

January 21, 2025

5E33088 BG22

EMNRD – Oil Conservation Division  
506 W. Texas Ave  
Artesia, NM 88210

SUBJECT: Closure Request Report for the Exotic Cat 5 CTB 2, Incident IDs # nAPP2428730359, nAPP2431931028, and nAPP2433729249, Eddy County, New Mexico.

### **1.0 Introduction**

On behalf of Devon Energy Production Company, LP (Devon), Souder, Miller & Associates (SMA) has prepared this Closure Request Report. This report describes the corrective actions for multiple produced water incidents related to oil and gas production activities at the Exotic Cat 5 CTB 2 (Exotic Cat), Incident IDs: nAPP2428730359 that occurred on October 12, 2024, nAPP2431931028 on November 14, 2024, and nAPP2433729249 on November 30, 2024. The release area is located at latitude N 32.335969 and longitude W -103.698928.

Devon completed release notifications to the New Mexico Energy, Minerals, and Natural Resources Department – Oil Conservation Division (OCD) via Operators Electronic Permitting and Payment Portal on October 13, 2024, incident nAPP2428730359, for the submission of Notice of Release (NOR), followed by the submission of the Form C-141, Release Notification on November 4, 2024. For incident ID nAPP2431931028 the NOR and Form C-141 were submitted on November 14, 2024, and for incident ID nAPP2433729249, the NOR submitted on December 2, 2024, and Form C-141 submitted on December 5, 2024. This letter provides a description of the spill assessment and includes a request for spill closure.

**Table 1: Release Information and Closure Criteria**

Name	Exotic Cat 5 CTB 2	Company	Devon Energy Production Company, LP
Facility ID	fAPP2308735100	Location	F-05-23S-32E N 32.335969, W -103.698928
Incident Numbers	nAPP2428730359 nAPP2431931028 nAPP2433729249	Land Status	Federal
Date of Release	October 12, 2024 November 14, 2024 November 30, 2024	Lease Number	NMNM63994
Source of Release	Pinhole formed on load line connection at water tank Leak on dump line Pinhole leak in flowline to production tank		
Released Volume	20 bbls 18 bbls 9 bbls	Recovered Volume	20 bbls 18 bbls 9 bbls
NMOCD Closure Criteria	Depth to groundwater <50 feet below ground surface (bgs)		

## **2.0 Background**

### **nAPP2428730359**

On October 12, 2024, a pinhole formed on the load line connection on the produced water storage tank resulting in a release into the secondary lined containment. The total volume of released fluids was 20 barrels (bbls) of produced water and approximately 20 bbls of the released fluids were recovered from the containment.

### **nAPP2431931028**

On November 14, 2024, a leak on the water dump line developed resulting in a release into the secondary lined containment. The total volume of released fluids was 18 bbls of produced water and approximately 18 bbls of released fluids were recovered from the containment.

### **nAPP2433729249**

On November 30, 2024, a water transfer pump failed resulting in a fluid release. The total volume of released fluids was 9 bbls of produced water and approximately 9 bbls of released fluids were recovered from the secondary lined containment.

Initial response activities were conducted by the operator, including source elimination, photographs of standing fluids, recovery of the released fluids, and verification that the affected area was properly exposed and cleaned for visual observation for each of the releases. Documentation of the liner inspection, including photographs, is provided in the Site Assessment Report in Attachment 1.

## **3.0 Site Geology and Vegetation**

The Geologic Map of New Mexico by New Mexico Bureau of Geology and Mineral Resources indicates the surface geology at the incident location area is comprised of primarily Qep – Eolian and piedmont deposits (Holocene to middle Pleistocene) interlayered eolian sands and piedmont-slope deposits. The soil is calcareous sandy eolian deposits derived from sedimentary rock.

The surrounding geography and terrain are associated with plains, hills, and dunes, at elevations between 2,842 and 4,500 feet above mean sea level (amsl). The annual average rainfall and precipitation ranges between 8 to 13 inches. Soil features of this site are deep and very deep.

The primary surficial soil type on the location is Kermit soils and Dune land. Subsurface features consist of fine sand or loamy fine sand while subsoils is fine sand or loamy fine sand with less than 10 percent clay content. This soil is subject to severe wind erosion and tend to be excessively drained, with very low runoff, low available water supply, and is not prime farmland.

The ecological setting of Sandhills integrated with Deep Sand with historic vegetation consisting of a mixture of grasses, shrubs, and forbs, with tall grasses dominating. Sand bluestem and giant dropseed are dominant grasses with Havard panicum and dropseeds as sub-dominants with remnants of plains bristlegrass, sand paspalum, and fourwing saltbrush. Sand shinnery oak and soapweed yucca, mesa dropseed, and threeawns can be found dispersed fairly uniform. Large natural bare areas or blowouts are a common feature in less stable areas.

Exotic Cat 5 CTB 2

(nAPP2428730359/nAPP2431931028/nAPP2433729249)

Devon Energy

Liner Inspection Closure Request

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#### **4.0 Site Information and Closure Criteria**

The Exotic Cat is located approximately 23.09 miles northeast of Malaga, New Mexico, on BLM land at an elevation of approximately 3,370 feet amsl. SMA personnel completed site assessment/characterization pursuant to 19.5.29.11-12 NMAC to determine potential environmental impacts and closure criteria. Site assessment and characterization results are included in Attachments 1 and 2.

There is no surface water located on site or within closure criteria parameters of the site. The nearest significant watercourse, as defined in 19.15.17.7.P NMAC, is the Pecos River located approximately 18.5 miles southwest of the site (U.S. Fish and Wildlife Service, National Wetlands Inventory, 2024). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features within the defined distances, as outlined in Paragraph (4) of Subsection C of 19.15.29.11 NMAC.

Depth to ground water was determined using New Mexico Office of the State Engineer (NMOSE) Water Rights Pod Location: ArcGIS Interactive Online Map. The nearest active pod is Pod C-04862-Pod1, a temporary borehole used for depth to groundwater determination, located 0.81 miles northeast from Exotic Cat. The temporary borehole was drilled to a depth of 105 feet bgs, where groundwater was discovered at a depth of 78 feet bgs. A freshwater well, Pod C-02349, located southeast of Exotic Cat is described as the nearest domestic well used for stock watering purposes 2.02 miles away.

Karst potential for the area that Exotic Cat is low and is 6.43 miles east of a medium karst feature, based on the New Mexico State Land Office Land Status Interactive Map (NMSLO).

Documentation of site characterization, including depth to groundwater, nearest domestic freshwater well, surface water features, and karst potential, is included in Attachment 2.

Based on data included in the closure criteria determination worksheet, the incident at Exotic Cat is not subject to the requirements of 19.15.29.11.A.4 NMAC. Due to insufficient data of depth to groundwater determination within a 0.5-mile radius, closure criteria for the site are the constituent concentration limits associated with less than 50 feet depth to groundwater (DTGW), as stated in Table I of 19.15.29.12 NMAC.

#### **5.0 Remediation Activities**

Notification of the liner inspection, scheduled for December 21, 2024, was provided to Devon and Bureau of Land Management (BLM) through email by SMA personnel on December 19, 2024. Devon provided notification to NMOCD through the ENMRD Electronic Permitting and Payment Portal for Operators on December 19, 2024. Notification documentation is included in Attachment 3.

On December 21, 2024, SMA personnel performed an on-site visual inspection of the secondary containment to verify liner integrity as outlined in Paragraph (5)(a) of Subsection A of 19.15.29.11 NMAC.

Visual observation of the liner included a complete inspection of all sidewalls and the base of the containment, around equipment, and all seams of the liner. The inspection included looking for any potential perforations in the liner that could lead to a breach of the secondary containment. Observations concluded no signs of any cuts, rips, tears, or weathering of the liner condition which need repairs or replacement. Liner integrity was confirmed. Photo documentation of the liner inspection is in the Site Assessment Photolog (Attachment 1).

Exotic Cat 5 CTB 2

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An extension request was submitted by Devon on January 9, 2025 to allow time to complete the closure report for all three releases associated with Exotic Cat. The extension request was approved by NMOCD on January 9, 2025, allowing an additional 30 days for submission of the final closure report. The new deadline is February 10, 2025. Documentation of correspondence between Devon and NMOCD is included with Attachment 3.

## **6.0 Conclusions and Recommendations**

Based on the liner inspection and assessment, SMA concludes the liner integrity is adequate to contain the releases related to incidents nAPP2428730359, nAPP2431931028, and nAPP2433729249. There is no evidence of a release to the environment. Based on the professional activities and site assessment, Devon Energy Production Company respectfully requests closure of the incidents that occurred at Exotic Cat 5 CTB 2.

## **7.0 Scope and Limitations**

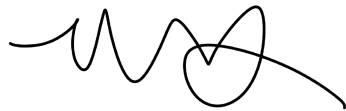
The scope of our services included: visual inspection for liner integrity; regulatory liaison; and preparing this report. All work has been performed in accordance set forth in Subsection E of 19.15.29.12 NMAC with accepted professional environmental consulting practices for oil and gas incidents in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact Stephanie Hinds at (505) 302-1127 or Monica Peppin at (575) 909-3418.

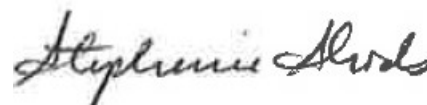
Submitted by:

SOUDER, MILLER &amp; ASSOCIATES

Reviewed by:



Monica Peppin, A.S.  
Project Manager



Stephanie Hinds, P.E.  
Senior Engineer

Exotic Cat 5 CTB 2

(nAPP2428730359/nAPP2431931028/nAPP2433729249)

Devon Energy

Liner Inspection Closure Request

January 21, 2025

**REFERENCES:**

New Mexico Office of the State Engineer (NMOSE) online water well database

[Http://gis.ose.state.nm.us/gisapps/ose\\_pod\\_locations/](Http://gis.ose.state.nm.us/gisapps/ose_pod_locations/)

USGS National Water Information System: Web interface online water well database

[https://nwis.waterdata.usgs.gov/nwis/gwlevels?site\\_no=321205103544701&agency\\_cd=USGS&format=html](https://nwis.waterdata.usgs.gov/nwis/gwlevels?site_no=321205103544701&agency_cd=USGS&format=html)

U.S. Fish and Wildlife Service: National Wetlands Inventory

[Wetlands Mapper | U.S. Fish & Wildlife Service](#)

New Mexico State Land Office: Land Status

[NMSLO Land Status](#)

United States Department of Agriculture: Natural Resources Conservation Service: Web Soil Survey

<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

USDA, USGS The National Map: Orthoimagry: FEMA's National Flood Hazard Layer (NFHL) Viewer

<https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>

**ATTACHMENTS:**

Attachment 1: Site Assessment Photolog

Attachment 2: Closure Criteria Determination Research

Attachment 3: Correspondence

# ATTACHMENT 1: SITE ASSESSMENT PHOTOLOG

# Site Inspection Report



Client: Devon Energy Corporation

Incident ID: nAPP2428730359,  
nAPP2431931028, & nAPP2433729249

Site Name: Exotic Cat 5 CTB 2

API: fAPP2308735100

Project Manager: Monica Peppin

Lease #: NMNM63994

Project Owner: Jim Raley

## Field Notes

December 21, 2024, at 12:45 PM

- Arrive on location, fill out paperwork for notes and safety check/JSA-JHA, updated site information for GPS stamp, begin visual inspection of secondary containment, and collect photos for proof of liner integrity. Inspected for any visible perforations, cuts, rips, tears, or substantial weathering that could lead to the potential breach through the liner.
- The liner inspection activity concluded that the secondary containment contained all fluids that were released when the incident occurred. Three incidents are being covered for this site visit and notice was given for each incident separately.
- No fluid released had any breach past the liner and all stayed within the containment. Liner integrity has been confirmed and photos for proof of liner integrity are located within this field report.

## Visual documentation

Photograph #1: Lease Information







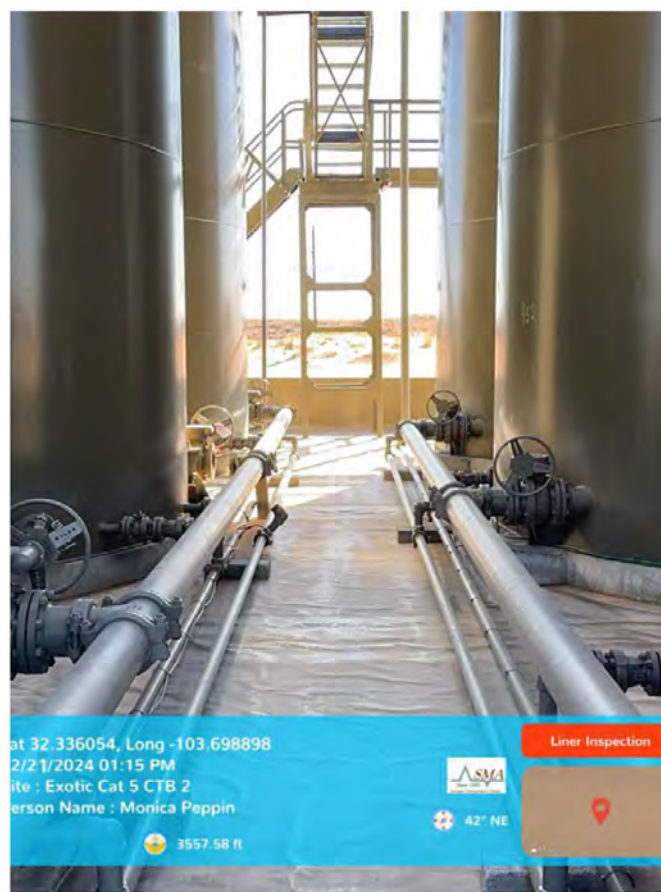
Photograph #2: North side of tank containment



Photograph #3: East side of tank containment

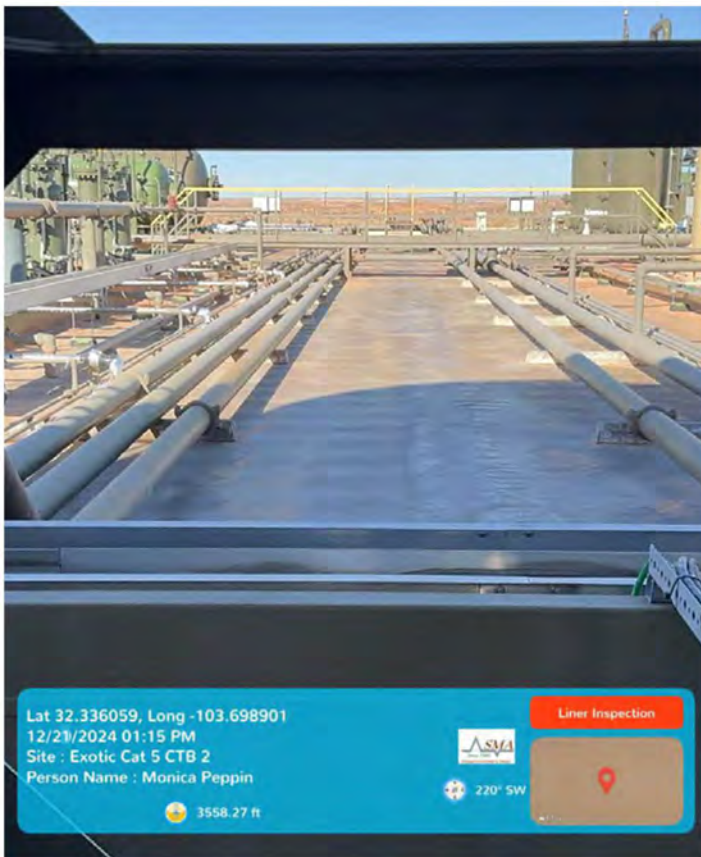


Photograph #4: liner in tank containment from east side



Photograph #5: Liner between tanks





Photograph #6: Facing north showing liner from south end



Photograph #7: Facing east from west middle area of containment



Photograph #8: Facing east from west/northwest side



Photograph #9: Facing south from north west corner





Photograph #10: Facing west showing middle area between tanks

Photograph #11: Facing east from west middle area of containment



Photograph #12: Facing east from west/northwest side



Photograph #13: Facing south from north west corner

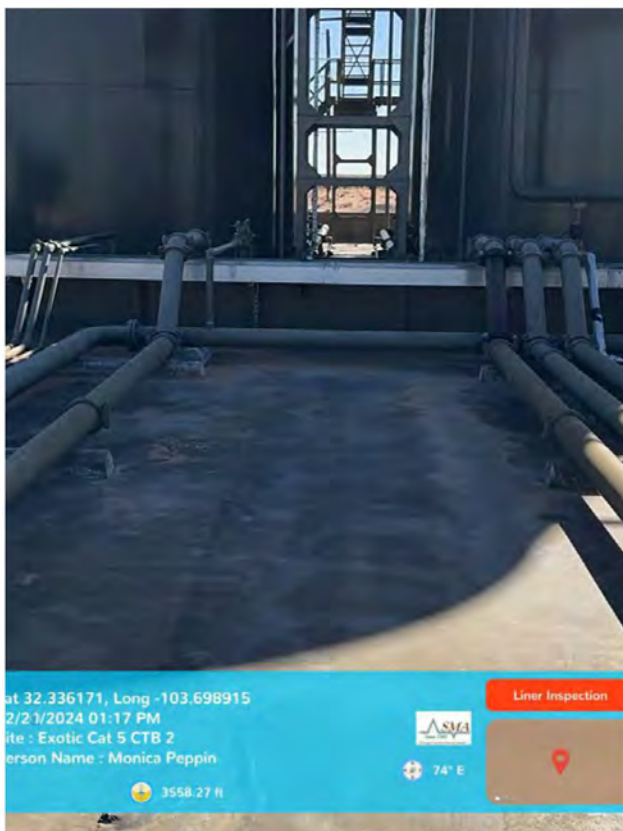




Photograph #14: Facing south from northwest corner



Photograph #15: Facing south from northeast side of containment



Photograph #16: north end of containment facing west



Photograph #17: Facing west/southwest from mid area on east side





Photograph #18: View of liner towards steps facing north



Photograph #19: Liner under piping and equipment in northeast corner



Photograph #20: Liner from steps  
in middle area

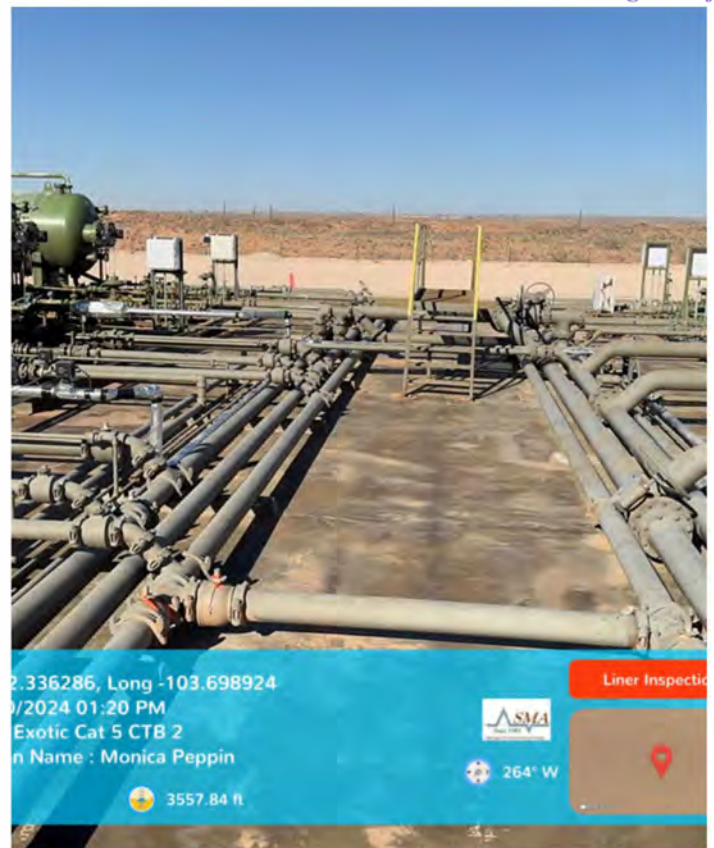


Photograph #21: Liner in mid area facing  
south towards tank containment





Photograph #22: View of liner around heater treaters and under piping



Photograph #23: Liner view in middle portion of containment on north end



Photograph #24: View of liner underneath piping



Photograph #25: Middle area of equipment





Photograph #26: West side of separators facing east



Photograph #27: Middle area between separators facing north



Photograph #28: north end of containment facing west



Photograph #29: Containment area on east side of separators

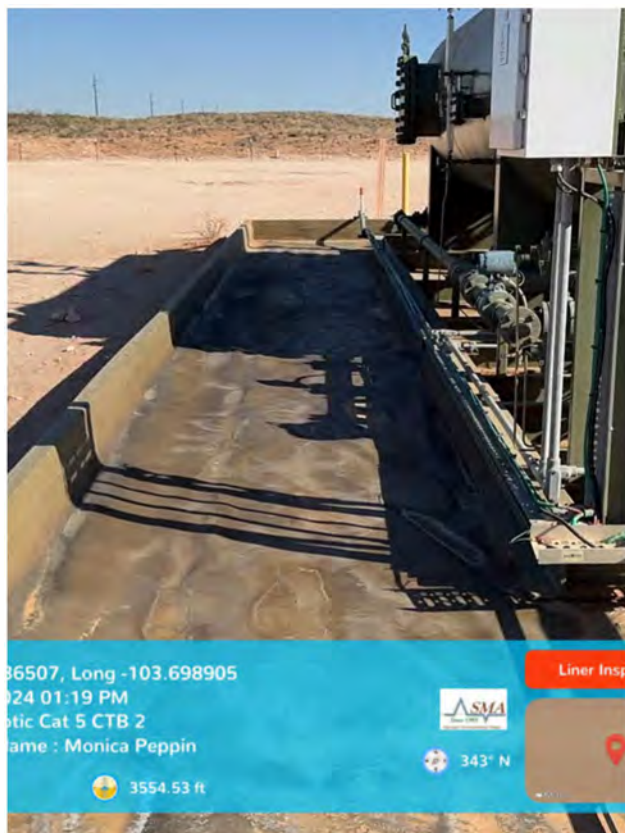




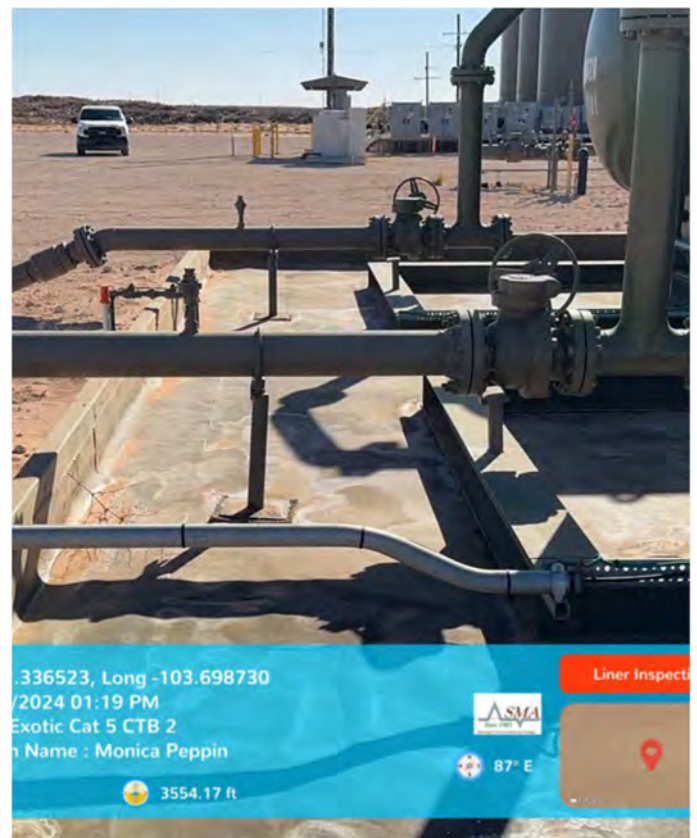
Photograph #30: Middle area where heater treaters are located



Photograph #31: Facing west on north end of containment near separators



Photograph #32: north end of separators facing east



Photograph #33: east side of separators facing south

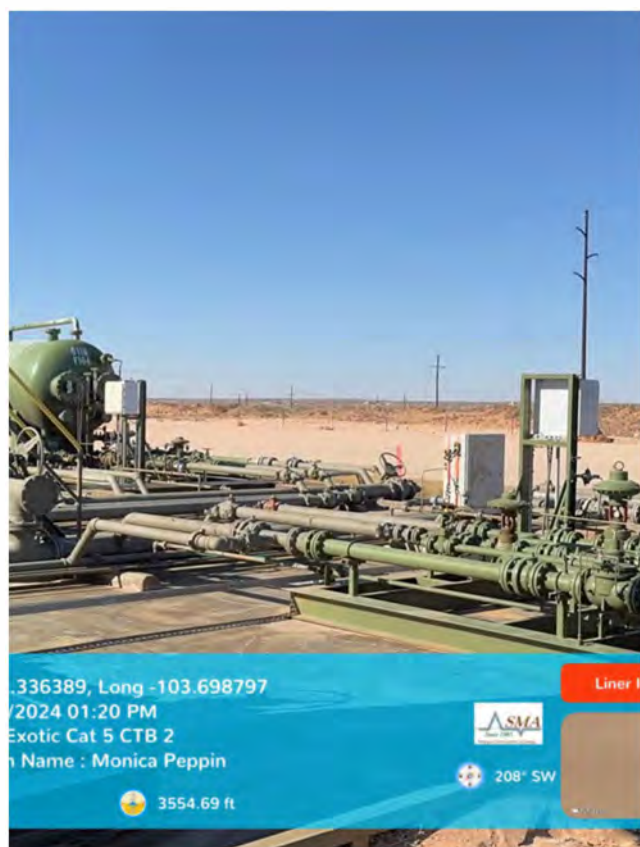




Photograph #34: Facing south from northwest corner



Photograph #35: Facing south from northeast side of containment

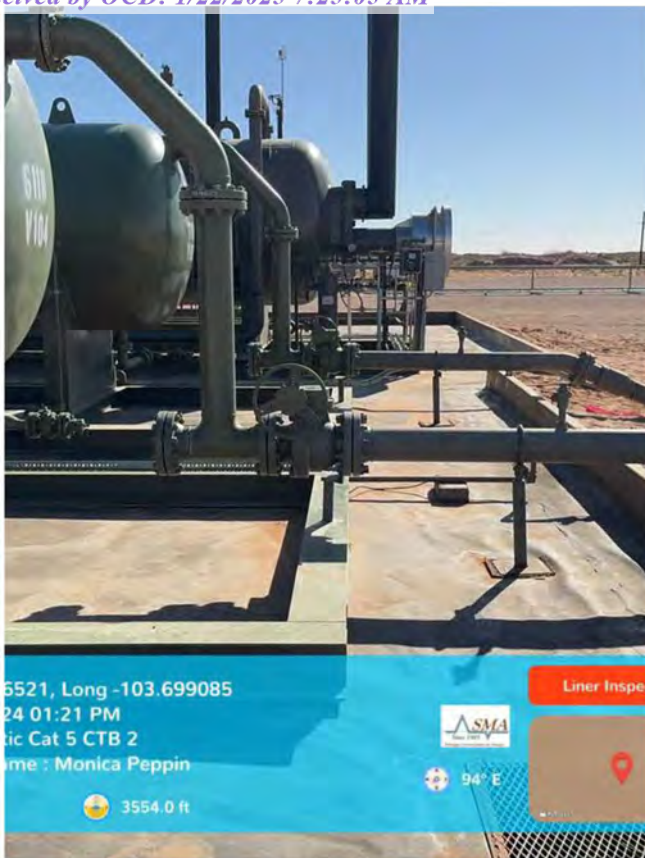


Photograph #36: north end of containment where separators and heaters are located

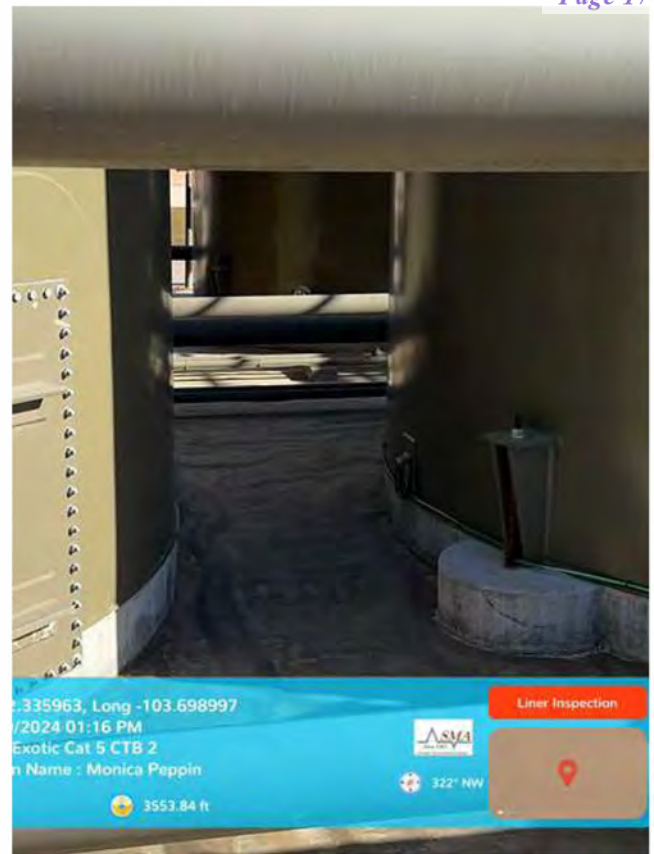


Photograph #37: Facing west/southwest from mid area on east side





Photograph #38: Facing south from northwest corner



Photograph #39: Facing south from northeast side of containment

Technician: Monica Peppin Date: 12/21/2024

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

# ATTACHMENT 2: CLOSURE CRITERIA DETERMINATION RESEARCH





## Exotic Cat 5 CTB 2

Site Coordinates: 32.335969, -103.698928

Containment Area: Approximately 14,971 square feet

### Legend

-  Containment Area
-  Exotic Cat 5 CTB 2

Exotic Cat 5 CTB 2 



# Exotic Cat 5 CTB 2 - 0.5-Mile Radius & Nearest DTGW Pod



1/16/2025, 7:53:47 AM

Override 1

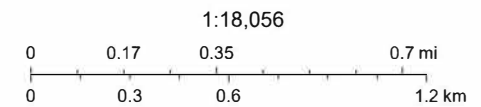
GIS WATERS PODs

Plugged



OSE District Boundary

Distance to C-04862-Pod1- 0.81 miles  
DTGW - 78 feet



Esri, HERE, iPC, Esri, HERE, Garmin, iPC, Maxar

Online web user  
This is an unofficial map from the OSE's online application.



File No. C-4862

## NEW MEXICO OFFICE OF THE STATE ENGINEER



## WR-07 APPLICATION FOR PERMIT TO DRILL

## A WELL WITH NO WATER RIGHT



(check applicable boxes):

For fees, see State Engineer website: <https://www.ose.nm.gov/>

Purpose:	<input type="checkbox"/> Pollution Control And/Or Recovery	<input type="checkbox"/> Ground Source Heat Pump
<input type="checkbox"/> Exploratory Well*(Pump test)	<input type="checkbox"/> Construction Site/Public Works Dewatering	<input checked="" type="checkbox"/> Other(Describe): groundwater determination
<input type="checkbox"/> Monitoring Well	<input type="checkbox"/> Mine Dewatering	

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

\*New Mexico Environment Department-Drinking Water Bureau (NMED-DWB) will be notified if a proposed exploratory well is used for public water supply.

☐ Check here if the borehole is anything other than vertical (directional boring or angle boring) and include a schematic of your design.

☒ Temporary Request - Requested Start Date: 7/15/24 Requested End Date: 7/15/25

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

Note: if there is known artesian conditions, contamination or high mineral content at the drilling location, include the borehole log or a well log from an existing well at that location. If this information is not submitted, check box and attach form WD-09 to this form. ☐

## 1. APPLICANT(S)

Name: Cimarex Energy CO./Coterra	Name:
Contact or Agent: check here if Agent <input checked="" type="checkbox"/> H&R Enterprises, LLC/James Hawley	Contact or Agent: check here if Agent <input type="checkbox"/>
Mailing Address: PO 3641	Mailing Address:
City: Hobbs	City:
State: Zip Code: NM 88241	State: Zip Code:
Phone: (575) 605-3471 <input type="checkbox"/> Home <input type="checkbox"/> Cell Phone (Work):	Phone: <input type="checkbox"/> Home <input type="checkbox"/> Cell Phone (Work):
E-mail (optional): jhawley@h-r-enterprises.com	E-mail (optional):

FOR OSE INTERNAL USE

Application for Permit, Form WR-07, Rev 07/10/2024

File No.: C-4862	Tm. No.: 764584	Receipt No.: 247115
Trans Description (optional): EXPL		
Sub-Basin: CLUB	PCWLOG Due Date: 8-5-2025	

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## 2. WELL(S) Describe the well(s) applicable to this application.

**Location Required:** Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).  
District II (Roswell), District V (Aztec) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☒ NM State Plane (NAD83) (Feet)
☐ UTM (NAD83) (Meters)
☒ Lat/Long (WGS84) (to the nearest 1/10<sup>th</sup> of second)

☐ NM West Zone
☐ Zone 12N

☒ NM East Zone
☐ Zone 13N

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	-Public Land Survey System (PLSS) (QQQSection, Township, Range) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name	Well Depth in feet	Casing Diameter (OD)
C-4862 Pcd1	-103.685720	32.339516	NWNW S4 T23S R32E	105	2"

**NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)**  
Additional well descriptions are attached: ☐ Yes ☒ No If yes, how many \_\_\_\_\_

Other description relating well to common landmarks, streets, or other:  
3.2 miles East of CR 29

Well is on land owned by: BLM

**Well Information:** NOTE: If casings telescope or involve nested casing, please provide diagram. Attached? ☐ Yes ☒ No

Approximate depth to water (feet): Unknown

Driller Name: James Hawley Driller License Number: WD-1862

## 3. ADDITIONAL STATEMENTS OR EXPLANATIONS

One 6" borehole will be advanced to determine the depth of groundwater at the Cimarex Energy CO./Coterra Red Tank 4 Fed #1 remediation site. The Borehole will be advanced until groundwater is reached or a maximum depth of 105' BGS, two inch casing will be installed into the borehole and left for 72 hours. After casing is gauged, it will be pulled and the borehole will be plugged pursuant to NMOSE guidelines. No pump will be installed.

FOR OSE INTERNAL USE

Application for Permit, Form WR-07 Version 07/10/2024

File No.: C-4862

Trm No.: 764584

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**4. SPECIFIC REQUIREMENTS:** The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

<b>Exploratory*:</b> Is proposed well a future public water supply well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> NO If Yes, an application must be filed with NMED-DWB, concurrently. <input checked="" type="checkbox"/> Include a description of any proposed pump test, if applicable.	<b>Pollution Control and/or Recovery:</b> <input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following: <input type="checkbox"/> A description of the need for the pollution control or recovery operation. <input type="checkbox"/> The estimated maximum period of time for completion of the operation. <input type="checkbox"/> The annual diversion amount. <input type="checkbox"/> The annual consumptive use amount. <input type="checkbox"/> The maximum amount of water to be diverted and injected for the duration of the operation. <input type="checkbox"/> The method and place of discharge. <input type="checkbox"/> The method of measurement of water produced and discharged. <input type="checkbox"/> The source of water to be injected. <input type="checkbox"/> The method of measurement of water injected. <input type="checkbox"/> The characteristics of the aquifer. <input type="checkbox"/> The method of determining the resulting annual consumptive use of water and depletion from any related stream system. <input type="checkbox"/> Proof of any permit required from the New Mexico Environment Department. <input type="checkbox"/> An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	<b>Construction De-Watering:</b> <input type="checkbox"/> Include a description of the proposed dewatering operation, <input type="checkbox"/> The estimated duration of the operation, <input type="checkbox"/> The maximum amount of water to be diverted, <input type="checkbox"/> A description of the need for the dewatering operation, and, <input type="checkbox"/> A description of how the diverted water will be disposed of. <b>Ground Source Heat Pump:</b> <input type="checkbox"/> Include a description of the geothermal heat exchange project, <input type="checkbox"/> The number of boreholes for the completed project and required depths. <input type="checkbox"/> The time frame for constructing the geothermal heat exchange project, and, <input type="checkbox"/> The duration of the project. <input type="checkbox"/> Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	<b>Mine De-Watering:</b> <input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following: <input type="checkbox"/> A description of the need for mine dewatering. <input type="checkbox"/> The estimated maximum period of time for completion of the operation. <input type="checkbox"/> The source(s) of the water to be diverted. <input type="checkbox"/> The geohydrologic characteristics of the aquifer(s). <input type="checkbox"/> The maximum amount of water to be diverted per annum. <input type="checkbox"/> The maximum amount of water to be diverted for the duration of the operation. <input type="checkbox"/> The quality of the water. <input type="checkbox"/> The method of measurement of water diverted. <input type="checkbox"/> The recharge of water to the aquifer. <input type="checkbox"/> Description of the estimated area of hydrologic effect of the project. <input type="checkbox"/> The method and place of discharge. <input type="checkbox"/> An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. <input type="checkbox"/> A description of the methods employed to estimate effects on surface water rights and underground water rights. <input type="checkbox"/> Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
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(\* if exploration or monitoring drilling activity is required by NMED, then you must also submit the NMED Work Plan)

#### ACKNOWLEDGEMENT

I, We (name of applicant(s)), James Hawley

Print Name(s)

affirm that the foregoing statements are true to the best of (my,our) knowledge and belief.

Applicant Signature

Applicant Signature

#### ACTION OF THE STATE ENGINEER

This application is:

☒ approved

☐ partially approved

☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 5th day of August 20 24, for the State Engineer,

State Engineer



By:  
Signature

K. Parekh

Kashyap Parekh  
Print

Title: Water Resources Manager I  
Print

FOR OSE INTERNAL USE

Application for Permit, Form WR-07 Version 07/10/2024

File No.: C-4862

Tm No.: 764584

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**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL**

- 17-16 Construction of a water well by anyone without a valid New Mexico Well Driller License is illegal, and the landowner shall bear the cost of plugging the well by a licensed New Mexico well driller. This does not apply to driven wells, the casing of which does not exceed two and three-eighths inches outside diameter.
- 17-1A Depth of the well shall not exceed the thickness of the valley fill.
- 17-4 No water shall be appropriated and beneficially used under this permit.
- 17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.

Trn Desc: C 04862 POD1

File Number: C 04862

Trn Number: 764584

page: 1



**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL (Continued)**

- 17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.
- 17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.
- 17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.  
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.
- 17-C2 No water shall be diverted from this well except for testing purposes which shall not exceed ten (10) cumulative days, and well shall be plugged or capped on or before , unless a permit to use water from this well is acquired from the Office of the State Engineer.
- 17-G If artesian water is encountered, the well driller shall comply with all rules and regulations pertaining to the drilling and casing of artesian wells.
- 17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.

Trn Desc: C 04862 POD1

File Number: C 04862

Trn Number: 764584

page: 2

**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL (Continued)**

- 17-Q The State Engineer retains jurisdiction over this permit.
- 17-R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.
- LOG The Point of Diversion C 04862 POD1 must be completed and the Well Log filed on or before 08/05/2025.

IT IS THE PERMITTEE'S RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

**ACTION OF STATE ENGINEER**

Notice of Intention Rcvd:	Date Rcvd. Corrected:
Formal Application Rcvd: 07/22/2024	Pub. of Notice Ordered:
Date Returned - Correction:	Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 05 day of Aug A.D., 2024

\_\_\_\_\_, State Engineer

By: K. Parekh  
KASHYAP PAREKH



Trn Desc: C 04862 POD1

File Number: C 04862

Trn Number: 764584

State Engineer



Roswell Office  
1900 WEST SECOND STREET  
ROSWELL, NM 88201

**STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER**

Trn Nbr: 764584  
File Nbr: C 04862

Aug. 05, 2024

JAMES HAWLEY  
CIMAREX ENERGY C O COTERRA  
P.O. BOX 3641  
HOBBS, NM 88241

Greetings:

Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

- \* If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.
- \* If the final intended purpose and condition requires a well ID tag and meter installation, the applicant must immediately send a completed meter report form to this office.
- \* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.
- \* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website [www.ose.state.nm.us](http://www.ose.state.nm.us).

Sincerely,

A handwritten signature in black ink, appearing to read "Vanessa Clements".

Vanessa Clements  
(575) 622-6521

Enclosure

explore





## Coordinates

UTM - NAD 83 (m) - Zone 13

Easting 623686.689

Northing 3578827.839

State Plane - NAD 83 (f) - Zone E

Easting 741351.304

Northing 487850.681

Degrees Minutes Seconds

Latitude 32 : 20 : 22.257600

Longitude -103 : 41 : 8.592000

Location pulled from Coordinate Search

NEW MEXICO OFFICE  
OF THE  
STATE ENGINEER

1:9,028

N



8/5/2024



It is the policy of the Office of the State Engineer to provide the best possible information available to the public. However, the Office cannot be held responsible for errors or for any consequences arising from the use of the information. The user assumes all liability for any errors or omissions. These maps are distributed as is without warranty of any kind.

## Spatial Information

Land Grant: Not in Land Grant  
County: Lea

Groundwater Basin: Carlsbad

Abstract Area:

Carlsbad 72-12-1

Carlsbad Underground Basin

Regulation Area:

Carlsbad/Capitan/Lea Closure

PLSS Description

SW NE NW NW Qtr of Sec 4 of 23S 32E

Derived from Projected PLSS- Qtr Sec.  
locations are calculated and are only  
approximations

## Parcel Information

UPC/DocNum:

Parcel Owner:

Address:null null null

Legal:

## POD Information

Owner:

File Number:

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose:

<input type="checkbox"/> Calculated PLSS	<input type="checkbox"/> New Mexico State Trust Lands	<input type="checkbox"/> Colfax County Parcels 2023	<input type="checkbox"/> Guadalupe County Parcels 2023	<input type="checkbox"/> Luna County Parcels 2023	<input type="checkbox"/> Roosevelt County Parcels 2023	<input type="checkbox"/> Santa Fe County Parcels 2023	<input type="checkbox"/> Valencia County Parcels 2023
<input type="checkbox"/> Coord Search Location	<input type="checkbox"/> Both Estates	<input type="checkbox"/> Curry County Parcels 2023	<input type="checkbox"/> Harding County Parcels 2023	<input type="checkbox"/> McKinley County Parcels 2023	<input type="checkbox"/> Sandoval County Parcels 2023	<input type="checkbox"/> Sierra County Parcels 2023	<input type="checkbox"/> Sections
<input type="checkbox"/> Water Right Regulations	<input type="checkbox"/> Bernalillo County Parcels 2023	<input type="checkbox"/> De Baca County Parcels 2023	<input type="checkbox"/> Hidalgo County Parcel 2023	<input type="checkbox"/> Mora County Parcels 2023	<input type="checkbox"/> San Juan County Parcels 2023	<input type="checkbox"/> Socorro County Parcels 2023	
<input type="checkbox"/> Closure Area	<input type="checkbox"/> Catron County Parcels 2023	<input type="checkbox"/> Doña Ana County Parcels 2023	<input type="checkbox"/> Lea County Parcels 2023	<input type="checkbox"/> Otero County Parcels 2023	<input type="checkbox"/> San Miguel County Parcels 2023	<input type="checkbox"/> Taos County Parcels 2023	
<input type="checkbox"/> Artesian Planning Area	<input type="checkbox"/> Chaves County Parcels 2023	<input type="checkbox"/> Eddy County Parcels 2023	<input type="checkbox"/> Lincoln County Parcels 2023	<input type="checkbox"/> Quay County Parcels 2023	<input type="checkbox"/> Torrance County Parcels 2023	<input type="checkbox"/> Union County Parcels 2023	
<input type="checkbox"/> OSE District Boundary	<input type="checkbox"/> Cibola County Parcels 2023	<input type="checkbox"/> Grant County Parcels 2023	<input type="checkbox"/> Los Alamos County Parcels 2023	<input type="checkbox"/> Rio Arriba County Parcels 2023			

U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

07/17/2024

Well Name: RED TANK 4 FEDERAL	Well Location: T23S / R32E / SEC 4 / NWNW / 32.3395163 / -103.6857202	County or Parish/State: LEA / NM
Well Number: 1	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM126065	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002540534	Operator: CIMAREX ENERGY COMPANY	

**Notice of Intent**

Sundry ID: 2798382

Type of Submission: Notice of Intent

Type of Action: Other

Date Sundry Submitted: 07/01/2024

Time Sundry Submitted: 01:13

Date proposed operation will begin: 07/08/2024

**Procedure Description:** The Red Tank 4 Federal 1 at D-04-23S-32E, Lea County, NM, GPS coordinates 32.33921, -103.68561, and the immediate area requires advanced soil boring to take place at approximately (105') feet below ground surface to remediate release (NMOCD Spill incident Number nAPP2412576675). The boring will be secured and left open for (72) hours at which time (Cimarex Energy Co. of Colorado) will assess for the presence or absence of groundwater. Temporary PVC well material will be placed to total depth of the boring and secured at the surface. If water is encountered at any point during the boring, installation of the soil boring will be plugged using Portland Type 1/11 neat cement less than 6.0 gallons of water per 94lb sack. If no water is encountered, then the soil boring will be plugged.

**Surface Disturbance**

Is any additional surface disturbance proposed?: No

OCD ON JUL 22 2024 #10:25



<b>Well Name:</b> RED TANK	<b>ERAL</b>	<b>Well Location:</b> T23S / R32E / SEC 4 / NWNW / 32.3395163 / -103.6857202	<b>County or Parish/State:</b> LEA /
<b>Well Number:</b> 1		<b>Type of Well:</b> OIL WELL	<b>Allottee or Tribe Name:</b>
<b>Lease Number:</b> NMNM126065		<b>Unit or CA Name:</b>	<b>Unit or CA Number:</b>
<b>US Well Number:</b> 3002540534		<b>Operator:</b> CIMAREX ENERGY COMPANY	

**Conditions of Approval****Additional**

20240715\_RED\_TANK\_4\_FEDERAL\_1\_\_\_St\_Engineer\_Office\_drilling\_approval\_20240716091236.pdf

**Operator**

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

**Operator Electronic Signature:** LACI LUIG**Signed on:** JUL 01, 2024 01:12 PM**Name:** CIMAREX ENERGY COMPANY**Title:** EHS Specialist**Street Address:** 6001 DEAUVILLE BLVD SUITE 300N**City:** MIDLAND**State:** TX**Phone:** (432) 208-3035**Email address:** LACI.LUIG@COTERRA.COM**Field****Representative Name:** Laci Luig**Street Address:** 6001 Deauville Blvd.**City:** Midland**State:** TX**Zip:** 79706**Phone:** (432)208-3035**Email address:** laci.luig@coterra.com**BLM Point of Contact****BLM POC Name:** CHRISTOPHER WALLS**BLM POC Title:** Petroleum Engineer**BLM POC Phone:** 5752342234**BLM POC Email Address:** cwalls@blm.gov**Disposition:** Approved**Disposition Date:** 07/16/2024**Signature:** Chris Walls

000000 JUL 22 2024 04:10:25



## United States Department of the Interior

### BUREAU OF LAND MANAGEMENT

Carlsbad Field Office  
620 E. Greene St.  
Carlsbad, NM 88220-6292

In Reply Refer To:  
3162.4 (NM-080)

July 15, 2024

NM Office of the State Engineer  
1900 W. Second St.  
Roswell, NM 88201

Re: RED TANK 4 FEDERAL I  
Sec 4, TS 23S, RE 32E  
Lea County, New Mexico  
32.33921, -103.68561

To Whom It May Concern:

The above well location and the immediate area mentioned above requires advanced soil boring to take place at approximately 105 feet below ground surface. The boring will be secured and left open for 72 hours at which time CIMAREX ENERGY COMPANY will assess for the presence or absence of groundwater. Temporary PVC well material will be placed to total depth of the boring and secured at the surface. If water is encountered at any point during the boring, installation of the soil boring will be plugged using Portland Type 1/11 neat cement less than 6.0 gallons of water per 94lb sack. If no water is encountered, then the soil boring will be plugged. The Bureau of Land Management (landowner) authorizes the access of the area to accomplish depth to groundwater determination of this site.

If you have any questions contact Crisha Morgan, at 575-234-5987.

GOV.DIT JUL 22 2024 10:10:25

Sincerely,

CRISHA MORGAN

Digitally signed by CRISHA MORGAN  
Date: 2024.07.15 10:21:57 -06'00'

Crisha A. Morgan  
Certified Environmental Protection Specialist




## 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
NA	C 04862 POD1	NE	NW	NW	04	23S	32E	623697.0	3578798.5	

\* UTM location was derived from PLSS - see Help

Driller License:	1862	Driller Company:	H&R ENTERPRISES, LLC		
Driller Name:	HAWLEY, JAMES CODYELALL OFF				
Drill Start Date:	2024-08-14	Drill Finish Date:	2024-08-14	Plug Date:	2024-08-22
Log File Date:	2024-08-30	PCW Rcv Date:		Source:	Shallow
Pump Type:		Pipe Discharge Size:		Estimated Yield:	
Casing Size:		Depth Well:	105	Depth Water:	78

### Water Bearing Stratifications:

Top	Bottom	Description
40	85	Shale/Mudstone/Siltstone

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

1/16/25 8:02 AM MST

Point of Diversion Summary

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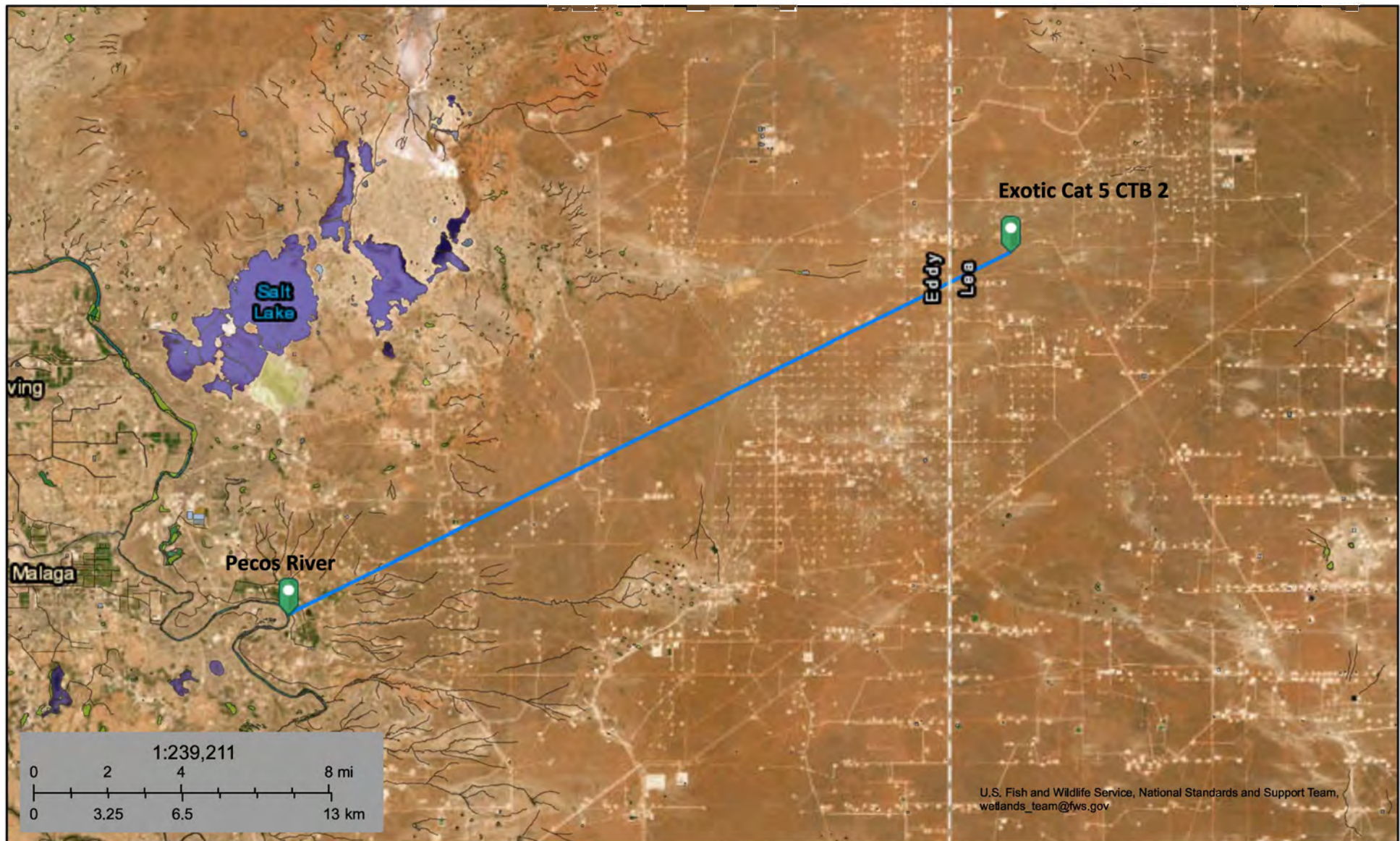
U.S. Fish and Wildlife Service

## National Wetlands Inventory

## Exotic Cat 5 CTB 2

Nearest Flowing Watercourse: Pecos River

Distance: 18.5 miles (97,814 feet)



January 17, 2025

## Wetlands

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Lake

Other

Riverine

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

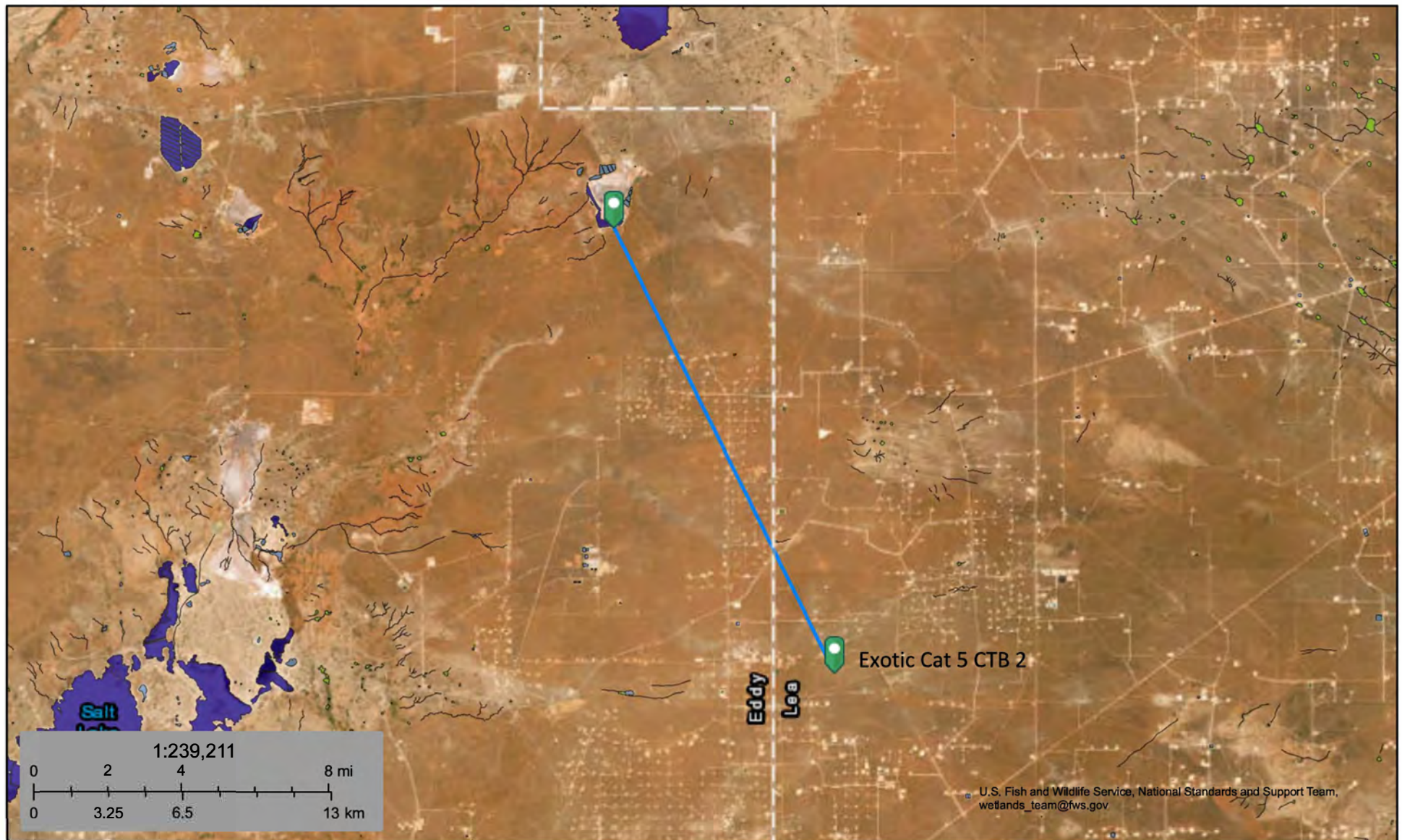




Exotic Cat 5 CTB 2

Nearest Lakebed - Salt Lakes

Distance - 11.3 miles (59,927 feet)



January 17, 2025

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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

- Lake
- Other
- Riverine



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

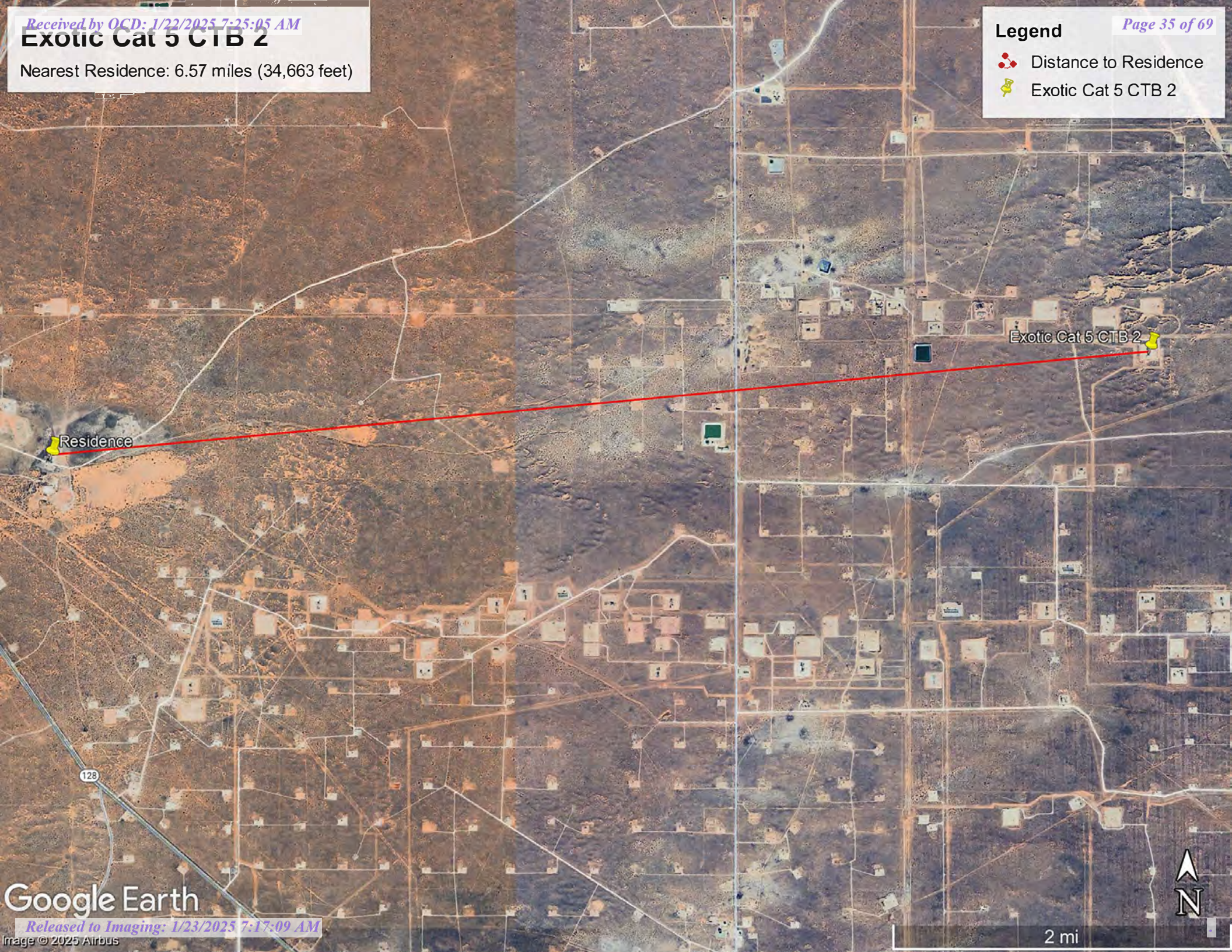


# Exotic Cat 5 CTB 2

Nearest Residence: 6.57 miles (34,663 feet)

## Legend

-  Distance to Residence
-  Exotic Cat 5 CTB 2





# Exotic Cat 5 CTB 2 - Pod C-02349 Stock Watering

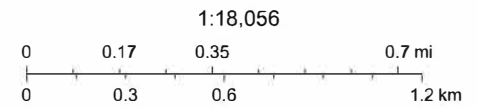


1/16/2025, 8:40:29 AM

Override 1  
GIS WATERS PODs

Plugged  
OSE District Boundary

Distance to Stock Watering Pod - 2.02 miles/33,943 feet



Esri, HERE, IPC, Esri, HERE, Garmin, IPC, Maxar

Online web user  
This is an unofficial map from the OSE's online application.

# Water Right Summary



[get image](#)  
[list](#)

WR File Number:	C 02349	Subbasin:	CUB	Cross Reference:
Primary Purpose:	STK 72-12-1 LIVESTOCK WATERING			
Primary Status:	DCL Declaration			
Total Acres:	0.000	Subfile:	Header:	
Total Diversion:	3.000	Cause/Case:		
Owner:	CHARLES F. JAMES	Owner Class:	Owner	

## Documents on File

(acr

Transaction Images	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/To	Acres	Divers
	<a href="#">154820</a>	DCL	1998-09-09	DCL	PRC	C 02349	T	0.000	3.000

## Current Points of Diversion

POD Number	Well Tag	Source	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map	Other Location Desc
<a href="#">C 02349</a>	NA		SE	NE	SW	03	23S	32E	625677.9	3578003.4		

\* 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.

1/16/25 8:36 AM MST


Water Rights Summary

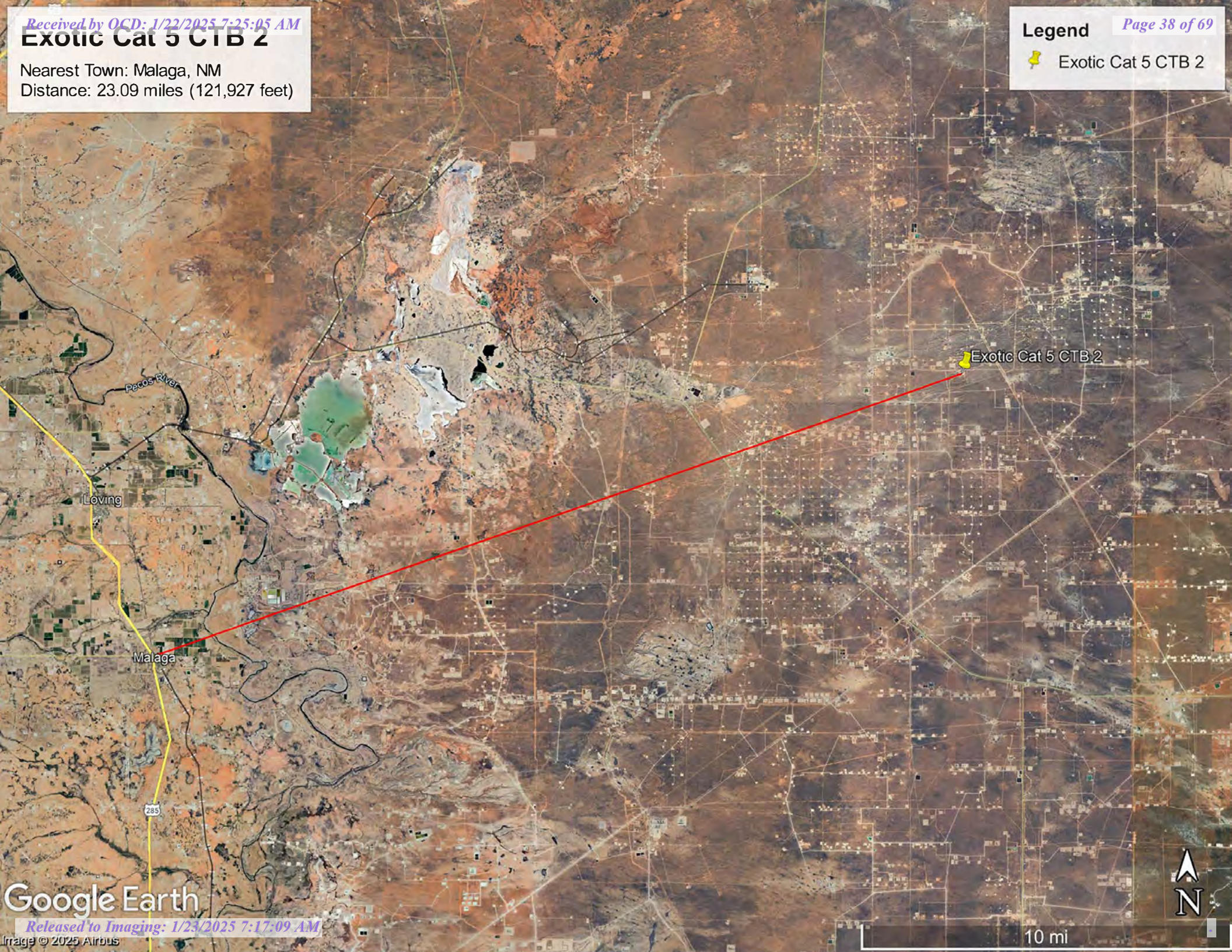


# Exotic Cat 5 CTB 2

Nearest Town: Malaga, NM  
Distance: 23.09 miles (121,927 feet)

## Legend

 Exotic Cat 5 CTB 2







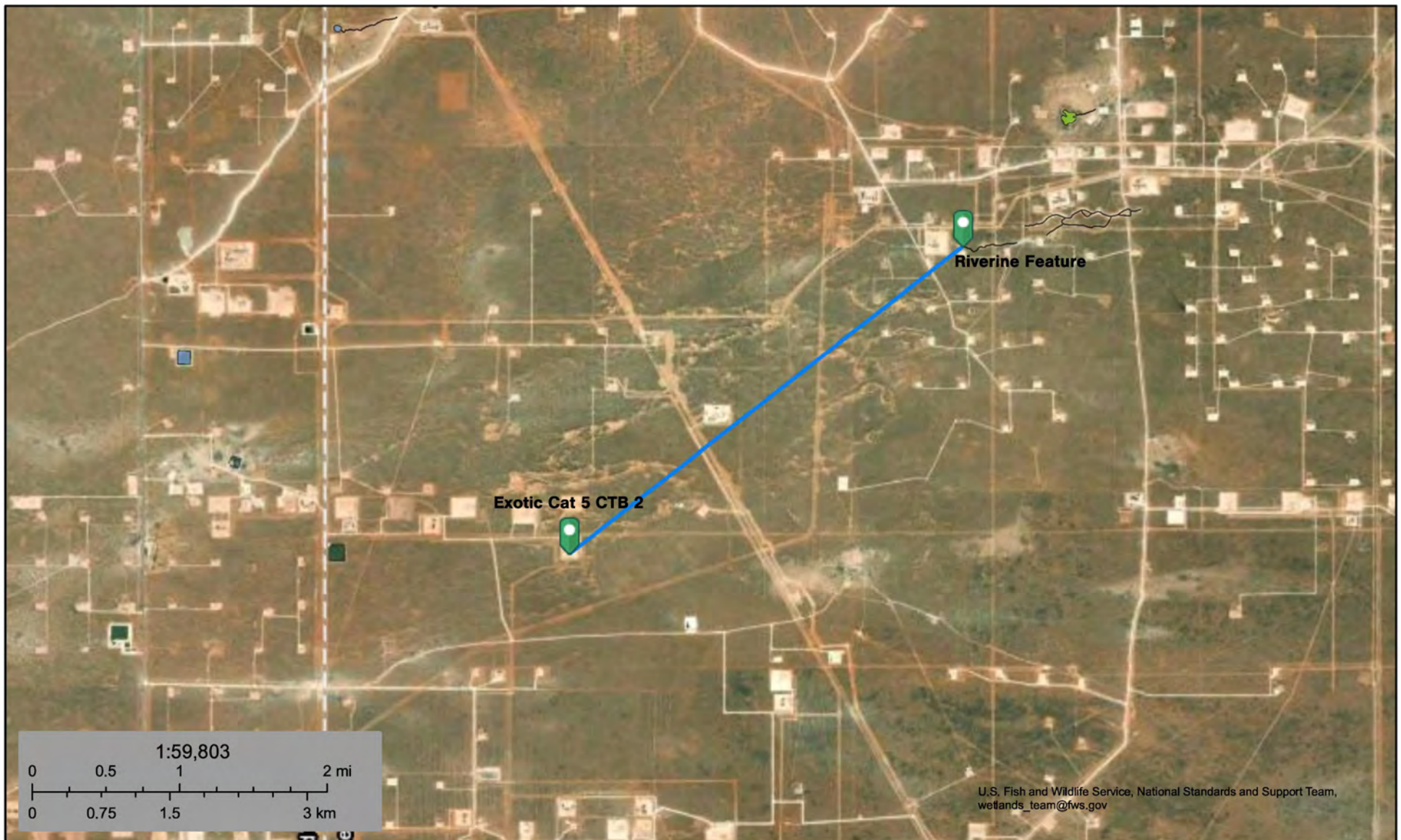
U.S. Fish and Wildlife Service

## National Wetlands Inventory

## Exotic Cat 5 CTB 2

Nearest Wetlands Feature - Riverine

Distance - 2.86 miles (15,103 feet)



January 16, 2025

## Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

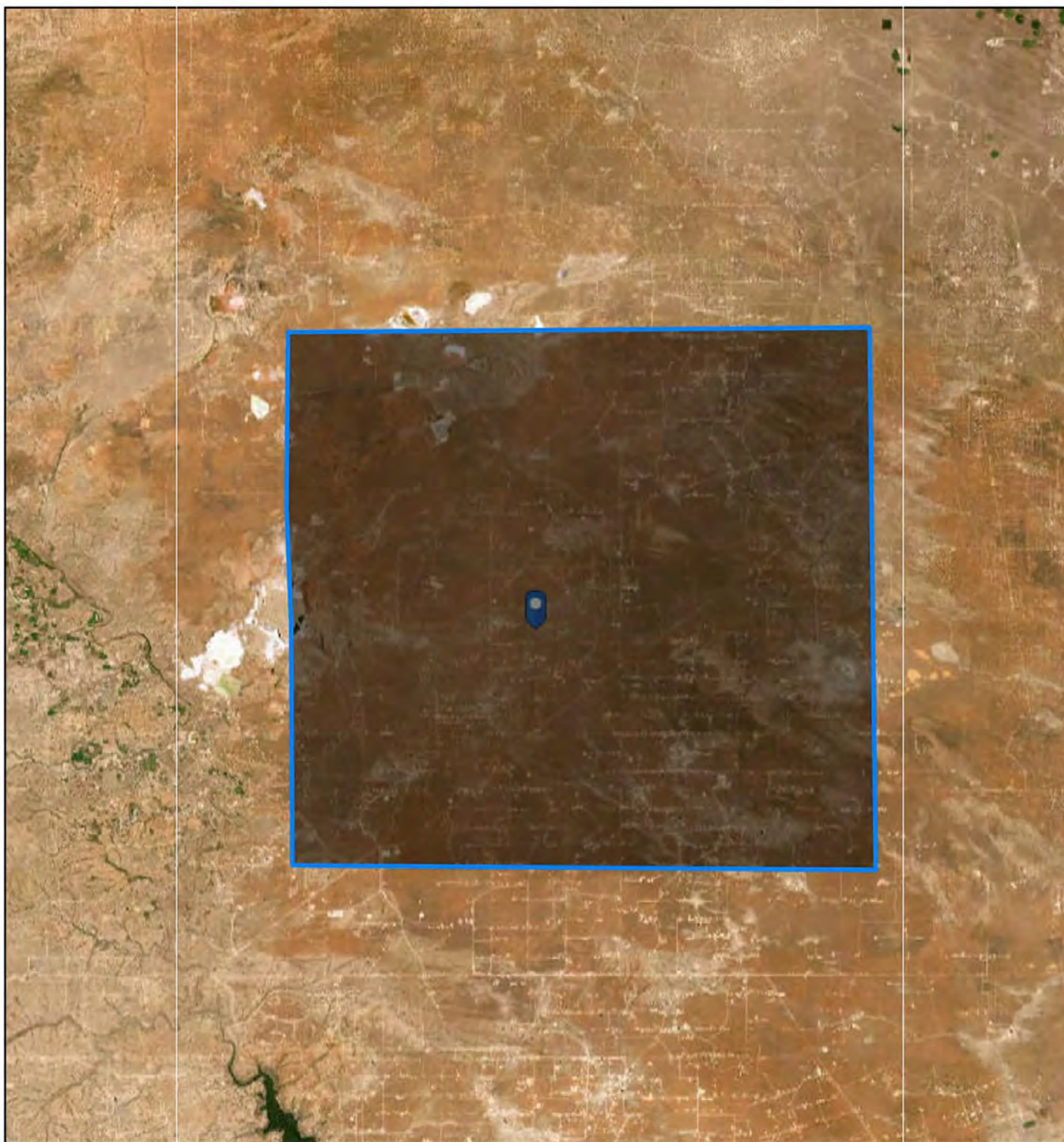
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

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

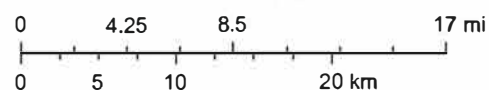


# Exotic Cat 5 CTB 2 - Subsurface Mines with 922 Sq Mile Buffer



1/17/2025, 8:26:22 PM

1:577,791



Earthstar Geographics. NM Coal Mine Reclamation Program. NM EMNRD



Exotic Cat 5 CTB 2

Distance to Medium Karst Potential Area

## Exotic Cat 5 CTB 2 Karst Potential & Distance to Medium Karst Area

0 0.42 0.85 1.7  
mi**New Mexico State Land Office**

Disclaimer:  
The New Mexico State Land Office assumes no responsibility or liability for, or in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.


Data pertaining to New Mexico State Trust Lands are provisional and subject to revision, and do not constitute an official record of title. Official records may be reviewed at the New Mexico State Land Office in Santa Fe, New Mexico.

Released to Imaging: 1/23/2025 7:17:09 AM  
Map Created: 1/16/2025

 User drawn points

Karst\_Potential\_NM

Potential

 High Medium Low Critical\_Karst\_Zone\_NM

Distance to Medium Karst Potential Area - 6.43 miles (33,943 feet)





# National Flood Hazard Layer FIRMMette



103°42'15"W 32°20'25"N



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

1:6,000

103°41'37"W 32°19'54"N

## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 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		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 1/16/2025 at 4:54 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.

# Exotic Cat 5 CTB 2

Soil Map—Lea County, New Mexico



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey


1/17/2025  
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
KM	Kermit soils and Dune land, 0 to 12 percent slopes	3.8	100.0%
Totals for Area of Interest		3.8	100.0%



Map Unit Description: Kermit soils and Dune land, 0 to 12 percent slopes—Lea County, New Mexico

---

## Lea County, New Mexico

### KM—Kermit soils and Dune land, 0 to 12 percent slopes

#### Map Unit Setting

*National map unit symbol:* dmpx

*Elevation:* 3,000 to 4,400 feet

*Mean annual precipitation:* 10 to 15 inches

*Mean annual air temperature:* 60 to 62 degrees F

*Frost-free period:* 190 to 205 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Kermit and similar soils:* 46 percent

*Dune land:* 44 percent

*Minor components:* 10 percent

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

#### Description of Kermit

##### Setting

*Landform:* Dunes

*Landform position (two-dimensional):* Shoulder, backslope, footslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave, convex, linear

*Across-slope shape:* Convex

*Parent material:* Calcareous sandy eolian deposits derived from sedimentary rock

##### Typical profile

*A - 0 to 8 inches:* fine sand

*C - 8 to 60 inches:* fine sand

##### Properties and qualities

*Slope:* 5 to 12 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Excessively drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* Very high (20.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 3 percent

*Gypsum, maximum content:* 1 percent

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

*Sodium adsorption ratio, maximum:* 2.0

*Available water supply, 0 to 60 inches:* Low (about 3.1 inches)

Map Unit Description: Kermit soils and Dune land, 0 to 12 percent slopes---Lea County, New Mexico

---

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* A

*Ecological site:* R070BC022NM - Sandhills

*Hydric soil rating:* No

**Description of Dune Land****Setting**

*Landform:* Dunes

*Landform position (two-dimensional):* Shoulder, backslope, footslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave, convex, linear

*Across-slope shape:* Convex

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

**Typical profile**

*A - 0 to 6 inches:* fine sand

*C - 6 to 60 inches:* fine sand

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

**Minor Components****Palomas**

*Percent of map unit:* 3 percent

*Ecological site:* R070BD003NM - Loamy Sand

*Hydric soil rating:* No

**Pyote**

*Percent of map unit:* 3 percent

*Ecological site:* R070BD003NM - Loamy Sand

*Hydric soil rating:* No

**Wink**

*Percent of map unit:* 2 percent

*Ecological site:* R070BD003NM - Loamy Sand

*Hydric soil rating:* No

**Maljamar**

*Percent of map unit:* 2 percent

*Ecological site:* R070BD003NM - Loamy Sand



Map Unit Description: Kermit soils and Dune land, 0 to 12 percent slopes---Lea County, New Mexico

---

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Lea County, New Mexico

Survey Area Data: Version 21, Sep 3, 2024





## Ecological site R070BC022NM Sandhills

Accessed: 01/17/2025

### General information

**Provisional.** A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

**Figure 1. Mapped extent**

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

**Table 1. Dominant plant species**

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

### Physiographic features

This site occurs on plains. The soils are calcareous sandy eolian deposits derived from sedimentary rock. Land form of sand dunes or hillslopes. Slopes average 5 to 35 percent. Slopes are complex as the steeper slopes are shorter in length while the more gentle slopes are longer in length. Direction of slopes vary and is usually not significant. Elevations range from 2,842 to 4,500 feet.

**Table 2. Representative physiographic features**

Landforms	(1) Plain (2) Hill (3) Dune
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–4,500 ft
Slope	5–35%
Aspect	Aspect is not a significant factor

### Climatic features

The climate of the area is "semi-arid continental". The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms. Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer. The average frost-free season is 180 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November. Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Because of the texture of this soil, most rainfall is effective. Strong winds blow from the west and southwest from January through June which accelerates soil drying at a time for cool season



plant growth.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

**Table 3. Representative climatic features**

Frost-free period (average)	220 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

## Influencing water features

This site is not influenced by wetlands or streams.

## Soil features

The soils of this site are deep and very deep. Surface textures are fine sand or loamy fine sand. Subsoils are a fine sand or loamy fine sand to a depth of 60 inches or more. These soils have less than 10 percent clay content. These soils are subject to severe wind erosion if vegetative cover is not adequate.

Minimum and maximum values listed below represent the characteristic soils for this site.

Characteristic Soils Are:

Kermit

Aguena

**Table 4. Representative soil features**

Surface texture	(1) Fine sand (2) Loamy fine sand (3) Loamy sand
Family particle size	(1) Sandy
Drainage class	Well drained to excessively drained
Permeability class	Rapid to very rapid
Soil depth	60–72 in
Surface fragment cover ≤3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0–40in)	3–9 in
Calcium carbonate equivalent (0–40in)	0–7%
Electrical conductivity (0–40in)	0–2 mmhos/cm
Sodium adsorption ratio (0–40in)	0–1
Soil reaction (1:1 water) (0–40in)	7.4–8.4
Subsurface fragment volume ≤3" (Depth not specified)	0–5%
Subsurface fragment volume >3" (Depth not specified)	0%

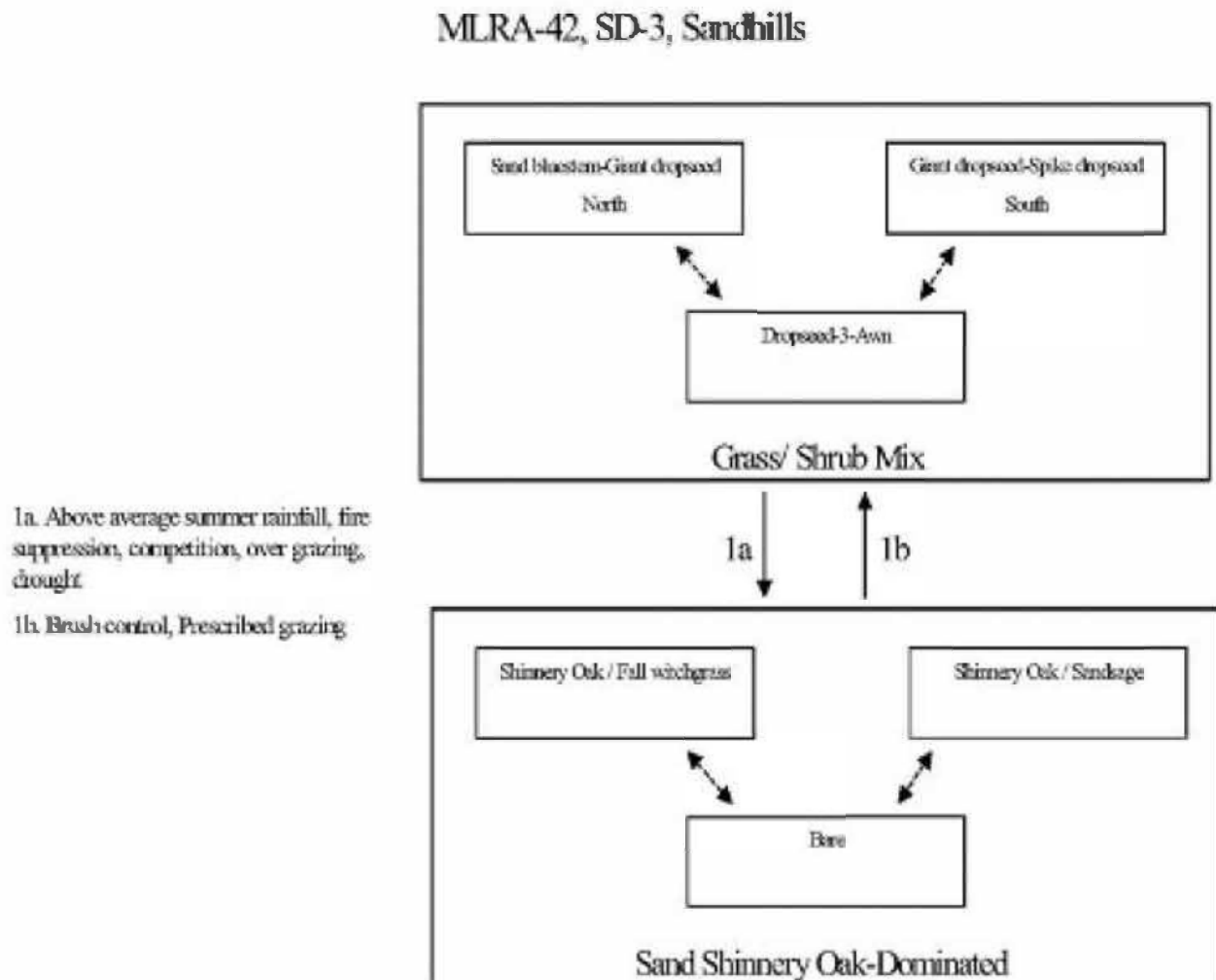
## Ecological dynamics

### Overview:

The Sandhills site occurs adjacent to or intergrades with the Deep Sand site. The Sandhills site is differentiated from deep sand sites by a steeper average slope, and an increased depth to a soil texture change. Sandhills slopes are usually greater than eight percent, and the soil profile is a fine sand or loamy fine sand to a depth greater than 60 inches. Deep Sand sites have slopes less than eight percent and a textural change can occur at less than 60 inches. The historic plant community of the Sandhills site is a mixture of grasses, shrubs and forbs, with tall grasses dominating in aspect. During years of abundant spring moisture, tall growing forbs occasionally reach aspect dominance. Sand bluestem and giant dropseed are the dominant grasses, with Havard panicum and dropseeds as sub-dominants. Sand shinnery oak and soapweed yucca are the dominant shrubs. Drought favors shinnery by impacting grasses more severely. Shinnery oak's ability to store water and carbohydrates, and its strong negative leaf water potential enable it to out compete grasses during drought conditions. Changes in historical fire regimes, competition by shrubs, and overgrazing may contribute to this site becoming dominated by sand shinnery oak.

## State and transition model

### Plant Communities and Transitional Pathways (diagram)





## State 1 Grass/Shrub Mix

### Community 1.1 Grass/Shrub Mix

Grass/Shrub Mix: The historic plant community in the northern part of the resource area (SD-3) is dominated by sand bluestem and giant dropseed, with Havard panicum as a sub-dominant. Primary grass dominance may gradually shift moving south across the resource area to a community dominated by giant dropseed and spike dropseed, with mesa dropseed as the sub-dominant grass species. Throughout the resource area sand shinnery oak and soapweed yucca are the dominant shrubs with sand sagebrush as the sub-dominant. As retrogression within this state occurs, plants such as sand bluestem, giant dropseed, Havard panicum, plains bristlegrass, sand paspalum, and fourwing saltbush decrease. This results in an increase in spike dropseed, sand dropseed, mesa dropseed, threeawns sand shinnery oak, and sand sagebrush. Continued loss of grass cover may result in a transition to a sand shinnery oak dominated state. Diagnosis: Sand bluestem or giant dropseed are dominant or present in substantial amounts. Spike dropseed, sand dropseed or mesa dropseed may be dominant in some instances. Grass cover is variable, shifting sands and large irregular dunes produce considerable variation in the spatial distribution and composition of the plant community. Grass cover is not continuous, but is fairly uniform across the more stable areas. Large natural bare areas or blowouts are a common feature on the less stable portions of the Sandhills site.

**Table 5. Annual production by plant type**

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	360	585	810
Shrub/Vine	120	195	270
Forb	120	195	270
<b>Total</b>	<b>600</b>	<b>975</b>	<b>1350</b>

**Table 6. Ground cover**

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	10-15%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	20-25%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	45-60%

**Figure 5. Plant community growth curve (percent production by month).  
NM2822, R042XC022NM Sandhills HCPC. R042XC022NM Sandhills HCPC  
warm season plant community.**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	1	3	4	10	10	25	30	12	5	0	0

## State 2 Sand Shinnery Oak-Dominated

### Community 2.1 Sand Shinnery Oak-Dominated

Additional States: Sand Shinnery Oak -Dominated: Sand shinnery oak is the dominant species and in dense stands may reduce forage production by as much as 90 percent.<sup>1</sup> It often forms a mosaic of dense thickets interspersed with occasional motts of taller oaks, large areas of bare ground, and concentrations of sand sagebrush. Sand shinnery oak is well suited to deep sandy soils. The height and cover of oak decreases as sand depth decreases or clay content increases. The aggressive nature of fall witchgrass and continued loss of more palatable grasses and threeawn species may result in a sand shinnery oak-fall witchgrass community. Burning may result in a community with very little grass or sand shinnery oak (bare). Sand shinnery oak usually recovers due to its ability to sprout aggressively following fire. Diagnosis: Sand shinnery oak is the dominant species. Grass cover is sparse and patchy. Shrub cover is high. Blowouts and bare areas are common, however, high shrub cover mediates erosion. Transition to Sand Shinnery Oak Dominated (1a): Climate may play a role in facilitating the spread sand shinnery oak. It is best adapted to those areas that receive an average of 16 inches of annual rainfall; it may therefore gain a competitive advantage during cycles of above average precipitation. Sand shinnery oak spreads mainly by elongation of rhizomes, but in some instances will reproduce by seed. The establishment and survival of seedlings is limited to those years with abundant rainfall during the months of July and August. If fire historically played a part in suppressing the density and distribution of shrubs in desert grasslands, then fire suppression may facilitate a shift to shrub dominance.<sup>2</sup> Competition for resources between grasses and shrubs may be a factor in increased densities of sand shinnery oak. 1 Sand shinnery oak has an extensive system of underground roots and stems that can uptake and store water for growth during drier periods, allowing it to increase, at times when grasses decrease. Evidence of competitive suppression of grasses is indicated by increases in herbaceous vegetation following chemical control of sand shinnery oak.<sup>1</sup> However, this increase may in part be due to a flush of nutrients made available from the decomposing biomass of woody roots and stems. Loss of grass cover due to overgrazing or drought may give a competitive advantage to sand shinnery oak. Key indicators of approach to transition: \* A decrease in the tall grass species and the associated increase in threeawns may be indicative of the initial stage of transition to a shrub-dominated state. \* Increased cover of sand shinnery oak. Transition back to Grass/Shrub Mix (1b) Chemical brush control is an effective means of controlling sand shinnery oak and sand sagebrush. Where large areas of chemical control are planned, increased erosion and the effect on loss of wildlife habitat should be considered. Prescribed grazing will help ensure an adequate deferment period to allow grass recovery and subsequent proper forage utilization. There have been studies that suggest long term browsing by goats can reduce sand shinnery oak, altering production in favor of grasses.<sup>3</sup>

### Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
<b>Grass/Grasslike</b>					
1				195–293	
	sand bluestem	ANHA	<i>Andropogon hallii</i>	195–293	—
	Havard's panicgrass	PAHA2	<i>Panicum havardii</i>	195–293	—
	giant dropseed	SPGI	<i>Sporobolus giganteus</i>	195–293	—
2				146–195	
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	146–195	—
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	146–195	—
	mesa dropseed	SPFL2	<i>Sporobolus flexuosus</i>	146–195	—
3				49–98	
	thin paspalum	PASE5	<i>Paspalum setaceum</i>	49–98	—
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	49–98	—
4				20–40	



4	threeawn	ARIST	<i>Aristida</i>	29-49	—
	mat sandbur	CELO3	<i>Cenchrus longispinus</i>	29-49	—
	flatsedge	CYPER	<i>Cyperus</i>	29-49	—
5				29-49	
	Grass, perennial	2GP	<i>Grass, perennial</i>	29-49	—
<b>Shrub/Vine</b>					
6				49-98	
	Havard oak	QUHA3	<i>Quercus havardii</i>	49-98	—
7				49-98	
	soapweed yucca	YUGL	<i>Yucca glauca</i>	49-98	—
8				29-49	
	sand sagebrush	ARFI2	<i>Artemisia filifolia</i>	29-49	—
9				20-49	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	20-49	—
10				20-49	
	rabbitbrush	CHRY9	<i>Chrysothamnus</i>	20-49	—
11				20-49	
	Shrub (>.5m)	2SHRUB	<i>Shrub (&gt;.5m)</i>	20-49	—
<b>Forb</b>					
12				20-49	
	featherplume	DAFO	<i>Dalea formosa</i>	20-49	—
13				29-49	
	sundrops	CALYL	<i>Calylophus</i>	29-49	—
	phlox heliotrope	HECO5	<i>Heliotropium convolvulaceum</i>	29-49	—
	sharpleaf penstemon	PEAC	<i>Penstemon acuminatus</i>	29-49	—
14				20-49	
	touristplant	DIWI2	<i>Dimorphocarpa wislizeni</i>	20-49	—
	lemon beebalm	MOCI	<i>Monarda citriodora</i>	20-49	—
16				29-49	
	hymenopappus	HYMEN4	<i>Hymenopappus</i>	29-49	—
	blazingstar	MENTZ	<i>Mentzelia</i>	29-49	—
	threadleaf ragwort	SEFLF	<i>Senecio flaccidus var. flaccidus</i>	29-49	—
17				20-49	
	sunflower	HELIA3	<i>Helianthus</i>	20-49	—
18				20-49	
	buckwheat	ERIOG	<i>Eriogonum</i>	20-49	—
19				20-49	
	Forb (herbaceous, not grass nor grass-like)	2FORB	<i>Forb (herbaceous, not grass nor grass-like)</i>	20-49	—

## Animal community

This site provides habitat which support a resident animal community that is characterized by pronghorn antelope, black-tailed jackrabbit, Ord's kangaroo rat, Northern grasshopper mouse, Southern Plains woodrat, swift fox, roadrunner, meadowlark, lark bunting, ferruginous hawk, lesser prairie chicken, mourning dove, scaled quail, sand

dune lizard, marbled whiptail, ornate box turtle, bullsnake and Western diamondback rattlesnake. Grasshopper and vesper sparrows utilize the site during migration. The ferruginous hawk sometimes nests on dunes associated with the site. White-tailed deer are also sometimes associated with this site (Mescalero Sands). Where mesquite invades, resident species of birds such as white-necked raven, roadrunner, pyrrhuloxia, mourning dove, and Harris hawk nest. Where sand hummocks form around shrubs, rodent populations and their predators increase. Fourwing saltbush, shinnery oak, sand sagebrush, and mesquite provide protective cover for scaled quail. Seed, green herbage, and fruit from a variety of grasses, forbs, and shrubs provide food for a number of birds and mammals, including mourning dove, scaled quail, lesser prairie chicken and antelope.

## Hydrological functions

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series----- Hydrologic Group

Kermit----- A

Aguaena----- A

## Recreational uses

This site offers recreation potential for hiking, horseback riding, nature observation and photography. This site also offers opportunities for hunting of such species as quail, dove and antelope.

Mechanical, off-road vehicle use by dune buggies, four wheelers, or motor bikes is site-destructive, resulting in severe soil movement by wind erosion. Off-road vehicle use should be confined to those areas which are already deteriorated and where intensive management for soil protection can be practiced.

During years of abundant spring moisture, this site displays a colorful array of wildflowers during May and June. A few showy summer and fall flowers also occur.

## Wood products

The plant community associated with this site affords little or no wood products.

## Other products

This site is suitable for grazing during all seasons of the year by all kinds and classes of livestock. Where shinnery oak has increased considerably above the amount in the potential plant community cattle loss can occur if grazed during the late bud and early leaf stage. This site responds well to an integrated brush management and grazing management. Brush management is inappropriate in occupied or potential habitat for sand dune lizard. Mismannagement of this site will cause a decrease in Harvard panicum, sand bluestem, giant dropseed, plains bristlegrass, sand paspalum and fourwing saltbush. There will be a corresponding increase in dropseeds, sand sagebrush and shinnery oak. When shinnery oak is not a problem, this site responds best to a system of mangement that rotates the season of use. Grazing management plans should be design to leave adequate residual cover for lesser prairie chicken nesting.

## Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index----- Ac/AUM

100 - 76----- 2.0 - 4.0

75 - 51----- 3.0 - 6.5

50 - 26----- 5.0 - 12.0

25 - 0----- 12.0 - +

## Inventory data references



Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains (SD-3) Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: South Chaves, Eddy, Lea and Otero Counties.

## Other references

### Literature Cited:

1. Sears, W.E., C.M. Britton, D.B. Wester, and R.D. Pettit. 1986. Herbicide conversion of a sand shinnery oak (*Quercus havardii*) community: effects on biomass. J. Range. Manage. 39: 399-403.
2. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, September). Fire Effects Information System, [Online]. Available: <http://www.fs.fed.us/database/feis/> [accessed 1/07/02].
3. Villena, F. and J.A. Pfister. 1990. Sand shinnery oak as forage for Angora and Spanish goats. J. Range. Manage. 43: 116-122.

## Contributors

David Trujillo  
Don Sylvester

## Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

## Indicators

### 1. Number and extent of rills:

---

### 2. Presence of water flow patterns:

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### 3. Number and height of erosional pedestals or terracettes:

---

### 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):

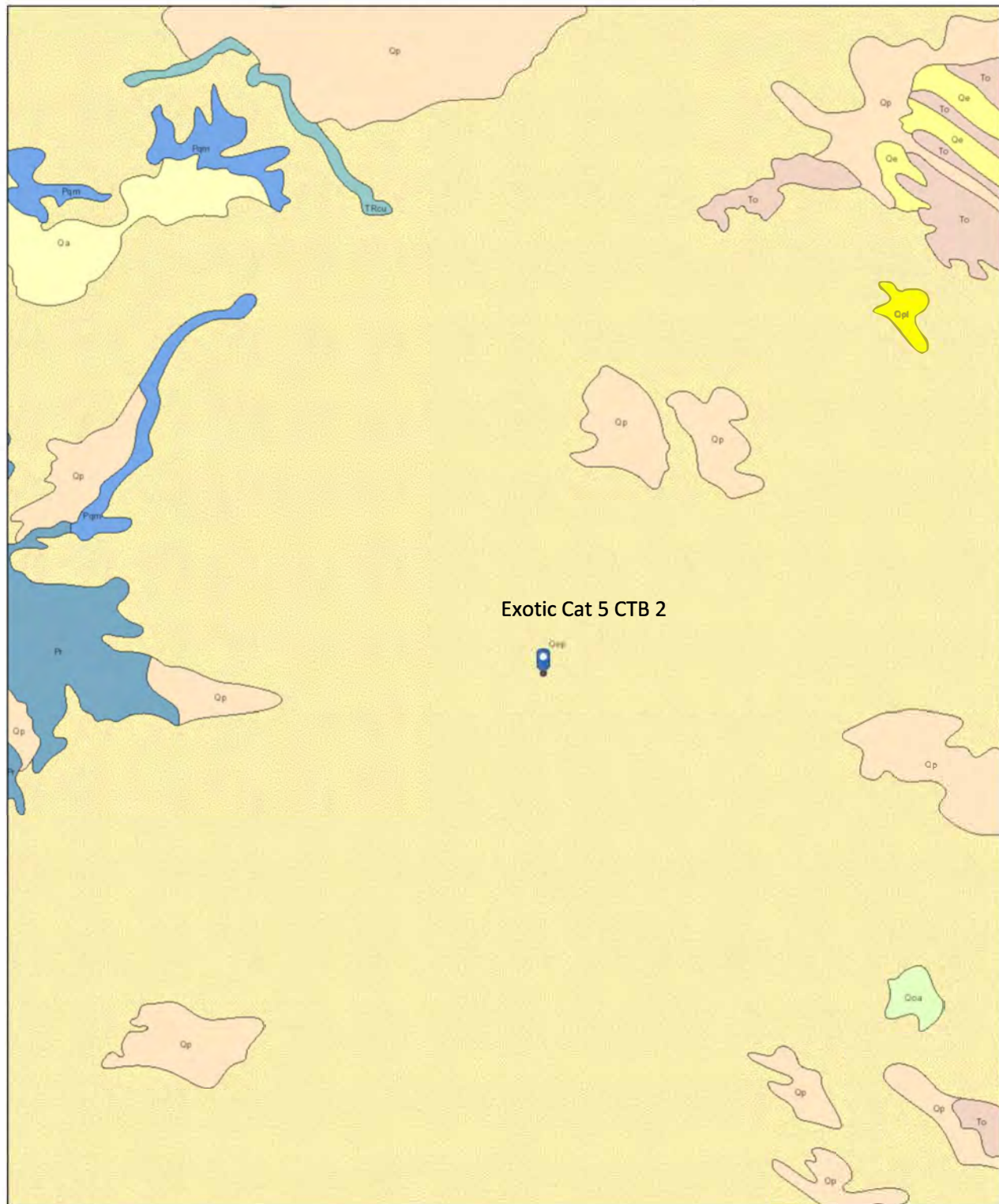
- 
5. **Number of gullies and erosion associated with gullies:**
- 
6. **Extent of wind scoured, blowouts and/or depositional areas:**
- 
7. **Amount of litter movement (describe size and distance expected to travel):**
- 
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**
- 
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**
- 
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**
- 
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**
- 
12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**
- Dominant:
- Sub-dominant:
- Other:
- Additional:
- 
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**
- 
14. **Average percent litter cover (%) and depth ( in):**
- 
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**
-



16. **Potential invasive (including noxious) species (native and non-native).** List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:
- 

17. **Perennial plant reproductive capability:**
-

## Exotic Cat 5 CTB 2 Geological Map



1/17/2025, 8:40:41 PM

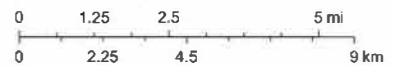
### Lithologic Units

- Playa—Alluvium and evaporite deposits (Holocene)
- Water—Perennial standing water
- Qa—Alluvium (Holocene to upper Pleistocene)

### Site Lithological Unit

**Qep**--Eolian and piedmont deposits (Holocene to middle Pleistocene) - Interlayered eolian sands and piedmont-slope deposits

1:144,448



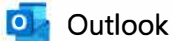
Esri, NASA, NGA, USGS, NMBGMR, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census

ArcGIS Web AppBuilder

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset,



# ATTACHMENT 3: CORRESPONDENCE



Outlook

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**RE: [EXTERNAL] nAPP2428730359/nAPP2431931028/nAPP2433729249 Exotic Cat 5 CTB 2 Liner Notifications**

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**From** Raley, Jim <jim.rale@dm.com>**Date** Thu 12/19/2024 9:32 AM**To** Monica Peppin <Monica.Peppin@soudermiller.com>**Cc** BLM Spill Email <blm\_nm\_cfo\_spill@blm.gov>; ocd.enviro@emnrd.nm.gov <OCD.Enviro@emnrd.nm.gov>; Stephanie Hinds <stephanie.hinds@soudermiller.com>

Submitted for all three incidents on 12/19/2024

Jim Raley | Environmental Professional - Permian Basin

5315 Buena Vista Dr., Carlsbad, NM 88220

C: (575)689-7597 | [jim.rale@dm.com](mailto:jim.rale@dm.com)

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**From:** Monica Peppin <Monica.Peppin@soudermiller.com>**Sent:** Wednesday, December 18, 2024 2:37 PM**To:** Raley, Jim <Jim.Raley@dm.com>**Cc:** BLM Spill Email <blm\_nm\_cfo\_spill@blm.gov>; ocd.enviro@emnrd.nm.gov; Stephanie Hinds <stephanie.hinds@soudermiller.com>**Subject:** [EXTERNAL] nAPP2428730359/nAPP2431931028/nAPP2433729249 Exotic Cat 5 CTB 2 Liner Notifications**All:****SMA anticipates conducting liner inspection activities at the following site on Saturday, December 21, 2024:****Proposed Date:**12.21.24**Proposed Time Frame:** 11:30 AM**Site Name:** Exotic Cat 5 CTB 2**Incident Number:** nAPP2428730359/nAPP2431931028/nAPP2433729249**API:** fAPP2308735100/NMNM63994

Liner Inspection Notification	
Incident ID and Site Name:	Exotic Cat 5 CTB 2 nAPP2428730359 nAPP2431931028 nAPP2433729249
API # and Corresponding Agency:	fAPP2308735100 BLM/Federal
Question	Answer (Fill In)
What is the liner inspection surface area in square feet (secondary containmet):	Tank Containment 5,466 sq ft Separators/Heater Treaters Containment 8,189 sq ft
Have all the impacted materials been removed from the liner and cleaned?	Yes - 12.12.2024



<b>Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC: 48 HOURS PRIOR TO INSPECTION</b>	<b>12.21.2024</b>
<b>Time liner inspection will commence:</b>	<b>11:30 AM</b>
<b>Please provide any information necessary for observers to contact inspector: (Name and Number)</b>	<b>Monica Peppin 575.909.3418</b>
<b>Please provide any information necessary for navigation to liner inspection site and coordinates (Lat/Long)</b>	<b>Intersection 128/Red Rd travel north for 6.45 miles, turn right/east onto lease road travel 0.39 miles, follow turn to the right/south travel 0.15 miles, turn left/facing southeast travel 0.51 miles, slight right/east travel 0.08 miles, right/south for 0.22 miles, left/ east for 0.54 miles, turn north 0.08 miles, east for 0.13 miles, south for 0.12 miles, turn left facing east for 0.77 miles, right follow for 0.13 miles and dead end on site. 32.335969, -103.698928</b>



*Stronger Communities by Design*

**Monica  
Peppin, A.S.**

**Project  
Manager**

**Direct/Mobile:  
575.909.3418**

**Office:  
575.689.7040**

**201 S  
Halagueno St.**

**Carlsbad, NM  
88220**





Outlook

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**RE: [EXTERNAL] Devon Energy Extension Request - nAPP2428730359**

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**From** Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>

**Date** Thu 1/9/2025 2:45 PM

**To** Raley, Jim <Jim.Raley@dmv.com>

**Cc** Monica Peppin <Monica.Peppin@soudermiller.com>; Stephanie Hinds <stephanie.hinds@soudermiller.com>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>

Good afternoon Jim,

The extension request for NAPP2428730359 EXOTIC CAT 5 CTB 2 is approved. The new due date to submit your closure report to the OCD is February 10, 2025. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Kind regards,

Shelly

**Shelly Wells** \* Environmental Specialist-Advanced  
Environmental Bureau  
EMNRD-Oil Conservation Division  
1220 S. St. Francis Drive|Santa Fe, NM 87505  
(505)469-7520|[Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)  
<http://www.emnrd.state.nm.us/OCD/>

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**From:** Raley, Jim <Jim.Raley@dmv.com>

**Sent:** Thursday, January 9, 2025 1:29 PM

**To:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>

**Cc:** Monica Peppin <Monica.Peppin@soudermiller.com>; Stephanie Hinds <stephanie.hinds@soudermiller.com>

**Subject:** [EXTERNAL] Devon Energy Extension Request - nAPP2428730359

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

NMOCD District II,

Devon Energy requests an extension to deliver closure report for incident  
(NAPP2428730359 EXOTIC CAT 5 CTB 2)

The inspection has been completed but we are still in process of compiling the closure document and plan on delivering it within 30 days.

**Jim Raley** | Environmental Professional - Permian Basin  
5315 Buena Vista Dr., Carlsbad, NM 88220  
C: (575)689-7597 | [jim.rale@dmv.com](mailto:jim.rale@dmv.com)



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

QUESTIONS

Action 423250

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 423250
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2433729249
Incident Name	NAPP2433729249 EXOTIC CAT 5 CTB 2 @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Facility	[fAPP2308735100] EXOTIC CAT 5 CTB 2

Location of Release Source	
Please answer all the questions in this group.	
Site Name	EXOTIC CAT 5 CTB 2
Date Release Discovered	11/30/2024
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
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	Cause: Corrosion   Flow Line - Production   Produced Water   Released: 9 BBL   Recovered: 9 BBL   Lost: 0 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Pinhole leak in piping allowed release of 9 bbls produced water to lined secondary containment. Fluids fully recovered.

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QUESTIONS, Page 2

Action 423250

**QUESTIONS (continued)**

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
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**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>No, according to supplied volumes this does not appear to be a "gas only" report.</b>
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	<b>No</b>
Reasons why this would be considered a submission for a notification of a major release	<i>Unavailable.</i>
<i>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.</i>	

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

*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: James Raley Title: EHS Professional Email: jim.raley@dvni.com Date: 01/22/2025
----------------------------------------------------	-----------------------------------------------------------------------------------------------



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QUESTIONS, Page 3

Action 423250

**QUESTIONS (continued)**

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	Action Number: 423250
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**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 75 and 100 (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	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 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 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (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	Between 500 and 1000 (ft.)
Did the release impact areas not on an exploration, development, production, or storage site	No

<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	Yes
<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	12/10/2024
On what date will (or did) the final sampling or liner inspection occur	12/21/2024
On what date will (or was) the remediation complete(d)	12/21/2024
What is the estimated surface area (in square feet) that will be remediated	14971
What is the estimated volume (in cubic yards) that will be remediated	0
<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>	

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QUESTIONS, Page 4

Action 423250

**QUESTIONS (continued)**

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 423250
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**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>	
Is (or was) there affected material present needing to be removed	Yes
Is (or was) there a power wash of the lined containment area (to be) performed	Yes
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: James Raley Title: EHS Professional Email: jim.raley@dv.com Date: 01/22/2025
<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>	

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QUESTIONS, Page 6

Action 423250

**QUESTIONS (continued)**

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	Action Number: 423250
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Liner Inspection Information	
Last liner inspection notification (C-141L) recorded	413871
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC	12/21/2024
Was all the impacted materials removed from the liner	Yes
What was the liner inspection surface area in square feet	5466

**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	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	Yes
What was the total surface area (in square feet) remediated	14971
What was the total volume (cubic yards) remediated	0
Summarize any additional remediation activities not included by answers (above)	Secondary Containment inspection completed. No breach through liner

*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 (in .pdf format) 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.*

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.

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dmv.com Date: 01/22/2025
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CONDITIONS

Action 423250

CONDITIONS

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CONDITIONS

Created By	Condition	Condition Date
nvez	Liner inspection approved, release resolved.	1/23/2025