



EAST VACUUM (GSA) UNIT #006

nGRL0916233108

PREPARED BY SAPEC-ECO, LLC.  
PREPARED FOR MAVERICK PERMIAN, LLC.

## **Proposed Sampling and Remediation Work Plan**

May 14, 2025



Attn: NMOCD District 1  
 1625 N French Dr.  
 Hobbs, NM 88240

Re: Proposed Sampling and Remediation Work Plan  
 NMOCD Incident Number: **nGRL0916233108**  
 East Vacuum (GSA) Unit #006 API #30-025-26390  
 Unit D, Section 34, Township 17S, Range 35E 166 FNL 1155 FWL Lea County, NM  
 GPS Coordinates: Latitude 32.7981606 Longitude -103.4503326 NAD83

Sapec-Eco (Sapec) has been contracted by Maverick Permian, LLC. (Maverick) to review and research this historic incident then prepare this proposed sampling and remediation work plan for a drilling mud/fluid release that occurred at the East Vacuum (GSAS) Unit #006 (Site). This incident was assigned Incident ID nGRL0916233108 by the New Mexico Oil Conservation Division (NMOCD).

### ***Release Information – nGRL0916233108***

The initial Form C-141 was submitted on June 5, 2009 (Appendix A) and stated that “Well work being done, 5/27/2009 well was shut in over night with 14# mud on back side 5.5 casing failure resulted in surface casing 135/8 over pressure and it too failed. Resulting in release to ground of brine and water based mud. Affected area consisted of 130'x265'x.75" calculated volume of 23.53bbbls. On Monday 6-01-2009 an additional 17bbbls was picked up from location resulting in release volume of 41 bbbls. Spill site will be delineated and remediated in accordance with NMOCD guidelines.” This initial Form C-141 was approved by the NMOCD on June 8, 2009.

### ***Site Characterization***

This Site is in Lea County, NM, approximately eleven (11) miles southwest of Lovington, NM. The wellhead and release area are in Unit D, Section 34, Township 17S, Range 35E, 32.7981606 degrees latitude and -103.4503326 degrees longitude. A Location Map is included for reference in Figure 5.

The New Mexico Bureau of Geology and Mineral Resources shows the geology at this Site includes Ogallala Formation. Alluvial and eolian deposits, and petrocalcic soils of the southern High Plains. Locally includes Qoa. A Geologic Unit Map can be found in Appendix C.

The soil type present at the Site is Kimbrough-Lea complex, dry, 0 to 3 percent slopes. The drainage class for this soil type is well drained. Soil type information is according to the United States Department of Agriculture Natural Resources Conservation Service soil survey. The Soil Survey and a Soil Map can be referenced in Appendix C. Reference Figure 4 for a Topographic Map.

The Site resides in a low karst zone and is approximately 26.98 miles away from the nearest medium karst zone. Figure 3 refers to the Karst Map.

According to the New Mexico Office of the State Engineer, depth to the nearest groundwater in this area is 70 feet below grade surface (bgs). This information is recorded by L-13479-POD2 which is situated approximately 0.23 miles away from the Site. This information is from 2014. The United States Geological Survey (USGS) offers the site USGS 324734103264601 17S.35E.34.114223 which shows depth to the nearest groundwater is 63 feet bgs. The latest gauge of this site was conducted in 1996, and it is located approximately 0.12 miles from the Site.

The nearest surface water feature is an Unnamed Pond, and it is located approximately 3.26 miles to the east. The U.S. Fish and Wildlife Service National Wetlands Inventory shows the nearest wetland to be a Freshwater Pond approximately 0.25 miles east. According to Fema's National Flood Hazard Layer search, the Site is situated in Zone D – Area of Undetermined Flood Hazard and is greater than 5 miles away from the nearest flood hazard zone. See Appendix B for referenced Water Surveys and Water-Related Maps.

Readily available data were reviewed to determine if the Site lies within biologically sensitive areas. The U.S. Fish and Wildlife Services (USFWS) Information for Planning and Consultation (IPaC) and the New Mexico Department of Game and Fish (NMDGF) Environmental Review Tool (ERT) were queried to determine if sensitive wildlife or plant areas are present

at the Site. The Site is not identified to be within biologically sensitive areas where remediation/reclamation would impact sensitive plant or wildlife habitats. A Special Status Plant/Wildlife Map is included in Figure 2.

The remediation area at the Site is in previously disturbed and undisturbed areas developed for oil and gas extraction; therefore, a cultural resource survey will be required at the Site for planned remediation activities. The requirements of the Cultural Properties Protection (CCP) Rule will be followed.

### ***Assessment and Delineation Activities***

"At the request of ConocoPhillips, Tetra Tech personnel conducted a records review and a visual Site inspection on June 2, 2020 at the release area to evaluate current conditions at the Site. The formerly impacted area was identified from the description in the C-141. Photographic documentation from the visual Site inspection is included as Attachment C. A list of observations made during the records review and the visual Site inspection follow:

- Review of available aerial imagery revealed no evidence of impact in the reported release location.
- No surficial staining was noted in the reported release area footprint during the June 2020 visual Site inspection."

On September 21, 2020, ConocoPhillips submitted a Closure Letter Report requesting closure approval of this incident. The NMOCD denied this report on April 17, 2023. This documentation can be referenced in Appendix E.

### ***Proposed Sampling & Remediation Activities***

In response to the previously denied report, Maverick would like to propose the following:

- The area of concern measures approximately 17,753 square feet and is on the pad surface and in the pasture.
- Collect discrete samples from within and around the edges of the release area to evaluate the presence of contaminants. Eighty-five (85) samples will be collected from 17 different sample points within the release area from depths of surface, 1', 2', 3', and 4' bgs. Forty (40) samples will be collected from 8 different sample points around the edges of the release area from depths of surface, 1', 2', 3', and 4' bgs.
- All samples will be put on ice, prepared for delivery, then delivered to Envirotech Analytical Laboratories where they will be analyzed for all the constituents listed in Table 1 19.15.29.12 NMAC.
- A 48-hour sampling notification will be issued to the NMOCD for these sampling events. A variance request is included below for permission to use the delineation samples as confirmation samples depending on the sample results of the soil. A Proposed Sample Map can be found in Figure 1.
- If any samples do not verify delineation, then the "step-out" method will be used for horizontal delineation samples until sample results can confirm delineation. Also, for vertical delineation samples, any samples not verifying delineation will be advanced deeper until sample results can confirm delineation.
- Sample results from the pasture that are over the regulatory limits of the less than 50-foot to groundwater section of Table 1 will be measured for total area and affected volume then removed via mechanical excavation means. The contaminated soil will be hauled to an NMOCD-approved disposal facility and clean, like material will be brought to the Site for backfilling the excavated area.
- Sample results from the pad area that are over the regulatory limits of the 51-100-foot to groundwater section of Table 1 will be measured for total area and affected volume then removed via mechanical excavation means. The contaminated soil will be hauled to an NMOCD-approved disposal facility and clean, like material will be brought to the Site for backfilling the excavated area.
- Once all sample results confirm delineation is complete, and contamination isn't present or has been removed, a remediation closure report will be drafted and submitted to the NMOCD Pay Portal for review/approval.

### ***Variance Request***

Maverick would like to respectfully request to use the delineation samples as confirmation samples in the event the laboratory samples results confirm that no contamination is present at any or all of the sample points. Maverick will diligently remediate all contaminants found in the pasture that have reported results being over the regulatory limits of the less than 50-foot depth to groundwater section of Table 1 19.15.29.12 NMAC. Chlorides should be no more than 600 mg/kg. TPH (GRO+DRO+ORO) should be no more than 100 mg/kg. BTEX should be no more than 50 mg/kg. Benzene should be no more than 10 mg/kg. Maverick will diligently remediate all contaminants found on the pad surface that have reported results being over the regulatory limits of the 51-100-foot depth to groundwater section of Table 1 19.15.29.12 NMAC. Chlorides should be no more than 10,000 mg/kg. TPH (GRO+DRO+ORO) should be no more than 2,500 mg/kg. GRO+DRO should be no more than 1,000 mg/kg. BTEX should be no more than 50 mg/kg. Benzene should be no more than 10 mg/kg.



Once official verification is received that contaminants are not present, or have been successfully removed from all areas within and around the Site, a remediation closure report will be drafted and submitted for approval. During this time, reclamation and revegetation activities of the pasture will commence. After all activities have been performed and documented, a final reclamation and revegetation report will be drafted and submitted for approval.

### ***Request for Proposed Sampling & Remediation Work Plan Approval***

Maverick requests that this proposed sampling & remediation work plan for incident ID nGRL0916233108 be approved. All rules and regulations set forth in 19.15.29.12 NMAC have been complied with.

For questions or additional information, please reach out to:

Maverick Permian – Bryce Wagoner – [Bryce.Wagoner@mavresources.com](mailto:Bryce.Wagoner@mavresources.com) – (928) 241-1862

Sapec-Eco, LLC – Tom Bynum – [tombynum@sapec-eco.com](mailto:tombynum@sapec-eco.com) – (580) 748-1613

### ***Attachments***

#### **Figures:**

- 1- Proposed Sample Map
- 2- Special Status Plant/Wildlife Map
- 3- Karst Map
- 4- Topographic Map
- 5- Location Map

#### **Appendices:**

- Appendix A – Initial Form C-141
- Appendix B – Water Surveys & Water-Related Maps
- Appendix C – Soil Surveys, Soil Map, & Geologic Unit Map
- Appendix D – Photographic Documentation
- Appendix E – Closure Letter Report



***Figures:***

**Proposed Sample Map**

**Special Status Plant/Wildlife Map**

**Karst Map**

**Topographic Map**

**Location Map**

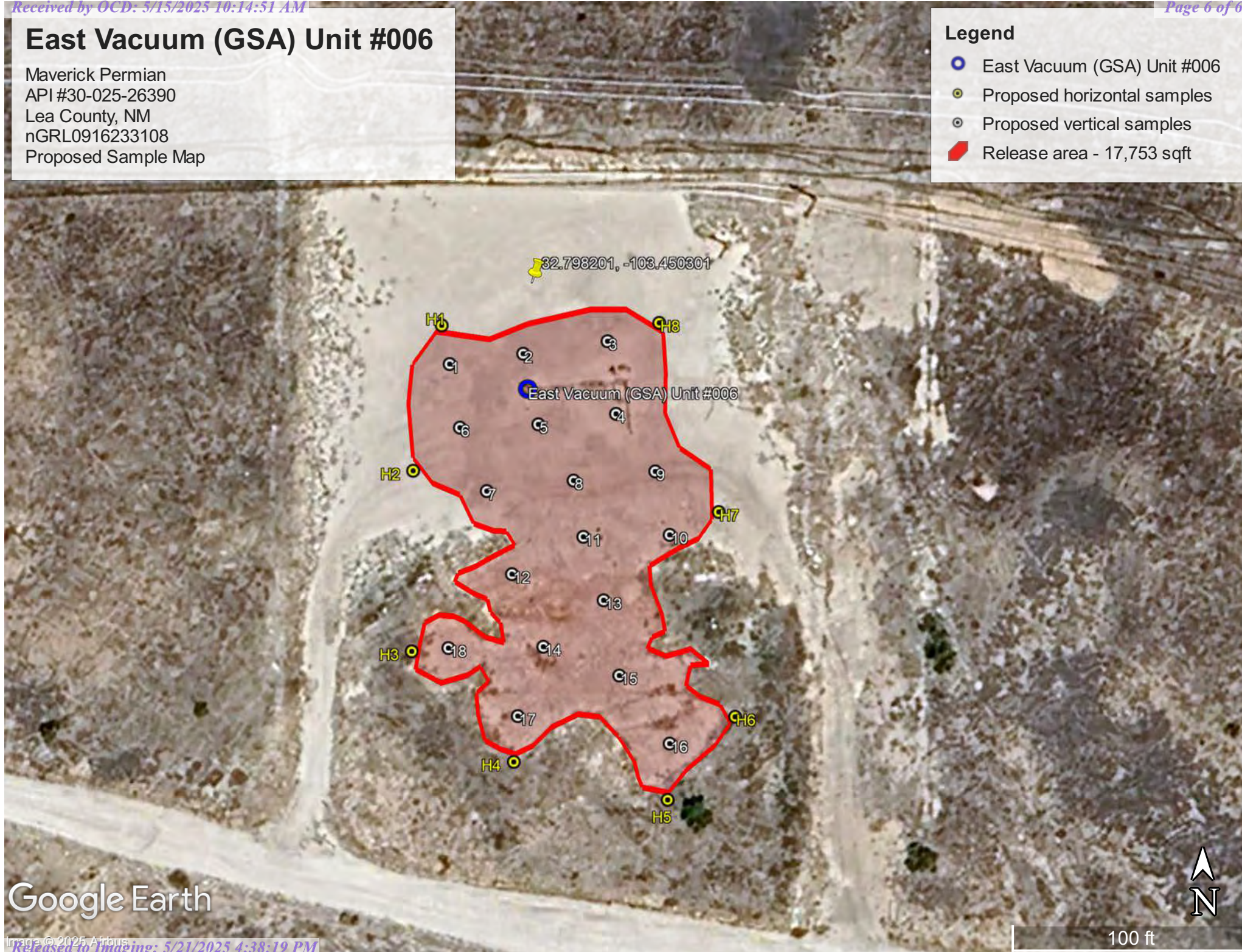


## East Vacuum (GSA) Unit #006

Maverick Permian  
API #30-025-26390  
Lea County, NM  
nGRL0916233108  
Proposed Sample Map

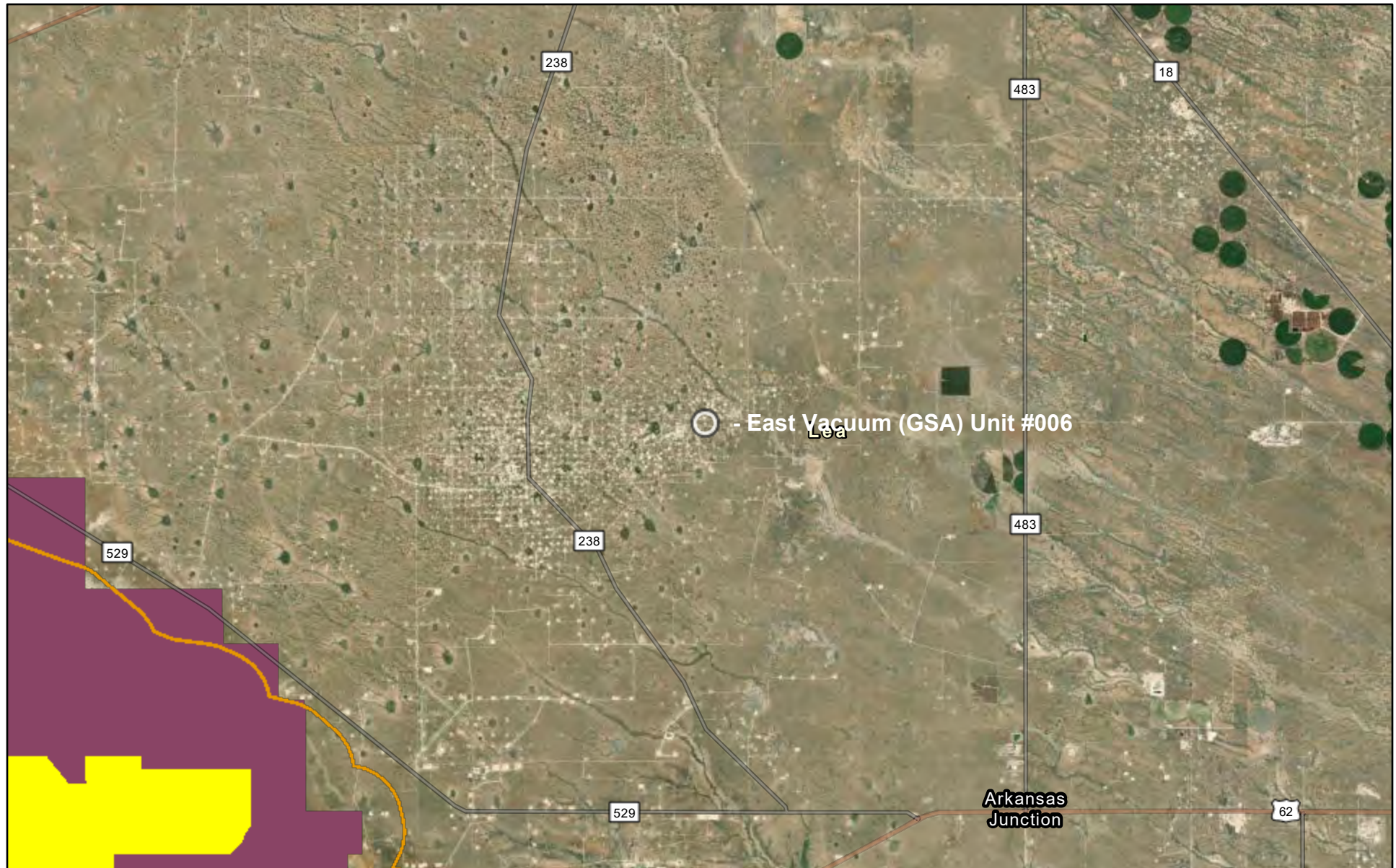
### Legend

- East Vacuum (GSA) Unit #006
- Proposed horizontal samples
- Proposed vertical samples
- Release area - 17,753 sqft





## Special Status Plant/Wildlife Map

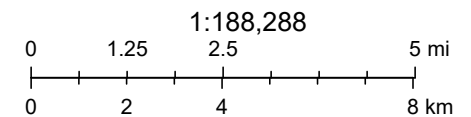


5/5/2025

- Dunes Sage Brush Lizard Habitat
- Lesser Prairie Chicken Habitat
- Habitat Evaluation Area
- Isolated Population Area

- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery

- Citations
- 38m Resolution Metadata






Earthstar Geographics, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community,

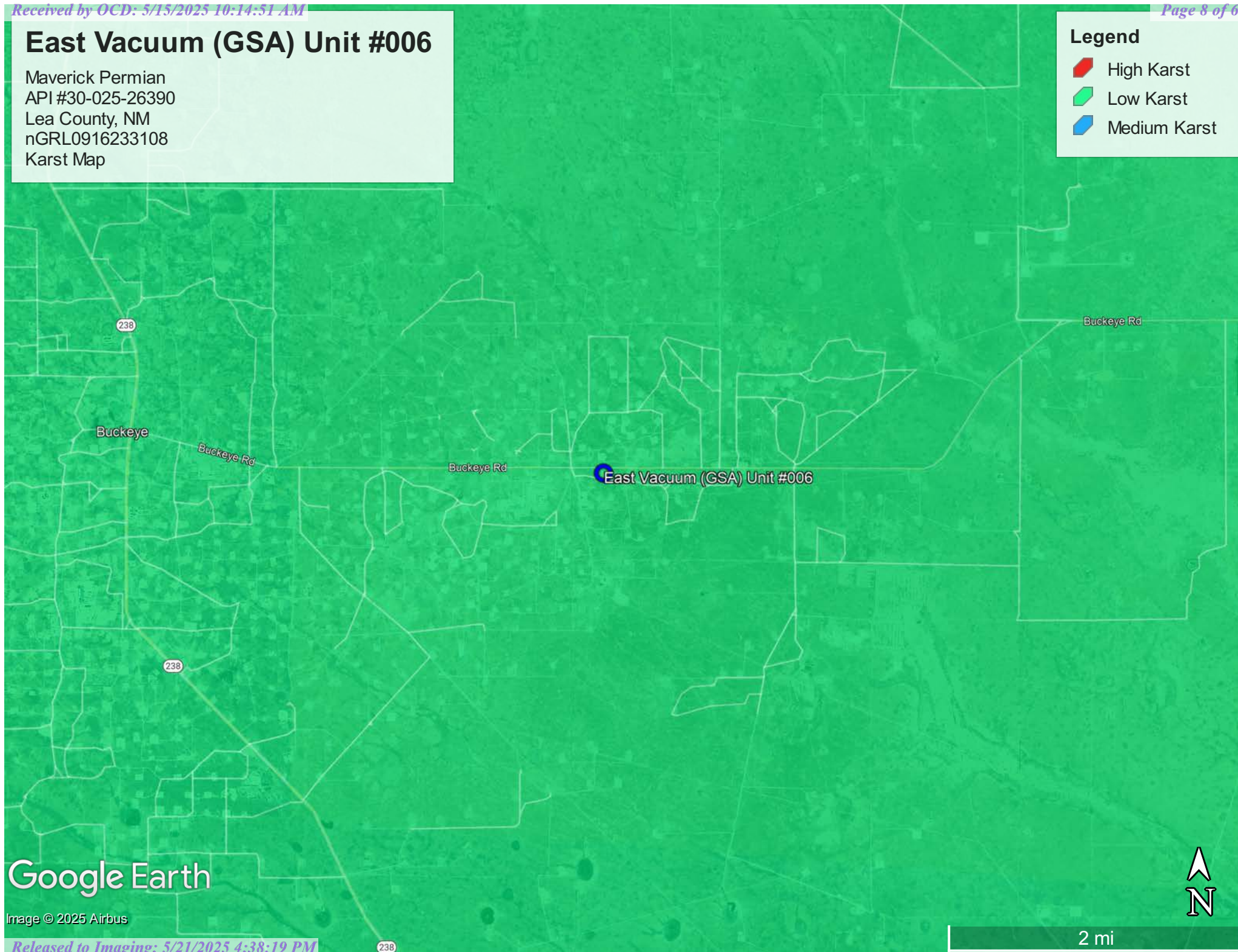


## East Vacuum (GSA) Unit #006

Maverick Permian  
API #30-025-26390  
Lea County, NM  
nGRL0916233108  
Karst Map

### Legend

-  High Karst
-  Low Karst
-  Medium Karst



Google Earth

Image © 2025 Airbus

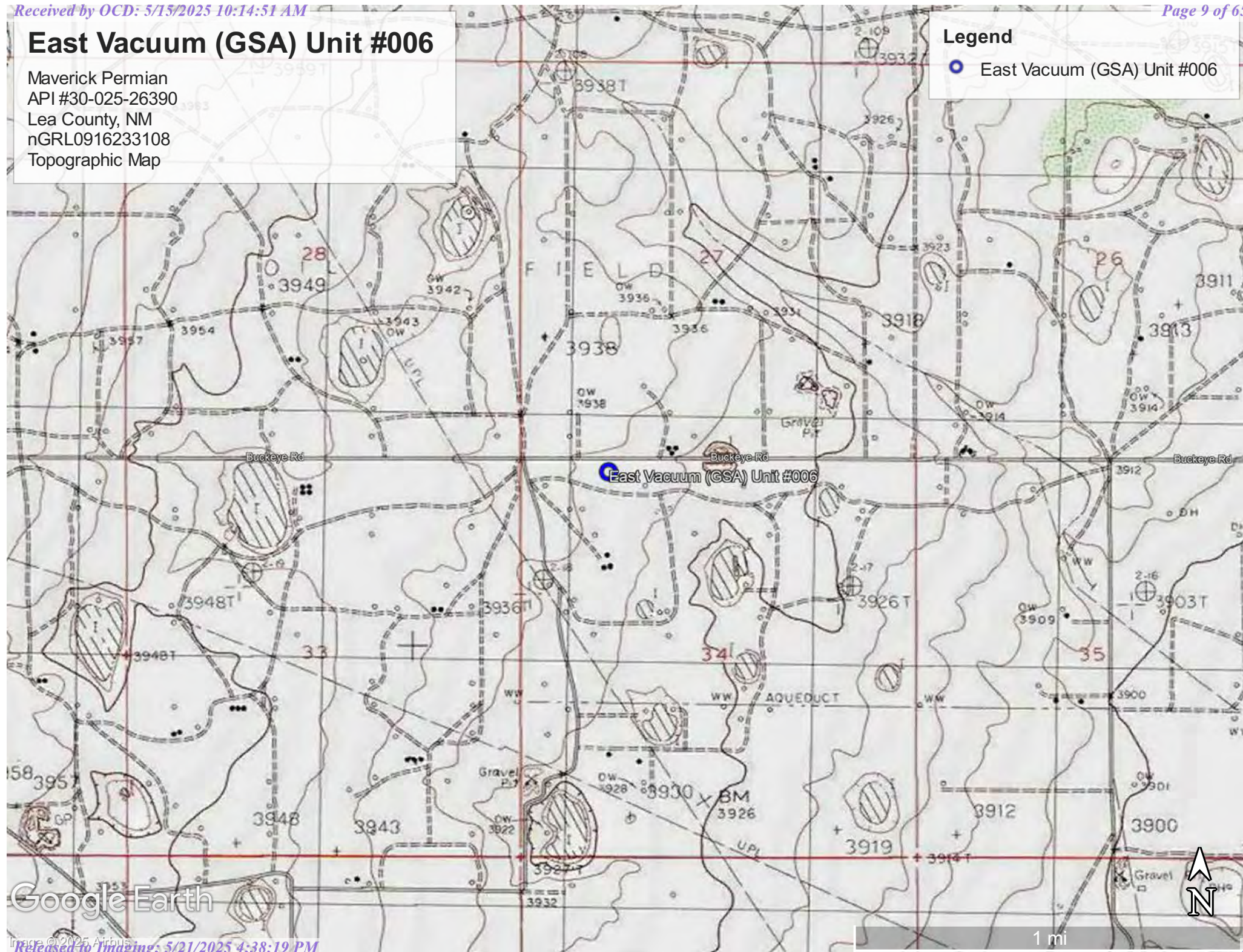


## East Vacuum (GSA) Unit #006

Maverick Permian  
API #30-025-26390  
Lea County, NM  
nGRL0916233108  
Topographic Map

### Legend

● East Vacuum (GSA) Unit #006



Google Earth

Released to Imaging: 5/21/2025 4:38:19 PM



## East Vacuum (GSA) Unit #006

Maverick Permian  
API #30-025-26390  
Lea County, NM  
nGRL0916233108  
Location Map

### Legend

- East Vacuum (GSA) Unit #006

Google Earth

Image © 2025 Airbus  
Released to Imaging: 5/21/2025 4:38:19 PM

9 mi







**Sapeco-ECO**  
**5846 E 21<sup>st</sup> Place**  
**Tulsa, OK 74114**

## ***Appendix A***

**Initial Form C-141**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

**RECEIVED** State of New Mexico  
Energy Minerals and Natural Resources  
JUN 08 2009 Oil Conservation Division  
HOBBSOCD 1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

### Release Notification and Corrective Action

#### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company ConocoPhillips Company	Contact Ron Robinson
Address 3300 North A St. Bldg 6, Midland Tx. 79705-5406	Telephone No. 575-390-4923
Facility Name EVGSAU 3456-006	Facility Type: CO2 Injection well

Surface Owner: State Of New Mexico	Mineral Owner: State Of New Mexico	Lease No. 30-025-2639000
------------------------------------	------------------------------------	--------------------------

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	34	17-S	35E	166'	FNL	1155'	FWL	LEA

Longitude -103.450311921207 Latitude 32.7981601052959

#### NATURE OF RELEASE

Type of Release: Well control fluids 10# brine/water base mud	Volume of Release: 41.53 bbls	Volume Recovered: 16 bbls
Source of Release: 5.5 production casing failure	Date and Hour of Occurrence: 5/27/2009 Unknown	Date and Hour of Discovery: 5/28/2009 @ 0630hr MST
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

WATER @ 63'

Describe Cause of Problem and Remedial Action Taken.\*

Well work being done, 5/27/2009 well was shut in over night with 14# mud on back side 5.5 casing failure resulted in surface casing 135/8 over pressure and it too failed. Resulting in release to ground of brine and water based mud.

Describe Area Affected and Cleanup Action Taken.\*

Affected area consisted of 130'x265'x.75" calculated volume of 23.53bbls. On Monday 6-01-2009 an additional 17bbls was picked up from location resulting in release volume of 41bbls. Spill site will be delineated and remediated in accordance with NMOCD guidelines.

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.

Signature: <u>Ron Robinson</u>		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Ron Robinson</b>		ENV ENGR Approved by District Supervisor: <u>Jeffrey L. King</u>	
Title: Projects HSE Lead		Approval Date: <u>06/08/09</u>	Expiration Date: <u>08/07/09</u>
E-mail Address: <u>ron.e.robinson@conocophillips.com</u>		Conditions of Approval: <u>SUBMIT FINAL</u>	
Date: <u>6-5-2009</u>	Phone: <u>575-390-4923</u>	C-141 BY <u>08/07/09</u> . Attached <input type="checkbox"/> IRP-09-6-2199	

\* Attach Additional Sheets If Necessary

FGRL0916232021





## ***Appendix B***


### **Water Surveys**

### **Water-Related Maps**

# Point of Diversion Summary

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

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
	L 13479 POD2	NE	NE	NW	34	17S	35E	645479.6	3629941.3	

\* UTM location was derived from PLSS - see [Help](#)

Driller License:	1458	Driller Company:	YELLOW JACKET DRLG. SERV. LLC
Driller Name:	RICHARD LEBLANC		
Drill Start Date:	2013-10-04	Drill Finish Date:	2013-12-13
Log File Date:	2014-04-28	PCW Rcv Date:	Source: Shallow
Pump Type:	Pipe Discharge Size:	Estimated Yield:	10
Casing Size:	2.05	Depth Well:	80
		Depth Water:	70

## Water Bearing Stratifications:

Top	Bottom	Description
70	80	Sandstone/Gravel/Conglomerate

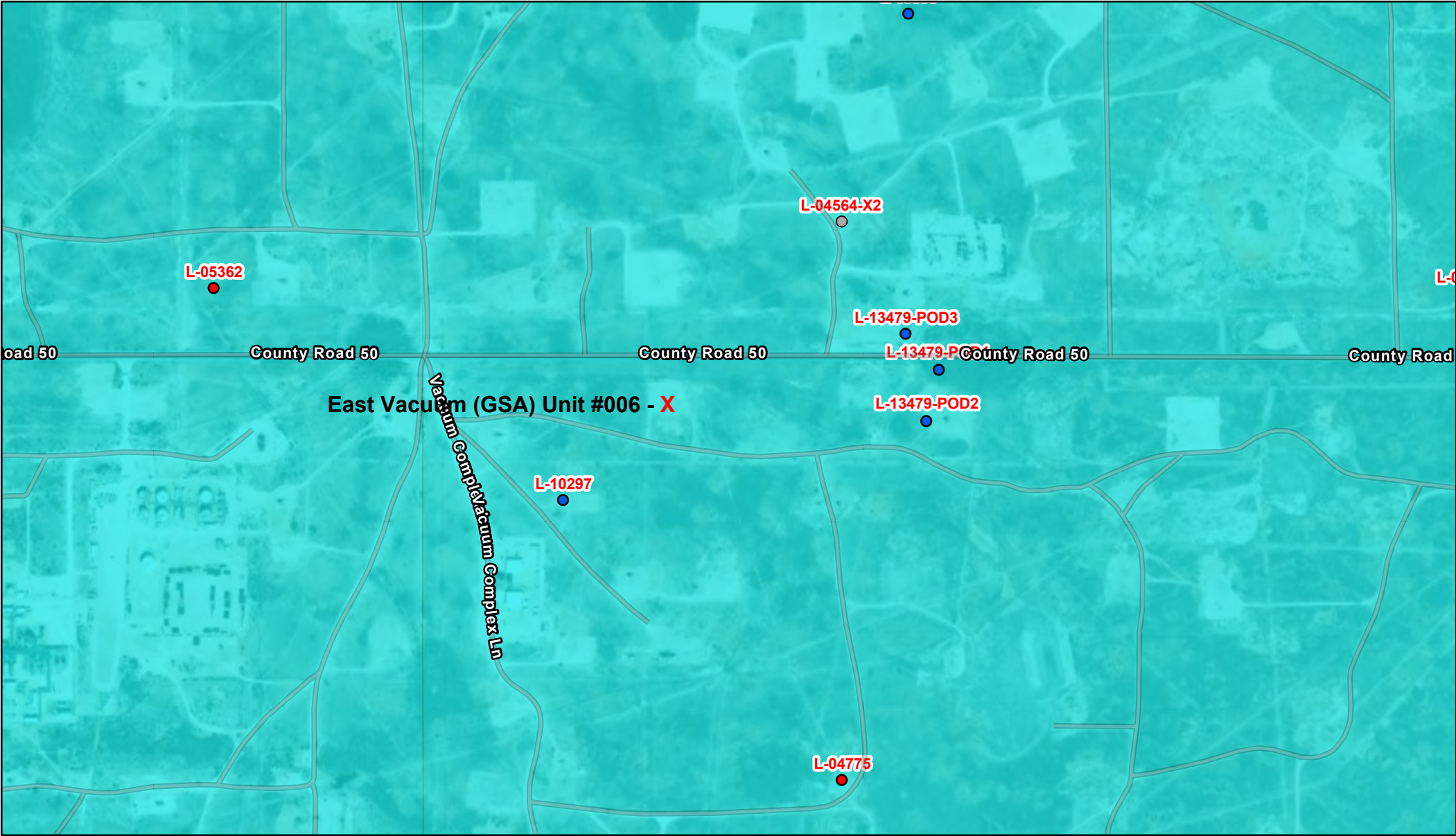
## Casing Perforations:

Top	Bottom
65	80

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.



# OSE POD Location Map



5/5/2025, 1:16:57 PM

GIS WATERS PODs

● Active

● Plugged

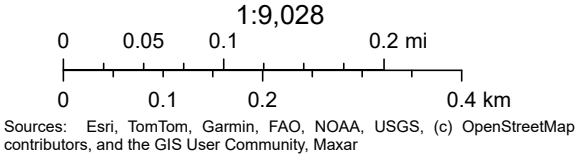
OSE District Boundary

Water Right Regulations

Artesian Plan Area

New Mexico State Trust Lands

Both Estates





[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.

Groundwater levels for the Nation

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

### Search Results -- 1 sites found

site\_no list =

- 324734103264601

Minimum number of levels = 1

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

### USGS 324734103264601 17S.35E.34.114223

Available data for this site

Groundwater: Field measurements

GO

Lea County, New Mexico

Hydrologic Unit Code 12080003

Latitude 32°47'47", Longitude 103°26'59" NAD27

Land-surface elevation 3,934.00 feet above NGVD29

This well is completed in the High Plains aquifer (N100HGHPLN) national aquifer.

This well is completed in the Ogallala Formation (121OGLL) local aquifer.

#### Output formats

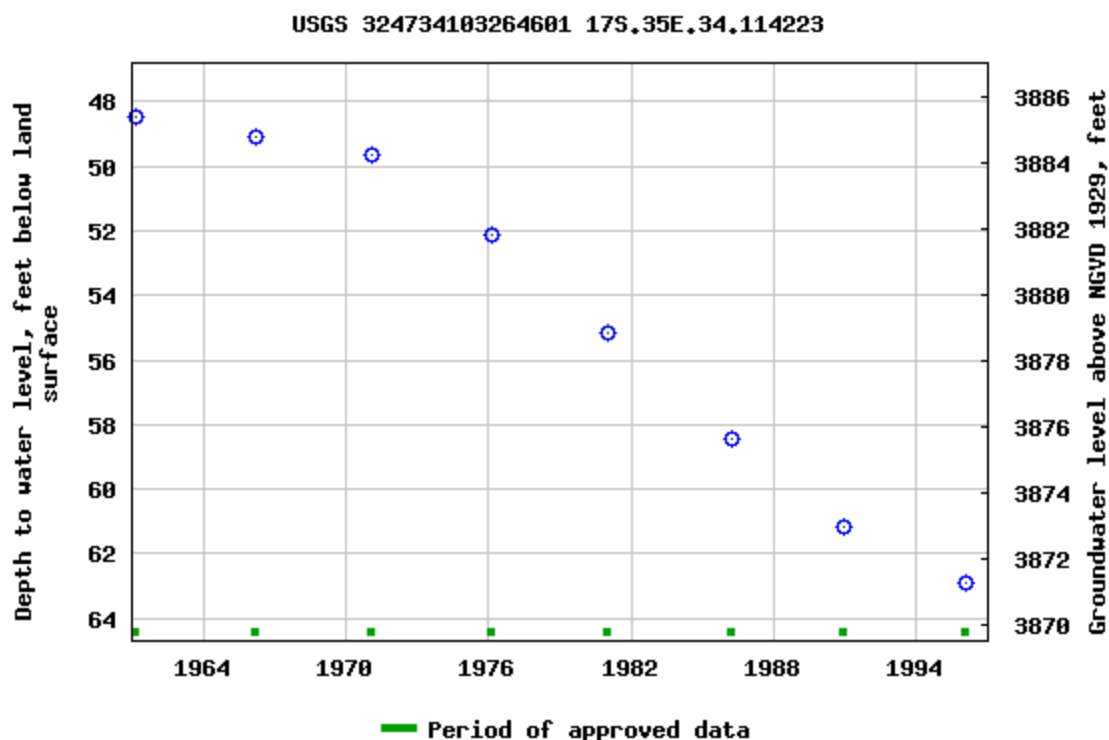
[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)





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

[Download a presentation-quality graph](#)

[Questions or Comments](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

[Subscribe for system changes](#)

[Accessibility](#)

[FOIA](#)

[Privacy](#)

[Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

**Title: Groundwater for USA: Water Levels**

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

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

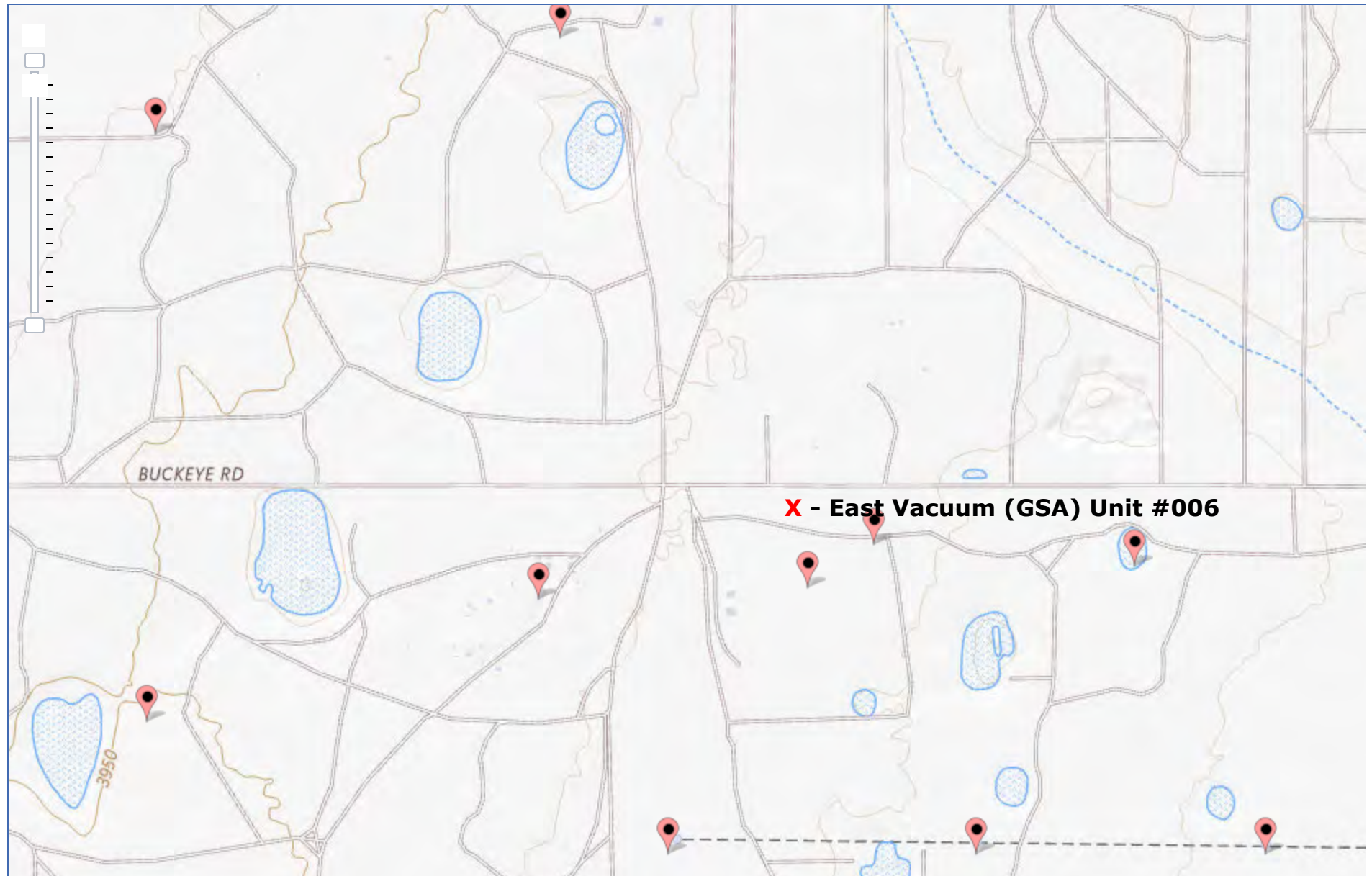
Page Last Modified: 2025-05-05 14:20:36 EDT

0.63 0.45 nadww02





## National Water Information System: Mapper







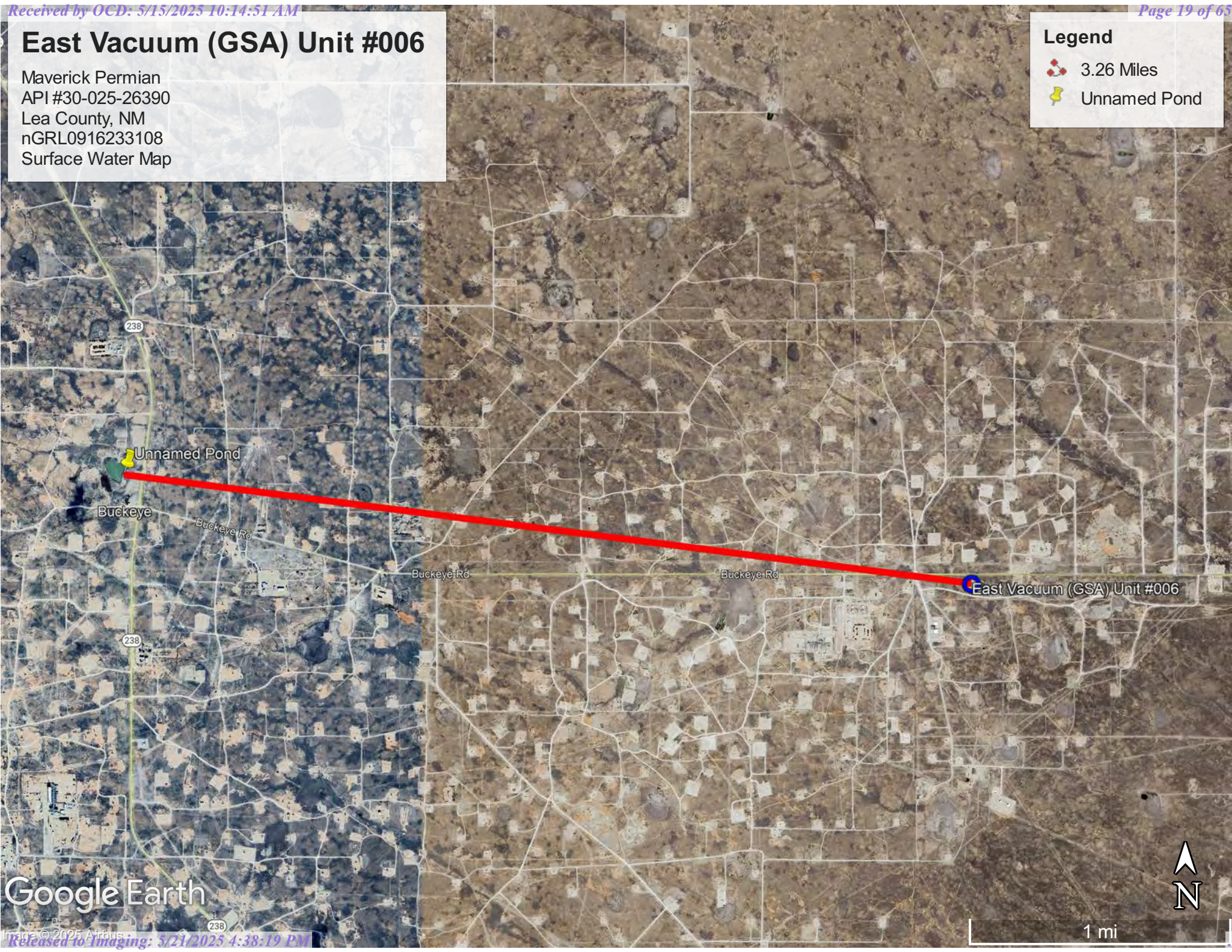
# East Vacuum (GSA) Unit #006

Maverick Permian  
API #30-025-26390  
Lea County, NM  
nGRL0916233108  
Surface Water Map

Legend

 3.26 Miles

 Unnamed Pond



Google Earth







# National Flood Hazard Layer FIRMette



103°27'20"W 32°48'8"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

103°26'42"W 32°47'38"N

Released to Imaging: 5/21/2025 4:38:19 PM

Basemap Imagery Source: USGS National Map 2023

## 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 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Profile Baseline
		Hydrographic Feature
		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 5/5/2025 at 6:23 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.



## ***Appendix C***

### **Soil Surveys**

### **Soil Map**

### **Geologic Unit Map**



Map Unit Description: Kimbrough-Lea complex, dry, 0 to 3 percent slopes---Lea County, New Mexico

---

## Lea County, New Mexico

### KU—Kimbrough-Lea complex, dry, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2tw46

*Elevation:* 2,500 to 4,800 feet

*Mean annual precipitation:* 14 to 16 inches

*Mean annual air temperature:* 57 to 63 degrees F

*Frost-free period:* 180 to 220 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Kimbrough and similar soils:* 45 percent

*Lea and similar soils:* 25 percent

*Minor components:* 30 percent

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

#### Description of Kimbrough

##### Setting

*Landform:* Playa rims, plains

*Down-slope shape:* Convex, linear

*Across-slope shape:* Concave, linear

*Parent material:* Loamy eolian deposits derived from sedimentary rock

##### Typical profile

*A - 0 to 3 inches:* gravelly loam

*Bw - 3 to 10 inches:* loam

*Bkkm1 - 10 to 16 inches:* cemented material

*Bkkm2 - 16 to 80 inches:* cemented material

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* 4 to 18 inches to petrocalcic

*Drainage class:* Well drained

*Runoff class:* Very high

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.01 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 95 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 1.0

*Available water supply, 0 to 60 inches:* Very low (about 1.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

Map Unit Description: Kimbrough-Lea complex, dry, 0 to 3 percent slopes---Lea County, New Mexico

---

*Land capability classification (nonirrigated): 7s*  
*Hydrologic Soil Group: D*  
*Ecological site: R077DY049TX - Very Shallow 12-17" PZ*  
*Hydric soil rating: No*

## Description of Lea

### Setting

*Landform: Plains*  
*Down-slope shape: Convex*  
*Across-slope shape: Linear*  
*Parent material: Calcareous, loamy eolian deposits from the blackwater draw formation of pleistocene age over indurated caliche of pliocene age*

### Typical profile

*A - 0 to 10 inches: loam*  
*Bk - 10 to 18 inches: loam*  
*Bkk - 18 to 26 inches: gravelly fine sandy loam*  
*Bkkm - 26 to 80 inches: cemented material*

### Properties and qualities

*Slope: 0 to 3 percent*  
*Depth to restrictive feature: 22 to 30 inches to petrocalcic*  
*Drainage class: Well drained*  
*Runoff class: High*  
*Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)*  
*Depth to water table: More than 80 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Calcium carbonate, maximum content: 90 percent*  
*Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*  
*Sodium adsorption ratio, maximum: 3.0*  
*Available water supply, 0 to 60 inches: Very low (about 2.9 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 7s*  
*Hydrologic Soil Group: D*  
*Ecological site: R077DY047TX - Sandy Loam 12-17" PZ*  
*Hydric soil rating: No*

## Minor Components

### Douro

*Percent of map unit: 12 percent*  
*Landform: Plains*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Ecological site: R077DY047TX - Sandy Loam 12-17" PZ*  
*Other vegetative classification: Unnamed (G077DH000TX)*  
*Hydric soil rating: No*



Map Unit Description: Kimbrough-Lea complex, dry, 0 to 3 percent slopes---Lea County, New Mexico

---

**Kenhill**

*Percent of map unit:* 12 percent

*Landform:* Plains

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* R077DY038TX - Clay Loam 12-17" PZ

*Hydric soil rating:* No

**Spraberry**

*Percent of map unit:* 6 percent

*Landform:* Playa rims, plains

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear

*Ecological site:* R077DY049TX - Very Shallow 12-17" PZ

*Other vegetative classification:* Unnamed (G077DH000TX)

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Lea County, New Mexico

Survey Area Data: Version 21, Sep 3, 2024



Soil Map—Lea County, New Mexico



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

5/5/2025  
Page 1 of 3



## Soil Map—Lea County, New Mexico

## MAP LEGEND

## Area of Interest (AOI)

 Area of Interest (AOI)

## Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

## Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

## Water Features



Streams and Canals

## Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

## Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lea County, New Mexico

Survey Area Data: Version 21, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 7, 2020—May 12, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



Map Unit Legend



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	2.2	100.0%
Totals for Area of Interest		2.2	100.0%



## East Vacuum (GSA) Unit #006

Maverick Permian  
API #30-025-26390  
Lea County, NM  
nGRL0916233108  
Geologic Unit Map

### Legend

-  Ogallala Formation
-  Piedmont alluvial deposits

Buckeye

East Vacuum (GSA) Unit #006

Google Earth

Image © 2025 Airbus  
Released to Imaging: 5/21/2025 4:38:19 PM

4 mi

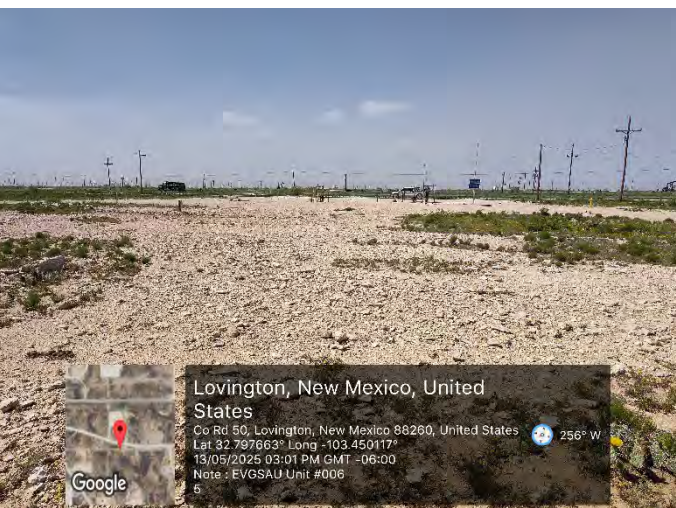
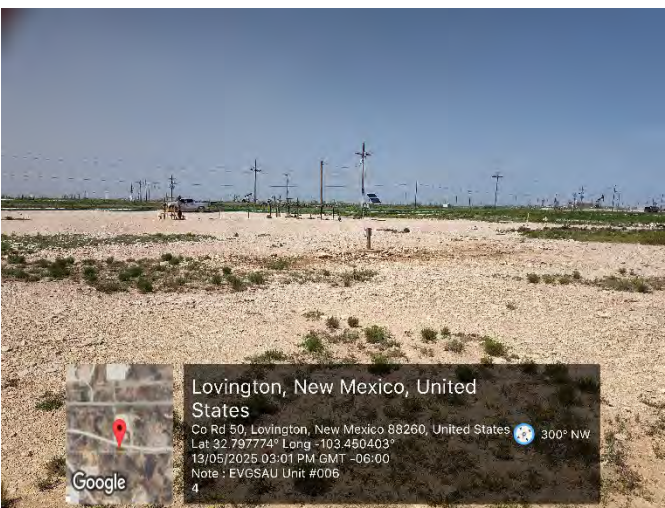
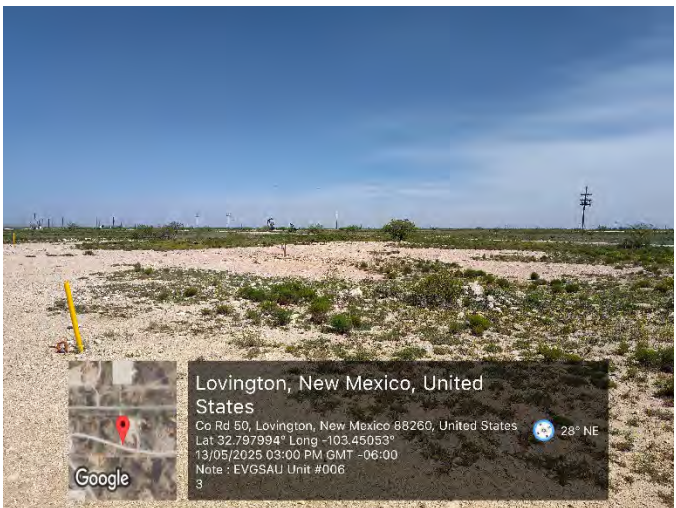
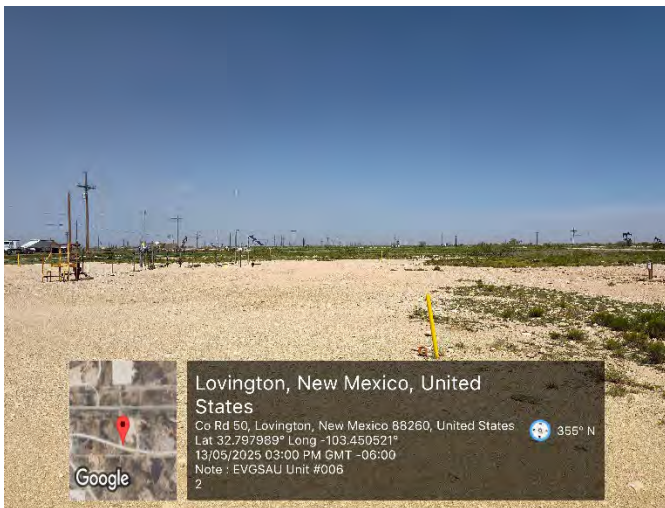
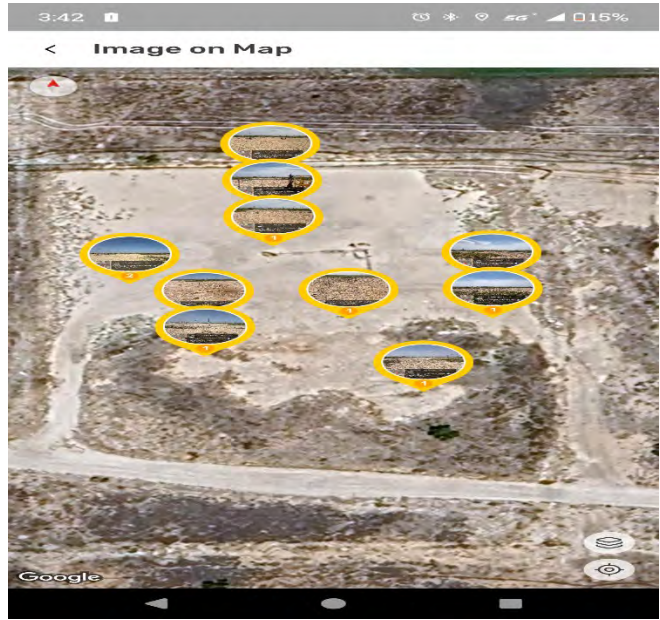




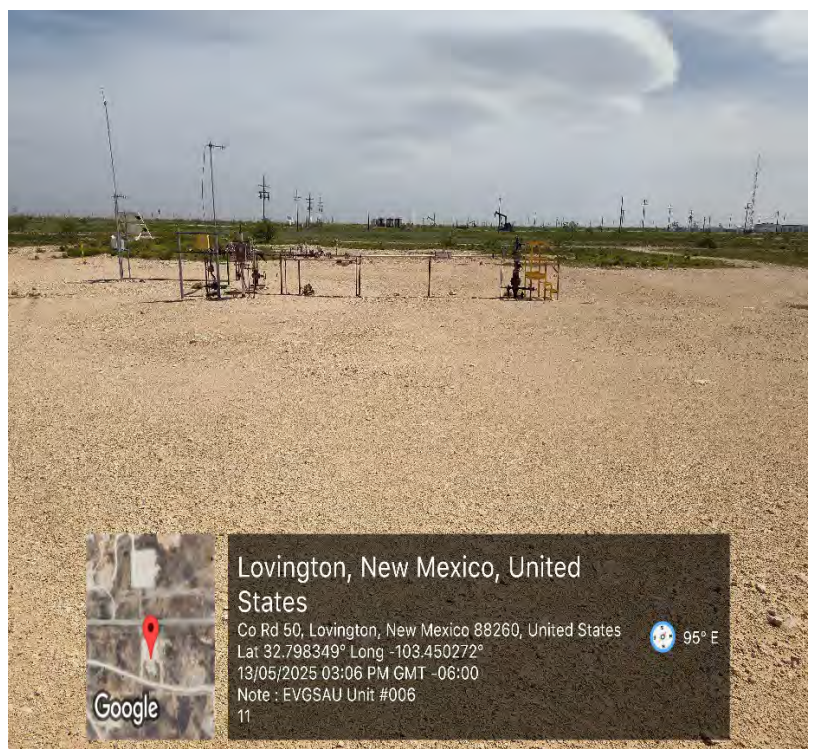
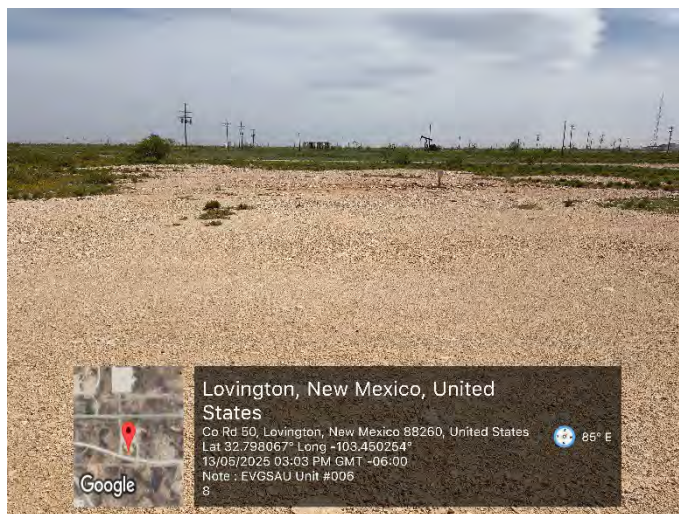
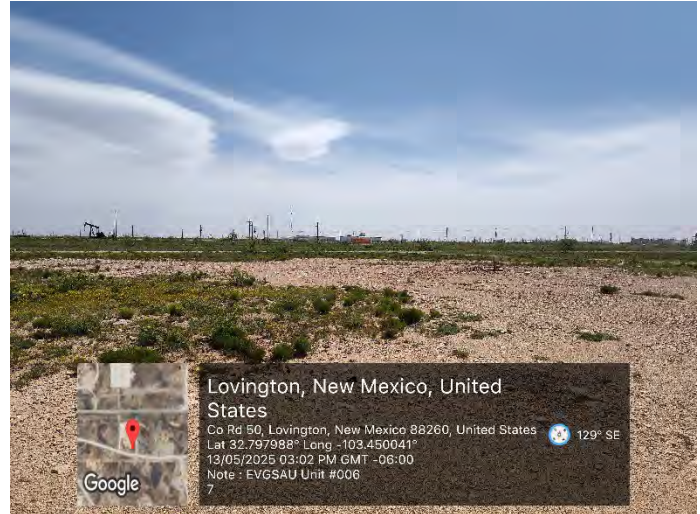
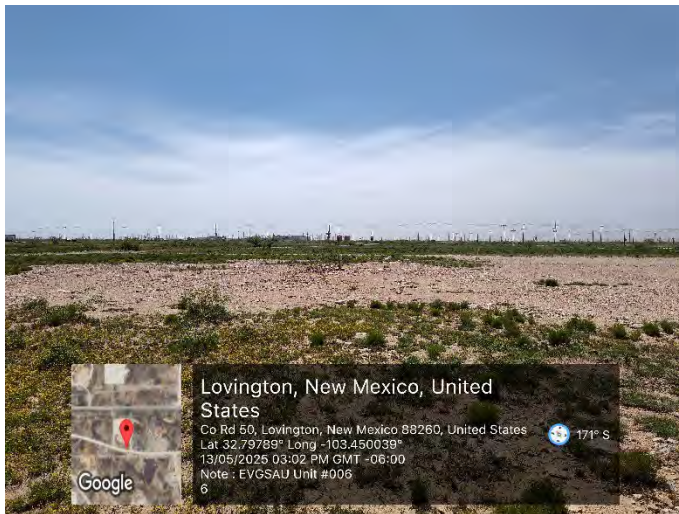
## ***Appendix D***

### **Photographic Documentation**







Maverick Permian, LLC  
East Vacuum (GSA) Unit #006 – nGRL0916233108





## ***Appendix E***

### **Closure Letter Report**



September 21, 2020

Bradford Billings  
Hydrologist  
District 2 Artesia  
Oil Conservation Division  
Santa Fe, NM 87505

**Subject: Closure Letter Report  
ConocoPhillips  
1RP-2199  
EVGSAU 3456-006 Wellhead Release  
PLSS Unit Letter D, Section 34, Township 17 South, and Range 35 East  
Lea County, New Mexico**

Mr. Billings:

On behalf of ConocoPhillips, Tetra Tech, Inc. (Tetra Tech) submits the following Closure Report for review. The ConocoPhillips East Vacuum Grayburg-San Andres Unit (EVGSAU) 3456-006 injection well (API No. 30-025-26390) is located approximately 3.25 miles east of Buckeye in Lea County, New Mexico (Figure 1). The well is located in the Public Land Survey System (PLSS) Unit Letter D, Section 34, Township 17 South, and Range 35 East. The coordinates of the release area (Site) are 32.798160°, -103.45031°.

## BACKGROUND

According to the State of New Mexico C-141 Initial Report (Attachment A), on May 27, 2009 a release of well control fluids occurred at the EVGSAU 3456-006 injection well due to a 5.5-inch production casing failure. The C-141 states that the release consisted of 41.53 barrels (bbls) of 10# brine/water-based mud (in another section in the C-141 the fluid was described as 14# mud). The release affected a 130-foot (ft) by 265-ft by ¾-inch area. A vacuum truck recovered approximately 16 bbls of the released fluids during initial response activities. The C-141 was submitted to the New Mexico Oil Conservation District (NMOCD) on June 5, 2009 and approved by the division on June 8, 2009. The release was assigned the Remediation Permit (RP) number 1RP-2199.

## SITE CHARACTERIZATION

A site characterization was performed and no watercourses, lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, public or private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. The Site is located in a low karst potential area.

Based on data from the New Mexico Office of the State Engineer (NMOSE), there are seven (7) water wells located within an 800-meter (approximately ½-mile) radius of the release location. The average depth to groundwater is 70 ft. The site characterization data is shown in Attachment B.

## REGULATORY FRAMEWORK

Based upon the release footprint and in accordance with Subsection E of 19.15.29.12 NMAC, per 19.15.29.11 NMAC, the site characterization data was used to determine recommended remedial action levels (RRALs) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX), total

**TETRA TECH**

8911 N. Capital of Texas Hwy, Building 2, Suite 2310, Austin, TX, 78759

Tel 512-338-1667 Fax 512-338-1331 [www.tetrattech.com](http://www.tetrattech.com)



Bradford Billings  
NMOCD  
September 21, 2020

petroleum hydrocarbons (TPH), and chlorides in soil. Based on the depth to groundwater at the Site, the RRALs for the Site are as follows:

- Benzene: 10 milligrams per kilogram (mg/kg);
- Total BTEX (sum of benzene, toluene, ethylbenzene, and xylene): 50 mg/kg;
- TPH (GRO + DRO + ORO): 100 mg/kg (0 – 4 ft bgs);
- TPH (GRO + DRO): 1,000 mg/kg;
- TPH (GRO + DRO + ORO): 2,500 mg/kg;
- Chloride: 600 mg/kg (0 – 4 ft bgs);
- Chloride: 10,000 mg/kg (>4 ft bgs).

## VISUAL SITE INSPECTION SUMMARY

At the request of ConocoPhillips, Tetra Tech personnel conducted a records review and a visual Site inspection on June 2, 2020 at the release area to evaluate current conditions at the Site. The formerly impacted area was identified from the description in the C-141. Photographic documentation from the visual Site inspection is included as Attachment C. A list of observations made during the records review and the visual Site inspection follow:

- Review of available aerial imagery revealed no evidence of impact in the reported release location.
- No surficial staining was noted in the reported release area footprint during the June 2020 visual Site inspection.

## CONCLUSION

Based on a review of available aerial imagery and the June 2020 visual Site inspection, no existing evidence of impact was observed in the vicinity of the release point. Therefore, ConocoPhillips requests closure for this release. The final C-141 form is enclosed in Attachment A.

Should you have any questions or comments regarding this report, please do not hesitate to contact me by telephone at 512-338-2861 or by email at [christian.llull@tetrattech.com](mailto:christian.llull@tetrattech.com).

Sincerely,



Christian M. Llull  
Project Manager  
Tetra Tech, Inc.


## **FIGURES**





Source: Google Earth Pro, May 2019.

DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\FIGURE 1 SITE LOCATION\_1RP-2199.MXD

<div><b>TETRA TECH</b></div> <div>www.tetrattech.com</div> <div>901 West Wall Street, Suite 100 Midland, Texas 79701 Phone: (432) 682-4559 Fax: (432) 682-3946</div>	<b>CONOCOPHILLIPS</b>		PROJECT NO.: 212C-MD-02152
	1RP-2199 (32.79816011°, -103.4503119°) LEA COUNTY, NEW MEXICO		DATE: JUNE 15, 2020
	<b>EVGSAU 3456-006 WELLHEAD RELEASE SITE LOCATION MAP</b>		DESIGNED BY: AAM
			Figure No. <b>1</b>



**ATTACHMENT A**  
**C-141 Forms**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

**RECEIVED** State of New Mexico  
Energy Minerals and Natural Resources  
JUN 08 2009 Oil Conservation Division  
**HOBBSCOCD** 1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

### Release Notification and Corrective Action

#### OPERATOR

X ☐ Initial Report ☐ Final Report

Name of Company ConocoPhillips Company	Contact Ron Robinson
Address 3300 North A St. Bldg 6, Midland Tx. 79705-5406	Telephone No. 575-390-4923
Facility Name EVGSAU 3456-006	Facility Type: CO2 Injection well

Surface Owner: State Of New Mexico	Mineral Owner: State Of New Mexico	Lease No. 30-025-2639000
------------------------------------	------------------------------------	--------------------------

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	34	17-S	35E	166'	FNL	1155'	FWL	LEA

Longitude  
Latitude -103.450311921207

Latitude  
Longitude 32.7981601052959

#### NATURE OF RELEASE

Type of Release: Well control fluids 10# brine/water base mud	Volume of Release: 41.53 bbls	Volume Recovered: 16 bbls
Source of Release: 5.5 production casing failure	Date and Hour of Occurrence: 5/27/2009 Unknown	Date and Hour of Discovery: 5/28/2009 @ 0630hr MST
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

WATER @ 63'

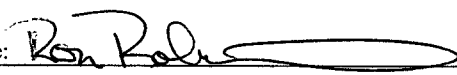
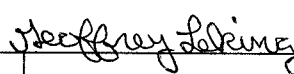
Describe Cause of Problem and Remedial Action Taken.\*

Well work being done, 5/27/2009 well was shut in over night with 14# mud on back side 5.5 casing failure resulted in surface casing 135/8 over pressure and it too failed. Resulting in release to ground of brine and water based mud.

Describe Area Affected and Cleanup Action Taken.\*

Affected area consisted of 130'x265'x.75" calculated volume of 23.53bbls. On Monday 6-01-2009 an additional 17bbls was picked up from location resulting in release volume of 41bbls. Spill site will be delineated and remediated in accordance with NMOCD guidelines.

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.

Signature: 		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Ron Robinson		ENV ENGR Approved by District Supervisor: 	
Title: Projects HSE Lead		Approval Date: 06/08/09	Expiration Date: 08/07/09
E-mail Address: ron.e.robinson@conocophillips.com		Conditions of Approval: SUBMIT FINAL	
Date: 6-5-2009	Phone: 575-390-4923	C-141 BY 08/07/09.	Attached <input type="checkbox"/> IRP-09-6-2199

\* Attach Additional Sheets If Necessary

FGRL0916232021



Incident ID	
District RP	1RP-2199
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: Charles Beauvais

Title: Environmental Coordinator

Signature: Charles R. Beauvais 99

Date: 09/21/2020

email: charles.r.beauvais@conocophillips.com

Telephone: 575-988-2043

**OCD Only**

Received by: Jocelyn Harimon

Date: 04/17/2023

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: closure not approved

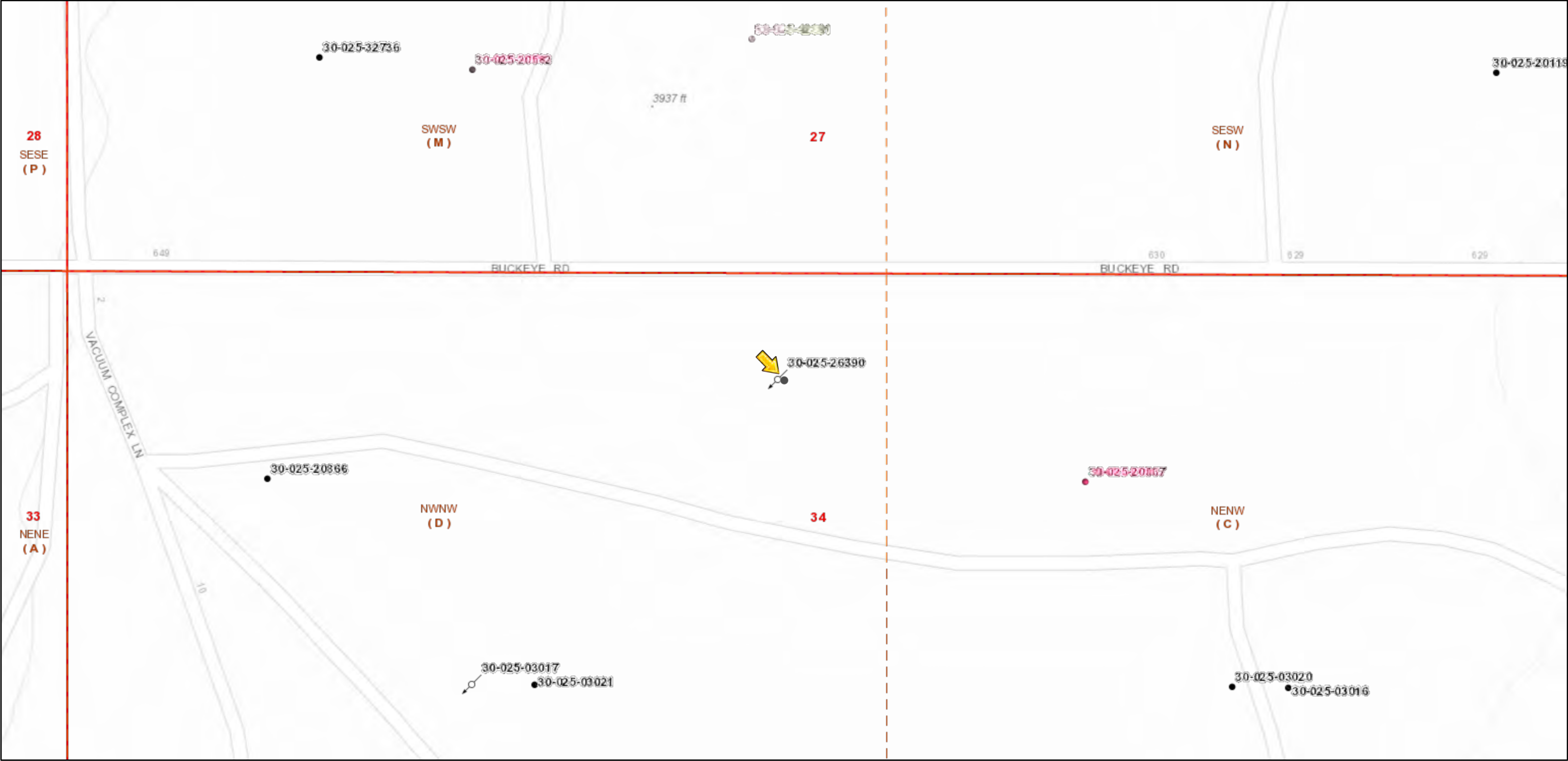
Date: 04/17/2023

Printed Name: Jocelyn Harimon

Title: Environmental Specialist

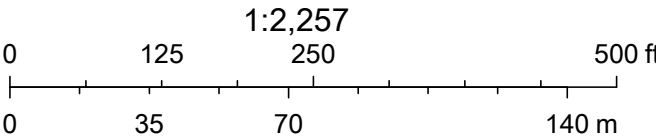
**ATTACHMENT B**  
**Site Characterization Data**

1RP-2199



7/27/2020, 4:06:18 PM

- Override 1
- Wells - Large Scale**
- undefined
- Miscellaneous
- CO2, Active
- CO2, Cancelled
- CO2, New
- CO2, Plugged
- CO2, Temporarily Abandoned
- Gas, Active
- Gas, Cancelled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abandoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water Injection, Temporarily Abandoned
- Water, Active



Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI,

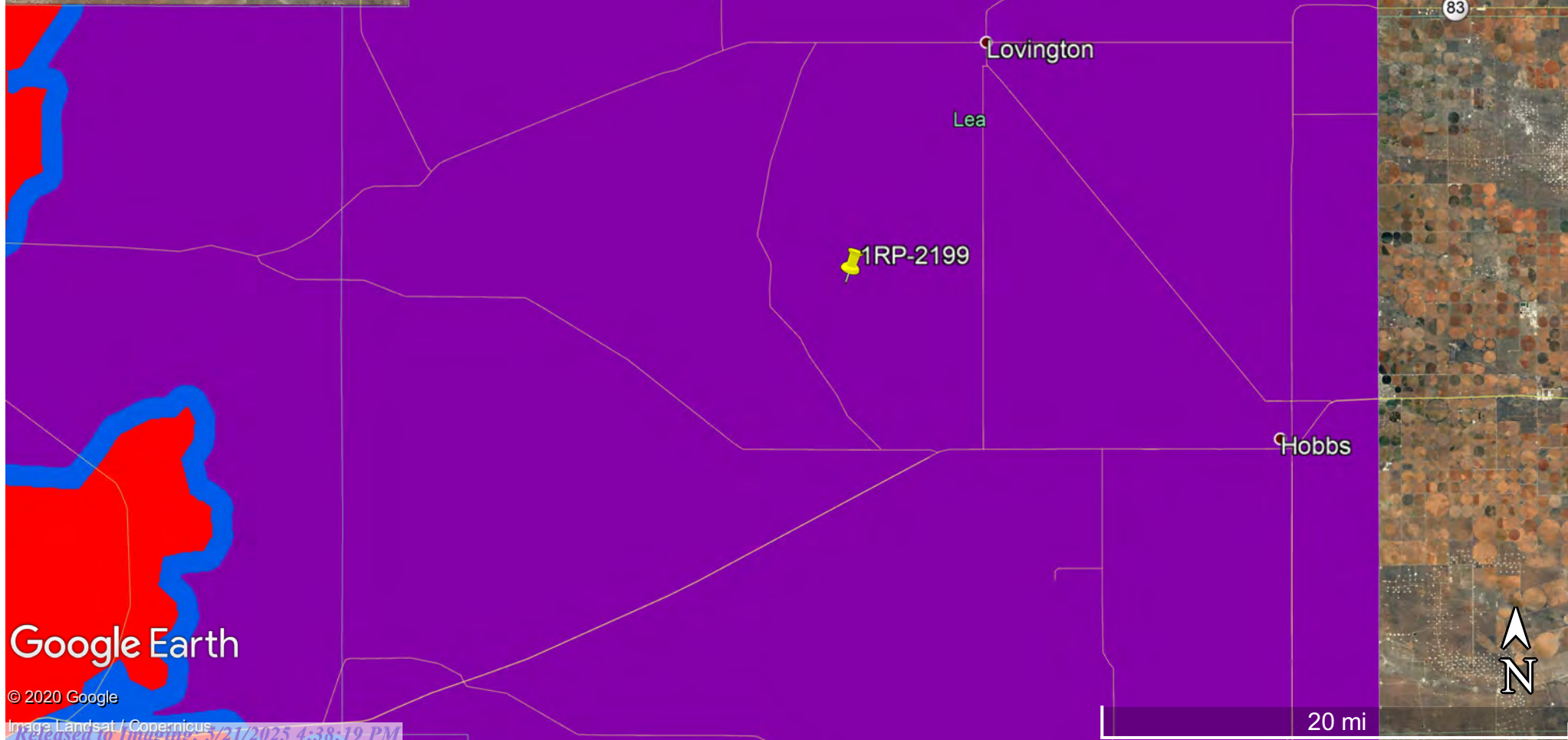


# KARST POTENTIAL MAP

1RP-2199

## Legend

-  1RP-2199
-  High
-  Low
-  Medium



Google Earth

© 2020 Google

Image Landsat / Copernicus

Released to Imaging: 5/21/2025 4:38:19 PM



# 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 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">L_10297</a>		L	LE	1	1	34	17S	35E		644955	3629819*	213	150	42	108
<a href="#">L_04829 S2</a>		L	LE	4	3	27	17S	35E		645352	3630227*	355	220	90	130
<a href="#">L_13479 POD3</a>		L	LE	4	4	3	27	17S	35E	645448	3630066	357	76	70	6
<a href="#">L_13479 POD2</a>		L	LE	2	2	1	34	17S	35E	645480	3629941	379	80	70	10
<a href="#">L_13479 POD1</a>		L	LE	2	2	1	34	17S	35E	645495	3630015	395	80	70	10
<a href="#">L_04775</a>		L	LE	4	1	34	17S	35E		645365	3629421*	612	133	68	65
<a href="#">L_05362</a>		L	LE	3	4	4	28	17S	35E	644444	3630117*	673	140	80	60

Average Depth to Water:

**70 feet**

Minimum Depth:

**42 feet**

Maximum Depth:

**90 feet**

**Record Count:** 7

**UTM NAD83 Radius Search (in meters):**

**Easting (X):** 645102

**Northing (Y):** 3629974

**Radius:** 800

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

9/16/20 2:39 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

## **ATTACHMENT C**

### **Photographic Documentation**





TETRA TECH, INC. PROJECT NO. 212C-MD-02152	DESCRIPTION	View facing northeast of well pad. Wellhead in background.	1
	SITE NAME	EVGSAU 3456-006 Wellhead Release	6/2/2020



TETRA TECH, INC. PROJECT NO. 212C-MD-02152	DESCRIPTION	View facing north of well head and pipeline on well pad.	2
	SITE NAME	EVGSAU 3456-006 Wellhead Release	6/2/2020





TETRA TECH, INC. PROJECT NO. 212C-MD-02152	DESCRIPTION	View facing east on the eastern end of the well pad area.	3
	SITE NAME	EVGSAU 3456-006 Wellhead Release	6/2/2020



TETRA TECH, INC. PROJECT NO. 212C-MD-02152	DESCRIPTION	View facing west on the well pad.	5
	SITE NAME	EVGSAU 3456-006 Wellhead Release	6/2/2020



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

---

June 20, 2024

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: EAST VACUUM (GSA) UNIT #006

Enclosed are the results of analyses for samples received by the laboratory on 06/14/24 16:02.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/14/2024	Sampling Date:	06/14/2024
Reported:	06/20/2024	Sampling Type:	Soil
Project Name:	EAST VACUUM (GSA) UNIT #006	Sampling Condition:	Cool & Intact
Project Number:	nGRL0916233108	Sample Received By:	Alyssa Parras
Project Location:	LEA COUNTY		

**Sample ID: BH 1 (0-0.5') (H243478-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/18/2024	ND	1.79	89.3	2.00	8.29	
Toluene*	<0.050	0.050	06/18/2024	ND	1.81	90.6	2.00	6.24	
Ethylbenzene*	<0.050	0.050	06/18/2024	ND	1.73	86.4	2.00	5.70	
Total Xylenes*	<0.150	0.150	06/18/2024	ND	5.38	89.7	6.00	5.69	
Total BTEX	<0.300	0.300	06/18/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/18/2024	ND	480	120	400	10.5	

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	06/18/2024	ND	196	98.2	200	1.97	
DRO >C10-C28*	<10.0	10.0	06/18/2024	ND	205	103	200	1.94	
EXT DRO >C28-C36	<10.0	10.0	06/18/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.4 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/14/2024	Sampling Date:	06/14/2024
Reported:	06/20/2024	Sampling Type:	Soil
Project Name:	EAST VACUUM (GSA) UNIT #006	Sampling Condition:	Cool & Intact
Project Number:	nGRL0916233108	Sample Received By:	Alyssa Parras
Project Location:	LEA COUNTY		

**Sample ID: BH 1 (2-2.5') (H243478-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/18/2024	ND	1.79	89.3	2.00	8.29		
Toluene*	<0.050	0.050	06/18/2024	ND	1.81	90.6	2.00	6.24		
Ethylbenzene*	<0.050	0.050	06/18/2024	ND	1.73	86.4	2.00	5.70		
Total Xylenes*	<0.150	0.150	06/18/2024	ND	5.38	89.7	6.00	5.69		
Total BTEx	<0.300	0.300	06/18/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	06/18/2024	ND	480	120	400	10.5		

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	06/18/2024	ND	196	98.2	200	1.97	
DRO >C10-C28*	<10.0	10.0	06/18/2024	ND	205	103	200	1.94	
EXT DRO >C28-C36	<10.0	10.0	06/18/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.7 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/14/2024	Sampling Date:	06/14/2024
Reported:	06/20/2024	Sampling Type:	Soil
Project Name:	EAST VACUUM (GSA) UNIT #006	Sampling Condition:	Cool & Intact
Project Number:	nGRL0916233108	Sample Received By:	Alyssa Parras
Project Location:	LEA COUNTY		

**Sample ID: BH 2 (0-0.5') (H243478-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/18/2024	ND	1.79	89.3	2.00	8.29		
Toluene*	<0.050	0.050	06/18/2024	ND	1.81	90.6	2.00	6.24		
Ethylbenzene*	<0.050	0.050	06/18/2024	ND	1.73	86.4	2.00	5.70		
Total Xylenes*	<0.150	0.150	06/18/2024	ND	5.38	89.7	6.00	5.69		
Total BTEX	<0.300	0.300	06/18/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	06/18/2024	ND	480	120	400	10.5		

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	06/18/2024	ND	196	98.2	200	1.97	
DRO >C10-C28*	<10.0	10.0	06/18/2024	ND	205	103	200	1.94	
EXT DRO >C28-C36	<10.0	10.0	06/18/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.2 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/14/2024	Sampling Date:	06/14/2024
Reported:	06/20/2024	Sampling Type:	Soil
Project Name:	EAST VACUUM (GSA) UNIT #006	Sampling Condition:	Cool & Intact
Project Number:	nGRL0916233108	Sample Received By:	Alyssa Parras
Project Location:	LEA COUNTY		

**Sample ID: BH 2 (2-2.5') (H243478-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/18/2024	ND	1.79	89.3	2.00	8.29		
Toluene*	<0.050	0.050	06/18/2024	ND	1.81	90.6	2.00	6.24		
Ethylbenzene*	<0.050	0.050	06/18/2024	ND	1.73	86.4	2.00	5.70		
Total Xylenes*	<0.150	0.150	06/18/2024	ND	5.38	89.7	6.00	5.69		
Total BTEx	<0.300	0.300	06/18/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	06/18/2024	ND	480	120	400	10.5		

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	06/18/2024	ND	175	87.3	200	1.63	
DRO >C10-C28*	<10.0	10.0	06/18/2024	ND	171	85.6	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	06/18/2024	ND					

Surrogate: 1-Chlorooctane 85.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 83.2 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/14/2024	Sampling Date:	06/14/2024
Reported:	06/20/2024	Sampling Type:	Soil
Project Name:	EAST VACUUM (GSA) UNIT #006	Sampling Condition:	Cool & Intact
Project Number:	nGRL0916233108	Sample Received By:	Alyssa Parras
Project Location:	LEA COUNTY		

**Sample ID: BH 3 (0-0.5') (H243478-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/18/2024	ND	1.79	89.3	2.00	8.29		
Toluene*	<0.050	0.050	06/18/2024	ND	1.81	90.6	2.00	6.24		
Ethylbenzene*	<0.050	0.050	06/18/2024	ND	1.73	86.4	2.00	5.70		
Total Xylenes*	<0.150	0.150	06/18/2024	ND	5.38	89.7	6.00	5.69		
Total BTEx	<0.300	0.300	06/18/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	06/18/2024	ND	480	120	400	10.5		

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	06/18/2024	ND	175	87.3	200	1.63	
DRO >C10-C28*	<10.0	10.0	06/18/2024	ND	171	85.6	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	06/18/2024	ND					

Surrogate: 1-Chlorooctane 78.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 76.8 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/14/2024	Sampling Date:	06/14/2024
Reported:	06/20/2024	Sampling Type:	Soil
Project Name:	EAST VACUUM (GSA) UNIT #006	Sampling Condition:	Cool & Intact
Project Number:	nGRL0916233108	Sample Received By:	Alyssa Parras
Project Location:	LEA COUNTY		

**Sample ID: BH 3 (2-2.5') (H243478-06)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/18/2024	ND	1.79	89.3	2.00	8.29	
Toluene*	<0.050	0.050	06/18/2024	ND	1.81	90.6	2.00	6.24	
Ethylbenzene*	<0.050	0.050	06/18/2024	ND	1.73	86.4	2.00	5.70	
Total Xylenes*	<0.150	0.150	06/18/2024	ND	5.38	89.7	6.00	5.69	
Total BTEX	<0.300	0.300	06/18/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/18/2024	ND	480	120	400	10.5	

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	06/18/2024	ND	175	87.3	200	1.63	
DRO >C10-C28*	<10.0	10.0	06/18/2024	ND	171	85.6	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	06/18/2024	ND					

Surrogate: 1-Chlorooctane 66.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 64.3 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/14/2024	Sampling Date:	06/14/2024
Reported:	06/20/2024	Sampling Type:	Soil
Project Name:	EAST VACUUM (GSA) UNIT #006	Sampling Condition:	Cool & Intact
Project Number:	nGRL0916233108	Sample Received By:	Alyssa Parras
Project Location:	LEA COUNTY		

**Sample ID: BH 4 (0-0.5') (H243478-07)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/18/2024	ND	1.79	89.3	2.00	8.29		
Toluene*	<0.050	0.050	06/18/2024	ND	1.81	90.6	2.00	6.24		
Ethylbenzene*	<0.050	0.050	06/18/2024	ND	1.73	86.4	2.00	5.70		
Total Xylenes*	<0.150	0.150	06/18/2024	ND	5.38	89.7	6.00	5.69		
Total BTEx	<0.300	0.300	06/18/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	06/18/2024	ND	480	120	400	10.5		

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	06/18/2024	ND	175	87.3	200	1.63	
DRO >C10-C28*	<10.0	10.0	06/18/2024	ND	171	85.6	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	06/18/2024	ND					

Surrogate: 1-Chlorooctane 73.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 71.2 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/14/2024	Sampling Date:	06/14/2024
Reported:	06/20/2024	Sampling Type:	Soil
Project Name:	EAST VACUUM (GSA) UNIT #006	Sampling Condition:	Cool & Intact
Project Number:	nGRL0916233108	Sample Received By:	Alyssa Parras
Project Location:	LEA COUNTY		

**Sample ID: BH 4 (2-2.5') (H243478-08)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/18/2024	ND	1.79	89.3	2.00	8.29		
Toluene*	<0.050	0.050	06/18/2024	ND	1.81	90.6	2.00	6.24		
Ethylbenzene*	<0.050	0.050	06/18/2024	ND	1.73	86.4	2.00	5.70		
Total Xylenes*	<0.150	0.150	06/18/2024	ND	5.38	89.7	6.00	5.69		
Total BTEX	<0.300	0.300	06/18/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	06/18/2024	ND	480	120	400	10.5		

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	06/18/2024	ND	175	87.3	200	1.63	
DRO >C10-C28*	<10.0	10.0	06/18/2024	ND	171	85.6	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	06/18/2024	ND					

Surrogate: 1-Chlorooctane 73.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 70.8 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

---

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

Cardinal Laboratories

\*=Accredited Analyte

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

A handwritten signature in black ink, appearing to read "C. D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager



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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> Tetra Tech <b>Project Manager:</b> Chuck Terhune <b>Address:</b> <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> <b>Phone #:</b> <b>Fax #:</b> <b>Project #:</b> MCL0911233108 <b>Project Owner:</b> <b>Project Name:</b> East vacuum (L&S) unit #006 <b>Project Location:</b> Lea County <b>Sampler Name:</b> Gilberto Sanchez <b>FOR LAB USE ONLY</b>		<b>BILL TO</b> <b>P.O. #:</b> <b>Company:</b> Tetra Tech <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>	
<b>Lab I.D.</b> <b>Sample I.D.</b>		<b>MATRIX</b> (G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:		<b>PRESERV.</b> ACID/BASE: ICE / COOL OTHER:	
1 RH1 (0-0.5') 2 RH1 (2-2.5') 3 RH2 (0-0.5') 4 RH2 (2-2.5') 5 RH3 (0-0.5') 6 RH3 (2-2.5') 7 RH4 (0-0.5') 8 RH4 (2-2.5')		DATE 6-14-24		TIME 10:02	
BTEX TPH (DRO/GRO/LORO) Chloride 4500					
Relinquished By: Gilberto Sanchez Date: 6-14-24 Time: 10:02 Received By: [Signature] Date: 6-14-24 Time: 10:02		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: All Results are emailed. Please provide Email address:		REMARKS:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Observed Temp. °C Corrected Temp. °C		Sample Condition Cool Intact Yes <input type="checkbox"/> No <input type="checkbox"/> Checked By: (Initials) AD	
Turnaround Time:		Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Bacteria (only) <input type="checkbox"/> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Sample Condition <input type="checkbox"/> Observed Temp. °C Corrected Temp. °C		Thermometer ID #140 Correction Factor 0°C	

† Cardinal Laboratories, Inc. verbal changes. Please email changes to celey.keene@cardinal-lab.com

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS

Action 463629

**QUESTIONS**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID: 331199
	Action Number: 463629
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Prerequisites</b>	
Incident ID (n#)	nGRL0916233108
Incident Name	NGRL0916233108 EAST VACUUM (GSA) UNIT #006 @ 30-025-26390
Incident Type	Release Other
Incident Status	Remediation Plan Received
Incident Well	[30-025-26390] EAST VACUUM (GSA) UNIT #006

**Location of Release Source**

Please answer all the questions in this group.

Site Name	EAST VACUUM (GSA) UNIT #006
Date Release Discovered	05/28/2009
Surface Owner	State

**Incident Details**

Please answer all the questions in this group.

Incident Type	Release Other
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

**Nature and Volume of Release**

Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.

Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Cause: Equipment Failure   Injection Well   Drilling Mud/Fluid   Released: 42 BBL   Recovered: 16 BBL   Lost: 26 BBL.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.



Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 2

Action 463629

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID: 331199
	Action Number: 463629
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**Initial Response**

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Chuck Terhune Title: Program Manager Email: <a href="mailto:chuck.terhune@tetrattech.com">chuck.terhune@tetrattech.com</a> Date: 07/23/2024
--	--

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 3

Action 463629

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID: 331199
	Action Number: 463629
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Site Characterization</b>	
<i>Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between ½ and 1 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1000 (ft.) and ½ (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 500 and 1000 (ft.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

<b>Remediation Plan</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
<b>Soil Contamination Sampling:</b> (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	48
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	0
GRO+DRO (EPA SW-846 Method 8015M)	0
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
On what estimated date will the remediation commence	08/01/2025
On what date will (or did) the final sampling or liner inspection occur	08/15/2025
On what date will (or was) the remediation complete(d)	08/30/2025
What is the estimated surface area (in square feet) that will be reclaimed	0
What is the estimated volume (in cubic yards) that will be reclaimed	0
What is the estimated surface area (in square feet) that will be remediated	17753
What is the estimated volume (in cubic yards) that will be remediated	2630
<i>These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.</i>	
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 4

Action 463629

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID: 331199
	Action Number: 463629
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	HALFWAY DISPOSAL AND LANDFILL [FEEM0112334510]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Chuck Terhune Title: Program Manager Email: <a href="mailto:chuck.terhune@tetrattech.com">chuck.terhune@tetrattech.com</a> Date: 05/15/2025
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	



Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 5

Action 463629

**QUESTIONS (continued)**

Operator:  Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:  331199
	Action Number:  463629
	Action Type:  [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Deferral Requests Only</b>	
<i>Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.</i>	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 6

Action 463629

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID: 331199
	Action Number: 463629
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	353433
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	06/14/2024
What was the (estimated) number of samples that were to be gathered	4
What was the sampling surface area in square feet	800

**Remediation Closure Request**

Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.

Requesting a remediation closure approval with this submission	No
--	----

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 463629

CONDITIONS

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID: 331199
	Action Number: 463629
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Remediation workplan approved.	5/21/2025
amaxwell	Variance request to use delineation samples as closure confirmation samples is approved. However, if samples exceed confirmation closure criteria set forth in Table I, remediation activities will fall under 19.15.29 NMAC.	5/21/2025
amaxwell	Submit a report via the OCD permitting portal by August 19, 2025.	5/21/2025