

# Onyx PWU 29 3H

Devon Energy  
API #30-015-39373  
Surface Water Map

**Legend**

-  6.4 Miles
-  Onyx PWU 29 3H
-  Playa



Google Earth

4 mi



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**Appendix B**

Soil Survey & Geological Data

FEMA Flood Map

Map Unit Description: Reeves-Gypsum land complex, 0 to 3 percent slopes---Eddy Area, New Mexico

## Eddy Area, New Mexico

### RG—Reeves-Gypsum land complex, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 1w5f  
*Elevation:* 1,250 to 5,000 feet  
*Mean annual precipitation:* 10 to 25 inches  
*Mean annual air temperature:* 57 to 70 degrees F  
*Frost-free period:* 190 to 235 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Reeves and similar soils:* 55 percent  
*Gypsum land:* 30 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Reeves

##### Setting

*Landform:* Hills, plains, ridges  
*Landform position (two-dimensional):* Backslope, footslope, shoulder, toeslope  
*Landform position (three-dimensional):* Crest, nose slope, side slope, head slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Residuum weathered from gypsum

##### Typical profile

*H1 - 0 to 8 inches:* loam  
*H2 - 8 to 32 inches:* clay loam  
*H3 - 32 to 60 inches:* gypsiferous material

##### Properties and qualities

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 25 percent  
*Gypsum, maximum content:* 80 percent  
*Maximum salinity:* Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 4.0  
*Available water capacity:* Low (about 4.3 inches)

Map Unit Description: Reeves-Gypsum land complex, 0 to 3 percent slopes---Eddy Area, New Mexico

---

### **Interpretive groups**

*Land capability classification (irrigated): 3s*  
*Land capability classification (nonirrigated): 7s*  
*Hydrologic Soil Group: B*  
*Ecological site: R042XC007NM - Loamy*  
*Hydric soil rating: No*

### **Description of Gypsum Land**

#### **Setting**

*Landform: Hills, plains, ridges*  
*Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope*  
*Landform position (three-dimensional): Crest, nose slope, side slope, head slope*  
*Down-slope shape: Convex*  
*Across-slope shape: Linear*  
*Parent material: Residuum weathered from gypsum*

#### **Interpretive groups**

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 8s*  
*Hydric soil rating: No*

### **Minor Components**

#### **Cottonwood**

*Percent of map unit: 5 percent*  
*Ecological site: R042XC033NM - Salty Bottomland*  
*Hydric soil rating: No*

#### **Reagan**

*Percent of map unit: 5 percent*  
*Ecological site: R042XC007NM - Loamy*  
*Hydric soil rating: No*

#### **Largo**

*Percent of map unit: 5 percent*  
*Ecological site: R042XC007NM - Loamy*  
*Hydric soil rating: No*

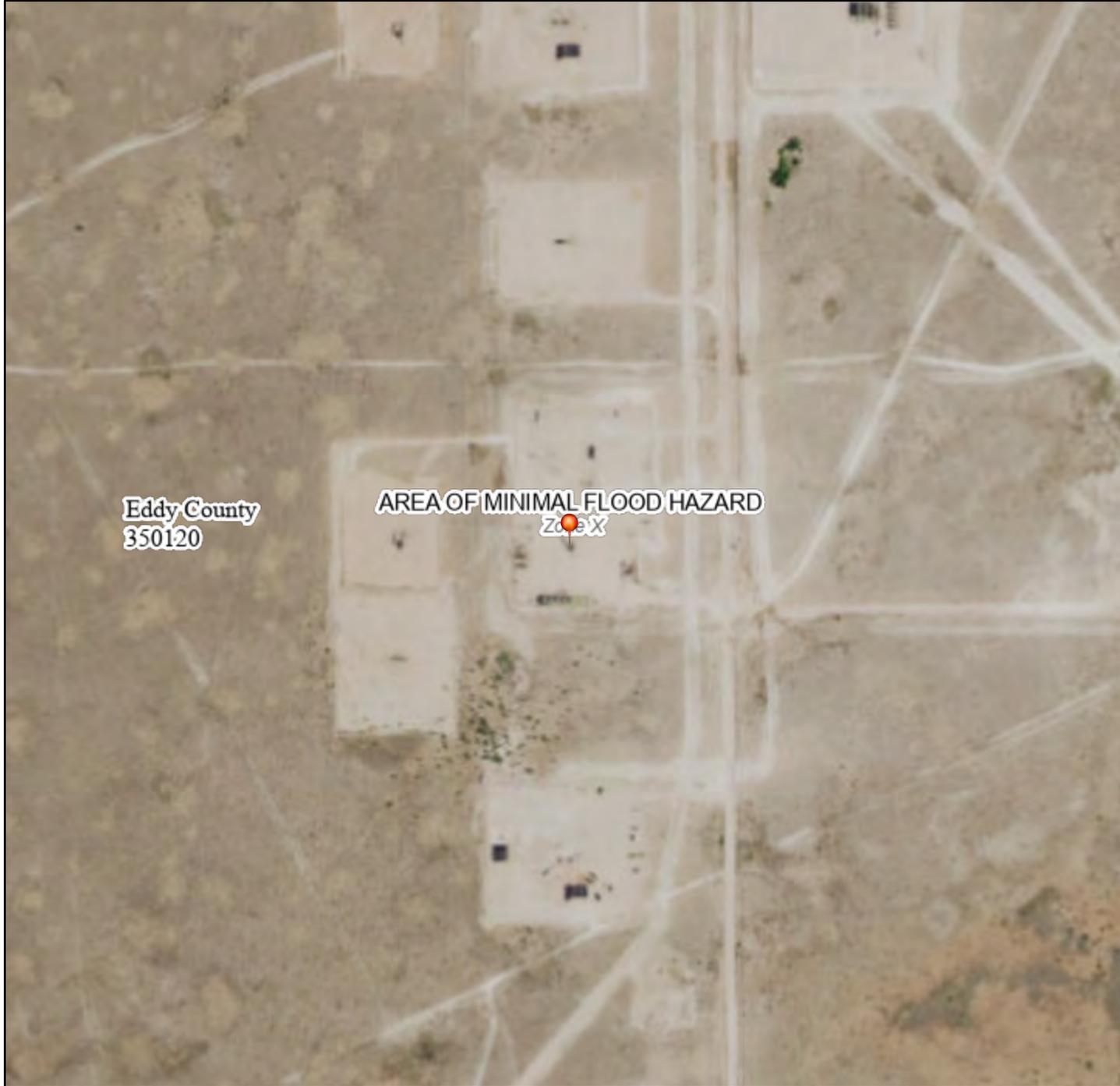
## **Data Source Information**

Soil Survey Area: Eddy Area, New Mexico  
Survey Area Data: Version 16, Jun 8, 2020

# National Flood Hazard Layer FIRMMette



104°6'35"W 32°38'5"N



Eddy County  
350120

AREA OF MINIMAL FLOOD HAZARD  
Zone X

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs

GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/18/2021 at 2:12 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



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**Appendix C**

C-141's:

Initial

Final

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

ARTESIA DISTRICT

Form C-141

Revised August 8, 2011

JAN 05 2016

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

RECEIVED

**Release Notification and Corrective Action**

*NAB1601137117*

**OPERATOR**

Initial Report  Final Report

<b>Name of Company</b> Devon Energy Production Company <i>4137</i>	<b>Contact</b> Rudy Zuniga Production Foreman
<b>Address</b> 6488 Seven Rivers Hwy Artesia, NM 88210	<b>Telephone No.</b> 575-390-5435
<b>Facility Name</b> Onyx PWU 29 #3	<b>Facility Type</b> Oil

<b>Surface Owner</b> State	<b>Mineral Owner</b> State	<b>API No</b> 30-015-39373
----------------------------	----------------------------	----------------------------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	29	19S	29E	2145	South	330	West	Eddy

Latitude: N 32°63'04.88"

Longitude: W 104°10'45.09"

**NATURE OF RELEASE**

<b>Type of Release</b> Oil	<b>Volume of Release</b> 5 bbls	<b>Volume Recovered</b> 0 bbls
<b>Source of Release</b> Lact Unit	<b>Date and Hour of Occurrence</b> 1.4.16 @ 8:40 am	<b>Date and Hour of Discovery</b> 1.4.16 @ 8:40 am
<b>Was Immediate Notice Given?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	<b>If YES, To Whom?</b> OCD @ Heather Patterson	
<b>By Whom?</b> Jesse Armendariz Assistant Production Foreman	<b>Date and Hour</b> 1.5.2016 @ 1:55 pm	
<b>Was a Watercourse Reached?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>If YES, Volume Impacting the Watercourse</b> N/A	

**If a Watercourse was Impacted, Describe Fully.\***  
N/A

**Describe Cause of Problem and Remedial Action Taken.\***  
Leak on the Lact Unit caused a 5 bbl oil spill. Well was shut in to prevent further release. Still investigating where the leak started due to the snow.

**Describe Area Affected and Cleanup Action Taken.\***  
5 bbls oil was released on the South, South West side of the facility. None of the spill was recovered due to weather. Size of affected area is 20' x 30'. All fluids remained on the location. Environmental agency will be contacted for remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

<b>Signature:</b> <i>Corina Moya</i>	<b>OIL CONSERVATION DIVISION</b>	
<b>Printed Name:</b> Corina Moya	<b>Signed By</b> <i>[Signature]</i>	
<b>Title:</b> Field Admin Support	Approved by Environmental Specialist:	
<b>E-mail Address:</b> corina.moya@dvn.com	<b>Approval Date:</b> <i>1/11/16</i>	<b>Expiration Date:</b> <i>N/A</i>
<b>Date:</b> 1.5.16 <b>Phone:</b> 575.746.5559	<b>Conditions of Approval:</b> <b>Remediation per O.C.D. Rules &amp; Guidelines</b> Attached <input type="checkbox"/> <b>SUBMIT REMEDIATION PROPOSAL NO</b> <b>LATER THAN:</b> <i>2/11/16</i>	

\* Attach Additional Sheets If Necessary

*2RP-3481*

Incident ID	NAB1601137117
District RP	2RP-3481
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>51'-100'</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 checked="" type="checkbox"/> Yes <input 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

Page 4

Incident ID	NAB1601137117
District RP	2RP-3481
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: Lupe Carrasco Title: EHS Professional

Signature: *Lupe Carrasco* Date: 3/19/2021

email: lupe.carrasco@dvn.com Telephone: 575-725-0787

**OCD Only**

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

Incident ID	NAB1601137117
District RP	2RP-3481
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: Lupe Carrasco Title: EHS Professional  
 Signature: Lupe Carrasco Date: 3/19/2021  
 email: lupe.carrasco@dvn.com Telephone: 575-725-0787

**OCD Only**

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

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: Brittany Hall Date: 10/12/2022  
 Printed Name: Brittany Hall Title: Environmental Specialist



Pima Environmental Services

**Appendix D**

Photographic Documentation









Pima Environmental Services

**Appendix E**

Laboratory Reports



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [clients.hallenvironmental.com](http://clients.hallenvironmental.com)

October 27, 2020

Chris Jones

Pima Environmental Services LLC

1601 N. Turner Ste 500

Hobbs, NM 88240

TEL: (575) 631-6977

FAX:

RE: Onyx PWV 29

OrderNo.: 2010A39

Dear Chris Jones:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/22/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

**Analytical Report**

Lab Order **2010A39**

Date Reported: **10/27/2020**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Pima Environmental Services LLC

**Client Sample ID:** S-1 0-6"

**Project:** Onyx PWV 29

**Collection Date:** 10/21/2020 2:30:00 PM

**Lab ID:** 2010A39-001

**Matrix:** SOIL

**Received Date:** 10/22/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	64	19		mg/Kg	2	10/23/2020 1:10:58 PM	55992
Motor Oil Range Organics (MRO)	180	95		mg/Kg	2	10/23/2020 1:10:58 PM	55992
Surr: DNOP	134	30.4-154		%Rec	2	10/23/2020 1:10:58 PM	55992
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/24/2020 7:39:17 AM	55990
Surr: BFB	91.1	75.3-105		%Rec	1	10/24/2020 7:39:17 AM	55990

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2010A39**

Date Reported: **10/27/2020**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Pima Environmental Services LLC

**Client Sample ID:** S-2 0-6"

**Project:** Onyx PWV 29

**Collection Date:** 10/21/2020 2:35:00 PM

**Lab ID:** 2010A39-002

**Matrix:** SOIL

**Received Date:** 10/22/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	44	9.9		mg/Kg	1	10/23/2020 1:20:49 PM	55992
Motor Oil Range Organics (MRO)	110	49		mg/Kg	1	10/23/2020 1:20:49 PM	55992
Surr: DNOP	120	30.4-154		%Rec	1	10/23/2020 1:20:49 PM	55992
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/24/2020 8:02:39 AM	55990
Surr: BFB	92.1	75.3-105		%Rec	1	10/24/2020 8:02:39 AM	55990

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2010A39

27-Oct-20

**Client:** Pima Environmental Services LLC

**Project:** Onyx PWV 29

Sample ID: <b>LCS-55992</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>55992</b>		RunNo: <b>72876</b>							
Prep Date: <b>10/22/2020</b>	Analysis Date: <b>10/23/2020</b>		SeqNo: <b>2562831</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.8	70	130			
Surr: DNOP	4.7		5.000		93.4	30.4	154			

Sample ID: <b>MB-55992</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>55992</b>		RunNo: <b>72876</b>							
Prep Date: <b>10/22/2020</b>	Analysis Date: <b>10/23/2020</b>		SeqNo: <b>2562833</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		92.5	30.4	154			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2010A39

27-Oct-20

**Client:** Pima Environmental Services LLC

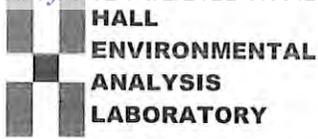
**Project:** Onyx PWV 29

Sample ID: <b>ics-55990</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>55990</b>	RunNo: <b>72897</b>								
Prep Date: <b>10/22/2020</b>	Analysis Date: <b>10/24/2020</b>	SeqNo: <b>2562395</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.0	72.5	106			
Surr: BFB	1100		1000		107	75.3	105			S

Sample ID: <b>mb-55990</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>55990</b>	RunNo: <b>72897</b>								
Prep Date: <b>10/22/2020</b>	Analysis Date: <b>10/24/2020</b>	SeqNo: <b>2562397</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	960		1000		96.1	75.3	105			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Pima Environmental Services LLC
Work Order Number: 2010A39
RcptNo: 1

Received By: Isaiah Ortiz 10/22/2020 8:00:00 AM
Completed By: Emily Mocho 10/22/2020 9:12:52 AM
Reviewed By: [Signatures]

Chain of Custody

- 1. Is Chain of Custody complete? Yes [checked] No [ ] Not Present [ ]
2. How was the sample delivered? Courier

Log In

- 3. Was an attempt made to cool the samples? Yes [checked] No [ ] NA [ ]
4. Were all samples received at a temperature of >0° C to 6.0° C? Yes [checked] No [ ] NA [ ]
5. Sample(s) in proper container(s)? Yes [checked] No [ ]
6. Sufficient sample volume for indicated test(s)? Yes [checked] No [ ]
7. Are samples (except VOA and ONG) properly preserved? Yes [checked] No [ ]
8. Was preservative added to bottles? Yes [ ] No [checked] NA [ ]
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes [ ] No [ ] NA [checked]
10. Were any sample containers received broken? Yes [ ] No [checked]
11. Does paperwork match bottle labels? Yes [checked] No [ ]
12. Are matrices correctly identified on Chain of Custody? Yes [checked] No [ ]
13. Is it clear what analyses were requested? Yes [checked] No [ ]
14. Were all holding times able to be met? Yes [checked] No [ ]

# of preserved bottles checked for pH: (<2 or >12 unless noted) Adjusted? Checked by: JR 10/22/20

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [ ] No [ ] NA [checked]

Person Notified: [ ] Date: [ ]
By Whom: [ ] Via: [ ] eMail [ ] Phone [ ] Fax [ ] In Person [ ]
Regarding: [ ]
Client Instructions: [ ]

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 1.8, Good, Not Present, [ ], [ ], [ ]





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

---

March 15, 2021

TOM BYNUM

PIMA ENVIROMENTAL

1601 N TURNER STE. 500

HOBBS, NM 88240

RE: ONYX PWU 29 3H

Enclosed are the results of analyses for samples received by the laboratory on 03/11/21 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

PIMA ENVIROMENTAL  
 TOM BYNUM  
 1601 N TURNER STE. 500  
 HOBBS NM, 88240  
 Fax To:

Received:	03/11/2021	Sampling Date:	03/10/2021
Reported:	03/15/2021	Sampling Type:	Soil
Project Name:	ONYX PWU 29 3H	Sampling Condition:	** (See Notes)
Project Number:	18	Sample Received By:	Jodi Henson
Project Location:	DEVON ENERGY - EDDY CO NM		

**Sample ID: CS - 1 (H210620-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2021	ND	2.09	105	2.00	0.407	
Toluene*	<0.050	0.050	03/13/2021	ND	2.02	101	2.00	0.493	
Ethylbenzene*	<0.050	0.050	03/13/2021	ND	2.00	99.9	2.00	0.335	
Total Xylenes*	<0.150	0.150	03/13/2021	ND	5.96	99.3	6.00	0.407	
Total BTEX	<0.300	0.300	03/13/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/15/2021	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/13/2021	ND	223	112	200	4.41	
DRO >C10-C28*	<10.0	10.0	03/13/2021	ND	222	111	200	3.68	
EXT DRO >C28-C36	<10.0	10.0	03/13/2021	ND					

Surrogate: 1-Chlorooctane 89.6 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.4 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

PIMA ENVIROMENTAL  
 TOM BYNUM  
 1601 N TURNER STE. 500  
 HOBBS NM, 88240  
 Fax To:

Received:	03/11/2021	Sampling Date:	03/10/2021
Reported:	03/15/2021	Sampling Type:	Soil
Project Name:	ONYX PWU 29 3H	Sampling Condition:	** (See Notes)
Project Number:	18	Sample Received By:	Jodi Henson
Project Location:	DEVON ENERGY - EDDY CO NM		

**Sample ID: CS - 2 (H210620-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2021	ND	2.09	105	2.00	0.407	
Toluene*	<0.050	0.050	03/13/2021	ND	2.02	101	2.00	0.493	
Ethylbenzene*	<0.050	0.050	03/13/2021	ND	2.00	99.9	2.00	0.335	
Total Xylenes*	<0.150	0.150	03/13/2021	ND	5.96	99.3	6.00	0.407	
Total BTEX	<0.300	0.300	03/13/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/15/2021	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/13/2021	ND	223	112	200	4.41	
DRO >C10-C28*	<10.0	10.0	03/13/2021	ND	222	111	200	3.68	
EXT DRO >C28-C36	<10.0	10.0	03/13/2021	ND					

Surrogate: 1-Chlorooctane 88.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 86.1 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager





Pima Environmental Services

**Appendix F**

NMOCD-Approved

Remediation Work Plan

# HUNGRY HORSE, LLC

---

3709 S. Eunice HWY  
P.O. Box 1058  
Hobbs, NM 88241  
Office: 575-393-3386  
Fax: 575-391-4585  
[info@hungry-horse.com](mailto:info@hungry-horse.com)

DIRT WORK \* ON-SITE REMEDIATION  
SOIL TESTING \* EXCAVATION \* ELECTRICAL

7Mar16

To: Mike Bratcher, New Mexico Oil Conservation Division, District II  
Reference: Remediation Work Plan  
Operator: Devon Energy Production Company  
Location: Onyx PWU 29 #3H  
API: 30-015-39373  
Legasl: Ul. L, Sec 29, T19S, R29E  
GPS: 32.63042 -104.10451  
2RP-3481

### Site Information

This site is located in rural Eddy County, New Mexico 1.3 miles west of the intersection of CR 235 (Curry Comb Road) and CR 210 (S. Old Loco Road) and 1.9 miles south of CR 235. The surrounding area is relatively flat with sparse vegetation. Based upon the Eddy County Depth to Groundwater Map, ground water appears to be between 50'-100'. The New Mexico Office of the State Engineer's website list no groundwater data for this section.

This release was due to a leak on the LACT unit. All fluids released remained on the caliche pad, nothing off the pad was impacted. The impacted area is approximately 25' x 35'.

### Work Conducted to Date

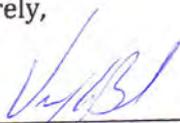
Delineation was conducted using a hand auger. Soil samples were collected from two sample points and laboratory analysis conducted for Chlorides, TPH, and BTEX. No Chlorides were detected, so they are not a contaminant of concern for this release. TPH level were elevated between the surface and 2' BGS.

### Remediation Proposal

I propose to conduct the remediation by using the in-situ method. Hand tools will be used to prepare the impacted soil. Once the soil has been prepared, a solution of a 10% mixture of MicroBlaze will be liberally applied to the impacted area. Loosening of the soil will allow a complete penetration of the MicroBlaze thereby speeding the process of the hydrocarbon remediation.

The impacted area will be re-sampled 60-90 days after the MicroBlaze application to determine the effectiveness of the treatment. If lab results indicate TPH levels at or below closure limits, closure documents will be submitted. If TPH levels remain elevated, another MicoBlaze treatment will be applied and the area re-sampled.

Sincerely,



---

Vernon K. Black, Hungry Horse, LLC

**NM OIL CONSERVATION**

ARTESIA DISTRICT

Form C-141

State of New Mexico  
Energy Minerals and Natural Resources

JAN 05 2016

Revised August 8, 2011

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

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

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

**RECEIVED**

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

*NAB1601137117*

Name of Company	Devon Energy Production Company <i>4037</i>	Contact	Rudy Zuniga Production Foreman
Address	6488 Seven Rivers Hwy Artesia, NM 88210	Telephone No.	575-390-5435
Facility Name	Onyx PWU 29 #3	Facility Type	Oil
Surface Owner State	Mineral Owner State	API No 30-015-39373	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	29	19S	29E	2145	South	330	West	Eddy

Latitude: N 32° 63' 04.88"

Longitude: W 104° 10' 45.09"

*32.63042*

*-104.10451*

**NATURE OF RELEASE**

Type of Release Spill	Oil	Volume of Release	5 bbls	Volume Recovered	0 bbls
Source of Release	Lact Unit	Date and Hour of Occurrence	1.4.16 @ 8:40 am	Date and Hour of Discovery	1.4.16 @ 8:40 am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	OCD @ Heather Patterson		
By Whom?	Jesse Armendariz Assistant Production Foreman	Date and Hour	1.5.2016 @ 1:55 pm		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	N/A		
If a Watercourse was Impacted, Describe Fully.* N/A					
Describe Cause of Problem and Remedial Action Taken.* Leak on the Lact Unit caused a 5 bbl oil spill. Well was shut in to prevent further release. Still investigating where the leak started due to the snow.					
Describe Area Affected and Cleanup Action Taken.* 5 bbls oil was released on the South, South West side of the facility. None of the spill was recovered due to weather. Size of affected area is 20' x 30'. All fluids remained on the location. Environmental agency will be contacted for remediation.					
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.					

**OIL CONSERVATION DIVISION**

Signed By *Michelle L...*

Approved by Environmental Specialist:

Approval Date: *1/11/16* Expiration Date: *N/A*

Conditions of Approval: Remediation per O.C.D. Rules & Guidelines Attached

**SUBMIT REMEDIATION PROPOSAL NO**

LATER THAN: *2/11/16*

*2RP-3481*

\* Attach Additional Sheets If Necessary



# New Mexico Office of the State Engineer Water Column/Average Depth to Water

No records found.

**PLSS Search:**

Section(s): 29

Township: 19S

Range: 29E

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.

3/8/16 2:52 PM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER

Devon Energy Production Company-Onyx PWU 29 #3H



Devon Energy Production Company-Onyx PWU 29 Fed #3H



Impacted area is 25' x 35' around LACT Unit-noted by red .



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 29, 2016

VERNON BLACK  
Hungry Horse Environmental  
P.O. Box 1058  
Hobbs, NM 88240

RE: ONYX PWU 29 #3

Enclosed are the results of analyses for samples received by the laboratory on 02/22/16 8:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene  
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/22/2016  
 Reported: 02/29/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/16/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 SURFACE (H600396-01)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Benzene*</b>	<b>30.3</b>	2.00	02/24/2016	ND	1.97	98.4	2.00	5.85		
<b>Toluene*</b>	<b>178</b>	2.00	02/24/2016	ND	1.93	96.5	2.00	6.07		
<b>Ethylbenzene*</b>	<b>69.5</b>	2.00	02/24/2016	ND	1.76	88.1	2.00	5.87		
<b>Total Xylenes*</b>	<b>201</b>	6.00	02/24/2016	ND	5.37	89.5	6.00	5.48		
<b>Total BTEX</b>	<b>479</b>	12.0	02/24/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>272</b>	16.0	02/23/2016	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>4230</b>	100	02/23/2016	ND	193	96.4	200	1.46		
<b>DRO &gt;C10-C28</b>	<b>34200</b>	100	02/23/2016	ND	214	107	200	13.1		

Surrogate: 1-Chlorooctane 202 % 35-147

Surrogate: 1-Chlorooctadecane 916 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/22/2016  
 Reported: 02/29/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/16/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 6" (H600396-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>35.2</b>	2.00	02/24/2016	ND	1.97	98.4	2.00	5.85	
<b>Toluene*</b>	<b>249</b>	2.00	02/24/2016	ND	1.93	96.5	2.00	6.07	
<b>Ethylbenzene*</b>	<b>87.2</b>	2.00	02/24/2016	ND	1.76	88.1	2.00	5.87	
<b>Total Xylenes*</b>	<b>234</b>	6.00	02/24/2016	ND	5.37	89.5	6.00	5.48	
<b>Total BTEX</b>	<b>605</b>	12.0	02/24/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 104 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>208</b>	16.0	02/23/2016	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>5180</b>	50.0	02/23/2016	ND	193	96.4	200	1.46	
<b>DRO &gt;C10-C28</b>	<b>8770</b>	50.0	02/23/2016	ND	214	107	200	13.1	S-06

Surrogate: 1-Chlorooctane 156 % 35-147

Surrogate: 1-Chlorooctadecane 189 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/22/2016  
 Reported: 02/29/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/16/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 1' (H600396-03)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	18.1	2.00	02/24/2016	ND	1.97	98.4	2.00	5.85		
Toluene*	135	2.00	02/24/2016	ND	1.93	96.5	2.00	6.07		
Ethylbenzene*	47.9	2.00	02/24/2016	ND	1.76	88.1	2.00	5.87		
Total Xylenes*	135	6.00	02/24/2016	ND	5.37	89.5	6.00	5.48		
Total BTEX	336	12.0	02/24/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	02/23/2016	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	2620	100	02/23/2016	ND	193	96.4	200	1.46		
DRO >C10-C28	5700	100	02/23/2016	ND	214	107	200	13.1		

Surrogate: 1-Chlorooctane 128 % 35-147

Surrogate: 1-Chlorooctadecane 139 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/22/2016  
 Reported: 02/29/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/16/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 2 SURFACE (H600396-04)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>5.11</b>	1.00	02/24/2016	ND	1.97	98.4	2.00	5.85	
<b>Toluene*</b>	<b>59.3</b>	1.00	02/24/2016	ND	1.93	96.5	2.00	6.07	
<b>Ethylbenzene*</b>	<b>35.6</b>	1.00	02/24/2016	ND	1.76	88.1	2.00	5.87	
<b>Total Xylenes*</b>	<b>117</b>	3.00	02/24/2016	ND	5.37	89.5	6.00	5.48	
<b>Total BTEX</b>	<b>217</b>	6.00	02/24/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 108 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/23/2016	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>2080</b>	100	02/23/2016	ND	193	96.4	200	1.46	
<b>DRO &gt;C10-C28</b>	<b>18800</b>	100	02/23/2016	ND	214	107	200	13.1	

Surrogate: 1-Chlorooctane 158 % 35-147

Surrogate: 1-Chlorooctadecane 470 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/22/2016  
 Reported: 02/29/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/16/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 2 6" (H600396-05)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Benzene*</b>	<b>47.5</b>	2.00	02/24/2016	ND	1.97	98.4	2.00	5.85		
<b>Toluene*</b>	<b>314</b>	2.00	02/24/2016	ND	1.93	96.5	2.00	6.07		
<b>Ethylbenzene*</b>	<b>98.3</b>	2.00	02/24/2016	ND	1.76	88.1	2.00	5.87		
<b>Total Xylenes*</b>	<b>258</b>	6.00	02/24/2016	ND	5.37	89.5	6.00	5.48		
<b>Total BTEX</b>	<b>717</b>	12.0	02/24/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/23/2016	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>5240</b>	100	02/23/2016	ND	193	96.4	200	1.46		
<b>DRO &gt;C10-C28</b>	<b>8780</b>	100	02/23/2016	ND	214	107	200	13.1		

Surrogate: 1-Chlorooctane 153 % 35-147

Surrogate: 1-Chlorooctadecane 201 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/22/2016  
 Reported: 02/29/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/16/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 2 1' (H600396-06)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Benzene*</b>	<b>86.7</b>	5.00	02/24/2016	ND	1.97	98.4	2.00	5.85		
<b>Toluene*</b>	<b>436</b>	5.00	02/24/2016	ND	1.93	96.5	2.00	6.07		
<b>Ethylbenzene*</b>	<b>126</b>	5.00	02/24/2016	ND	1.76	88.1	2.00	5.87		
<b>Total Xylenes*</b>	<b>339</b>	15.0	02/24/2016	ND	5.37	89.5	6.00	5.48		
<b>Total BTEX</b>	<b>988</b>	30.0	02/24/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 103 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/23/2016	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>7030</b>	100	02/23/2016	ND	193	96.4	200	1.46		
<b>DRO &gt;C10-C28</b>	<b>12100</b>	100	02/23/2016	ND	214	107	200	13.1		

Surrogate: 1-Chlorooctane 176 % 35-147

Surrogate: 1-Chlorooctadecane 281 % 28-171

\*=Accredited Analyte

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

\*=Accredited Analyte

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager





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---

March 03, 2016

VERNON BLACK  
Hungry Horse Environmental  
P.O. Box 1058  
Hobbs, NM 88240

RE: ONYX PWU 29 #3

Enclosed are the results of analyses for samples received by the laboratory on 02/25/16 10:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene  
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/25/2016  
 Reported: 03/03/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/24/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 2' (H600421-01)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Benzene*</b>	<b>2.15</b>	0.500	02/27/2016	ND	2.06	103	2.00	0.0598		
<b>Toluene*</b>	<b>17.3</b>	0.500	02/27/2016	ND	2.03	101	2.00	0.159		
<b>Ethylbenzene*</b>	<b>6.47</b>	0.500	02/27/2016	ND	1.82	90.8	2.00	0.254		
<b>Total Xylenes*</b>	<b>19.5</b>	1.50	02/27/2016	ND	5.58	92.9	6.00	0.718		
<b>Total BTEX</b>	<b>45.4</b>	3.00	02/27/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 100 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>288</b>	16.0	02/26/2016	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>574</b>	10.0	02/26/2016	ND	198	98.8	200	7.73		
<b>DRO &gt;C10-C28</b>	<b>1170</b>	10.0	02/26/2016	ND	208	104	200	14.9		

Surrogate: 1-Chlorooctane 115 % 35-147

Surrogate: 1-Chlorooctadecane 106 % 28-171

\*=Accredited Analyte

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/25/2016  
 Reported: 03/03/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/24/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 3' (H600421-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/26/2016	ND	2.06	103	2.00	0.0598	
Toluene*	0.289	0.050	02/26/2016	ND	2.03	101	2.00	0.159	
Ethylbenzene*	0.242	0.050	02/26/2016	ND	1.82	90.8	2.00	0.254	
Total Xylenes*	0.990	0.150	02/26/2016	ND	5.58	92.9	6.00	0.718	
Total BTEX	1.52	0.300	02/26/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 103 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	02/26/2016	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/26/2016	ND	198	98.8	200	7.73	
DRO >C10-C28	86.5	10.0	02/26/2016	ND	208	104	200	14.9	

Surrogate: 1-Chlorooctane 98.8 % 35-147

Surrogate: 1-Chlorooctadecane 108 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/25/2016  
 Reported: 03/03/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/24/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 4' (H600421-03)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/26/2016	ND	2.06	103	2.00	0.0598		
Toluene*	0.100	0.050	02/26/2016	ND	2.03	101	2.00	0.159		
Ethylbenzene*	0.276	0.050	02/26/2016	ND	1.82	90.8	2.00	0.254		
Total Xylenes*	1.18	0.150	02/26/2016	ND	5.58	92.9	6.00	0.718		
Total BTEX	1.56	0.300	02/26/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 101 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	02/26/2016	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	02/26/2016	ND	198	98.8	200	7.73		
DRO >C10-C28	74.9	10.0	02/26/2016	ND	208	104	200	14.9		

Surrogate: 1-Chlorooctane 100 % 35-147

Surrogate: 1-Chlorooctadecane 88.8 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/25/2016  
 Reported: 03/03/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/24/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 2 2' (H600421-04)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/26/2016	ND	2.06	103	2.00	0.0598		
<b>Toluene*</b>	<b>0.258</b>	0.050	02/26/2016	ND	2.03	101	2.00	0.159		
<b>Ethylbenzene*</b>	<b>0.442</b>	0.050	02/26/2016	ND	1.82	90.8	2.00	0.254		
<b>Total Xylenes*</b>	<b>1.78</b>	0.150	02/26/2016	ND	5.58	92.9	6.00	0.718		
<b>Total BTEX</b>	<b>2.48</b>	0.300	02/26/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 108 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/26/2016	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>82.2</b>	10.0	02/26/2016	ND	198	98.8	200	7.73		
<b>DRO &gt;C10-C28</b>	<b>751</b>	10.0	02/26/2016	ND	208	104	200	14.9		

Surrogate: 1-Chlorooctane 116 % 35-147

Surrogate: 1-Chlorooctadecane 104 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/25/2016  
 Reported: 03/03/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/24/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 2 3' (H600421-05)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/26/2016	ND	2.06	103	2.00	0.0598		
Toluene*	<0.050	0.050	02/26/2016	ND	2.03	101	2.00	0.159		
Ethylbenzene*	<0.050	0.050	02/26/2016	ND	1.82	90.8	2.00	0.254		
Total Xylenes*	<0.150	0.150	02/26/2016	ND	5.58	92.9	6.00	0.718		
Total BTEX	<0.300	0.300	02/26/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/26/2016	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	02/26/2016	ND	198	98.8	200	7.73		
<b>DRO &gt;C10-C28</b>	<b>26.0</b>	10.0	02/26/2016	ND	208	104	200	14.9		

Surrogate: 1-Chlorooctane 90.7 % 35-147

Surrogate: 1-Chlorooctadecane 96.7 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

Hungry Horse Environmental  
 VERNON BLACK  
 P.O. Box 1058  
 Hobbs NM, 88240  
 Fax To: (505) 391-4585

Received: 02/25/2016  
 Reported: 03/03/2016  
 Project Name: ONYX PWU 29 #3  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 02/24/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 2 4' (H600421-06)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/26/2016	ND	2.06	103	2.00	0.0598		
Toluene*	<0.050	0.050	02/26/2016	ND	2.03	101	2.00	0.159		
Ethylbenzene*	<0.050	0.050	02/26/2016	ND	1.82	90.8	2.00	0.254		
Total Xylenes*	<0.150	0.150	02/26/2016	ND	5.58	92.9	6.00	0.718		
Total BTEX	<0.300	0.300	02/26/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 98.6 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/26/2016	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	02/26/2016	ND	198	98.8	200	7.73		
<b>DRO &gt;C10-C28</b>	<b>112</b>	10.0	02/26/2016	ND	208	104	200	14.9		

Surrogate: 1-Chlorooctane 94.0 % 35-147

Surrogate: 1-Chlorooctadecane 102 % 28-171

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

\*=Accredited Analyte

Cardinal Laboratories

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: Hungry Horse, LLC  
Project Manager: Vernon K Black  
Address: 101 East 1058  
City: Hobbs State: NM Zip: 88240  
Phone #: 505-225-2253 Fax #: 505-225-2253  
Project #: Project Owner: Devon  
Project Name: Onyx  
Project Location: Eddie County N.M.  
Sampler Name: Vernon K Black

BILL TO		ANALYSIS REQUEST									
P.O. #:											
Company:											
Attn:											
Address:											
City:											
State: Zip:											
Phone #:											
Fax #:											

Lab I.D.	Sample I.D.	# CONTAINERS	MATRIX		PRESERV		SAMPLING		DATE	TIME	ANALYSIS
			GROUNDWATER	WASTE WATER	ACID/BASE	ICE / COOL	OTHER	DATE			
H600421	1 SP1 2'	6		X					2-24-16	10:00	C/TPH BTEX
	2 SP1 3'								10:10		
	3 SP1 4'								10:20		
	4 SP2 2'								10:30		
	5 SP2 3'								10:40		
	6 SP2 4'								10:50		

PLEASE NOTE: Samples and Containers. Containers should be clearly labeled with the name of the sample and the date and time of collection. Samples should be kept cool and protected from light. Containers should be sealed and labeled immediately after collection. Containers should be kept in a cool, dry place until they are ready to be analyzed. Containers should be kept in a cool, dry place until they are ready to be analyzed.

Relinquished By: *[Signature]* Date: 2-25-16 Time: 10:15  
 Relinquished By: *[Signature]* Date: Received By: *[Signature]*  
 Delivered By: (Circle One)  Cool  Intact  
 Sampler - UPS - Bus - Other: 5.80  
 Sample Condition:  Yes  No  
 CHECKED BY: *[Signature]*

Phone Result:  Yes  No Add'l Phone #:  
 Fax Result:  Yes  No Add'l Fax #:  
 REMARKS:

**Bratcher, Mike, EMNRD**

---

**From:** Bratcher, Mike, EMNRD  
**Sent:** Thursday, March 10, 2016 2:31 PM  
**To:** 'Vernon Black'; Fulks, Brett  
**Cc:** Patterson, Heather, EMNRD  
**Subject:** RE: Devon Onyx PWU 29 #3H Work Plan Packet.pdf

RE: Devon Energy \* Onyx PWU 29-3H \* 30-015-39373  
2RP-3481 \* DOR: 1/4/2016

Vernon,

Your proposal for remediation of the above referenced release is approved. It is OCD's understanding that samples will be obtained from the impacted area after 60 - 90 days from the initial Microblaze application, to assess progress of the insitu bioremediation. If RRAL for the site has not been achieved after 180 days, OCD will request excavation of the impacted material. Please advise when future sampling events are scheduled.

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If you have any questions or concerns, and for notification, please contact me.

Mike Bratcher  
NMOCD District 2  
811 S. First Street  
Artesia, NM 88210  
O: 575-748-1283 X108  
C: 575-626-0857  
F: 575-748-9720

PWU in the well name probably stands for Parkway Unit, just a guess based on where the site is.

-----Original Message-----

From: Vernon Black [mailto:vblack@hungry-horse.com]  
Sent: Thursday, March 10, 2016 6:21 AM  
To: Bratcher, Mike, EMNRD  
Subject: Devon Onyx PWU 29 #3H Work Plan Packet.pdf

Hello Mike,

Please see the attached work plan for the above referenced Devon location.

Thanks,  
VKB

Oh by the way, was does PWU stand for in the well name?

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
 Action 22672

**CONDITIONS**

Operator: Pima Environmental Services, LLC 5614 N Lovington Hwy Hobbs, NM 88240	OGRID: 329999
	Action Number: 22672
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
bhall	Requires like approval from NMSLO.	10/12/2022