

**Raybaw Operating, LLC.**  
**2626 Cole Ave., Suite 300**  
**Dallas, TX 75204**  
**214-800-2301**

February 16, 2023

NMOCD District 2  
 811 S First St.  
 Artesia, NM, 88210

Bureau of Land Management  
 620 E Green St.  
 Carlsbad, NM 88220

**RE: Site Assessment, Remediation, and Closure Report**  
**Serene Sisters 25 Federal #004H**  
**API No. 30-015-38312**  
**GPS: Latitude 32.711242 Longitude -103.831272**  
**UL "N", Section 25, Township 18S, Range 31E,**  
**Eddy County, NM**  
**NMOCD Reference No. NAB1520255168**

Raybaw Operating, LLC (Raybaw) has contracted Pima Environmental Services, LLC (Pima) to perform a site assessment, remediation, and prepare this closure report for a produced water release that happened west of the Serene Sisters 25 Federal #004H (Serene). An initial C-141 was submitted on July 20, 2015, and can be found in Appendix C. This incident was assigned Incident ID NAB1520255168, by the New Mexico Oil Conservation Division (NMOCD).

#### Site Information and Site Characterization

The Serene is located approximately eleven (11) miles southeast of Loco Hills, NM. This spill site is in Unit N, Section 25, Township 18S, Range 31E, Latitude 32.711242 Longitude -103.831272, Eddy County, NM. A Location Map can be found in Figure 1.

Per the New Mexico Bureau of Geology and Mineral Resources, the geology in this area is made up of Eolian and piedmont deposits. Interlayered eolian sands and piedmont-slope deposits along the eastern flank of the Pecos River valley, primarily between Roswell and Carlsbad. Typically capped by thin eolian deposits. The soil in this area is made up of Berino complex, 0 to 3 percent slopes according to the United States Department of Agriculture Natural Resources Conservation Service soil survey (Appendix B). The drainage class in this area is well drained. There is a low potential for karst geology to be present around the Serene (Figure 3).

According to the New Mexico Office of the State Engineer, depth to the nearest groundwater in this area is 430 feet below grade surface (BGS). According to the United States Geological Survey well water data, depth to the nearest groundwater in this area is 260 feet BGS. 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
<50' (Lack of GW data)	600 mg/kg	100 mg/kg		50 mg/kg	10 mg/kg
51-100'	10,000 mg/kg	2,500 mg/kg	1,000 mg/kg	50 mg/kg	10 mg/kg
>100'	20,000 mg/kg	2,500 mg/kg	1,000 mg/kg	50 mg/kg	10 mg/kg

Reference Figure 2 for a Topographic Map.

**Release Information**

**NAB1520255168:** On July 17, 2015, Rudy Zuniga Devon Energy Production Foreman received a call from Jim Huerta Devon Energy Assistant Production Foreman notifying him that he received a call from Dwayne Concho Lease Operator that there was a leak by the Serene Sisters 25 Fed 4 Battery. Rudy drove to location and found the leak about Vi mile from the battery right next to the lease road into the pasture. From what Rudy observed the hole looked like the line had been shot causing the leak of 6 bbls of produced water. Rudy isolated the line so no more fluid could get out. None of the 6 bbls was recovered. This will have to be assessed for clean-up.

**Site Assessment and Liner Inspection**

On March 2, 2016, Hungry Horse, LLC submitted a remediation plan for approval to the NMOCD. Later that day the remediation plan was approved by the NMOCD and BLM with conditions. The NMOCD-approved remediation plan can be found in Appendix F.

On July 1, 2020, Pima personnel mobilized to the site to conduct a follow-up assessment and collect new data from the spill area. We collected samples from the area mainly to find out if any previous remediation activities had taken place. The samples were field-screened, and the results can be seen in the following data table. A Site Map can be found in Figure 4.

7-1-20 Field Screened Sample Results

<b>NMOCD Table 1 Closure Criteria 19.15.29 NMAC (Depth to Groundwater is &lt;50')</b>								
<b>Raybaw Operating - Serene Sisters 25 Fed 4H</b>								
<b>Date: 7-1-20</b>		<b>Field Screen Sample Results</b>						
<b>Sample ID</b>	<b>Depth (BGS)</b>	<b>BTEX mg/kg</b>	<b>Benzene mg/kg</b>	<b>GRO mg/kg</b>	<b>DRO mg/kg</b>	<b>MRO mg/kg</b>	<b>Total TPH mg/kg</b>	<b>Cl mg/kg</b>
S-1	0-6"	ND	ND	ND	ND	ND	ND	1418
	1'-R	ND	ND	ND	ND	ND	ND	354
S-2	0-6"	ND	ND	ND	ND	ND	ND	709
	1'-R	ND	ND	ND	ND	ND	ND	354
S-3	0-6"	ND	ND	ND	ND	ND	ND	ND
	1'	ND	ND	ND	ND	ND	ND	ND
	2'-R	ND	ND	ND	ND	ND	ND	ND
BG-1	0-6"	ND	ND	ND	ND	ND	ND	ND
BG-2	0-6"	ND	ND	ND	ND	ND	ND	ND
BG-3	0-6"	ND	ND	ND	ND	ND	ND	ND
BG-4	0-6"	ND	ND	ND	ND	ND	ND	ND

ND – Analyte Not Detected

**Remediation Activities**

On July 14, 2020, Pima personnel mobilized to the site to conduct remedial activities base on the approved work plan. An initial area of 30' x 30' was marked off and excavated to a depth of 4' bgs. The excavated material was stockpiled on a plastic liner at the nearby location. A total of four confirmatory samples were collected from the excavation. Five-point composite samples were collected from the stockpiled material. The laboratory results of this sampling event can be seen in the following data table. Photographic Documentation can be found in Appendix D.

## 7-14-20 Composite Soil Sample Results

NMOCD Table 1 Closure Criteria 19.15.29 NMAC (Depth to Groundwater is <50')								
Raybaw Operating - Serene Sisters 25 Fed 4H								
Date: 7-14-20		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
N. Sidewall Comp	4'	ND	ND	ND	ND	ND	ND	3000
S. Sidewall Comp	4'	ND	ND	ND	ND	ND	ND	ND
E. Sidewall Comp	4'	ND	ND	ND	ND	ND	ND	ND
W. Sidewall Comp	4'	ND	ND	ND	ND	ND	ND	ND
Stockpile 1	--	ND	ND	ND	ND	ND	ND	ND
Stockpile 2	--	ND	ND	ND	ND	ND	ND	ND
Stockpile 3	--	ND	ND	ND	ND	ND	ND	2200
Stockpile 4	--	ND	ND	ND	ND	ND	ND	3200
Stockpile 5	--	ND	ND	ND	ND	ND	ND	160
Stockpile 6	--	ND	ND	ND	ND	ND	ND	830
Stockpile 7	--	ND	ND	ND	ND	ND	ND	400
Stockpile 8	--	ND	ND	ND	ND	ND	ND	ND

ND – Analyte Not Detected

On July 17, 2020, Pima personnel returned to the site to load up and haul off the stockpiled contaminated soil. Stockpiles 3, 4, and 6 were hauled to Lea Land, LLC, an NMOCD-approved disposal facility. A poly liner was installed at the bottom of the excavation. The excavation was then backfilled with the remaining stockpiled material. Clean, fresh topsoil was brought in and used to finish backfilling the top 1.5' of the excavation. The area was then machine compacted and contoured to match the surrounding terrain. A Confirmation Sample Map can be found in Figure 5.

On February 9, 2023, due to contamination still being present at the N. Sidewall Comp area, Pima personnel returned to the site to collect re-confirmation samples from that area. The following data table represents the sample results collected from this sampling event. A Re-Confirmation Sample Map can be found in Figure 6.

## 2-9-23 Re-Confirmation Soil Sample Results

NMOCD Table 1 Closure Criteria 19.15.29 NMAC (Depth to Groundwater is <50')								
Raybaw Operating - Serene Sisters 25 Fed 4H								
Date: 2/9/23		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
CNS1	3'	ND	ND	ND	ND	ND	ND	ND
CNS2	3'	ND	ND	ND	ND	ND	ND	ND
CNS3	3'	ND	ND	ND	ND	ND	ND	ND
CNS1	4'	ND	ND	ND	ND	ND	ND	ND
CNS2	4'	ND	ND	ND	ND	ND	ND	ND
CNS3	4'	ND	ND	ND	ND	ND	ND	ND

ND – Analyte Not Detected

Complete Laboratory Reports can be found in Appendix E.

**Closure Request**

After careful review, the sample results show that contamination levels are below closure criteria according to Table 1 of NMAC 19.15.29. Pima, on behalf of Raybaw, requests that this incident, NAB1520255168 be closed. Raybaw has complied with the applicable closure requirements.

Should you have any questions or need additional information, please feel free to contact:

Tom Bynum w/Pima Environmental at 580-748-1613 or [tom@pimaoil.com](mailto:tom@pimaoil.com)

Nancy Winn w/Raybaw Operating at 281-793-5452 or [nwinn@sbcglobal.net](mailto:nwinn@sbcglobal.net)

### **Attachments**

Figures:

- 1- Location Map
- 2- Topographic Map
- 3- Karst Map
- 4- Site Map
- 5- Confirmation Sample Map
- 6- Re-Confirmation Sample Map

Appendices:

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





Pima Environmental Services

**Figures:**

- 1 - Location Map
- 2 - Topographic Map
- 3 - Karst Map
- 4 - Site Map
- 5 - Confirmation Sample Map
- 6 - Re-Confirmation Sample Map

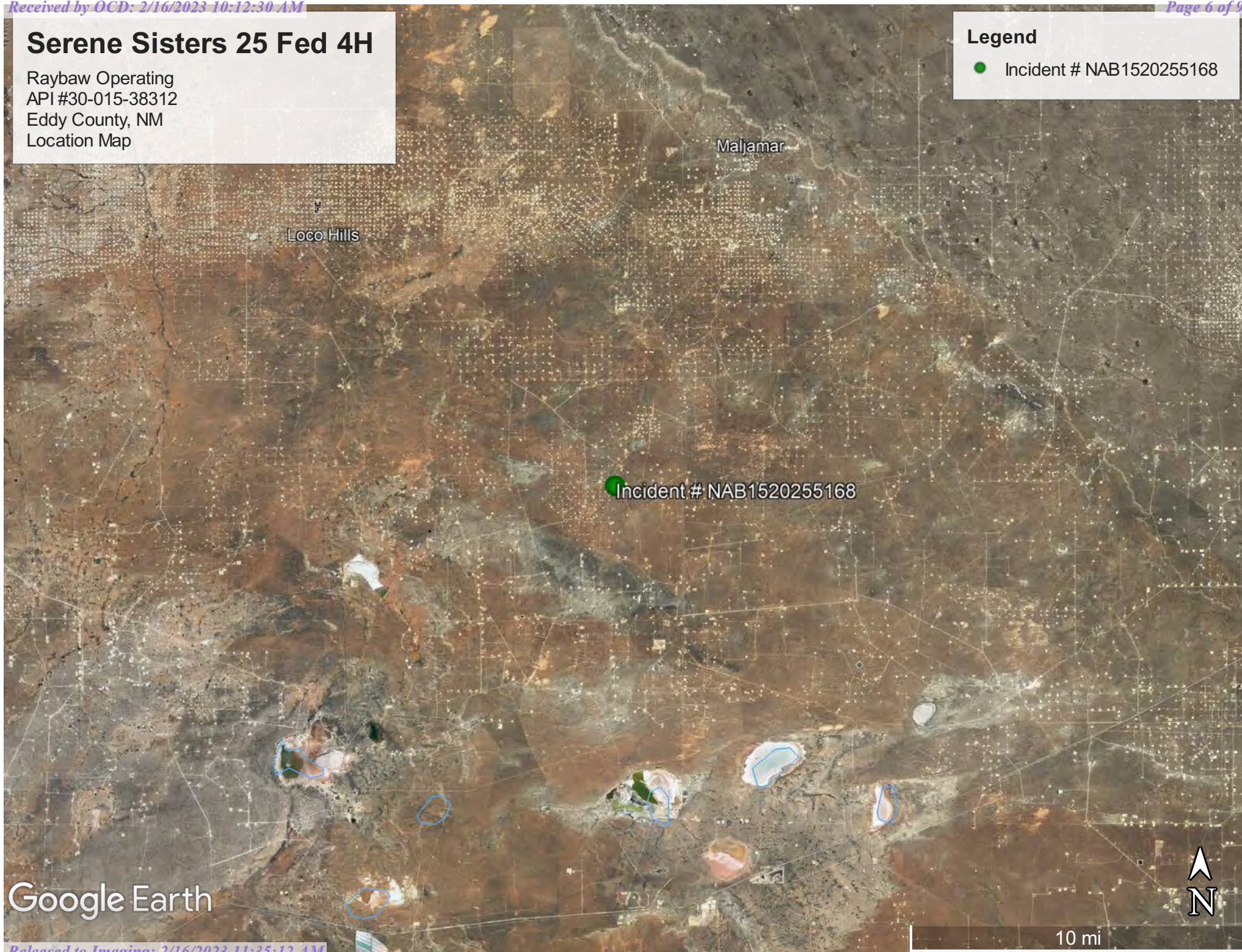


# Serene Sisters 25 Fed 4H

Raybaw Operating  
API #30-015-38312  
Eddy County, NM  
Location Map

## Legend

● Incident # NAB1520255168



Google Earth

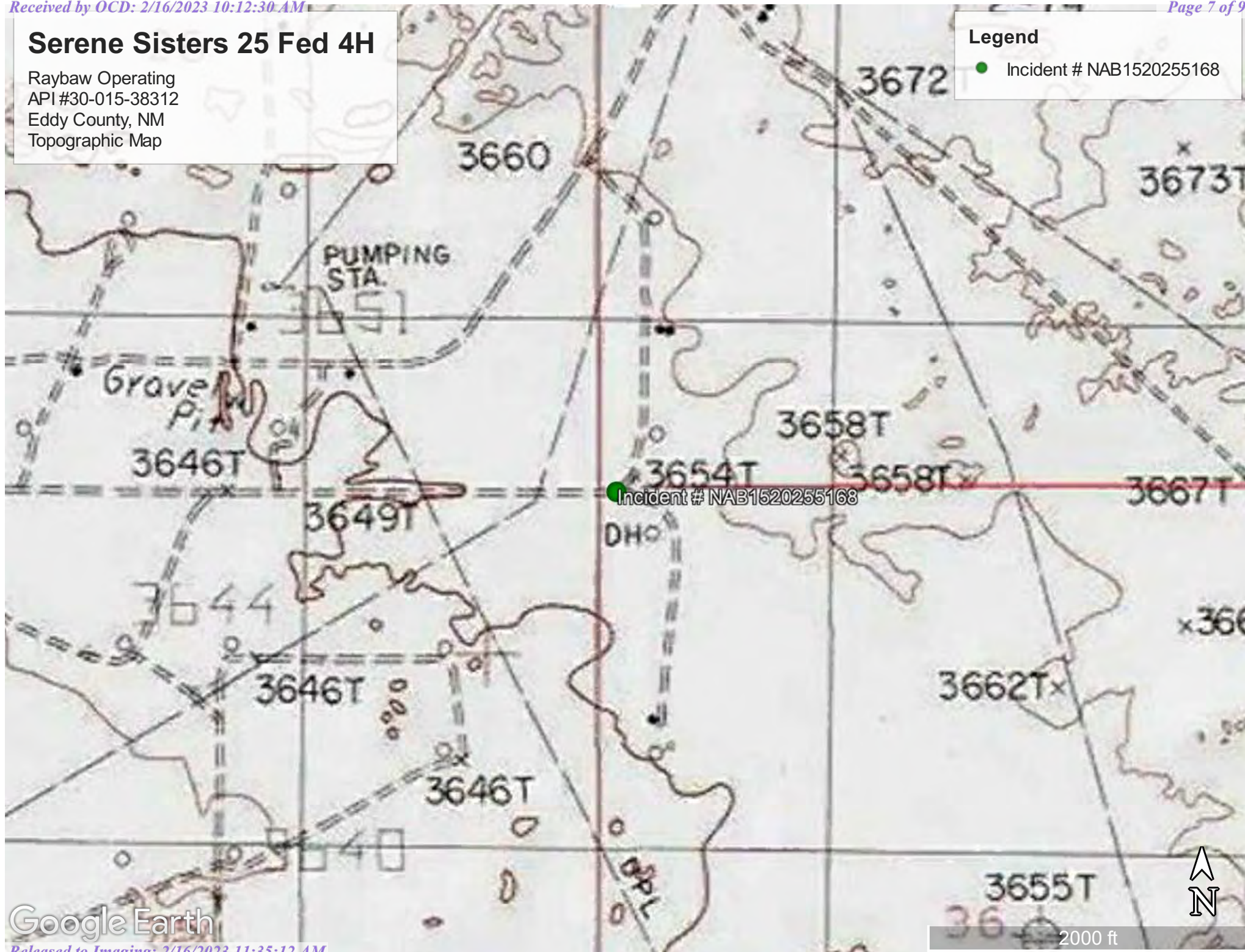


## Serene Sisters 25 Fed 4H

Raybaw Operating  
API #30-015-38312  
Eddy County, NM  
Topographic Map

### Legend

● Incident # NAB1520255168






Google Earth



## Serene Sisters 25 Fed 4H

Raybaw Operating  
API #30-015-38312  
Eddy County, NM  
Karst Map

### Legend

-  High Karst
-  Low Karst
-  Medium Karst

Incident # NAB1520255168

Google Earth



4 mi



## Serene Sisters 25 Fed 4H

Raybaw Operating  
API #30-015-38312  
Eddy County, NM  
Site Map

### Legend

- Samples & Backgrounds
- Spill Area

32.711242, -103.831272



Google Earth

80 ft






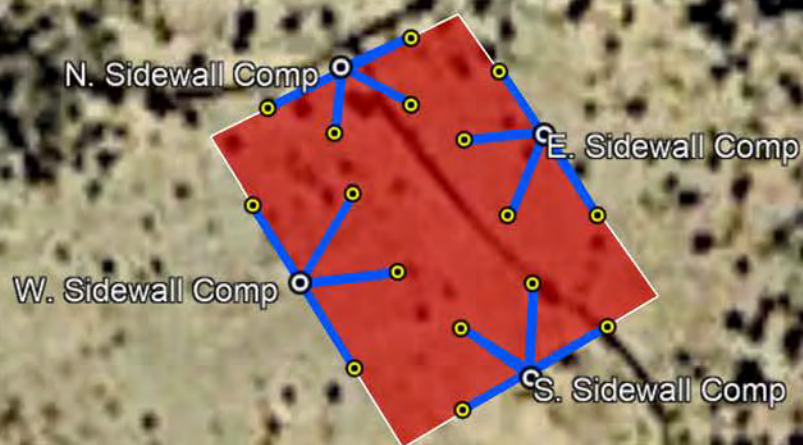
## Serene Sisters 25 Fed 4H


Raybaw Operating  
API #30-015-38312  
Eddy County, NM  
Confirmation Sample Map

### Legend

- Confirmation Base/Sidewall Comps
- Spill Area

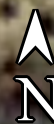
 32.711242, -103.831272



 Serene Sisters 25 Fed 4H - 1,680' East

Google Earth

50 ft



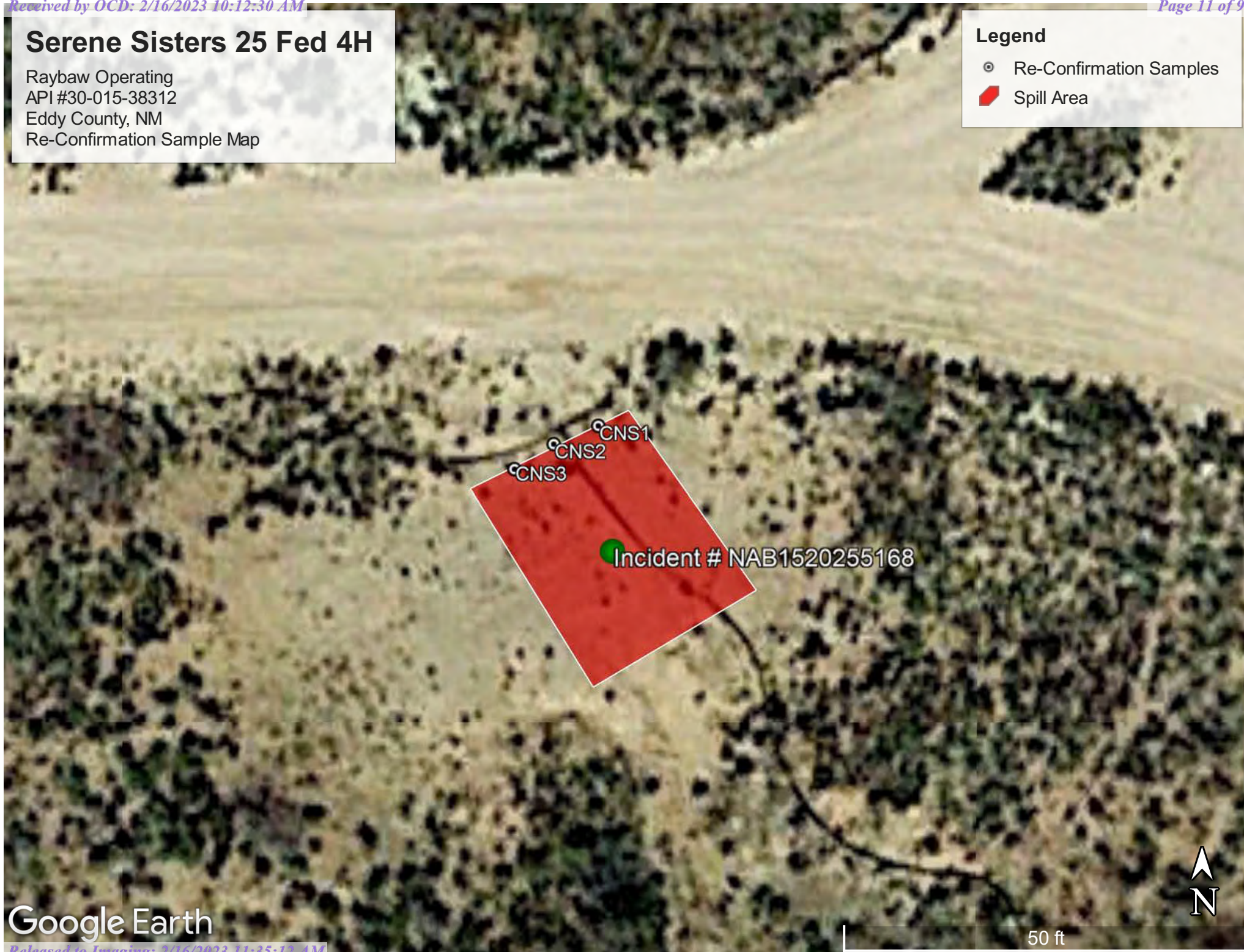


## Serene Sisters 25 Fed 4H

Raybaw Operating  
API #30-015-38312  
Eddy County, NM  
Re-Confirmation Sample Map

### Legend

- Re-Confirmation Samples
- Spill Area



Google Earth



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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	Code	POD Sub-basin	County	Q Q Q						X	Y	Distance	DepthWell	DepthWater	Water Column
		64		16	4	Sec	Tws	Rng							
<a href="#">CP 00849 POD1</a>	O	CP	LE	3	1	3	35	18S	31E	608012	3618757*	1892	300		
<a href="#">CP 00672</a>		CP	LE		4	4	07	18S	32E	612475	3624947*	5858	524	430	94
<a href="#">CP 00672 CLW475398</a>		CP	LE		4	4	07	18S	32E	612475	3624947*	5858	540	460	80
<a href="#">CP 00829 POD1</a>		CP	LE		2	4	16	19S	31E	606165	3614009*	6769	120		
<a href="#">CP 01554 POD1</a>		CP	LE	2	2	1	22	19S	31E	607166	3613354	6941	400		
<a href="#">CP 01554 POD2</a>		CP	LE	2	2	1	22	19S	31E	607165	3613322	6972	400		
<a href="#">CP 00563 POD1</a>		CP	LE	1	1	2	19	19S	32E	612118	3613376*	6996	300		
<a href="#">CP 00640 POD1</a>		CP	LE		2	2	19	19S	32E	612621	3613280*	7284	260	102	158
<a href="#">CP 01656 POD2</a>		CP	LE	3	4	3	17	19S	32E	613364	3613648	7312	70		
<a href="#">CP 01656 POD1</a>		CP	LE	3	4	3	17	19S	32E	613368	3613646	7316	70		
<a href="#">CP 01656 POD3</a>		CP	LE	3	4	3	17	19S	32E	613374	3613633	7330	30		
<a href="#">CP 00814 POD1</a>		CP	LE		2	2	08	18S	32E	614074	3626168*	7755	480		
<a href="#">CP 00639 POD1</a>	CP	LE		3	1	20	19S	32E	613029	3612880*	7822	350	345	5	

Average Depth to Water:

**334 feet**

Minimum Depth:

**102 feet**

Maximum Depth:

**460 feet**

**Record Count:** 13

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

**Easting (X):** 609536

**Northing (Y):** 3619879.12

**Radius:** 8000

\*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.

2/4/23 12:36 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER



[USGS Home](#)  
[Contact USGS](#)  
[Search USGS](#)

## National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

GO

Click to hide News Bulletins

- Explore the *NEW* [USGS National Water Dashboard](#) interactive map to access real-time water data from over 13,500 stations nationwide.
- [Full News](#) 

Groundwater levels for the Nation

 Important: [Next Generation Monitoring Location Page](#)

### Search Results -- 1 sites found

site\_no list =

- 324159103503801

Minimum number of levels = 1

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

### USGS 324159103503801 18S.31E.35.31324

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°42'07.3", Longitude 103°50'50.1" NAD83

Land-surface elevation 3,630 feet above NAVD88

The depth of the well is 300 feet below land surface.

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

This well is completed in the Chinle Formation (231CHNL) local aquifer.

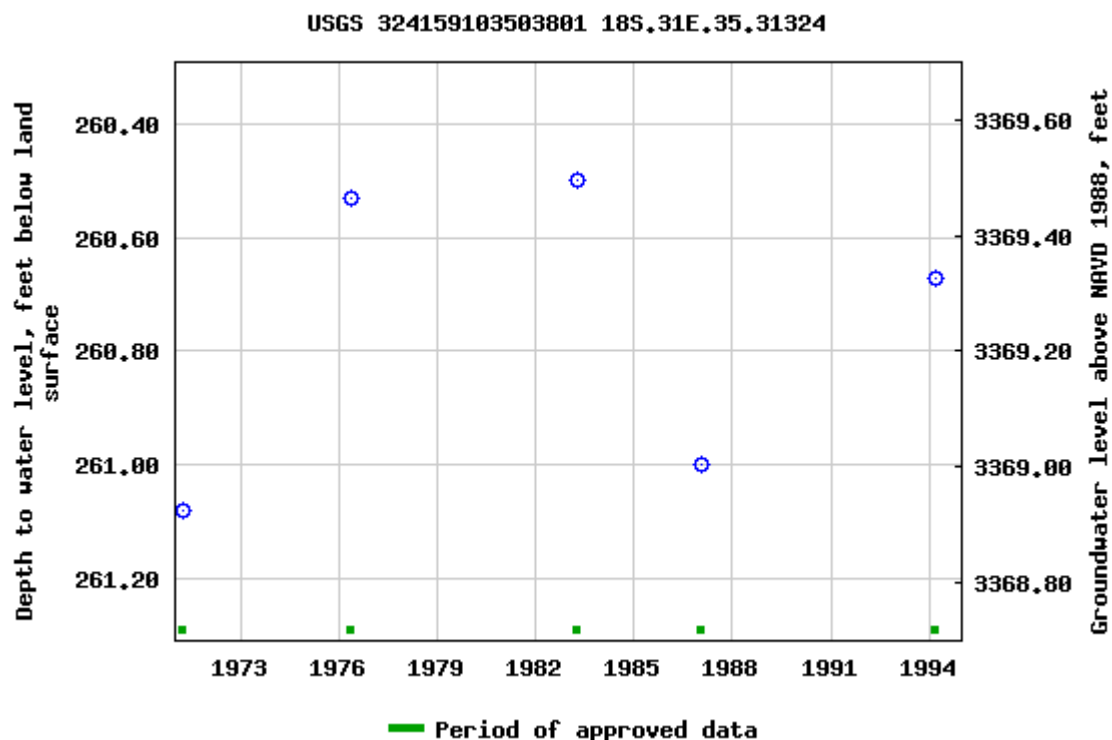
#### Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)



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: 2023-02-04 14:38:34 EST

0.55 0.48 nadww02





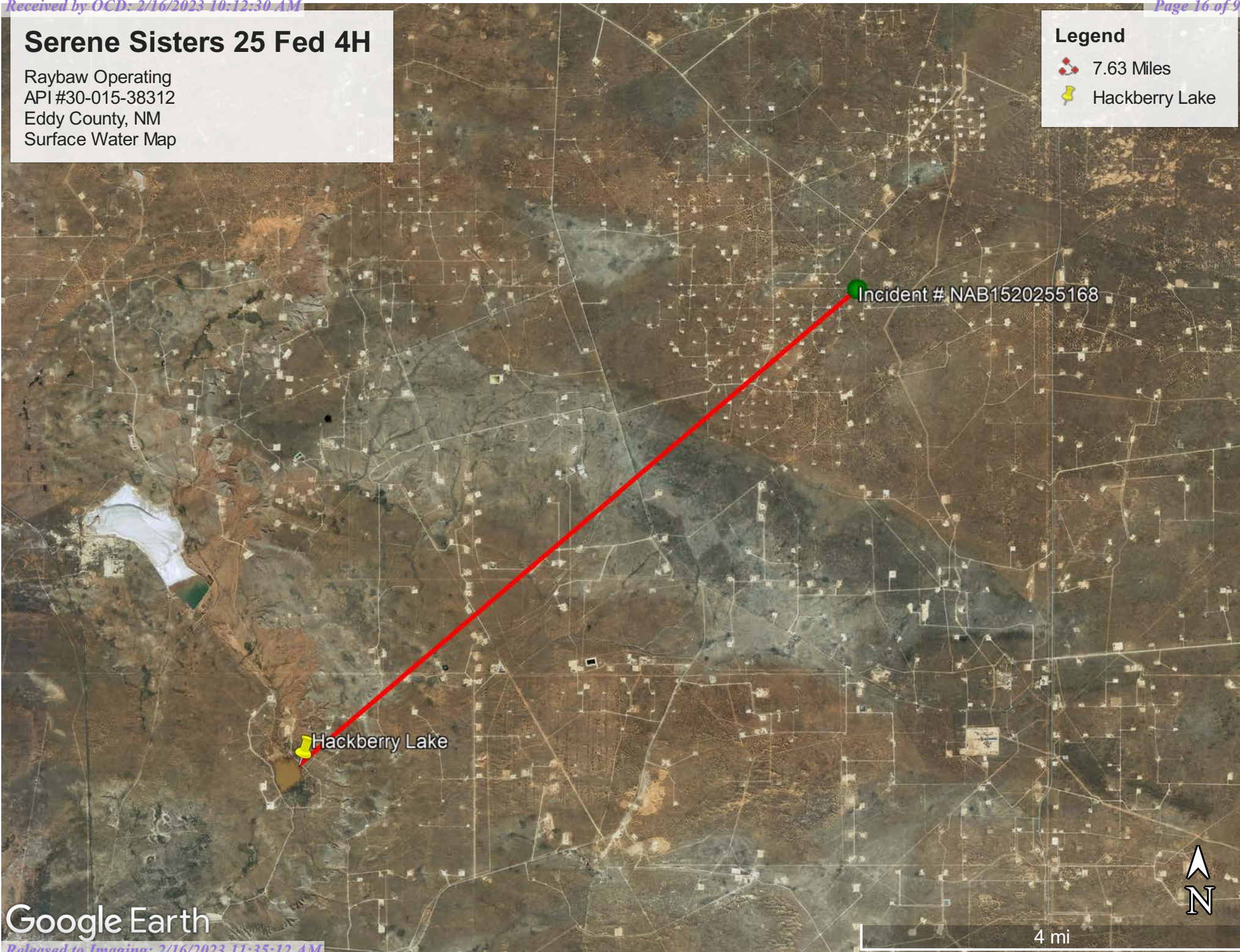


## Serene Sisters 25 Fed 4H

Raybaw Operating  
API #30-015-38312  
Eddy County, NM  
Surface Water Map

### Legend

-  7.63 Miles
-  Hackberry Lake



Google Earth





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**Appendix B**

Soil Survey & Geological Data

FEMA Flood Map

Wetlands Map

Map Unit Description: Berino complex, 0 to 3 percent slopes, eroded---Eddy Area, New Mexico

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## Eddy Area, New Mexico

### BB—Berino complex, 0 to 3 percent slopes, eroded

#### Map Unit Setting

*National map unit symbol:* 1w43

*Elevation:* 2,000 to 5,700 feet

*Mean annual precipitation:* 5 to 15 inches

*Mean annual air temperature:* 57 to 70 degrees F

*Frost-free period:* 180 to 260 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Berino and similar soils:* 60 percent

*Pajarito and similar soils:* 25 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Berino

##### Setting

*Landform:* Plains, fan piedmonts

*Landform position (three-dimensional):* Riser

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Mixed alluvium and/or eolian sands

##### Typical profile

*H1 - 0 to 17 inches:* fine sand

*H2 - 17 to 58 inches:* sandy clay loam

*H3 - 58 to 60 inches:* loamy sand

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 40 percent

*Maximum salinity:* Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 1.0

*Available water supply, 0 to 60 inches:* Moderate (about 8.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

Map Unit Description: Berino complex, 0 to 3 percent slopes, eroded---Eddy Area, New Mexico

---

*Land capability classification (nonirrigated): 7e*  
*Hydrologic Soil Group: B*  
*Ecological site: R070BD003NM - Loamy Sand*  
*Hydric soil rating: No*

## Description of Pajarito

### Setting

*Landform: Dunes, plains, interdunes*  
*Landform position (three-dimensional): Side slope*  
*Down-slope shape: Convex, linear*  
*Across-slope shape: Convex, linear*  
*Parent material: Mixed alluvium and/or eolian sands*

### Typical profile

*H1 - 0 to 9 inches: loamy fine sand*  
*H2 - 9 to 72 inches: fine sandy loam*

### Properties and qualities

*Slope: 0 to 3 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Well drained*  
*Runoff class: Very low*  
*Capacity of the most limiting layer to transmit water (Ksat): High*  
*(2.00 to 6.00 in/hr)*  
*Depth to water table: More than 80 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Calcium carbonate, maximum content: 40 percent*  
*Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)*  
*Sodium adsorption ratio, maximum: 1.0*  
*Available water supply, 0 to 60 inches: Moderate (about 8.0 inches)*

### Interpretive groups

*Land capability classification (irrigated): 2e*  
*Land capability classification (nonirrigated): 7e*  
*Hydrologic Soil Group: A*  
*Ecological site: R070BD003NM - Loamy Sand*  
*Hydric soil rating: No*

## Minor Components

### Pajarito

*Percent of map unit: 4 percent*  
*Ecological site: R070BD003NM - Loamy Sand*  
*Hydric soil rating: No*

### Wink

*Percent of map unit: 4 percent*  
*Ecological site: R070BD003NM - Loamy Sand*  
*Hydric soil rating: No*

### Cacique

*Percent of map unit: 4 percent*

Map Unit Description: Berino complex, 0 to 3 percent slopes, eroded---Eddy Area, New Mexico

---

*Ecological site:* R070BD004NM - Sandy

*Hydric soil rating:* No

**Kermit**

*Percent of map unit:* 3 percent

*Ecological site:* R070BD005NM - Deep Sand

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 18, Sep 8, 2022

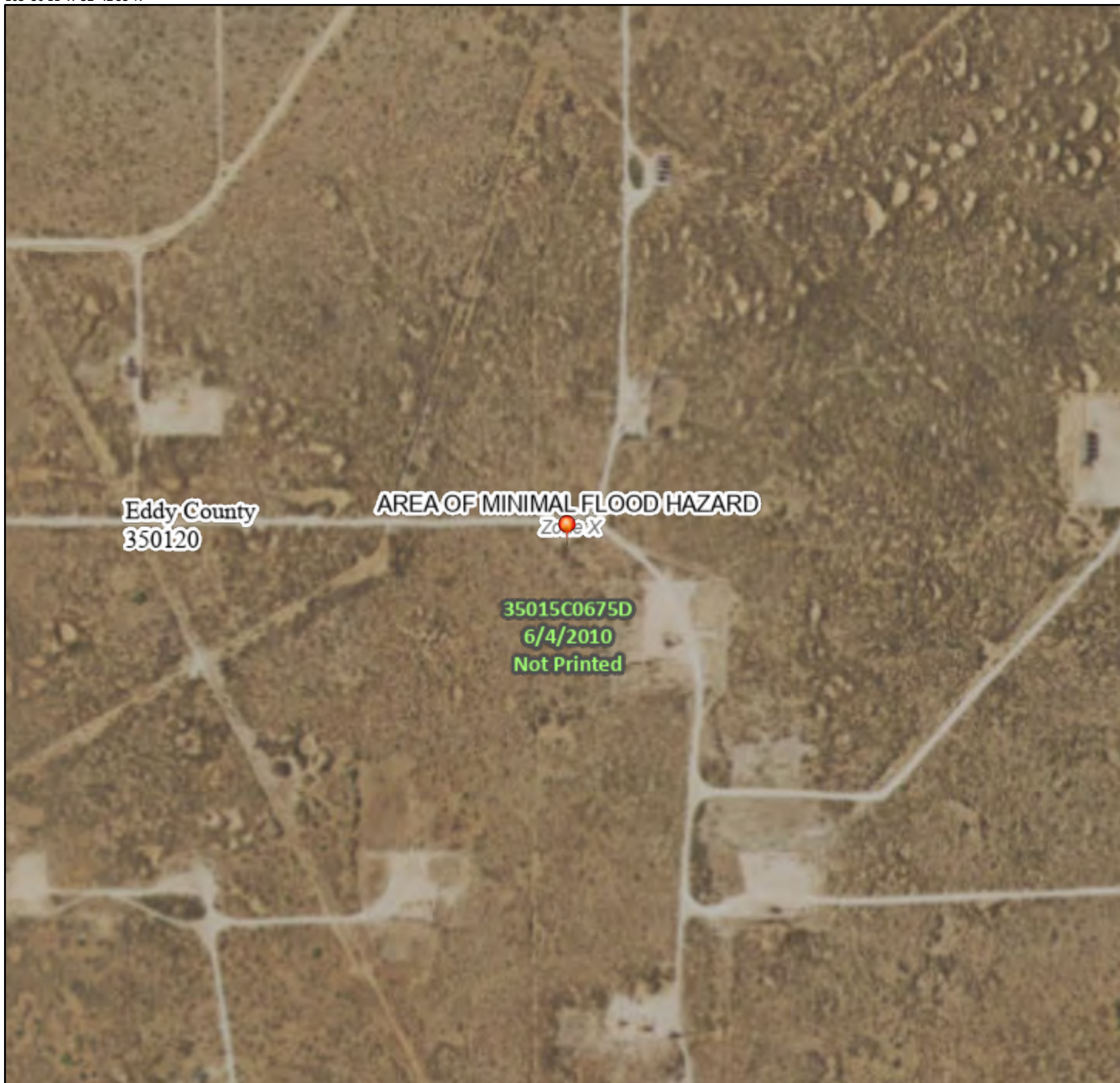




# National Flood Hazard Layer FIRMette



103°50'11"W 32°42'55"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000 103°49'34"W 32°42'25"N

## 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
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



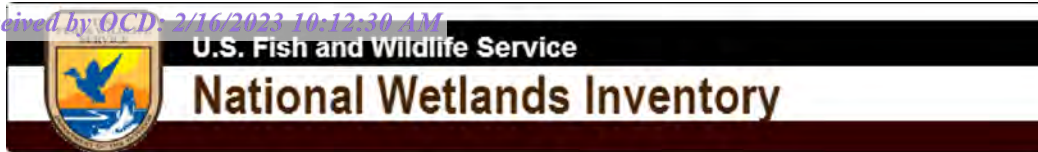
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

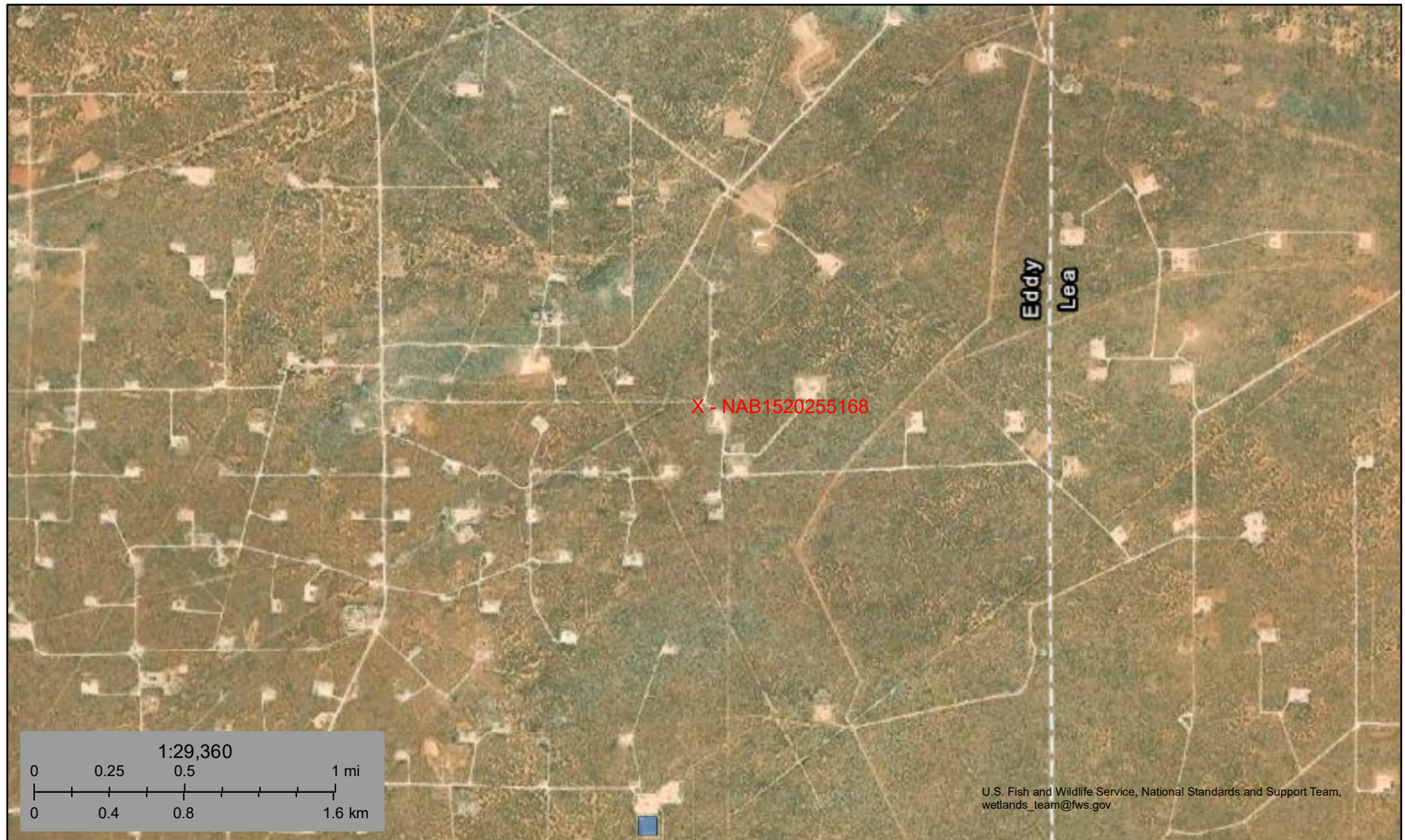
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/4/2023 at 2:42 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new 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.





## Wetlands



February 4, 2023

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



Pima Environmental Services

**Appendix C**

C-141 Form

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

Form C-141  
Revised August 8, 2011

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

### Release Notification and Corrective Action

**NAB1520255168**

#### OPERATOR

☒ Initial Report ☐ Final Report

<b>Name of Company</b> Devon Energy Production <b>6137</b>	<b>Contact</b> Rudy Zuniga
<b>Address</b> 6488 Seven Rivers Hwy Artesia, NM 88220	<b>Telephone No.</b> 575-390-5435
<b>Facility Name</b> Serene Sisters 25 Fed 4	<b>Facility Type</b> Oil

<b>Surface Owner</b> State	<b>Mineral Owner</b> Federal	<b>API No.</b> 30-015-38312
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#### LOCATION OF RELEASE

Unit Letter N	Section 25	Township 18S	Range 31E	Feet from the 200	North/South Line South	Feet from the 1750	East/West Line West	County Eddy
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**Latitude:** N 32°71'10.66"

**Longitude:** W 103°83'11.82"

#### NATURE OF RELEASE

<b>Type of Release Spill</b> PW	<b>Volume of Release</b> 6 bbls	<b>Volume Recovered</b> 0 bbls
<b>Source of Release</b> Leak in water line	<b>Date and Hour of Occurrence</b> 7/17/2015 @ 10:30 AM	<b>Date and Hour of Discovery</b> 7/17/2015 @ 10:30 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> Kellie Jones OCD Jim Amos BLM	
<b>By Whom?</b> Rudy Zuniga	<b>Date and Hour</b> 7/17/2015 @ 12:26 PM 7/17/2015 @ 12:30 PM	
<b>Was a Watercourse Reached?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>If YES, Volume Impacting the Watercourse</b>	

**NM OIL CONSERVATION**  
ARTESIA DISTRICT  
JUL 17 2015

**RECEIVED**

**If a Watercourse was Impacted, Describe Fully.\***


**Describe Cause of Problem and Remedial Action Taken.\***

On July 17, 2015 at 10:39 AM Rudy Zuniga Devon Energy Production Foreman received a call from Jim Huerta Devon Energy Assistant Production Foreman notifying him that he received a call from Dwayne Concho Lease Operator that there was a leak by the Serene Sisters 25 Fed 4 Battery. Rudy drove to location and found the leak about 1/4 mile from the battery right next to the lease road into the pasture. From what Rudy observed the hole looked like the line had been shot causing the leak of 6 bbls of produced water.

**Describe Area Affected and Cleanup Action Taken.\***

Rudy isolated the line so no more fluid could get out. None of the 6 bbls was recovered. This will have to be assessed for clean up

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC 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 NMOC 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, NMOC 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> Corina Moya	<b>OIL CONSERVATION DIVISION</b>	
<b>Printed Name:</b> Corina Moya	Approved by Environmental Specialist: 	
<b>Title:</b> Field Admin Support	Approval Date: 7/21/15	Expiration Date: N/A
<b>E-mail Address:</b> corina.moya@dvn.com	Conditions of Approval: <b>Remediation per O.C.D. Rules &amp; Guidelines</b>	
<b>Date:</b> 7/20/2015 <b>Phone:</b> 575.746.5559	<b>Submitted</b> <input type="checkbox"/> <b>REMITTANCE PROPOSAL NO</b>	

\* Attach Additional Sheets If Necessary

**LATER THAN:** 8/22/15

2RP-3141



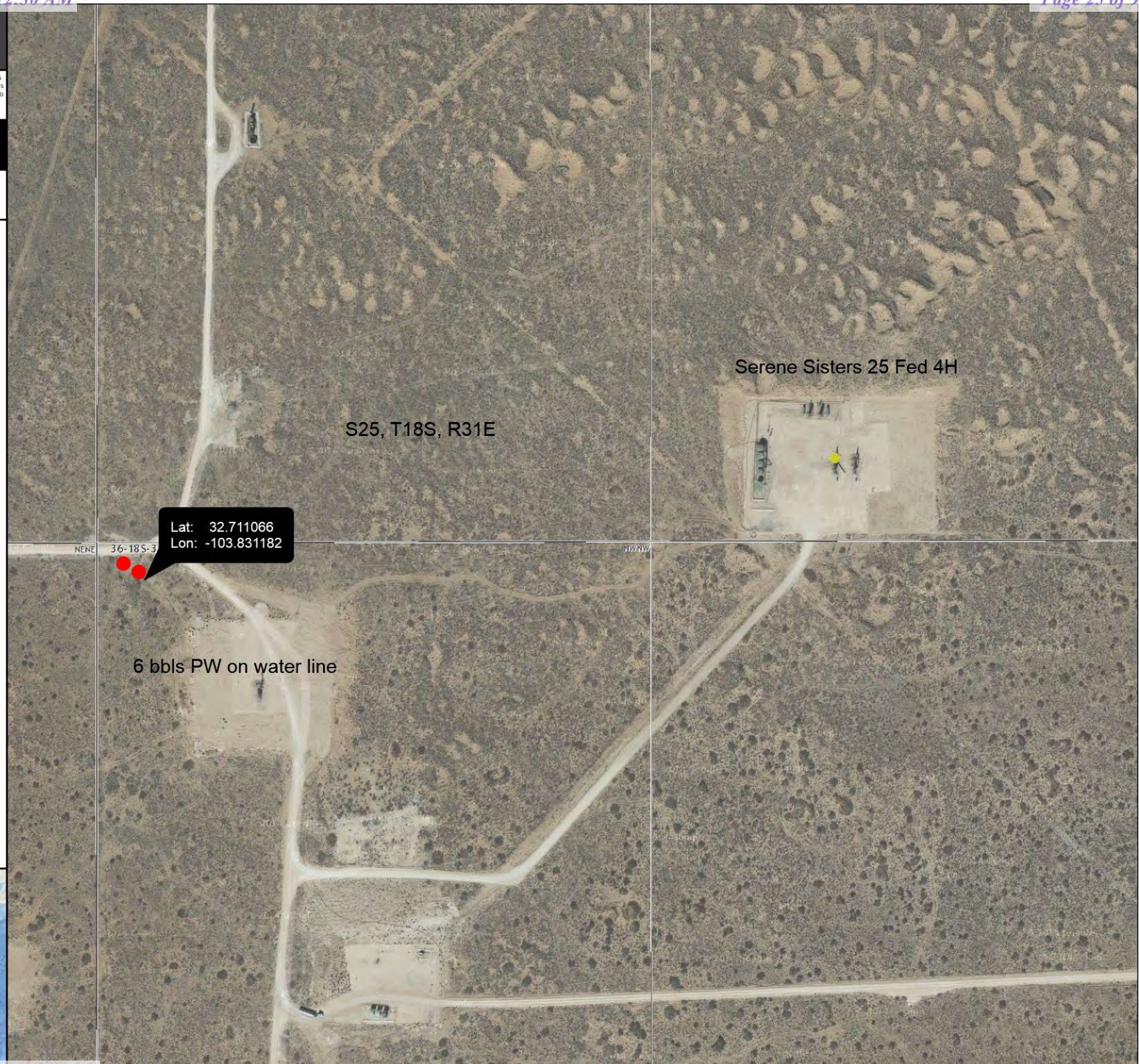
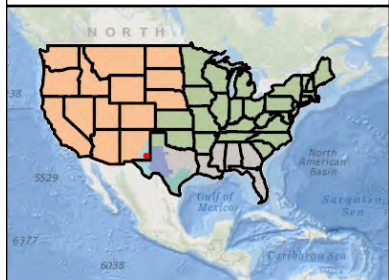
**Serene Sisters 25 Fed 4H****6 BBLS PW on water line**

This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
Prepared by: corina moya  
Map is current as of: 20-Jul-2015



Project Outline





Form C-141

State of New Mexico  
Oil Conservation Division

Page 3

Incident ID	NAB1520255168
District RP	
Facility ID	
Application ID	

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

What is the shallowest depth to groundwater beneath the area affected by the release?	< 50 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

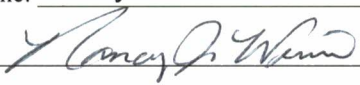
Form C-141

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	NAB1520255168
District RP	
Facility ID	
Application ID	

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

Printed Name: Nancy J. WinnTitle: Geoscience AnalystSignature: Date: 02/16/2023email: nwinn@sbcglobal.netTelephone: 281-793-5452**OCD Only**

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

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

Form C-141

State of New Mexico  
Oil Conservation Division

Page 6

Incident ID	NAB1520255168
District RP	
Facility ID	
Application ID	

## Closure

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

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

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

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

Printed Name: Nancy J. WinnTitle: Geoscience AnalystSignature: Date: 02/16/2023email: nwinn@sbcglobal.netTelephone: 281-793-5452**OCD Only**Received by: OCDDate: 2/16/2023

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: 2/16/2023Printed Name: Ashley MaxwellTitle: 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

July 21, 2020

Chris Jones  
Pima Environmental Services LLC  
1601 N. Turner Ste 500  
Hobbs, NM 88240  
TEL: (575) 631-6977  
FAX:

RE: Serene Sisters 25 Fed 4 H

OrderNo.: 2007769

Dear Chris Jones:

Hall Environmental Analysis Laboratory received 12 sample(s) on 7/15/2020 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 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: N. Sidewall Comp

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 1:00:00 PM

Lab ID: 2007769-001

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/16/2020 9:27:57 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/16/2020 9:27:57 AM
Surr: DNOP	117	55.1-146		%Rec	1	7/16/2020 9:27:57 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2020 9:16:02 AM
Surr: BFB	88.0	66.6-105		%Rec	1	7/16/2020 9:16:02 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	7/16/2020 9:16:02 AM
Toluene	ND	0.049		mg/Kg	1	7/16/2020 9:16:02 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2020 9:16:02 AM
Xylenes, Total	ND	0.097		mg/Kg	1	7/16/2020 9:16:02 AM
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	7/16/2020 9:16:02 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CJS
Chloride	3000	150		mg/Kg	50	7/16/2020 1:46:41 PM

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		

Page 1 of 17



## Analytical Report

Lab Order 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: S. Sidewall Comp

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 2:00:00 PM

Lab ID: 2007769-002

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>CLP</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/16/2020 9:57:11 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/16/2020 9:57:11 AM
Surr: DNOP	108	55.1-146		%Rec	1	7/16/2020 9:57:11 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/16/2020 9:39:27 AM
Surr: BFB	80.8	66.6-105		%Rec	1	7/16/2020 9:39:27 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	7/16/2020 9:39:27 AM
Toluene	ND	0.047		mg/Kg	1	7/16/2020 9:39:27 AM
Ethylbenzene	ND	0.047		mg/Kg	1	7/16/2020 9:39:27 AM
Xylenes, Total	ND	0.094		mg/Kg	1	7/16/2020 9:39:27 AM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	7/16/2020 9:39:27 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	61		mg/Kg	20	7/16/2020 12:53:07 AM

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		

Page 2 of 17

## Analytical Report

Lab Order 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: E. Sidewall Comp

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 3:00:00 PM

Lab ID: 2007769-003

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>CLP</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/16/2020 10:07:00 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/16/2020 10:07:00 AM
Surr: DNOP	115	55.1-146		%Rec	1	7/16/2020 10:07:00 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2020 10:02:57 AM
Surr: BFB	86.0	66.6-105		%Rec	1	7/16/2020 10:02:57 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	7/16/2020 10:02:57 AM
Toluene	ND	0.049		mg/Kg	1	7/16/2020 10:02:57 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2020 10:02:57 AM
Xylenes, Total	ND	0.099		mg/Kg	1	7/16/2020 10:02:57 AM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	7/16/2020 10:02:57 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	7/16/2020 1:05:28 AM

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		

Page 3 of 17

## Analytical Report

Lab Order 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: W. Sidewall Comp

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 4:00:00 PM

Lab ID: 2007769-004

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/16/2020 10:16:50 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/16/2020 10:16:50 AM
Surr: DNOP	114	55.1-146		%Rec	1	7/16/2020 10:16:50 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2020 10:26:29 AM
Surr: BFB	88.0	66.6-105		%Rec	1	7/16/2020 10:26:29 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	7/16/2020 10:26:29 AM
Toluene	ND	0.049		mg/Kg	1	7/16/2020 10:26:29 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2020 10:26:29 AM
Xylenes, Total	ND	0.098		mg/Kg	1	7/16/2020 10:26:29 AM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	7/16/2020 10:26:29 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	ND	60		mg/Kg	20	7/16/2020 1:42:31 AM

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		

Page 4 of 17

## Analytical Report

Lab Order 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: Stockpile 1

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 4:30:00 PM

Lab ID: 2007769-005

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/16/2020 10:26:40 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/16/2020 10:26:40 AM
Surr: DNOP	111	55.1-146		%Rec	1	7/16/2020 10:26:40 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/16/2020 10:49:57 AM
Surr: BFB	86.7	66.6-105		%Rec	1	7/16/2020 10:49:57 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	7/16/2020 10:49:57 AM
Toluene	ND	0.048		mg/Kg	1	7/16/2020 10:49:57 AM
Ethylbenzene	ND	0.048		mg/Kg	1	7/16/2020 10:49:57 AM
Xylenes, Total	ND	0.096		mg/Kg	1	7/16/2020 10:49:57 AM
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	7/16/2020 10:49:57 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	ND	60		mg/Kg	20	7/16/2020 1:54:51 AM

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		

Page 5 of 17

## Analytical Report

Lab Order 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: Stockpile 2

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 4:40:00 PM

Lab ID: 2007769-006

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/16/2020 10:36:31 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/16/2020 10:36:31 AM
Surr: DNOP	115	55.1-146		%Rec	1	7/16/2020 10:36:31 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2020 11:13:27 AM
Surr: BFB	84.3	66.6-105		%Rec	1	7/16/2020 11:13:27 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	7/16/2020 11:13:27 AM
Toluene	ND	0.049		mg/Kg	1	7/16/2020 11:13:27 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2020 11:13:27 AM
Xylenes, Total	ND	0.097		mg/Kg	1	7/16/2020 11:13:27 AM
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	7/16/2020 11:13:27 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	ND	60		mg/Kg	20	7/16/2020 2:07:12 AM

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		

Page 6 of 17



## Analytical Report

Lab Order 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: Stockpile 3

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 4:50:00 PM

Lab ID: 2007769-007

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	7/16/2020 10:46:24 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/16/2020 10:46:24 AM
Surr: DNOP	127	55.1-146		%Rec	1	7/16/2020 10:46:24 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/16/2020 11:37:01 AM
Surr: BFB	90.3	66.6-105		%Rec	1	7/16/2020 11:37:01 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	7/16/2020 11:37:01 AM
Toluene	ND	0.048		mg/Kg	1	7/16/2020 11:37:01 AM
Ethylbenzene	ND	0.048		mg/Kg	1	7/16/2020 11:37:01 AM
Xylenes, Total	ND	0.095		mg/Kg	1	7/16/2020 11:37:01 AM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	7/16/2020 11:37:01 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	2200	59		mg/Kg	20	7/16/2020 2:19:34 AM

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		

Page 7 of 17

## Analytical Report

Lab Order 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: Stockpile 4

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 5:00:00 PM

Lab ID: 2007769-008

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/16/2020 10:56:17 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/16/2020 10:56:17 AM
Surr: DNOP	109	55.1-146		%Rec	1	7/16/2020 10:56:17 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/16/2020 12:00:29 PM
Surr: BFB	87.9	66.6-105		%Rec	1	7/16/2020 12:00:29 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	7/16/2020 12:00:29 PM
Toluene	ND	0.048		mg/Kg	1	7/16/2020 12:00:29 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/16/2020 12:00:29 PM
Xylenes, Total	ND	0.096		mg/Kg	1	7/16/2020 12:00:29 PM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	7/16/2020 12:00:29 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CJS
Chloride	3200	150		mg/Kg	50	7/16/2020 1:59:05 PM

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		

Page 8 of 17

## Analytical Report

Lab Order 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: Stockpile 5

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 5:10:00 PM

Lab ID: 2007769-009

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>CLP</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/16/2020 11:06:12 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/16/2020 11:06:12 AM
Surr: DNOP	149	55.1-146	S	%Rec	1	7/16/2020 11:06:12 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/16/2020 12:24:00 PM
Surr: BFB	86.8	66.6-105		%Rec	1	7/16/2020 12:24:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	7/16/2020 12:24:00 PM
Toluene	ND	0.048		mg/Kg	1	7/16/2020 12:24:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/16/2020 12:24:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	7/16/2020 12:24:00 PM
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	7/16/2020 12:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	160	60		mg/Kg	20	7/16/2020 2:44:14 AM

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		

Page 9 of 17



## Analytical Report

Lab Order 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: Stockpile 6

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 5:20:00 PM

Lab ID: 2007769-010

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/16/2020 11:16:08 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/16/2020 11:16:08 AM
Surr: DNOP	103	55.1-146		%Rec	1	7/16/2020 11:16:08 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2020 12:47:37 PM
Surr: BFB	85.3	66.6-105		%Rec	1	7/16/2020 12:47:37 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	7/16/2020 12:47:37 PM
Toluene	ND	0.049		mg/Kg	1	7/16/2020 12:47:37 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2020 12:47:37 PM
Xylenes, Total	ND	0.097		mg/Kg	1	7/16/2020 12:47:37 PM
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	7/16/2020 12:47:37 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	830	60		mg/Kg	20	7/16/2020 2:56:35 AM

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 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: Stockpile 7

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 5:30:00 PM

Lab ID: 2007769-011

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/16/2020 11:26:05 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/16/2020 11:26:05 AM
Surr: DNOP	106	55.1-146		%Rec	1	7/16/2020 11:26:05 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2020 1:34:35 PM
Surr: BFB	83.6	66.6-105		%Rec	1	7/16/2020 1:34:35 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	7/16/2020 1:34:35 PM
Toluene	ND	0.049		mg/Kg	1	7/16/2020 1:34:35 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2020 1:34:35 PM
Xylenes, Total	ND	0.098		mg/Kg	1	7/16/2020 1:34:35 PM
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	7/16/2020 1:34:35 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	400	60		mg/Kg	20	7/16/2020 3:08:56 AM

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 2007769

Date Reported: 7/21/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Pima Environmental Services LLC

Client Sample ID: Stockpile 8

Project: Serene Sisters 25 Fed 4 H

Collection Date: 7/14/2020 5:40:00 PM

Lab ID: 2007769-012

Matrix: SOIL

Received Date: 7/15/2020 2:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>CLP</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/16/2020 11:36:04 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/16/2020 11:36:04 AM
Surr: DNOP	107	55.1-146		%Rec	1	7/16/2020 11:36:04 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2020 1:58:08 PM
Surr: BFB	91.5	66.6-105		%Rec	1	7/16/2020 1:58:08 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	7/16/2020 1:58:08 PM
Toluene	ND	0.049		mg/Kg	1	7/16/2020 1:58:08 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2020 1:58:08 PM
Xylenes, Total	ND	0.098		mg/Kg	1	7/16/2020 1:58:08 PM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	7/16/2020 1:58:08 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	7/16/2020 3:21:16 AM

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#: 2007769  
21-Jul-20

Client: Pima Environmental Services LLC  
Project: Serene Sisters 25 Fed 4 H

Sample ID: <b>MB-53741</b>		SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>PBS</b>		Batch ID: <b>53741</b>		RunNo: <b>70358</b>						
Prep Date: <b>7/15/2020</b>		Analysis Date: <b>7/15/2020</b>		SeqNo: <b>2446448</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-53741</b>		SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>LCSS</b>		Batch ID: <b>53741</b>		RunNo: <b>70358</b>						
Prep Date: <b>7/15/2020</b>		Analysis Date: <b>7/16/2020</b>		SeqNo: <b>2446449</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.8	90	110			

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

Page 13 of 17

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007769

21-Jul-20

**Client:** Pima Environmental Services LLC**Project:** Serene Sisters 25 Fed 4 H

Sample ID: <b>MB-53747</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53747</b>	RunNo: <b>70378</b>								
Prep Date: <b>7/16/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2446274</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	11		10.00		108	55.1	146			

Sample ID: <b>LCS-53747</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>53747</b>	RunNo: <b>70378</b>								
Prep Date: <b>7/16/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2446275</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	10	50.00	0	110	70	130			
Surr: DNOP	5.5		5.000		111	55.1	146			

Sample ID: <b>MB-53715</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53715</b>	RunNo: <b>70379</b>								
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2446278</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.5		10.00		75.5	55.1	146			

Sample ID: <b>LCS-53715</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>53715</b>	RunNo: <b>70379</b>								
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2446279</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		77.2	55.1	146			

Sample ID: <b>2007769-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>N. Sidewall Comp</b>	Batch ID: <b>53747</b>	RunNo: <b>70378</b>								
Prep Date: <b>7/16/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2446284</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.2	46.08	4.649	96.9	47.4	136			
Surr: DNOP	5.3		4.608		115	55.1	146			

Sample ID: <b>2007769-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>N. Sidewall Comp</b>	Batch ID: <b>53747</b>	RunNo: <b>70378</b>								
Prep Date: <b>7/16/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2446285</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	9.6	47.80	4.649	105	47.4	136	10.9	43.4	

**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#: 2007769

21-Jul-20

Client: Pima Environmental Services LLC

Project: Serene Sisters 25 Fed 4 H

Sample ID: 2007769-001AMSD		SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: N. Sidewall Comp		Batch ID: 53747		RunNo: 70378						
Prep Date: 7/16/2020		Analysis Date: 7/16/2020		SeqNo: 2446285		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.7		4.780		120	55.1	146	0	0	

- 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#: 2007769

21-Jul-20

**Client:** Pima Environmental Services LLC**Project:** Serene Sisters 25 Fed 4 H

Sample ID: <b>2007769-001ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>N. Sidewall Comp</b>	Batch ID: <b>53739</b>	RunNo: <b>70385</b>								
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2447088</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.37	0	94.5	80	120			
Surr: BFB	960		974.7		98.8	66.6	105			

Sample ID: <b>2007769-001amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>N. Sidewall Comp</b>	Batch ID: <b>53739</b>	RunNo: <b>70385</b>								
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2447089</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	23.83	0	98.6	80	120	2.01	20	
Surr: BFB	950		953.3		99.3	66.6	105	0	0	

Sample ID: <b>lcs-53739</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>53739</b>	RunNo: <b>70385</b>								
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2447091</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	84.3	72.5	106			
Surr: BFB	1100		1000		108	66.6	105			S

Sample ID: <b>mb-53739</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53739</b>	RunNo: <b>70385</b>								
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>	SeqNo: <b>2447093</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	860		1000		85.7	66.6	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

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2007769

21-Jul-20

**Client:** Pima Environmental Services LLC**Project:** Serene Sisters 25 Fed 4 H

Sample ID: <b>LCS-53739</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>53739</b>		RunNo: <b>70385</b>							
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>		SeqNo: <b>2447128</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.1	80	120			
Toluene	0.96	0.050	1.000	0	96.1	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			

Sample ID: <b>mb-53739</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>53739</b>		RunNo: <b>70385</b>							
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>		SeqNo: <b>2447130</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID: <b>2007769-002ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>S. Sidewall Comp</b>	Batch ID: <b>53739</b>		RunNo: <b>70385</b>							
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>		SeqNo: <b>2447290</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9901	0	116	78.5	119			
Toluene	1.2	0.050	0.9901	0	118	75.7	123			
Ethylbenzene	1.2	0.050	0.9901	0	121	74.3	126			
Xylenes, Total	3.6	0.099	2.970	0	122	72.9	130			
Surr: 4-Bromofluorobenzene	1.1		0.9901		109	80	120			

Sample ID: <b>2007769-002amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>S. Sidewall Comp</b>	Batch ID: <b>53739</b>		RunNo: <b>70385</b>							
Prep Date: <b>7/15/2020</b>	Analysis Date: <b>7/16/2020</b>		SeqNo: <b>2447291</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9681	0	112	78.5	119	5.88	20	
Toluene	1.1	0.048	0.9681	0	114	75.7	123	5.14	20	
Ethylbenzene	1.1	0.048	0.9681	0	118	74.3	126	4.77	20	
Xylenes, Total	3.5	0.097	2.904	0	119	72.9	130	4.73	20	
Surr: 4-Bromofluorobenzene	1.1		0.9681		109	80	120	0	0	

**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

Page 17 of 17



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: 2007769

RcptNo: 1

Received By: Cheyenne Cason 7/15/2020 2:50:00 PM

Completed By: Michelle Garcia 7/15/2020 3:00:36 PM

Reviewed By: DAD 7/15/20

*Michelle Garcia*

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
5. Sample(s) in proper container(s)? Yes ☒ No ☐  
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒  
10. Were any sample containers received broken? Yes ☐ No ☒  
11. Does paperwork match bottle labels? Yes ☒ No ☐  
(Note discrepancies on chain of custody)  
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
13. Is it clear what analyses were requested? Yes ☒ No ☐  
14. Were all holding times able to be met? Yes ☒ No ☐  
(If no, notify customer for authorization.)

# of preserved bottles checked for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: *gm 7/15/20*

### Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
By Whom: \_\_\_\_\_ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person  
Regarding: \_\_\_\_\_  
Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good	Yes			
2	3.2	Good	Yes			
3	2.2	Good	Yes			





Report to:  
Tom Bynum



# envirotech

*Practical Solutions for a Better Tomorrow*

## Analytical Report

Pima Environmental Services-Carlsbad

Project Name: Serene Sisters 25 Fed 4H

Work Order: E302065

Job Number: 21064-0001

Received: 2/13/2023

Revision: 1

Report Reviewed By:

Walter Hinchman  
Laboratory Director  
2/15/23

5796 U.S. Hwy 64  
Farmington, NM 87401

Phone: (505) 632-1881  
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.  
Statement of Data Authenticity: Envirotech Inc. attests the data reported has not been altered in any way.  
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Envirotech Inc. holds the Utah TNI certification NM00979 for data reported.  
Envirotech Inc. holds the Texas TNI certification T104704557 for data reported.

Date Reported: 2/15/23



Tom Bynum  
PO Box 247  
Plains, TX 79355-0247

Project Name: Serene Sisters 25 Fed 4H  
Workorder: E302065  
Date Received: 2/13/2023 8:15:00AM

Tom Bynum,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 2/13/2023 8:15:00AM, under the Project Name: Serene Sisters 25 Fed 4H.

The analytical test results summarized in this report with the Project Name: Serene Sisters 25 Fed 4H apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

**Walter Hinchman**  
Laboratory Director  
Office: 505-632-1881  
Cell: 775-287-1762  
[whinchman@envirotech-inc.com](mailto:whinchman@envirotech-inc.com)

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**Alexa Michaels**  
Sample Custody Officer  
Office: 505-632-1881  
[labadmin@envirotech-inc.com](mailto:labadmin@envirotech-inc.com)

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**Lynn Jarboe**  
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[ljjarboe@envirotech-inc.com](mailto:ljjarboe@envirotech-inc.com)

**West Texas Midland/Odessa Area**  
**Rayny Hagan**  
Technical Representative  
Office: 505-421-LABS(5227)

Envirotech Web Address: [www.envirotech-inc.com](http://www.envirotech-inc.com)



## Table of Contents

Title Page	1
Cover Page	2
Table of Contents	3
Sample Summary	4
Sample Data	5
CNS1 3'	5
CNS2 3'	6
CNS3 3'	7
CNS1 4'	8
CNS2 4'	9
CNS3 4'	10
QC Summary Data	11
QC - Volatile Organics by EPA 8021B	11
QC - Nonhalogenated Organics by EPA 8015D - GRO	12
QC - Nonhalogenated Organics by EPA 8015D - DRO/ORO	13
QC - Anions by EPA 300.0/9056A	14
Definitions and Notes	15
Chain of Custody etc.	16

Sample Summary

Pima Environmental Services-Carlsbad	Project Name:	Serene Sisters 25 Fed 4H	Reported:  02/15/23 12:39
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
CNS1 3'	E302065-01A	Soil	02/09/23	02/13/23	Glass Jar, 2 oz.
CNS2 3'	E302065-02A	Soil	02/09/23	02/13/23	Glass Jar, 2 oz.
CNS3 3'	E302065-03A	Soil	02/09/23	02/13/23	Glass Jar, 2 oz.
CNS1 4'	E302065-04A	Soil	02/09/23	02/13/23	Glass Jar, 2 oz.
CNS2 4'	E302065-05A	Soil	02/09/23	02/13/23	Glass Jar, 2 oz.
CNS3 4'	E302065-06A	Soil	02/09/23	02/13/23	Glass Jar, 2 oz.



## Sample Data

Pima Environmental Services-Carlsbad  
PO Box 247  
Plains TX, 79355-0247

Project Name: Serene Sisters 25 Fed 4H  
Project Number: 21064-0001  
Project Manager: Tom Bynum

**Reported:**  
2/15/2023 12:39:59PM

## CNS1 3'

## E302065-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg	Analyst: IY		Batch: 2307010	
Benzene	ND	0.0250	1	02/13/23	02/14/23	
Ethylbenzene	ND	0.0250	1	02/13/23	02/14/23	
Toluene	ND	0.0250	1	02/13/23	02/14/23	
o-Xylene	ND	0.0250	1	02/13/23	02/14/23	
p,m-Xylene	ND	0.0500	1	02/13/23	02/14/23	
Total Xylenes	ND	0.0250	1	02/13/23	02/14/23	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	105 %	70-130		02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg	Analyst: IY		Batch: 2307010	
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/13/23	02/14/23	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	90.2 %	70-130		02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg	Analyst: KM		Batch: 2307004	
Diesel Range Organics (C10-C28)	ND	25.0	1	02/13/23	02/13/23	
Oil Range Organics (C28-C36)	ND	50.0	1	02/13/23	02/13/23	
<i>Surrogate: n-Nonane</i>						
	102 %	50-200		02/13/23	02/13/23	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg	Analyst: BA		Batch: 2307006	
Chloride	ND	20.0	1	02/13/23	02/13/23	





## Sample Data

Pima Environmental Services-Carlsbad  
PO Box 247  
Plains TX, 79355-0247

Project Name: Serene Sisters 25 Fed 4H  
Project Number: 21064-0001  
Project Manager: Tom Bynum

**Reported:**  
2/15/2023 12:39:59PM

## CNS2 3'

## E302065-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Benzene	ND	0.0250	1	02/13/23	02/14/23	
Ethylbenzene	ND	0.0250	1	02/13/23	02/14/23	
Toluene	ND	0.0250	1	02/13/23	02/14/23	
o-Xylene	ND	0.0250	1	02/13/23	02/14/23	
p,m-Xylene	ND	0.0500	1	02/13/23	02/14/23	
Total Xylenes	ND	0.0250	1	02/13/23	02/14/23	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		107 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/13/23	02/14/23	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		88.8 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: KM		Batch: 2307004
Diesel Range Organics (C10-C28)	ND	25.0	1	02/13/23	02/13/23	
Oil Range Organics (C28-C36)	ND	50.0	1	02/13/23	02/13/23	
<i>Surrogate: n-Nonane</i>						
		102 %	50-200	02/13/23	02/13/23	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: BA		Batch: 2307006
Chloride	ND	20.0	1	02/13/23	02/13/23	



## Sample Data

Pima Environmental Services-Carlsbad  
PO Box 247  
Plains TX, 79355-0247

Project Name: Serene Sisters 25 Fed 4H  
Project Number: 21064-0001  
Project Manager: Tom Bynum

**Reported:**  
2/15/2023 12:39:59PM

## CNS3 3'

## E302065-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Benzene	ND	0.0250	1	02/13/23	02/14/23	
Ethylbenzene	ND	0.0250	1	02/13/23	02/14/23	
Toluene	ND	0.0250	1	02/13/23	02/14/23	
o-Xylene	ND	0.0250	1	02/13/23	02/14/23	
p,m-Xylene	ND	0.0500	1	02/13/23	02/14/23	
Total Xylenes	ND	0.0250	1	02/13/23	02/14/23	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		104 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/13/23	02/14/23	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		91.8 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: KM		Batch: 2307004
Diesel Range Organics (C10-C28)	ND	25.0	1	02/13/23	02/13/23	
Oil Range Organics (C28-C36)	ND	50.0	1	02/13/23	02/13/23	
<i>Surrogate: n-Nonane</i>						
		103 %	50-200	02/13/23	02/13/23	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: BA		Batch: 2307006
Chloride	ND	20.0	1	02/13/23	02/13/23	



## Sample Data

Pima Environmental Services-Carlsbad  
PO Box 247  
Plains TX, 79355-0247

Project Name: Serene Sisters 25 Fed 4H  
Project Number: 21064-0001  
Project Manager: Tom Bynum

**Reported:**  
2/15/2023 12:39:59PM

## CNS1 4'

## E302065-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Benzene	ND	0.0250	1	02/13/23	02/14/23	
Ethylbenzene	ND	0.0250	1	02/13/23	02/14/23	
Toluene	ND	0.0250	1	02/13/23	02/14/23	
o-Xylene	ND	0.0250	1	02/13/23	02/14/23	
p,m-Xylene	ND	0.0500	1	02/13/23	02/14/23	
Total Xylenes	ND	0.0250	1	02/13/23	02/14/23	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		107 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/13/23	02/14/23	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		88.2 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: KM		Batch: 2307004
Diesel Range Organics (C10-C28)	ND	25.0	1	02/13/23	02/13/23	
Oil Range Organics (C28-C36)	ND	50.0	1	02/13/23	02/13/23	
<i>Surrogate: n-Nonane</i>						
		103 %	50-200	02/13/23	02/13/23	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: BA		Batch: 2307006
Chloride	ND	20.0	1	02/13/23	02/13/23	





## Sample Data

Pima Environmental Services-Carlsbad  
PO Box 247  
Plains TX, 79355-0247

Project Name: Serene Sisters 25 Fed 4H  
Project Number: 21064-0001  
Project Manager: Tom Bynum

**Reported:**  
2/15/2023 12:39:59PM

## CNS2 4'

## E302065-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Benzene	ND	0.0250	1	02/13/23	02/14/23	
Ethylbenzene	ND	0.0250	1	02/13/23	02/14/23	
Toluene	ND	0.0250	1	02/13/23	02/14/23	
o-Xylene	ND	0.0250	1	02/13/23	02/14/23	
p,m-Xylene	ND	0.0500	1	02/13/23	02/14/23	
Total Xylenes	ND	0.0250	1	02/13/23	02/14/23	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		107 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/13/23	02/14/23	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		88.4 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: KM		Batch: 2307004
Diesel Range Organics (C10-C28)	ND	25.0	1	02/13/23	02/13/23	
Oil Range Organics (C28-C36)	ND	50.0	1	02/13/23	02/13/23	
<i>Surrogate: n-Nonane</i>						
		100 %	50-200	02/13/23	02/13/23	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: BA		Batch: 2307006
Chloride	ND	20.0	1	02/13/23	02/13/23	



## Sample Data

Pima Environmental Services-Carlsbad  
PO Box 247  
Plains TX, 79355-0247

Project Name: Serene Sisters 25 Fed 4H  
Project Number: 21064-0001  
Project Manager: Tom Bynum

**Reported:**  
2/15/2023 12:39:59PM

## CNS3 4'

## E302065-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Benzene	ND	0.0250	1	02/13/23	02/14/23	
Ethylbenzene	ND	0.0250	1	02/13/23	02/14/23	
Toluene	ND	0.0250	1	02/13/23	02/14/23	
o-Xylene	ND	0.0250	1	02/13/23	02/14/23	
p,m-Xylene	ND	0.0500	1	02/13/23	02/14/23	
Total Xylenes	ND	0.0250	1	02/13/23	02/14/23	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		106 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2307010
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/13/23	02/14/23	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		89.1 %	70-130	02/13/23	02/14/23	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: KM		Batch: 2307004
Diesel Range Organics (C10-C28)	ND	25.0	1	02/13/23	02/13/23	
Oil Range Organics (C28-C36)	ND	50.0	1	02/13/23	02/13/23	
<i>Surrogate: n-Nonane</i>						
		104 %	50-200	02/13/23	02/13/23	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: BA		Batch: 2307006
Chloride	ND	20.0	1	02/13/23	02/13/23	



## QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Serene Sisters 25 Fed 4H	<b>Reported:</b>
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	2/15/2023 12:39:59PM

## Volatile Organics by EPA 8021B

Analyst: SL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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## Blank (2307010-BLK1)

Prepared: 02/13/23 Analyzed: 02/13/23

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	8.43		8.00		105	70-130			

## LCS (2307010-BS1)

Prepared: 02/13/23 Analyzed: 02/13/23

Benzene	5.09	0.0250	5.00		102	70-130			
Ethylbenzene	5.19	0.0250	5.00		104	70-130			
Toluene	5.29	0.0250	5.00		106	70-130			
o-Xylene	5.37	0.0250	5.00		107	70-130			
p,m-Xylene	10.5	0.0500	10.0		105	70-130			
Total Xylenes	15.9	0.0250	15.0		106	70-130			
Surrogate: 4-Bromochlorobenzene-PID	8.60		8.00		108	70-130			

## Matrix Spike (2307010-MS1)

Source: E302063-06

Prepared: 02/13/23 Analyzed: 02/13/23

Benzene	4.93	0.0250	5.00	ND	98.6	54-133			
Ethylbenzene	5.02	0.0250	5.00	ND	100	61-133			
Toluene	5.12	0.0250	5.00	ND	102	61-130			
o-Xylene	5.19	0.0250	5.00	ND	104	63-131			
p,m-Xylene	10.2	0.0500	10.0	ND	102	63-131			
Total Xylenes	15.4	0.0250	15.0	ND	102	63-131			
Surrogate: 4-Bromochlorobenzene-PID	8.46		8.00		106	70-130			

## Matrix Spike Dup (2307010-MSD1)

Source: E302063-06

Prepared: 02/13/23 Analyzed: 02/13/23

Benzene	5.05	0.0250	5.00	ND	101	54-133	2.44	20	
Ethylbenzene	5.15	0.0250	5.00	ND	103	61-133	2.51	20	
Toluene	5.25	0.0250	5.00	ND	105	61-130	2.51	20	
o-Xylene	5.32	0.0250	5.00	ND	106	63-131	2.51	20	
p,m-Xylene	10.4	0.0500	10.0	ND	104	63-131	2.56	20	
Total Xylenes	15.8	0.0250	15.0	ND	105	63-131	2.55	20	
Surrogate: 4-Bromochlorobenzene-PID	8.41		8.00		105	70-130			



QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Serene Sisters 25 Fed 4H	Reported:
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	2/15/2023 12:39:59PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: SL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2307010-BLK1) Prepared: 02/13/23 Analyzed: 02/13/23

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.04		8.00		88.0	70-130			

LCS (2307010-BS2) Prepared: 02/13/23 Analyzed: 02/13/23

Gasoline Range Organics (C6-C10)	49.0	20.0	50.0		98.0	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.92		8.00		86.4	70-130			

Matrix Spike (2307010-MS2) Source: E302063-06 Prepared: 02/13/23 Analyzed: 02/13/23

Gasoline Range Organics (C6-C10)	45.5	20.0	50.0	ND	90.9	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.08		8.00		88.5	70-130			

Matrix Spike Dup (2307010-MSD2) Source: E302063-06 Prepared: 02/13/23 Analyzed: 02/13/23

Gasoline Range Organics (C6-C10)	42.6	20.0	50.0	ND	85.3	70-130	6.41	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.19		8.00		89.9	70-130			





## QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Serene Sisters 25 Fed 4H	<b>Reported:</b>
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	2/15/2023 12:39:59PM

## Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: KM

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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## Blank (2307004-BLK1)

Prepared: 02/13/23 Analyzed: 02/13/23

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	50.2		50.0		100	50-200			

## LCS (2307004-BS1)

Prepared: 02/13/23 Analyzed: 02/13/23

Diesel Range Organics (C10-C28)	234	25.0	250		93.6	38-132			
Surrogate: n-Nonane	50.7		50.0		101	50-200			

## Matrix Spike (2307004-MS1)

Source: E302065-05

Prepared: 02/13/23 Analyzed: 02/13/23

Diesel Range Organics (C10-C28)	238	25.0	250	ND	95.2	38-132			
Surrogate: n-Nonane	49.8		50.0		99.7	50-200			

## Matrix Spike Dup (2307004-MSD1)

Source: E302065-05

Prepared: 02/13/23 Analyzed: 02/13/23

Diesel Range Organics (C10-C28)	246	25.0	250	ND	98.5	38-132	3.44	20	
Surrogate: n-Nonane	51.2		50.0		102	50-200			



QC Summary Data

Pima Environmental Services-Carlsbad	Project Name:	Serene Sisters 25 Fed 4H	Reported:
PO Box 247	Project Number:	21064-0001	
Plains TX, 79355-0247	Project Manager:	Tom Bynum	2/15/2023 12:39:59PM

Anions by EPA 300.0/9056A

Analyst: BA

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	

Blank (2307006-BLK1)					Prepared: 02/13/23 Analyzed: 02/13/23				
Chloride	ND	20.0							
LCS (2307006-BS1)					Prepared: 02/13/23 Analyzed: 02/13/23				
Chloride	252	20.0	250		101	90-110			
Matrix Spike (2307006-MS1)					Source: E302063-01		Prepared: 02/13/23 Analyzed: 02/13/23		
Chloride	436	20.0	250	196	96.3	80-120			
Matrix Spike Dup (2307006-MSD1)					Source: E302063-01		Prepared: 02/13/23 Analyzed: 02/13/23		
Chloride	413	20.0	250	196	87.0	80-120	5.52	20	

QC Summary Report Comment:  
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures.  
Therefore, hand calculated values may differ slightly.



Definitions and Notes

Pima Environmental Services-Carlsbad	Project Name:	Serene Sisters 25 Fed 4H	
PO Box 247	Project Number:	21064-0001	Reported:
Plains TX, 79355-0247	Project Manager:	Tom Bynum	02/15/23 12:39

- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- DNI Did Not Ignite

Note (1): Methods marked with \*\* are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.





## Envirotech Analytical Laboratory

Printed: 2/13/2023 10:35:19AM

## Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Pima Environmental Services-Carlsbad	Date Received:	02/13/23 08:15	Work Order ID:	E302065
Phone:	(575) 631-6977	Date Logged In:	02/10/23 15:48	Logged In By:	Caitlin Christian
Email:	tom@pimaoil.com	Due Date:	02/17/23 07:00 (4 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC? Yes
2. Does the number of samples per sampling site location match the COC? Yes
3. Were samples dropped off by client or carrier? Yes
4. Was the COC complete, i.e., signatures, dates/times, requested analyses? Yes
5. Were all samples received within holding time? Yes

Note: Analysis, such as pH which should be conducted in the field, i.e., 15 minute hold time, are not included in this discussion.

Carrier: CourierComments/ResolutionSample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

7. Was a sample cooler received? Yes
8. If yes, was cooler received in good condition? Yes
9. Was the sample(s) received intact, i.e., not broken? Yes
10. Were custody/security seals present? No
11. If yes, were custody/security seals intact? NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

14. Are aqueous VOC samples present? No
15. Are VOC samples collected in VOA Vials? NA
16. Is the head space less than 6-8 mm (pea sized or less)? NA
17. Was a trip blank (TB) included for VOC analyses? NA
18. Are non-VOC samples collected in the correct containers? Yes
19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

20. Were field sample labels filled out with the minimum information:
  - Sample ID? Yes
  - Date/Time Collected? Yes
  - Collectors name? No

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved? No
22. Are sample(s) correctly preserved? NA
24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase? No
27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory? No
29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.



Pima Environmental Services

## **Appendix F**

NMOCD-Approved Remediation 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

30Jan16

To: Heather Patterson, New Mexico Oil Conservation Division, Dist II  
Jim Amos, Bureau of Land Management, Carlsbad District  
Reference: Remediation Work Plan  
Operator: Devon Energy Production Company  
Location: Serene Sisters 25 Fed #4  
API: 30-015-38312  
Legals: UL. N, Sec. 25, T18S, R31E, Eddy County  
GPS (Point of Release): 32.7112 -103.8312  
NM OCD: 2RP 3141

## Site Information

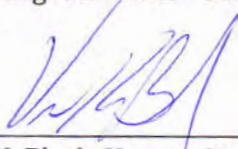
The point of release (POR) is located approximately .9 miles east of Westall Road/CR 249 and 2.5 miles from the south intersection of CR 222 and Westall Road. The POR is 570 yards west/southwest of the well site near a "Y" intersection of lease roads. The area is relatively flat with sparse vegetation and gentle rolling sand dunes. The Eddy County Depth to Groundwater indicates groundwater to be 250'-300'. The New Mexico State Engineer's website list no ground water data for this area.

## Work Conducted to Date

The impacted area is approximately 30' x 30'. A delineation was conducted using a hand auger, back-hoe, and due to hard rock, an excavator. One sample point in the middle of the impacted area was selected for soil sampling. All soil samples were filed tested on site for chlorides with selected samples being submitted for lab analysis. (See attached analytical summary and lab results.) Results demonstrate a steady drop in Chlorides from 7'- 21' BGS. TPH nor BTEX were detected in samples.

## Proposal

Due to the low Chloride levels between the surface and 3' BGS, I propose to mechanically excavate the impacted area to a depth of 3' BGS and line the excavated area with a synthetic liner and back fill with the excavated material. Thus preventing the downward migration of the existing Chlorides. The impacted area will be seeded using a BLM approved seed mixture.



---

Vernon K. Black, Hungry Horse, LLC



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

Form C-141  
Revised August 8, 2011

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

### Release Notification and Corrective Action

<b>NAB1520255168</b>		<b>OPERATOR</b>	<input checked="" type="checkbox"/> Initial Report <input type="checkbox"/> Final Report
<b>Name of Company</b> Devon Energy Production <b>6137</b>		<b>Contact</b> Rudy Zuniga	
<b>Address</b> 6488 Seven Rivers Hwy Artesia, NM 88220		<b>Telephone No.</b> 575-390-5435	
<b>Facility Name</b> Serene Sisters 25 Fed 4		<b>Facility Type</b> Oil	
<b>Surface Owner</b> State		<b>Mineral Owner</b> Federal	<b>API No.</b> 30-015-38312

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	25	18S	31E	200	South	1750	West	Eddy

Latitude: N 32° 71' 10.66"

Longitude: W 103° 83' 11.82"

### NATURE OF RELEASE

<b>Type of Release Spill</b> PW	<b>Volume of Release</b> 6 bbls	<b>Volume Recovered</b> 0 bbls
<b>Source of Release</b> Leak in water line	<b>Date and Hour of Occurrence</b> 7/17/2015 @ 10:30 AM	<b>Date and Hour of Discovery</b> 7/17/2015 @ 10:30 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> Kellie Jones OCD Jim Amos BLM <b>Date and Hour</b> 7/17/2015 @ 12:26 PM 7/17/2015 @ 12:30 PM	
<b>By Whom?</b> Rudy Zuniga	<b>RECEIVED</b> NM OIL CONSERVATION ARTESIA DISTRICT JUL 17 2015	
<b>Was a Watercourse Reached?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>If YES, Volume Impacting the Watercourse</b>	

If a Watercourse was Impacted, Describe Fully.\*

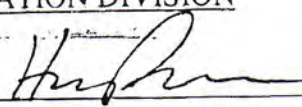
**Describe Cause of Problem and Remedial Action Taken.\***

On July 17, 2015 at 10:39 AM Rudy Zuniga Devon Energy Production Foreman received a call from Jim Huerta Devon Energy Assistant Production Foreman notifying him that he received a call from Dwayne Concho Lease Operator that there was a leak by the Serene Sisters 25 Fed 4 Battery. Rudy drove to location and found the leak about 1/4 mile from the battery right next to the lease road into the pasture. From what Rudy observed the hole looked like the line had been shot causing the leak of 6 bbls of produced water.

**Describe Area Affected and Cleanup Action Taken.\***

Rudy isolated the line so no more fluid could get out. None of the 6 bbls was recovered. This will have to be assessed for clean up

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> Corina Moya	<b>OIL CONSERVATION DIVISION</b>	
<b>Printed Name:</b> Corina Moya	<b>Approved by Environmental Specialist:</b> 	
<b>Title:</b> Field Admin Support	<b>Approval Date:</b> 7/21/15	<b>Expiration Date:</b> N/A
<b>E-mail Address:</b> corina.moya@dvn.com	<b>Conditions of Approval:</b>	
<b>Date:</b> 7/20/2015 <b>Phone:</b> 575.746.5559	<b>Remediation per O.C.D. Rules &amp; Guidelines Attached</b> <input type="checkbox"/> <b>SUBMIT REMEDIATION PROPOSAL NO</b> <b>LATER THAN:</b> 8/22/15	

\* Attach Additional Sheets If Necessary

2RP-3141





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

No records found.

**PLSS Search:**

Section(s): 25

Township: 18S

Range: 31E

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.

1/30/16 12:43 PM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER



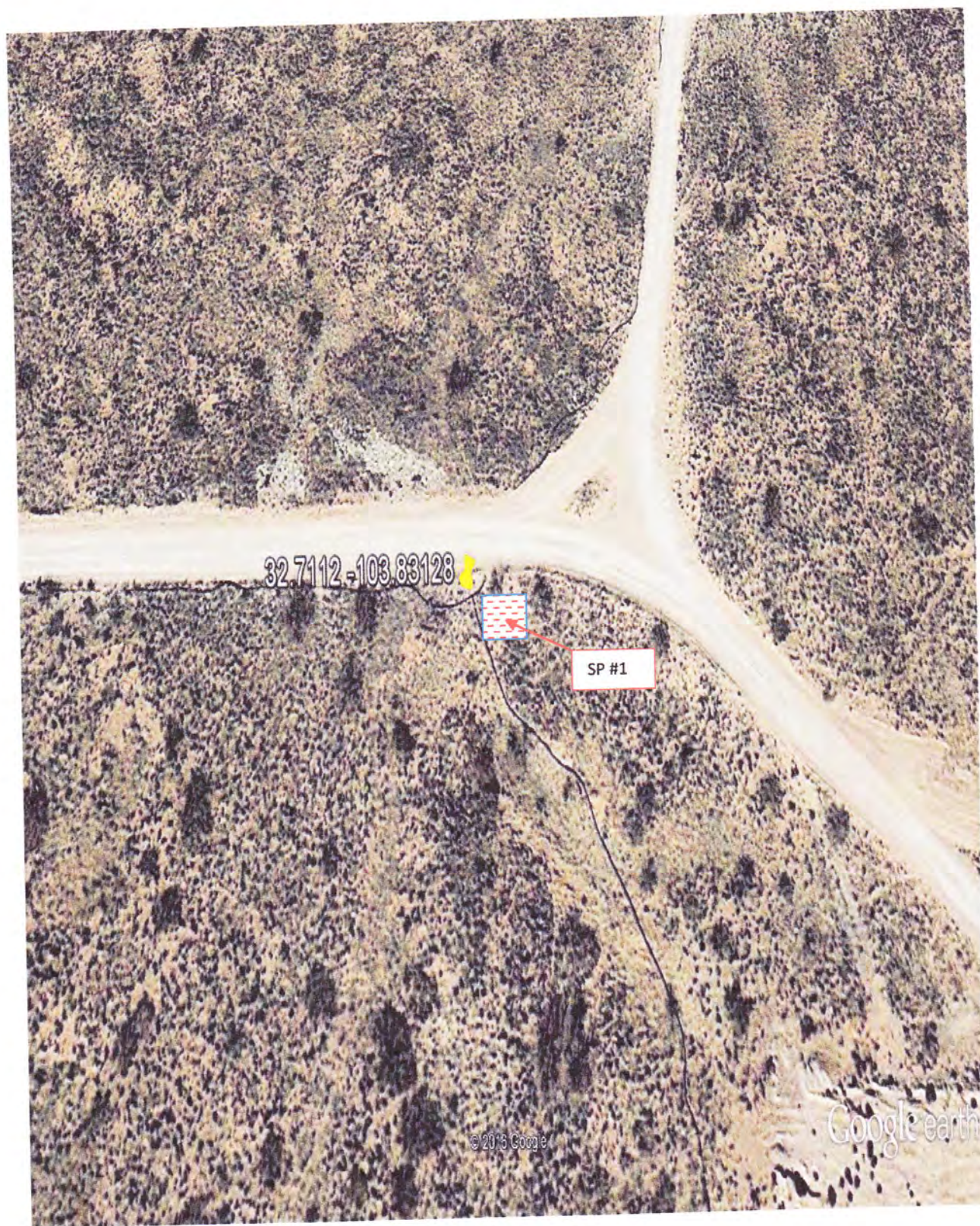
Devon Energy Production Company-Serene Sisters 25 Fed #4



Point of Release is 570 yards west/southwest of well site near lease road intersection.



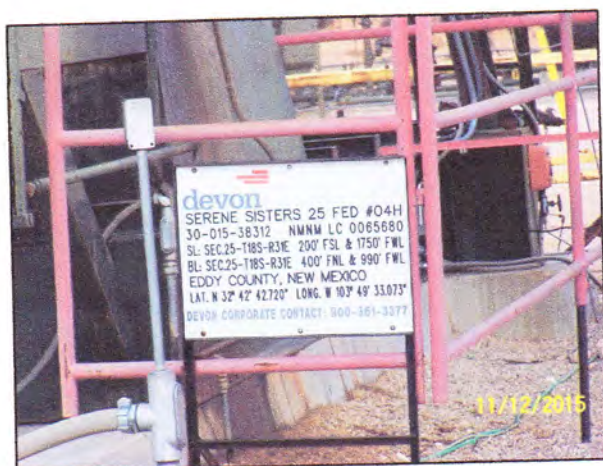
Devon Energy Production Company-Serene Sisters 25 Fed #4



Impacted area is approximately 30' x 30'.



**Devon Energy Production-Serene Sisters 25 Fed #4**





## Analytical Summary

**Operator:** Devon Energy Production Company

**Location:** Serene Sisters 25 Fed #4

Summary of Remediation Sampling Analytical Results as Parts Per Million (PPM)

### BTEX

Sample Point	Depth	LAB
SP #1	1' BGS	ND
	5' BGS	ND
	7' BGS	ND

### Chlorides

Sample Point	Depth	LAB	Field Test
SP #1	1' BGS	288	285
	3' BGS		237
	5' BGS	9200	4715
	7' BGS	12900	11371
	9' BGS		8374
	11' BGS		6475
	13' BGS	8480	7659
	16' BGS	3480	5970
	17' BGS		1587
	19' BGS	3280	2281
	20' BGS	1390	840
	21' BGS	224	ND

Hand Auger Refusal/Backhoe was brought in

Back-hoe Bucket refusal/Excavator was brought in for completion

### TPH

Sample Point	Depth	LAB
SP #1	1' BGS	36
	5' BGS	ND
	7" BGS	ND



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

January 25, 2016

VERNON BLACK

Hungry Horse Environmental

P.O. Box 1058

Hobbs, NM 88240

RE: SERENE SISTERS

Enclosed are the results of analyses for samples received by the laboratory on 01/19/16 14:53.

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,

Caley 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: 01/19/2016  
 Reported: 01/25/2016  
 Project Name: SERENE SISTERS  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 01/19/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Amanda Ponce

**Sample ID: SP1 @ 1' (H600111-01)**

BTX 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	01/21/2016	ND	1.83	91.4	2.00	10.6	
<b>Toluene*</b>	<b>0.051</b>	0.050	01/21/2016	ND	1.80	89.8	2.00	8.52	
Ethylbenzene*	<0.050	0.050	01/21/2016	ND	1.65	82.3	2.00	7.09	
Total Xylenes*	<0.150	0.150	01/21/2016	ND	5.11	85.1	6.00	6.58	
Total BTX	<0.300	0.300	01/21/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 113 % 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	01/20/2016	ND	448	112	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	01/20/2016	ND	191	95.3	200	1.65	
<b>DRO &gt;C10-C28</b>	<b>36.3</b>	10.0	01/20/2016	ND	197	98.7	200	9.16	

Surrogate: 1-Chlorooctane 94.8 % 35-147

Surrogate: 1-Chlorooctadecane 94.2 % 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: 01/19/2016  
 Reported: 01/25/2016  
 Project Name: SERENE SISTERS  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 01/19/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Amanda Ponce

**Sample ID: SP1 @ 5' (H600111-02)**

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	01/21/2016	ND	1.83	91.4	2.00	10.6	
<b>Toluene*</b>	<b>0.055</b>	0.050	01/21/2016	ND	1.80	89.8	2.00	8.52	
Ethylbenzene*	<0.050	0.050	01/21/2016	ND	1.65	82.3	2.00	7.09	
Total Xylenes*	<0.150	0.150	01/21/2016	ND	5.11	85.1	6.00	6.58	
Total BTEX	<0.300	0.300	01/21/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 118 % 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>9200</b>	16.0	01/20/2016	ND	448	112	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	01/20/2016	ND	191	95.3	200	1.65	
DRO >C10-C28	<10.0	10.0	01/20/2016	ND	197	98.7	200	9.16	

Surrogate: 1-Chlorooctane 79.6 % 35-147

Surrogate: 1-Chlorooctadecane 86.9 % 28-171

**Cardinal Laboratories**

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 01/19/2016  
 Reported: 01/25/2016  
 Project Name: SERENE SISTERS  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 01/19/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Amanda Ponce

**Sample ID: SP1 @ 7' (H600111-03)**

BTX 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	01/21/2016	ND	1.83	91.4	2.00	10.6	
<b>Toluene*</b>	<b>0.054</b>	0.050	01/21/2016	ND	1.80	89.8	2.00	8.52	
Ethylbenzene*	<0.050	0.050	01/21/2016	ND	1.65	82.3	2.00	7.09	
Total Xylenes*	<0.150	0.150	01/21/2016	ND	5.11	85.1	6.00	6.58	
Total BTEX	<0.300	0.300	01/21/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 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>12900</b>	16.0	01/20/2016	ND	400	100	400	3.92	

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	01/20/2016	ND	191	95.3	200	1.65	
DRO >C10-C28	<10.0	10.0	01/20/2016	ND	197	98.7	200	9.16	

Surrogate: 1-Chlorooctane 78.6 % 35-147

Surrogate: 1-Chlorooctadecane 84.3 % 28-171

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**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

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





# CARDINAL

## Laboratories

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

<b>Company Name:</b> Hungry Horse, LLC <b>Project Manager:</b> Vernon K. Black <b>Address:</b> PO Box 1058 <b>City:</b> Hobbs <b>State:</b> NM <b>Zip:</b> 88241 <b>Phone #:</b> 575-631-2253 <b>Fax #:</b> 575 391-4585 <b>Project #:</b> <b>Project Owner:</b> Devon <b>Project Name:</b> Serene Sisters <b>Project Location:</b> Serene Sisters Eddie County <b>Sampler Name:</b> Vernon K. Black				<b>BILL TO</b> <b>P.O. #:</b> <b>Company:</b> <b>Attn:</b> <b>Address:</b> <b>City:</b> <b>State:</b> <b>Zip:</b> <b>Phone #:</b> <b>Fax #:</b>				<b>ANALYSIS REQUEST</b>																
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING																
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER												
H000111	Point of Balance																							
1	SPI 1'	G											Time DATE 9:00 19 Jan 16											
2	SPI 5'	G											9:50											
3	SPI 7'	G											10:00											
													Chlorides											
													Btex											
													TPH											

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<b>Relinquished By:</b>  <b>Relinquished By:</b>	<b>Date:</b> 1-19-16 <b>Time:</b> 2:53 pm <b>Date:</b> <b>Time:</b>	<b>Received By:</b>  <b>Received By:</b>	<b>Phone Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>REMARKS:</b>	<b>Add'l Phone #:</b> <b>Add'l Fax #:</b>	
<b>Delivered By: (Circle One)</b> Sampler - UPS - Bus - Other: 21.8°C #54		<b>Sample Condition</b> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>CHECKED BY:</b> (Initials)	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



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

January 29, 2016

VERNON BLACK

Hungry Horse Environmental

P.O. Box 1058

Hobbs, NM 88240

RE: SERENE SISTERS

Enclosed are the results of analyses for samples received by the laboratory on 01/28/16 17:07.

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 black ink that reads "Coley D. Keene". The signature is written in a cursive, flowing style.

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: 01/28/2016  
 Reported: 01/29/2016  
 Project Name: SERENE SISTERS  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 01/28/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 13' (H600214-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8480	16.0	01/29/2016	ND	416	104	400	3.92	

**Sample ID: SP 1 16' (H600214-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3480	16.0	01/29/2016	ND	416	104	400	3.92	

**Sample ID: SP 1 19' (H600214-03)**

Chloride, SM4500Cl-B		Analyzed By: AP							
	mg/kg								
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3280	16.0	01/29/2016	ND	416	104	400	3.92	

**Sample ID: SP 1 20' (H600214-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1390	16.0	01/29/2016	ND	416	104	400	3.92	

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 01/28/2016  
 Reported: 01/29/2016  
 Project Name: SERENE SISTERS  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY, NM

Sampling Date: 01/28/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 21' (H600214-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	01/29/2016	ND	416	104	400	3.92	

\*=Accredited Analyte

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Caley D. Keene, Lab Director/Quality Manager



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**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**

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A handwritten signature in cursive script, appearing to read "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

BILL TO				ANALYSIS REQUEST																	
Company Name: <u>Hungry Horse, LLC</u>				P.O. #:																	
Project Manager: <u>Vernon K. Black</u>				Company:																	
Address: <u>PO Box 1058</u>				Attn:																	
City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88241</u>				Address:																	
Phone #: <u>575-631-2253</u> Fax #: <u>575-391-4585</u>				City:																	
Project #: _____ Project Owner: <u>Dee W</u>				State: _____ Zip: _____																	
Project Name: <u>Serene Sisters 25 Fed #4</u>				Phone #: _____																	
Project Location: <u>Eddie</u>				Fax #: _____																	
Sampler Name: <u>Vernon K Black</u>																					
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING		Chlorides											
Lab I.D.		Sample I.D.																			
1-28-16		SP1 13'		GROUNDWATER																	
2		SP1 16'		WASTEWATER																	
3		SP1 19'		SOIL																	
4		SP1 20'		OIL						DATE		TIME									
5		SP1 21'		SLUDGE						1-28-16		1:00									
				OTHER						1:10		1:40									
				ACID/BASE						2:15		3:00									
				ICE / COOL																	
				OTHER																	

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Relinquished By: <u>[Signature]</u>	Date: <u>1-28-16</u>	Received By: <u>Jodi Benson</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #: _____
Relinquished By: _____	Time: <u>5:01</u>	Received By: _____	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #: _____
Delivered By: (Circle One)	Date: _____	Time: _____	REMARKS:	
Sampler - UPS - Bus - Other: _____	Sample Condition	CHECKED BY: <u>[Signature]</u>		
	Cool Intact	(Initials)		
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



From: [Tucker, Shelly](#)  
To: [Patterson, Heather, EMNRD](#)  
Cc: [Vernon Black](#); [jamos@blm.gov](mailto:jamos@blm.gov); [Bratcher, Mike, EMNRD](#); [Fulks, Brett](#)  
Subject: Re: Devon Serene Sisters 25 Fed #1 Work Plan  
Date: Thursday, March 03, 2016 9:18:43 AM

---

BLM concurs with the NMOCD. The area is also cleared for Arch.

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

*Shelly J Tucker*

Environmental Protection Specialist  
Bureau of Land Management

620 E. Greene St  
Carlsbad, NM 88220

575.234.5905 - Direct  
575.361.0084 - Cellular

[stucker@blm.gov](mailto:stucker@blm.gov)



The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. In such an event that the location does not revegetate, or future issues with contaminants are encountered, the operator will be asked to address the issues until the contaminant issues are fully mitigated and the location is successfully reclaimed. In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state or local laws/regulations.

**Confidentiality Warning:** This message along with any attachments are intended only for use of the individual or entity to which it is addressed and may contain information that is privileged or confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient or the employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately.

On Wed, Mar 2, 2016 at 12:17 PM, Patterson, Heather, EMNRD

<[Heather.Patterson@state.nm.us](mailto:Heather.Patterson@state.nm.us)> wrote:

RE: Devon Energy \* Serene Sisters 25 Fed #4 \* 30-015-38312 \* 2RP-3141

Vernon,

Your work plan for the above listed release is approved with the following conditions:

The OCD will require a 4 foot excavation. You may use the top 3 feet as backfill as outlined in your work plan, but the zone between 3 and 4 feet will either have to be hauled off, or a confirmation sample should be submitted showing it is clean.

Like approval by BLM is required for federal sites.

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.

Heather Patterson  
Environmental Specialist  
NMOCD District II  
Office (575)748-1283 ext.101  
Cell (575)703-0228

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

From: Vernon Black [mailto:[vblack@hungry-horse.com](mailto:vblack@hungry-horse.com)]  
Sent: Wednesday, March 02, 2016 8:49 AM  
To: Patterson, Heather, EMNRD; Jim Amos ([jamos@blm.gov](mailto:jamos@blm.gov))  
Subject: Devon Serene Sisters 25 Fed #1 Work Plan

Good Morning Heather and Jim,

Please see the attached work plan packet for the above referenced Devon location. Your feedback will be greatly appreciated.

Thanks in advance for your help,  
Vernon

**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 187099

CONDITIONS

Operator: RAYBAW Operating, LLC 2626 Cole Avenue Dallas, TX 75204	OGRID: 330220
	Action Number: 187099
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	2/16/2023