

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

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

Incident ID	nAPP2129845429
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party Devon Energy Production Company	OGRID 6137
Contact Name Dale Woodall	Contact Telephone
Contact email Dale.Woodall@dvn.com	Incident # (assigned by OCD)
Contact mailing address 6488 Seven Rivers Hwy Artesia, NM 88210	

### Location of Release Source

Latitude 32.025948 Longitude -103.488588  
*(NAD 83 in decimal degrees to 5 decimal places)*

Site Name Green Wave 20 CTB 9	Site Type Oil
Date Release Discovered 10/24/2021	API# (if applicable)

Unit Letter	Section	Township	Range	County
J	20	26S	34E	Lea

Surface Owner:  State  Federal  Tribal  Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 29.68 BBLS	Volume Recovered (bbls) 29.68 BBLS
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release Water transfer pump seal leaked.

State of New Mexico  
 Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? <b>This release is over 25 BBLs.</b>
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? <b>Notice given on OCD portal on 10/25/2021 by Dale Woodall.</b>	

**Initial Response**

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:  	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kendra DeHoyos</u>	Title: <u>EHS Associate</u>
Signature: <u>Kendra DeHoyos</u>	Date: <u>11/2/2021</u>
email: <u>Kendra.DeHoyos@dvn.com</u>	Telephone: <u>575-748-0167</u>
<b><u>OCD Only</u></b>	
Received by: <u>Ramona Marcus</u>	Date: <u>11/2/2021</u>

NAPP2129845429

<b>Spills In Lined Containment</b>	
Measurements Of Standing Fluid	
Length(Ft)	100
Width(Ft)	40
Depth(in.)	0.5
Total Capacity without tank displacements (bbls)	29.68
No. of 500 bbl Tanks In Standing Fluid	
No. of Other Tanks In Standing Fluid	
OD Of Other Tanks In Standing Fluid(feet)	
Total Volume of standing fluid accounting for tank displacement.	29.68

**District I**  
 1525 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-8101 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rte Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-8178 Fax:(505) 334-0170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3482

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

CONDITIONS  
 Action 59369

**CONDITIONS**

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6197
	Action Number: 59369
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
marcus	None	11/2/2021

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## Site Assessment/Characterization

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

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

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

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

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- N/A Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- N/A Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- N/A Laboratory data including chain of custody

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

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

Printed Name: Dale Woodall Title: EHS Professional

Signature: *Dale Woodall* Date: Feb 3, 2022  
; Dale Woodall (Feb 3, 2022 15:54 MST)

email: Dale.Woodall@dvn.com Telephone: 575-748-1838

**OCD Only**

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

State of New Mexico  
Oil Conservation Division

Page 6

Incident ID	nAPP2129845429
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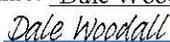
### Closure

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

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

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

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

Printed Name: Dale Woodall Title: EHS Professional  
 Signature:  Date: Feb 3, 2022  
Dale Woodall (Feb 3, 2022 15:54 MST)  
 email: Dale.Woodall@dvn.com Telephone: 575-748-1838

**OCD Only**

Received by: Chad Hensley Date: 02/23/2022

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

Closure Approved by:  Date: 02/23/2022  
 Printed Name: Chad Hensley Title: Environmental Specialist Advanced



February 3, 2022

Vertex Project #: 21E-00580-011

**Spill Closure Report:** Green Wave 20 CTB 9  
Unit J, Section 20, Township 26 South, Range 34 East  
County: Lea  
API: N/A  
Tracking Number: nAPP2129845429

**Prepared For:** Devon Energy Production Company  
6488 Seven Rivers Highway  
Artesia, New Mexico 88210

**New Mexico Oil Conservation Division – District 1 – Hobbs**

1625 North French Drive  
Hobbs, New Mexico 88240

Devon Energy Production Company (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and liner inspection for a produced water release that occurred at Green Wave 20 CTB 9 (hereafter referred to as “Green Wave”). Devon provided immediate notification of the spill to New Mexico Oil Conservation Division (NMOCD) District 1 and the Bureau of Land Management (BLM), who own the property, on October 25, 2021, via the NMOCD portal. The initial C-141 Release Notification was submitted and processed on November 2, 2021 (Attachment 1). The NMOCD tracking number assigned to this incident is nAPP2129845429.

This letter provides a description of the liner inspection and demonstrates that closure criteria established in 19.15.29.12 *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) have been met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NMOCD for closure of this release.

## Incident Description

On October 24, 2021, a release occurred at Devon’s Green Wave site when a water transfer pump seal leaked. The incident resulted in the release of approximately 29.68 barrels (bbl) of produced water into lined containment. A hydrovac arrived on-site to recover free fluids; approximately 29.68 bbl of produced water were recovered and removed for disposal off-site. The spill was contained within the bermed, lined containment on the facility pad. No produced water was released into undisturbed areas or waterways.

## Site Characterization

The release at Green Wave occurred on federally-owned land, N 32.025948, W 103.488588, approximately 17.7 miles west-southwest of Jal, New Mexico. The legal description for the site is Unit J, Section 20, Township 26 South, Range 34 East, Lea County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland. An aerial map of the site is included in Attachment 2.

[vertex.ca](http://vertex.ca)

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3101 Boyd Drive, Carlsbad, New Mexico 88220, USA | P 575.725.5001

Green Wave is typical of oil and gas exploration and production sites in the western portion of the Permian Basin and is currently used for oil and gas production and storage. The following sections specifically describe the area in which the Green Wave facility is located.

The surrounding landscape is associated with sandy plains typical of elevations of 3,000 to 3,900 feet above sea level. The climate is semi-arid, with average annual precipitation ranging between 10 and 12 inches. Historically, the plant community was dominated by grasses, which stabilized the potentially erosive sandy soils; however, more recent conditions, resulting from fire suppression and extensive grazing, show increased woody plant abundance. The dominant grass species are black grama, dropseeds and bluestems, with scattered shinnery oak and sand sage. Litter and, to a lesser extent, bare ground are a significant proportion of ground cover while grasses compose the remainder (United States Department of Agriculture, Natural Resources Conservation Service, 2022). Limited to no vegetation is allowed to grow on the compacted facility pad.

The *Geological Map of New Mexico* indicates the surface geology at Green Wave is comprised of Qep – eolian and piedmont deposits that include eolian sands interlaid with piedmont-slope deposits (New Mexico Bureau of Geology and Mineral Resources, 2022). The Natural Resources Conservation Service *Web Soil Survey* characterizes the soil at the site as Pyote and Maljamar fine sands, characterized by deep, fine sandy and loamy fine sandy soil. It tends to be well-drained with very low to negligible runoff and low available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2022). There is low potential for karst geology to be present near Green Wave, though some erosional karst is possible (United States Department of the Interior, Bureau of Land Management, 2018).

There is no surface water located at Green Wave. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream located approximately 1.44 miles east-northeast of the site. An emergent wetland is located approximately 1.54 miles east-northeast and an intermittent lake is located approximately 12.6 miles southeast of the release site (United States Fish and Wildlife Service, 2022). At Green Wave, there are no continuously flowing watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features nearby as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest active wells to Green Wave are New Mexico Office of the State Engineer identified monitoring and livestock wells. The monitoring well is located approximately 1.59 miles northeast of the site. The livestock well is located approximately 2.72 miles to the northwest, and has a 1949 recorded depth to groundwater of 200 feet below ground surface (bgs; New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2022). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

## Closure Criteria Determination

Using site characterization information, a closure criteria determination worksheet (Attachment 3) was completed to determine if the release was subject to any of the special case scenarios outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Based on data included in the closure criteria determination worksheet, the release at Green Wave is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC. The nearest depth to groundwater reference is more than 0.5 miles from the site and is greater than 25 years old; therefore, the closure criteria for the incident assume most stringent conditions (depth to groundwater <50 feet bgs) and are determined to be associated with the following constituent concentration limits.

<b>Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/L TDS<sup>1</sup></b>	<b>Constituent</b>	<b>Limit</b>
< 50 feet	Chloride	600 mg/kg
	TPH <sup>2</sup> (GRO + DRO + MRO)	100 mg/kg
	BTEX <sup>3</sup>	50 mg/kg
	Benzene	10 mg/kg

<sup>1</sup>Total Dissolved Solids (TDS)

<sup>2</sup>Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)

<sup>3</sup>Benzene, toluene, ethylbenzene, and xylenes (BTEX)

## Liner Inspection

On January 13, 2022, Vertex provided 48-hour notification of the liner inspection to NM OCD District 1 and the BLM, as required by Subparagraph (a) of Paragraph (5) of Subsection A 19.15.29.11 NMAC (Attachment 4). On January 21, 2022, Vertex was on-site to conduct an inspection of the lined containment and verify that the liner was intact and had the ability to contain the release. The Daily Field Report and associated photographs of the liner inspection are included in Attachment 5. The inspection confirmed the liner remained intact and had the ability to contain the release. This is further evidenced by the amount of fluid released (~29.68 bbl) and recovered (~29.68 bbl).

Devon Energy Production Company  
Green Wave 20 CTB 9

2022 Spill Assessment and Closure  
February 2022

### Closure Request

Vertex recommends no additional remediation action to address the release at Green Wave. The secondary containment liner was intact and contained the release. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Vertex requests that this incident (nAPP2129845429) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Devon certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the October 24, 2021, release at Green Wave. A complete C-141 form is included in Attachment 6.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 832.588.0674 or dhanton@vertex.ca



\_\_\_\_\_  
Lakin Pullman, B.Sc.  
ENVIRONMENTAL TECHNICIAN, REPORT

\_\_\_\_\_  
February 3, 2022

Date



\_\_\_\_\_  
Dhugal Hanton, B.Sc., P.Ag, P.Biol., SR/WA.  
VICE PRESIDENT- USA, REPORT REVIEW

\_\_\_\_\_  
February 3, 2022

Date

**Devon Energy Production Company**  
Green Wave 20 CTB 9

**2022 Spill Assessment and Closure**  
February 2022

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## **Attachments**

- Attachment 1. NMOCD C-141 Initial Notification
- Attachment 2. Aerial Site Map
- Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
- Attachment 4. Required 48-hr Notification
- Attachment 5. Daily Field Report(s) with Photographs
- Attachment 6. Complete C-141 Form

## References

New Mexico Bureau of Geology and Mineral Resources. (2022). *Interactive Geologic Map*. Retrieved from <http://geoinfo.nmt.edu>.

New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2022). *Water Column/Average Depth to Water Report*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html>.

New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code – Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.

United States Department of Agriculture, Natural Resources Conservation Service. (2022). *Web Soil Survey*. Retrieved from <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.

United States Department of the Interior, Bureau of Land Management. (2018). *CFO Karst Public*. [https://www.nm.blm.gov/shapeFiles/cfo/carlsbad\\_spatial\\_data.html](https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html)

United States Fish and Wildlife Service. (2022). *National Wetlands Inventory*. Retrieved from <https://www.fws.gov/wetlands/data/Mapper.html>.

## **Limitations**

This report has been prepared for the sole benefit of Devon Energy Production Company (Devon). This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division or the Bureau of Land Management, without the express written consent of Vertex Resource Services Inc. (Vertex) and Devon. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

## **ATTACHMENT 1**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
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## Release Notification

### Responsible Party

Responsible Party <b>Devon Energy Production Company</b>	OGRID <b>6137</b>
Contact Name <b>Dale Woodall</b>	Contact Telephone
Contact email <b>Dale.Woodall@dvn.com</b>	Incident # <i>(assigned by OCD)</i>
Contact mailing address <b>6488 Seven Rivers Hwy Artesia, NM 88210</b>	

### Location of Release Source

Latitude 32.025948 Longitude -103.488588  
*(NAD 83 in decimal degrees to 5 decimal places)*

Site Name <b>Green Wave 20 CTB 9</b>	Site Type <b>Oil</b>
Date Release Discovered <b>10/24/2021</b>	API# <i>(if applicable)</i>

Unit Letter	Section	Township	Range	County
J	20	26S	34E	Lea

Surface Owner:  State  Federal  Tribal  Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) <b>29.68 BBLS</b>	Volume Recovered (bbls) <b>29.68 BBLS</b>
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release **Water transfer pump seal leaked.**

State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2129845429
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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? <b>This release is over 25 BBLs.</b>
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? <b>Notice given on OCD portal on 10/25/2021 by Dale Woodall.</b>	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:  	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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Printed Name: <u>Kendra DeHoyos</u>	Title: <u>EHS Associate</u>
Signature: <u>Kendra DeHoyos</u>	Date: <u>11/2/2021</u>
email: <u>Kendra.DeHoyos@dvn.com</u>	Telephone: <u>575-748-0167</u>
<b><u>OCD Only</u></b>	
Received by: <u>Ramona Marcus</u>	Date: <u>11/2/2021</u>

NAPP2129845429

<b>Spills In Lined Containment</b>	
Measurements Of Standing Fluid	
Length(Ft)	100
Width(Ft)	40
Depth(in.)	0.5
Total Capacity without tank displacements (bbls)	29.68
No. of 500 bbl Tanks In Standing Fluid	
No. of Other Tanks In Standing Fluid	
OD Of Other Tanks In Standing Fluid(feet)	
Total Volume of standing fluid accounting for tank displacement.	29.68

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
 Action 59369

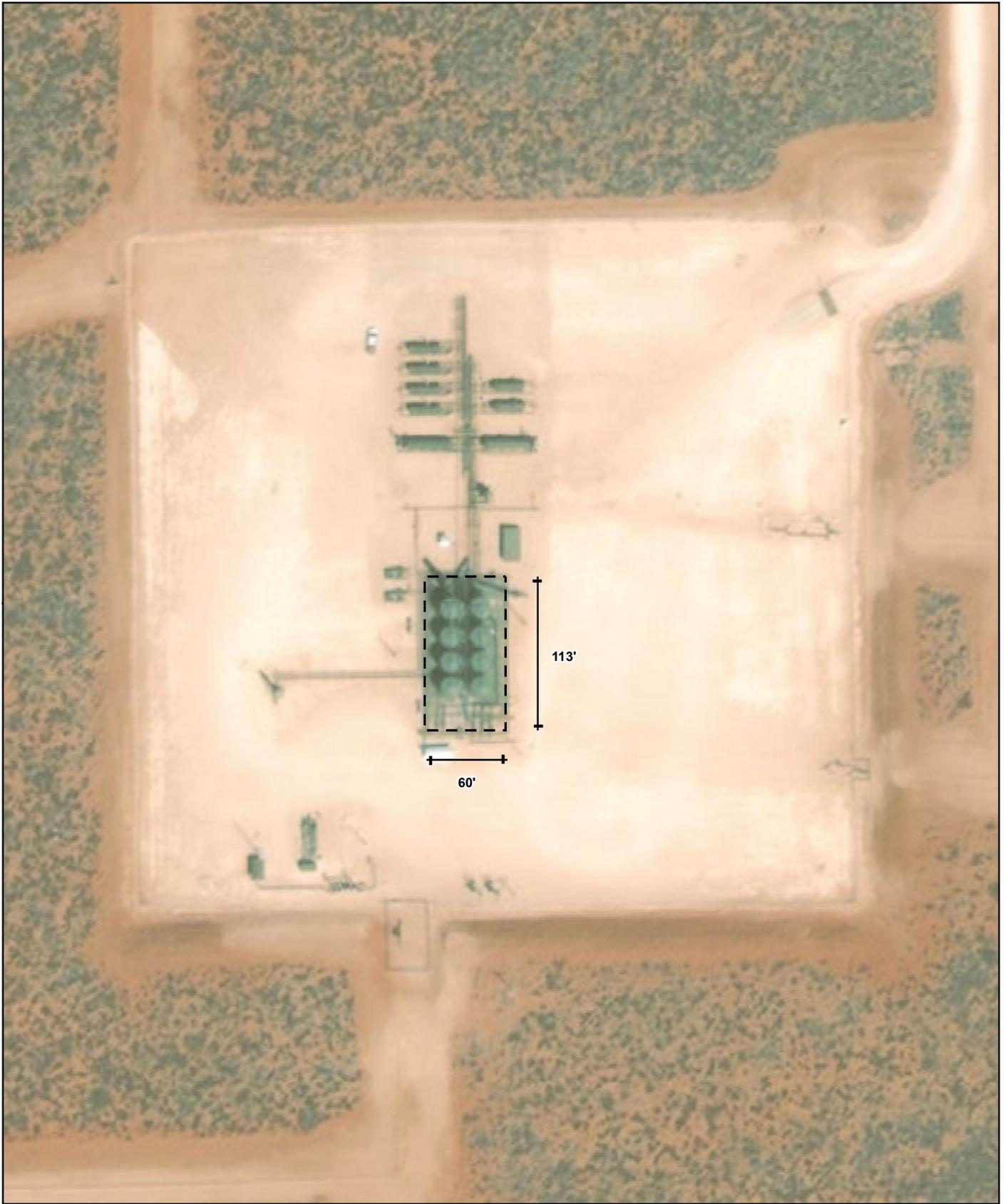
**CONDITIONS**

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 59369
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
marcus	None	11/2/2021

## **ATTACHMENT 2**



 Containment (~6,717 sq. ft.)

Document Path: G:\1-Projects\US PROJECTS\Devon Energy Corporation\21E-06580\011 - Green Wave 20 CTB 9\Figure 1 Aerial Map (Green Wave 20 CTB 9).mxd



0 12.525 50 ft.  
 NAD 1983 UTM Zone 13N  
 Date: Jan 24/22

Map Center:  
 Lat: 32.025948,  
 Long:-103.488588



**Aerial Site Map**  
**Green Wave 20 CTB 9**

FIGURE:

1



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Feature locations from aerial imagery, ESRI, 2021.

VERSATILITY. EXPERTISE.

## **ATTACHMENT 3**

Closure Criteria Worksheet				
Site Name: Green Wave 20 CTB 9				
Spill Coordinates:		X: 32.025948	Y: -103.488588	
Site Specific Conditions	Value	Unit	Reference	
1	Depth to Groundwater	<50'	feet	1
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	7,610	feet	2
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	66,590	feet	3
4	Within 300 feet from an occupied residence, school, hospital, institution or church	18,840	feet	4
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or	14,367	feet	5
	ii) Within 1000 feet of any fresh water well or spring	8,415	feet	5
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)	6
7	Within 300 feet of a wetland	8,143	feet	7
8	Within the area overlying a subsurface mine	No	(Y/N)	8
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low	9
10	Within a 100-year Floodplain	Zone D (Undetermined)	year	10
11	Soil Type	Pyote and Maljamar find sands		11
12	Ecological Classification	Loamy sand		12
13	Geology	Qep - Eolian and piedmont deposits		13
	<b>NMAC 19.15.29.12 E (Table 1) Closure Criteria</b>	<50'	<50' 51-100' >100'	

# Green Wave 20 CTB 9

Proximity Map

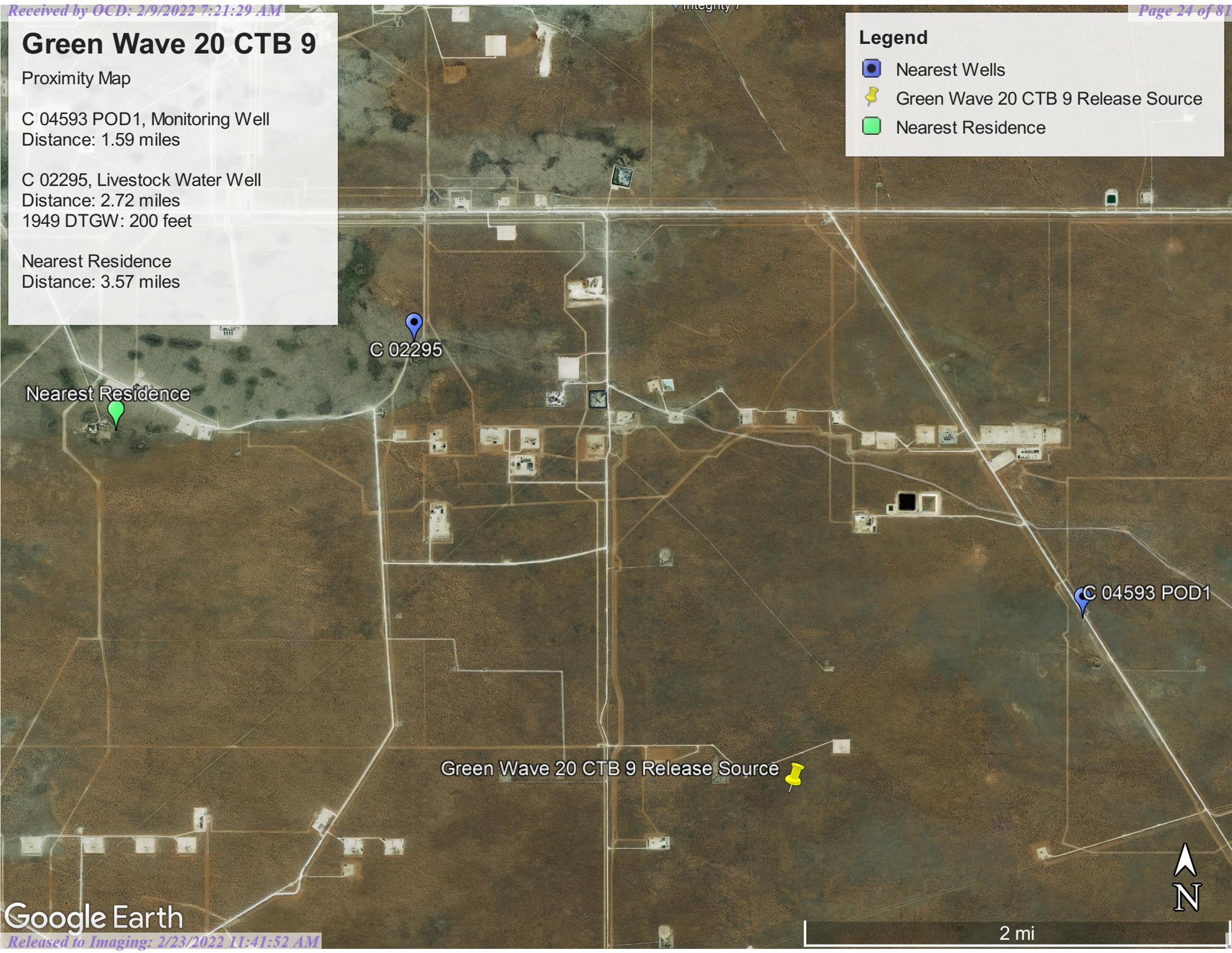
C 04593 POD1, Monitoring Well  
Distance: 1.59 miles

C 02295, Livestock Water Well  
Distance: 2.72 miles  
1949 DTGW: 200 feet

Nearest Residence  
Distance: 3.57 miles

**Legend**

-  Nearest Wells
-  Green Wave 20 CTB 9 Release Source
-  Nearest Residence





# New Mexico Office of the State Engineer

## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)						
		(quarters are smallest to largest)					(NAD83 UTM in meters)	
<b>Well Tag</b>	<b>POD Number</b>	<b>Q64</b>	<b>Q16</b>	<b>Q4</b>	<b>Sec</b>	<b>Tw</b>	<b>Rng</b>	<b>X</b>
								<b>Y</b>
C	02295	2	2	4	12	26S	33E	639865
								3547624

---

<b>Driller License:</b> 122	<b>Driller Company:</b> UNKNOWN	
<b>Driller Name:</b> UNKNOWN		
<b>Drill Start Date:</b>	<b>Drill Finish Date:</b> 12/31/1949	<b>Plug Date:</b>
<b>Log File Date:</b>	<b>PCW Rcv Date:</b>	<b>Source:</b>
<b>Pump Type:</b>	<b>Pipe Discharge Size:</b>	<b>Estimated Yield:</b> 12 GPM
<b>Casing Size:</b> 8.00	<b>Depth Well:</b> 250 feet	<b>Depth Water:</b> 200 feet

---

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1/19/22 8:48 AM

POINT OF DIVERSION SUMMARY



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

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

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

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">C_02295</a>	CUB	LE		2	2	4	12	26S	33E	639865	3547624	4379	250	200	50

Average Depth to Water: 200 feet

Minimum Depth: 200 feet

Maximum Depth: 200 feet

Record Count: 1

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

**Easting (X):** 642728

**Northing (Y):** 3544310

**Radius:** 5000

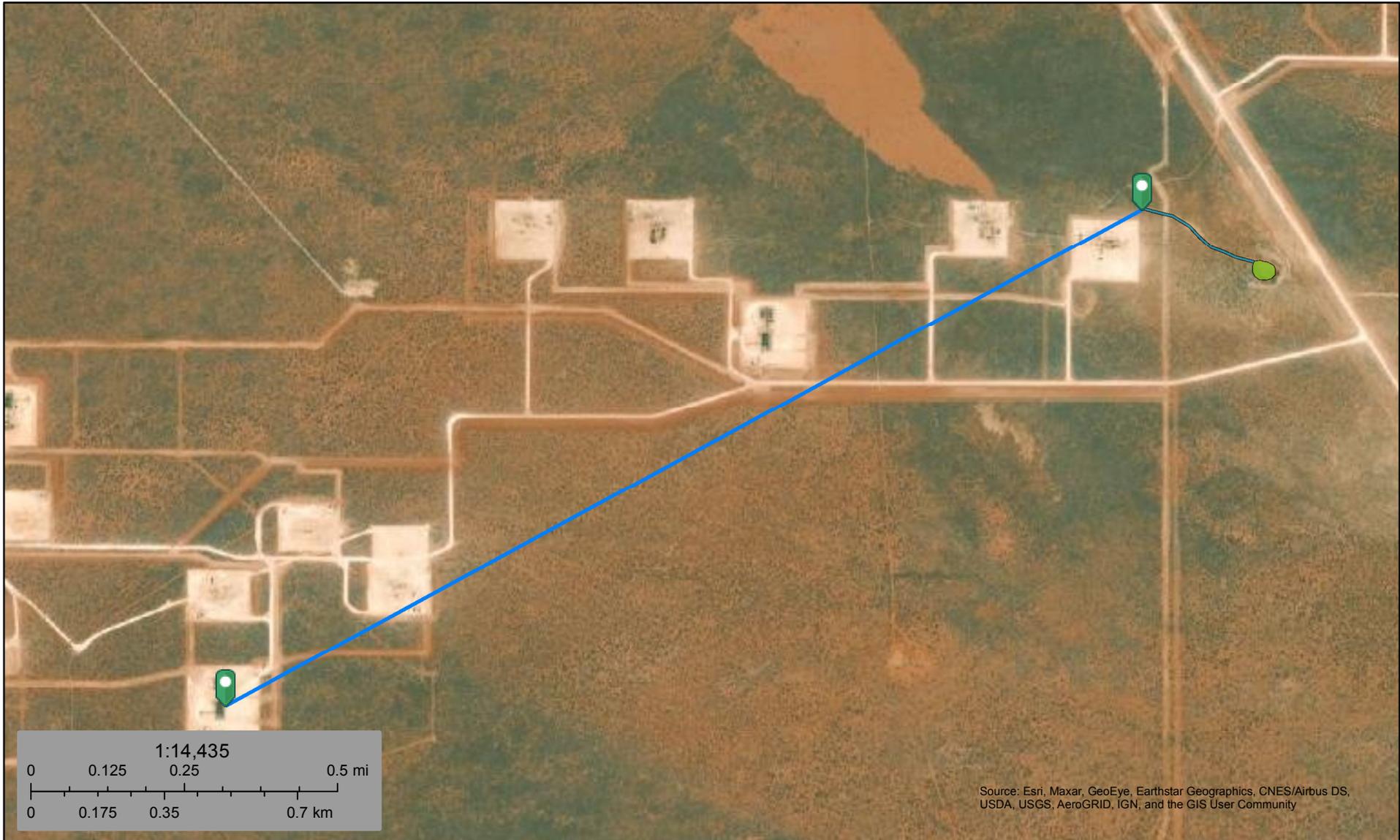
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1/19/22 8:47 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



# Intermittent 7610 feet



January 19, 2022

### Wetlands

- Estuarine and Marine Deepwater
- Freshwater Emergent Wetland
- Lake
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Other
- Estuarine and Marine Wetland
- 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.



U.S. Fish and Wildlife Service  
National Wetlands Inventory

# Lake 66590 feet



January 19, 2022

### 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.



# New Mexico Office of the State Engineer

## Water Right Summary



**WR File Number:** C 02295      **Subbasin:** CUB      **Cross Reference:** -  
**Primary Purpose:** PLS    NON 72-12-1 LIVESTOCK WATERING  
**Primary Status:** DCL    DECLARATION  
**Total Acres:** 0      **Subfile:** -      **Header:** -  
**Total Diversion:** 3      **Cause/Case:** -  
**Owner:** INTREPID POTASH NEW MEXICO LLC  
**Contact:** KATIE KELLER

### Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/		Acres	Diversion	Consumptive
			1	2		To				
<a href="#">673898</a>	<a href="#">UWL</a>	<a href="#">2020-05-15</a>	UWL	ACC	C 02295	T		0	0	
<a href="#">652904</a>	<a href="#">COWNF</a>	<a href="#">2019-06-11</a>	CHG	PRC	C 02295	T		0	0	
<a href="#">648787</a>	<a href="#">COWNF</a>	<a href="#">2019-03-20</a>	CHG	PRC	C 02295	T		0	0	
<a href="#">198381</a>	<a href="#">DCL</a>	<a href="#">1993-02-02</a>	DCL	PRC	C-02295	T		0	3	

### Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q	X	Y	Other Location Desc
<a href="#">C 02295</a>			64 Q16 Q4Sec TwS Rng 2 2 4 12 26S 33E	639865	3547624	

### Priority Summary

Priority	Status	Acres	Diversion	Pod Number
12/31/1949	DCL	0	3	<a href="#">C 02295</a>

### Place of Use

Q	Q	Acres	Diversion	CU Use	Priority	Status	Other Location Desc
256	64 Q16 Q4Sec TwS Rng	0	3	PLS	12/31/1943	DCL	NO PLACE OF USE GIVEN

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1/19/22 8:50 AM

WATER RIGHT  
SUMMARY



# New Mexico Office of the State Engineer

## Water Right Summary

**WR File Number:** C 04583                      **Subbasin:** CUB                      **Cross Reference:** -  
**Primary Purpose:** MON MONITORING WELL  
**Primary Status:** PMT PERMIT  
**Total Acres:**    **Subfile:** -    **Header:** -  
**Total Diversion:** 0    **Cause/Case:** -  
**Owner:** LUCID ENERGY GROUP  
**Contact:** MICHAEL GANT

### Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/	Acres	Diversion	Consumptive
			1	2		To			
<a href="#">713387</a>	<a href="#">EXPL</a>	<a href="#">2021-12-20</a>	PMT	APR	C 04583 POD1	T	0	0	

### Current Points of Diversion

POD Number	Well Tag	Source	Q (NAD83 UTM in meters)							Other Location Desc	
			64	Q16	Q4	Sec	Tws	Rng	X		Y
<a href="#">C 04583 POD1</a>	NA		3	3	3	15	26S	34E	644920	3545643	

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1/19/22 8:50 AM

WATER RIGHT SUMMARY



# New Mexico Office of the State Engineer

## Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE)				(NAD83 UTM in meters)		
		(quarters are smallest to largest)				X	Y	
		Q64	Q16	Q4	Sec	Tws	Rng	
NA	C 04583 POD1	3	3	3	15	26S	34E	644920 3545643

<b>Driller License:</b>	<b>Driller Company:</b>	
<b>Driller Name:</b>		
<b>Drill Start Date:</b>	<b>Drill Finish Date:</b>	<b>Plug Date:</b>
<b>Log File Date:</b>	<b>PCW Rcv Date:</b>	<b>Source:</b>
<b>Pump Type:</b>	<b>Pipe Discharge Size:</b>	<b>Estimated Yield:</b>
<b>Casing Size:</b>	<b>Depth Well:</b>	<b>Depth Water:</b>

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1/19/22 8:49 AM

POINT OF DIVERSION SUMMARY



## New Mexico Office of the State Engineer

# Active & Inactive Points of Diversion

### (with Ownership Information)

WR File Nbr	Sub basin Use Diversion Owner	County	POD Number	Well Tag Code Grant	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)				(NAD83 UTM in met)				
					Source	q q q	Sec	Tws	Rng	X	Y		
<a href="#">C 04583</a>	CUB MON 0 LUCID ENERGY GROUP	LE	<a href="#">C 04583 POD1</a>	NA	6416	4	3	3	15	26S	34E	644919	3545643
<a href="#">C 02295</a>	CUB PLS 3 INTREPID POTASH NEW MEXICO LLC	LE	<a href="#">C 02295</a>		2	2	4	12	26S	33E		639864	3547624

**Record Count:** 2

**UTMNA83 Radius Search (in meters):**

**Easting (X):** 642728      **Northing (Y):** 3544310      **Radius:** 5000

**Sorted by:** Distance

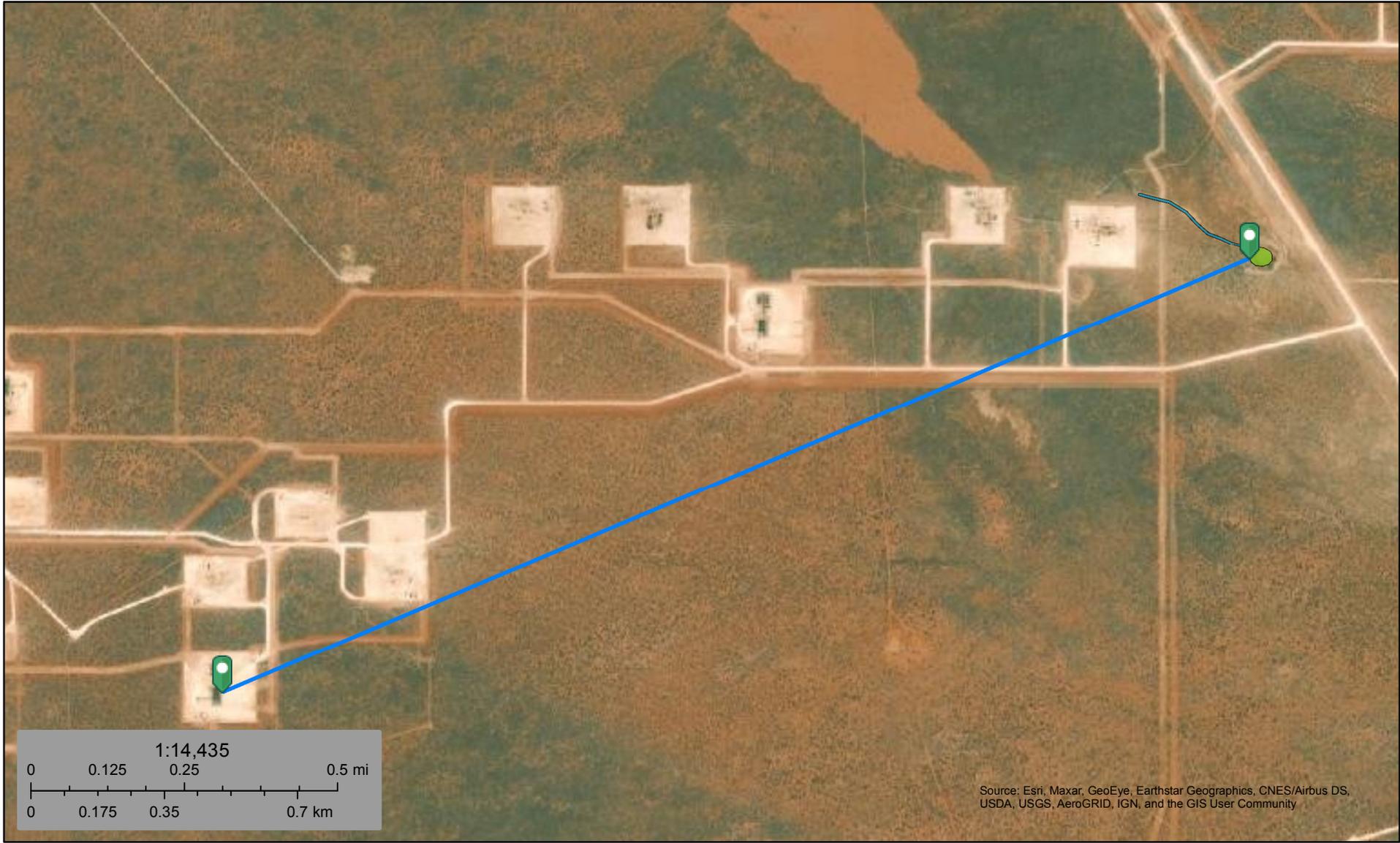
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for purpose of the data.

1/19/22 8:47 AM

ACTIVE & INACTIVE POINTS OF DI



# Wetland 8143 feet



January 19, 2022

### Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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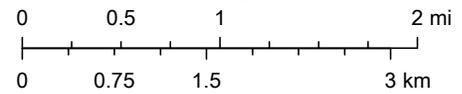
# Active Mines in New Mexico



1/19/2022, 11:30:04 AM

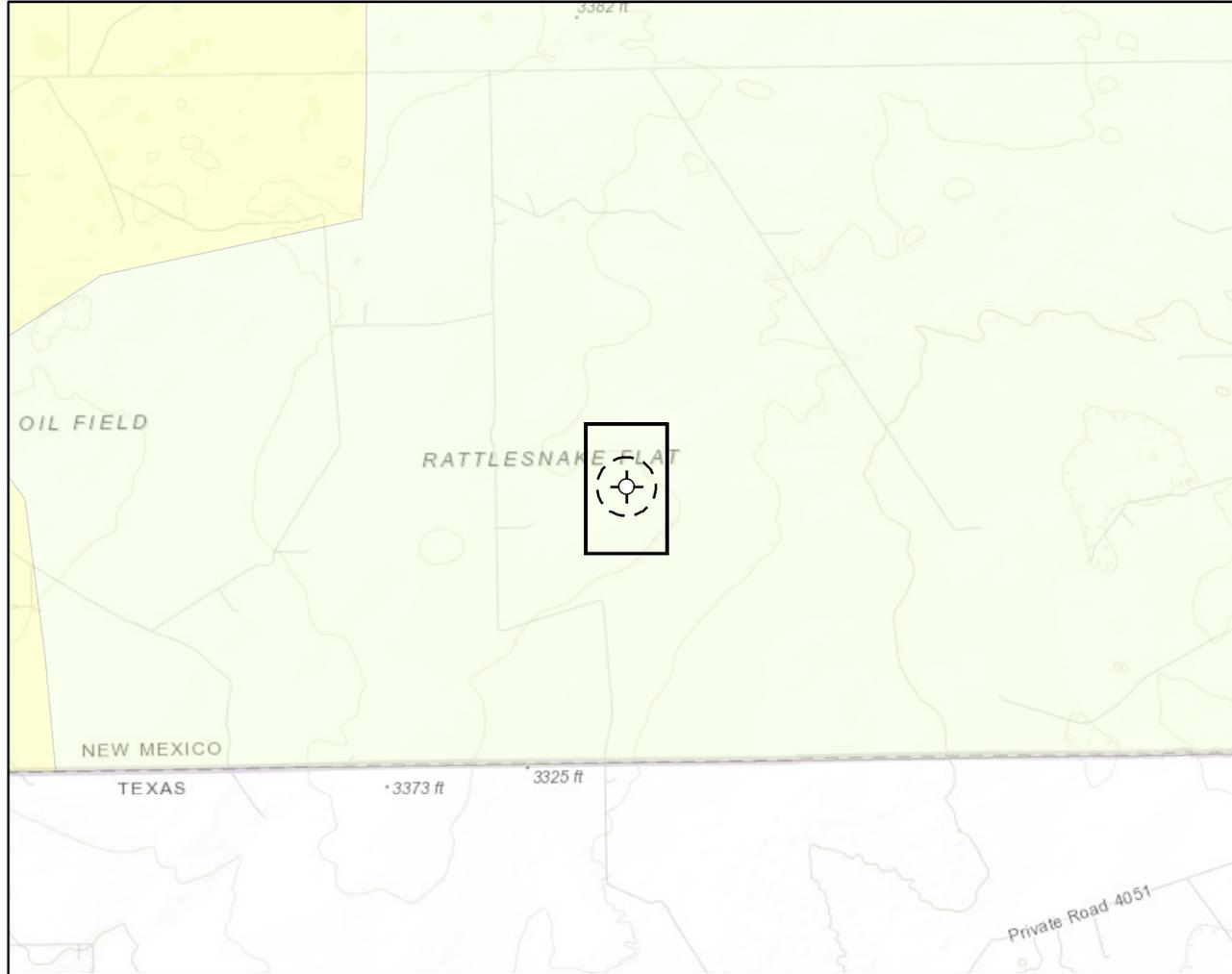
1:72,224

- Township / Range
- Sections
- Land Ownership**
- Bureau of Land Management
- Bureau of Reclamation
- Department of Agriculture
- Department of Defense
- Department of Energy
- National Park Service
- Private Land
- State Game and Fish
- State Land
- State Parks
- Tribal



U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

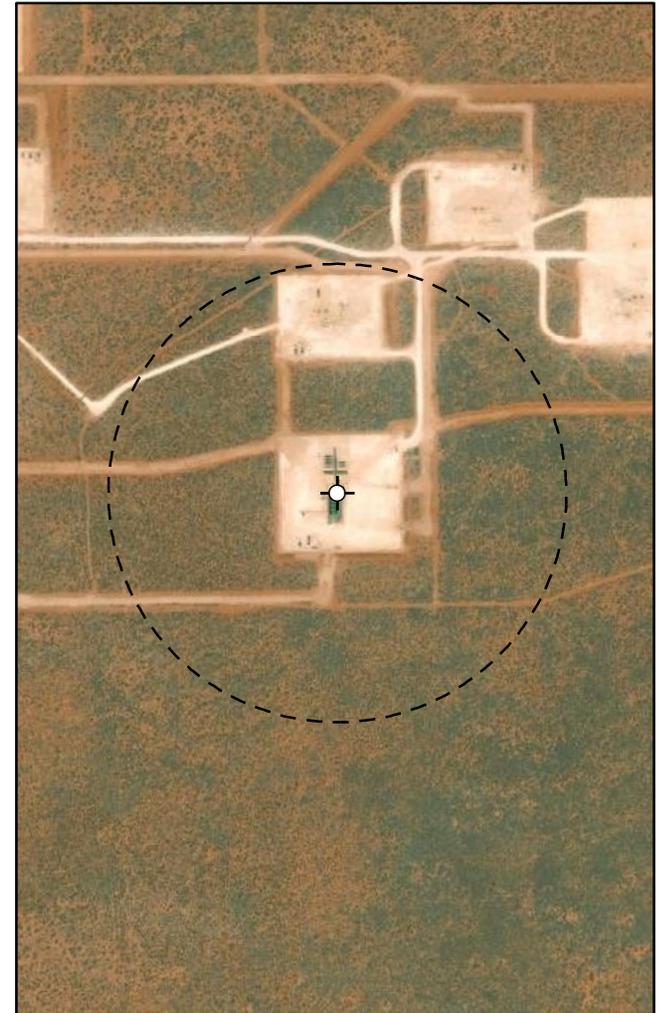
Document Path: G:\1-Projects\US PROJECTS\Devon Energy Corporation\21E-00560\011 - Green Wave 20 CTB 9\Figure X Karst Potential Map (Green Wave 20 CTB 9).mxd



- Karst Potential**
- Critical
  - High
  - Medium
  - Low
- Site Location
- Site Buffer (1,000 ft.)

**Overview Map**

0 0.25 0.5 1 mi



**Detail Map**

0 150 300 600 ft.



Map Center:  
Lat/Long: 32.025848, -103.488674

NAD 1983 UTM Zone 13N  
Date: Jan 28/22



**Karst Potential Map  
Green Wave 20 CTB 9**

FIGURE:

X



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Note: Inset Map, ESRI 20XX; Overview Map: ESRI World Topographic

VERSATILITY. EXPERTISE.

# National Flood Hazard Layer FIRMMette



103°29'37"W 32°1'49"N



## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		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 <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs

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

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
OTHER FEATURES		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/19/2022 at 12:34 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.



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Lea County, New Mexico



January 19, 2022

# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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## How Soil Surveys Are Made

---

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

### Custom Soil Resource Report

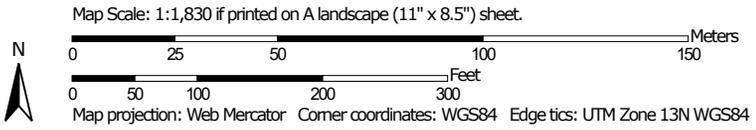
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

## Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

### Custom Soil Resource Report Soil Map



Custom Soil Resource Report

**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 18, Sep 10, 2021

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.

## Custom Soil Resource Report

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PU	Pyote and Maljamar fine sands	12.5	100.0%
<b>Totals for Area of Interest</b>		<b>12.5</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

## Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Custom Soil Resource Report

**Lea County, New Mexico****PU—Pyote and Maljamar fine sands****Map Unit Setting**

*National map unit symbol:* dmqq  
*Elevation:* 3,000 to 3,900 feet  
*Mean annual precipitation:* 10 to 12 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**

*Pyote and similar soils:* 46 percent  
*Maljamar and similar soils:* 44 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Pyote****Setting**

*Landform:* Plains  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy eolian deposits derived from sedimentary rock

**Typical profile**

*A - 0 to 30 inches:* fine sand  
*Bt - 30 to 60 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 5 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 5.1 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 6e  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* A  
*Ecological site:* R042XC003NM - Loamy Sand  
*Hydric soil rating:* No

## Custom Soil Resource Report

### Description of Maljamar

#### Setting

*Landform:* Plains  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy eolian deposits derived from sedimentary rock

#### Typical profile

*A - 0 to 24 inches:* fine sand  
*Bt - 24 to 50 inches:* sandy clay loam  
*Bkm - 50 to 60 inches:* cemented material

#### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* 40 to 60 inches to petrocalcic  
*Drainage class:* Well drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 5 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 5.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 6e  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* B  
*Ecological site:* R042XC003NM - Loamy Sand  
*Hydric soil rating:* No

### Minor Components

#### Kermit

*Percent of map unit:* 10 percent  
*Ecological site:* R042XC022NM - Sandhills  
*Hydric soil rating:* No

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## Ecological site R042XC003NM Loamy Sand

Accessed: 01/19/2022

### General information



**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.

### Associated sites

R042XC004NM	<b>Sandy</b> Sandy
R042XC005NM	<b>Deep Sand</b> Deep Sand

**Table 1. Dominant plant species**

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

### Physiographic features

This site is on uplands, plains, dunes, fan piedmonts and in inter dunal areas. The parent material consists of mixed alluvium and or eolian sands derived from sedimentary rock. Slope range on this site range from 0 to 9 percent with the average of 5 percent.

Low stabilized dunes may occur occasionally on this site. Elevations range from 2,800 to 5,000 feet.

**Table 2. Representative physiographic features**

Landforms	(1) Fan piedmont (2) Alluvial fan (3) Dune
Elevation	2,800–5,000 ft
Slope	0–9%
Aspect	Aspect is not a significant factor

### Climatic features

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 207 to 220 days. The last killing frost being late March or early April and the first killing frost being in later 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. Strong winds blow from the southwest from January through June, which accelerates soil drying during a critical period 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)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

### Influencing water features

This site is not influenced from water from wetlands or streams.

### Soil features

Soils are moderately deep or very deep. Surface textures are loamy fine sand, fine sandy loam, loamy very fine sand or gravelly sandy loam.

Subsurface is a loamy fine sand, coarse sandy loam, fine sandy loam or loam that averages less than 18 percent clay and less than 15 percent carbonates.

Substratum is a fine sandy loam or gravelly fine sandy loam with less than 15 percent gravel and with less than 40 percent calcium carbonate. Some layers high in lime or with caliche fragments may occur at depths of 20 to 30 inches.

These soils, if unprotected by plant cover and organic residue, become wind blown and low hummocks are formed.

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

Characteristic soils are:

Maljamar  
Berino

Parjarito  
Palomas  
Wink  
Pyote

**Table 4. Representative soil features**

Surface texture	(1) Fine sand (2) Fine sandy loam (3) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to moderately rapid
Soil depth	40–72 in
Surface fragment cover <=3"	0–10%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	5–7 in
Calcium carbonate equivalent (0-40in)	3–40%
Electrical conductivity (0-40in)	2–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	4–12%
Subsurface fragment volume >3" (Depth not specified)	0%

## Ecological dynamics

### Overview

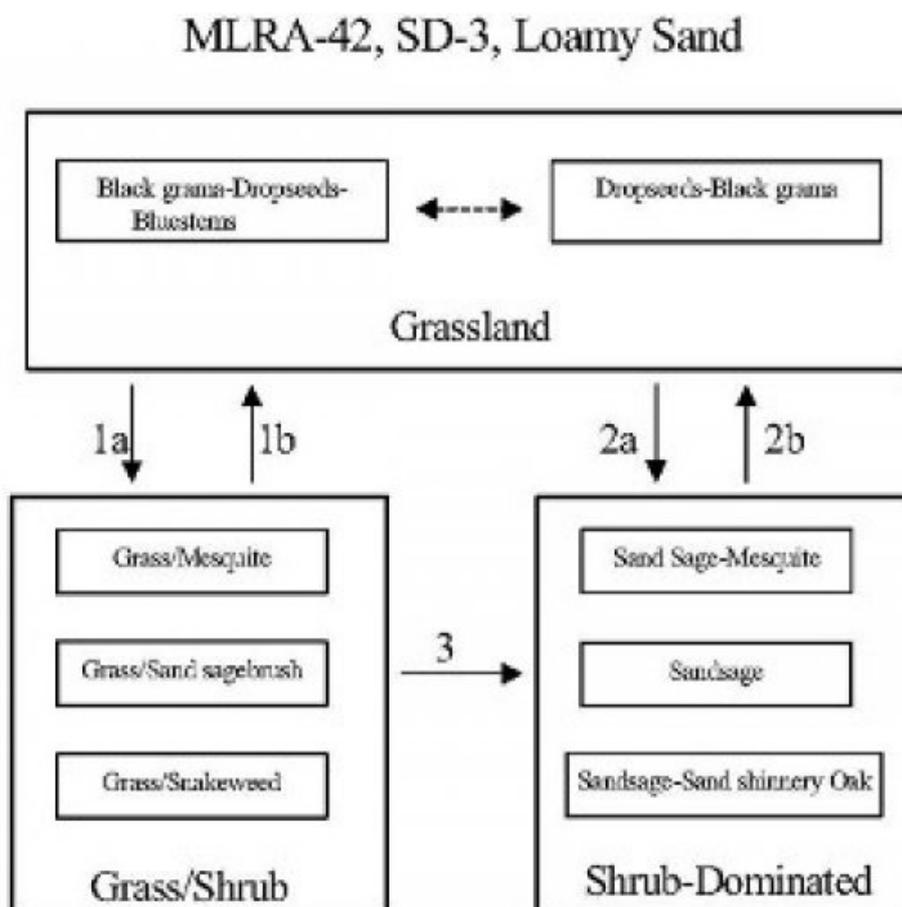
The Loamy Sand site intergrades with the Deep Sand and Sandy sites (SD-3). These sites can be differentiated by surface soil texture and depth to a textural change. Loamy Sand and Deep Sand sites have coarse textured (sands and loamy sand) surface soils while Sandy sites have moderately coarse textured (sandy loam and fine sandy loam) surfaces. Although Loamy Sand and Deep Sand sites have similar surface textures, the depth to a textural change is different—Loamy Sand sub-surface textures typically increase in clay at approximately 20 to 30 inches, and Deep Sand sites not until around 40 inches.

The historic plant community of Loamy Sand sites is dominated by black grama (*Bouteloua eriopoda*), dropseeds (*Sporobolus flexuosus*, *S. contractus*, *S. cryptandrus*), and bluestems (*Schizachyrium scoparium* and *Andropogon hallii*), with scattered shinnery oak (*Quercus havardii*) and sand sage (*Artemisia filifolia*). Perennial and annual forb abundance and distribution are dependent on precipitation. Litter and to a lesser extent, bare ground, are a significant proportion of ground cover while grasses compose the remainder. Decreases in black grama indicate a transition to either a grass/shrub or shrub-dominated state. The grass/shrub state is composed of grasses/honey mesquite (*Prosopis glandulosa*), grasses/broom snakeweed (*Gutierrezia sarothrae*), or grasses/sand sage. The shrub-dominated state occurs after a severe loss of grass cover and a prevalence of sand sage with secondary shinnery oak and mesquite. Heavy grazing intensity and/or drought are influential drivers in decreasing black grama and bluestems and subsequently increasing shrub cover, erosion, and bare patches. Historical fire suppression also encourages shrub pervasiveness and a competitive advantage over grass species (McPherson 1995). Brush and grazing management, however, may reverse grass/shrub and shrub-dominated states toward the grassland-

dominated historic plant community.

**State and transition model**

**Plant Communities and Transitional Pathways (diagram):**



- 1a. Drought, over grazing, fire suppression.
- 1b. Brush control, prescribed grazing
  
- 2.a Severe loss of grass cover, fire suppression, erosion.
- 2b. Brush control, seeding, prescribed grazing.
  
- 3. Continued loss of grass cover, erosion.

Figure 4.

**State 1  
Historic Climax Plant Community**

### Community 1.1 Historic Climax Plant Community

Grassland: The historic plant community is a uniformly distributed grassland dominated by black grama, dropseeds, and bluestems. Sand sage and shinnery oak are evenly dispersed throughout the grassland due to the coarse soil surface texture. Perennial and annual forbs are common but their abundance and distribution are reflective of precipitation. Bluestems initially, followed by black grama, decrease with drought and heavy grazing intensity. Historical fire frequency is unknown but likely occurred enough to remove small shrubs to the competitive advantage of grass species. Fire suppression, drought conditions, and excessive grazing drive most grass species out of competition with shrub species.

Diagnosis: Grassland dominated by black grama, dropseeds, and bluestems. Shrubs, such as sand sage, shinnery oak, and mesquite are dispersed throughout the grassland. Forbs are present and populations fluctuate with precipitation variability.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	442	833	1224
Forb	110	208	306
Shrub/Vine	98	184	270
<b>Total</b>	<b>650</b>	<b>1225</b>	<b>1800</b>

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	28%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	22%

Figure 6. Plant community growth curve (percent production by month). NM2803, R042XC003NM-Loamy Sand-HCPC. SD-3 Loamy Sand - Warm season plant community .

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

### State 2 Grass/Shrub

#### Community 2.1 Grass/Shrub



**Grass/Shrub State:** The grass/shrub state is dominated by communities of grasses/mesquite, grasses/snakeweed, or grasses/sand sage. Decreases in black grama and bluestem species lead to an increase in bare patches and mesquite which further competes with grass species. An increase of dropseeds and threeawns occurs. Grass distribution becomes more patchy with an absence or severe decrease in black grama and bluestems. Mesquite provides nitrogen and soil organic matter to co-dominant grasses (Ansley and Jacoby 1998, Ansley et al. 1998). Mesquite mortality when exposed to fire is low due to aggressive resprouting abilities. Herbicide application combined with subsequent prescribed fire may be more effective in mesquite reduction (Britton and Wright 1971).

**Diagnosis:** This state is dominated by an increased abundance of communities including grass/mesquite, grass/snakeweed, or grass/sand sage. Dropseeds and threeawns have a patchy distribution.

**Transition to Grass/Shrub State (1a):** The historic plant community begins to shift toward the grass/shrub state as drivers such as drought, fire suppression, interspecific competition, and excessive grazing contribute to alterations in soil properties and herbaceous cover. Cover loss and surface soil erosion are initial indicators of transition followed by a decrease in black grama with a subsequent increase of dropseeds, threeawns, mesquite, and snakeweed. Snakeweed has been documented to outcompete black grama especially under conditions of fire suppression and drought (McDaniel et al. 1984).

Key indicators of approach to transition:

- Loss of black grama cover
- Surface soil erosion
- Bare patch expansion
- Increased dropseed/threeawn and mesquite, snakeweed, or sand sage abundances

**Transition to Historic Plant Community (1b):** Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community.

### **State 3 Shrub Dominated**

### Community 3.1 Shrub Dominated

Shrub-Dominated State: The shrub-dominated state results from a severe loss of grass cover. This state’s primary species is sand sage. Shinnery oak and mesquite also occur; however, grass cover is limited to intershrub distribution. Sand sage stabilizes light sandy soils from wind erosion, which enhances protected grass/forb cover (Davis and Bonham 1979). However, shinnery oak also responds to the sandy soils with dense stands due to an aggressive rhizome system. Shinnery oak’s extensive root system promotes competitive exclusion of grasses and forbs. Sand sage, shinnery oak, and mesquite can be controlled with herbicide (Herbel et al. 1979, Pettit 1986).

Transition to Shrub-Dominated (2a): Severe loss of grass species with increased erosion and fire suppression will result in a transition to a shrub-dominated state with sand sage, Shin oak, and honey mesquite directly from the grassland-dominated state.

Key indicators of approach to transition:

- Severe loss of grass species cover
- Surface soil erosion
- Bare patch expansion
- Increased sand sage, shinnery oak, and mesquite abundance

Transition to Historic Plant Community (2b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community. In addition, seeding with native grass species will augment the transition to a grassland-dominated state.

Transition to Shrub-Dominated (3): If the grass/shrub site continues to lose grass cover with soil erosion, the site will transition to a shrub-dominated state with sand sage, shinnery oak, and honey mesquite.

Key indicators of approach to transition:

- Continual loss of dropseeds/threawns cover
- Surface soil erosion
- Bare patch expansion
- Increased sand sage, shinnery oak, and mesquite/dropseed/threawn and mesquite/snakeweed abundance

### 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	<b>Warm Season</b>			61–123	
	little bluestem	SCSC	<i>Schizachyrium scoparium</i>	61–123	–
2	<b>Warm Season</b>			37–61	
	sand bluestem	ANHA	<i>Andropogon hallii</i>	37–61	–
3	<b>Warm Season</b>			37–61	
	cane bluestem	BOBA3	<i>Bothriochloa barbinodis</i>	37–61	–
	silver bluestem	BOSA	<i>Bothriochloa saccharoides</i>	37–61	–
4	<b>Warm Season</b>			123–184	
	black grama	BOER4	<i>Bouteloua eriopoda</i>	123–184	–
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	123–184	–
5	<b>Warm Season</b>			123–184	
	thin paspalum	PASE5	<i>Paspalum setaceum</i>	123–184	–

	prains bristlegress	SEVUZ	<i>Setaria vupipseta</i>	123-184	-
	fringed signalgrass	URCI	<i>Urochloa ciliatissima</i>	123-184	-
6	<b>Warm Season</b>			123-184	
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	123-184	-
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	123-184	-
	mesa dropseed	SPFL2	<i>Sporobolus flexuosus</i>	123-184	-
7	<b>Warm Season</b>			61-123	
	hooded windmill grass	CHCU2	<i>Chloris cucullata</i>	61-123	-
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	61-123	-
9	<b>Other Perennial Grasses</b>			37-61	
	Grass, perennial	2GP	<i>Grass, perennial</i>	37-61	-
<b>Shrub/Vine</b>					
8	<b>Warm Season</b>			37-61	
	New Mexico feathergrass	HENE5	<i>Hesperostipa neomexicana</i>	37-61	-
	giant dropseed	SPGI	<i>Sporobolus giganteus</i>	37-61	-
10	<b>Shrub</b>			61-123	
	sand sagebrush	ARFI2	<i>Artemisia filifolia</i>	61-123	-
	Havard oak	QUHA3	<i>Quercus havardii</i>	61-123	-
11	<b>Shrub</b>			34-61	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	37-61	-
	featherplume	DAFO	<i>Dalea formosa</i>	37-61	-
12	<b>Shrub</b>			37-61	
	jointfir	EPHED	<i>Ephedra</i>	37-61	-
	littleleaf ratany	KRER	<i>Krameria erecta</i>	37-61	-
13	<b>Other Shrubs</b>			37-61	
	Shrub (>.5m)	2SHRUB	<i>Shrub (&gt;.5m)</i>	37-61	-
<b>Forb</b>					
14	<b>Forb</b>			61-123	
	leatherweed	CRPOP	<i>Croton pottsii var. pottsii</i>	61-123	-
	Indian blanket	GAPU	<i>Gaillardia pulchella</i>	61-123	-
	globemallow	SPHAE	<i>Sphaeralcea</i>	61-123	-
15	<b>Forb</b>			12-37	
	woolly groundsel	PACA15	<i>Packera cana</i>	12-37	-
16	<b>Forb</b>			61-123	
	touristplant	DIWI2	<i>Dimorphocarpa wislizeni</i>	61-123	-
	woolly plantain	PLPA2	<i>Plantago patagonica</i>	61-123	-
17	<b>Other Forbs</b>			37-61	
	Forb (herbaceous, not grass nor grass-like)	2FORB	<i>Forb (herbaceous, not grass nor grass-like)</i>	37-61	-

## Animal community

This Ecological Site provides habitat which supports a resident animal community that is characterized by pronghorn antelope, desert cottontail, spotted ground squirrel, black-tailed prairie dog, yellow faced pocket gopher, Ord's kangaroo rat, northern grasshopper mouse, southern plains woodrat, badger, roadrunner, meadowlark, burrowing owl, white necked raven, lesser prairie chicken, morning dove, scaled quail, Harris hawk, side blotched

lizard, marbled whiptail, Texas horned lizard, western diamondback rattlesnake, dusty hognose snake and ornate box turtle.

Where mesquite has invaded, most resident birds and scissor-tailed flycatcher, morning dove and Swainson's hawk, nest. Vesper and grasshopper sparrows utilize the site during migration.

## Hydrological functions

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

Hydrologic Interpretations

Soil Series Hydrologic Group

Berino B

Kinco A

Maljamar B

Pajarito B

Palomas B

Wink B

Pyote A

## Recreational uses

This site offers recreation potential for hiking, borseback riding, nature observation, photography and hunting. During years of abundant spring moisture, this site displays a colorful array of wildflowers during May and June.

## Wood products

This site has no potential for wood products.

## Other products

This site is suitable for grazing by all kinds and classes of livestock at any time of year. In cases where this site has been invaded by brush species it is especially suited for goats. Mismanagement of this site will cause a decrease in species such as the bluestems, black grama, bush muhly, plains bristlegrass, New Mexico feathergrass, Arizona cottontop and fourwing saltbush. A corresponding increase in the dropseeds, windmill grass, fall witchgrass, silver bluestem, sand sagebrush, shinery oak and ephedra will occur. This will also cause an increase in bare ground which will increase soil erodibility. This site will respond well to a system of management that rotates the season of use.

## Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index Ac/AUM

100 - 76 2.3 – 3.5

75 – 51 3.0 – 4.5

50 – 26 4.6 – 9.0

25 – 0 9.1 +

## 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, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

## Other references

Literature Cited:

Ansley, R. J.; Jacoby, P. W. 1998. Manipulation of fire intensity to achieve mesquite management goals in north Texas. In: Pruden, Teresa L.; Brennan, Leonard A., eds. Fire in ecosystem management: shifting the paradigm from suppression to prescription: Proceedings, Tall Timbers fire ecology conference; 1996 May 7-10; Boise, ID. No. 20. Tallahassee, FL: Tall Timbers Research Station: 195-204.

Ansley, R. J.; Jones, D. L.; Tunnell, T. R.; [and others]. 1998. Honey mesquite canopy responses to single winter fires: relation to herbaceous fuel, weather and fire temperature. International Journal of Wildland Fire 8(4):241-252.

Britton, Carlton M.; Wright, Henry A. 1971. Correlation of weather and fuel variables to mesquite damage by fire. Journal of Range Management 24:136-141.

Davis, Joseph H., III and Bonham, Charles D. 1979. Interference of sand sagebrush canopy with needleandthread. Journal of Range Management 32(5):384-386.

Herbel, C. H, Steger, R, Gould, W. L. 1974. Managing semidesert ranges of the Southwest Circular 456. Las Cruces, NM: New Mexico State University, Cooperative Extension Service. 48 p.

McDaniel, Kirk C.; Pieper, Rex D.; Loomis, Lyn E.; Osman, Abdelgader A. 1984. Taxonomy and ecology of perennial snakeweeds in New Mexico. Bulletin 711. Las Cruces, NM: New Mexico State University, Agricultural Experiment Station. 34 p.

McPherson, Guy R. 1995. The role of fire in the desert grasslands. In: McClaran, Mitchel P.; Van Devender, Thomas R., eds. The desert grassland. Tucson, AZ: The University of Arizona Press: 130-151.

Pettit, Russell D. 1986. Sand shinnery oak: control and management. Management Note 8. Lubbock, TX: Texas Tech University, College of Agricultural Sciences, Department of Range and Wildlife Management. 5 p.

**Contributors**

Don Sylvester  
Quinn Hodgson

**Rangeland health reference sheet**

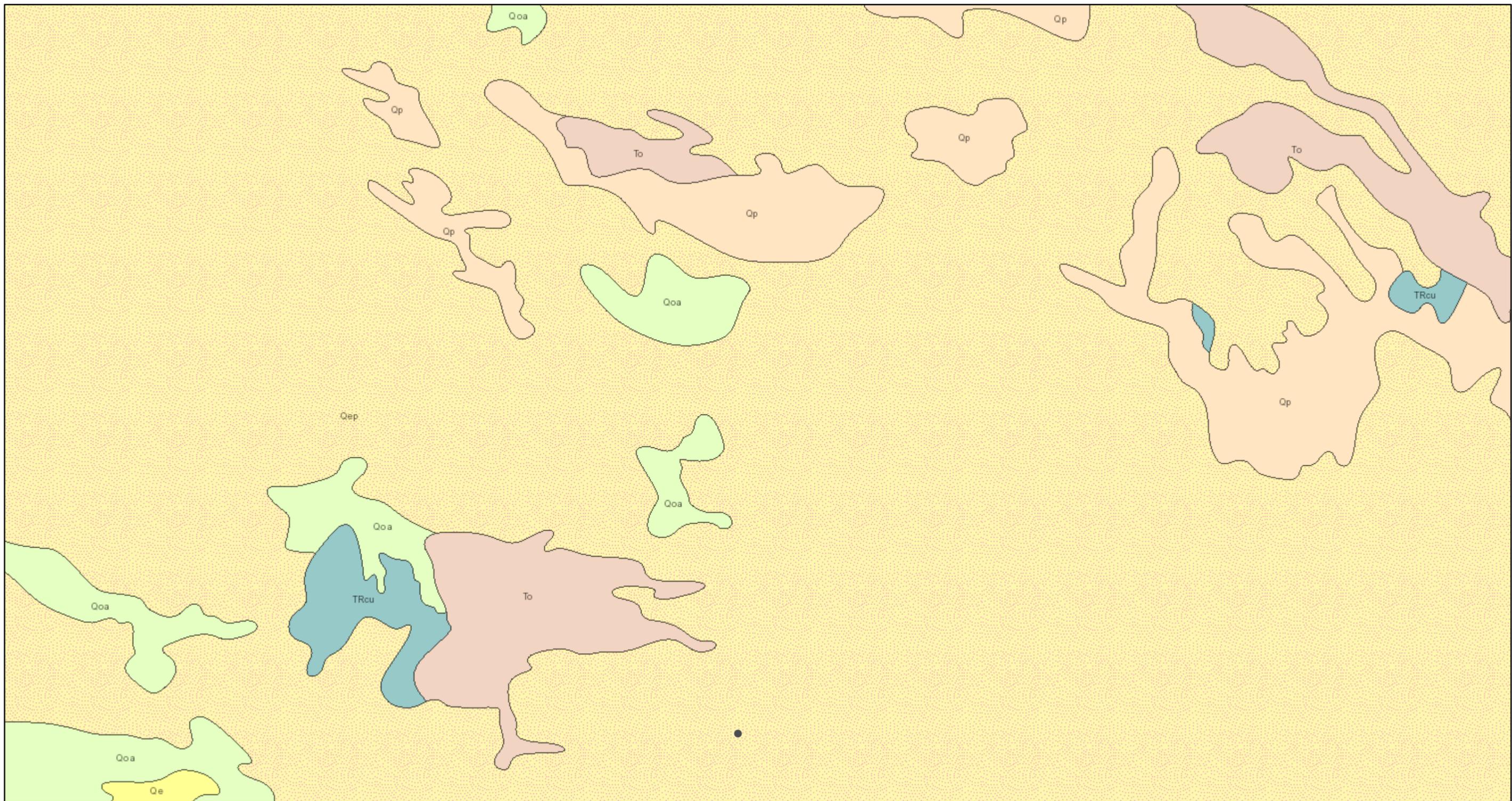
Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative 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:**

# ArcGIS Web Map



1/19/2022, 11:40:44 AM

1:144,448

### Lithologic Contacts

- Contact, Exposed
- Contact, Gradational
- Nomenclature change
- Map Boundary

### Faults

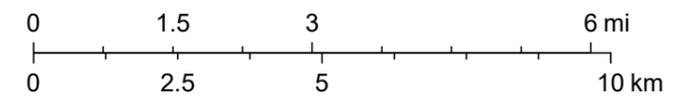
- Fault, Exposed
- Fault, Intermittent
- Fault, Concealed
- ~ Shere Zone

### Dikes

- <all other values>
- Dike
- Dike intruding fault
- \* Volcanic Vents

### STATEMAP (1993 to Present) [Publications]

- Mapping is Complete
- Mapping in Progress



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 Bureau TIGER/Line data; USFS

## **ATTACHMENT 4**



Dhugal Hanton <vertexresourcegroupusa@gmail.com>

## 48-HR Notification Billiken 6 CTB 1, Gaucho Unit 30 CTB 1, Green Wave 20 CTB 9 Liner Inspections

Dhugal Hanton <vertexresourcegroupusa@gmail.com>

Thu, Jan 13, 2022 at 1:52 PM

To: EMNRD-OCD-District1spills <emnrd-ocd-district1spills@state.nm.us>, "CFO\_Spill, BLM\_NM" <blm\_nm\_cfo\_spill@blm.gov>, "Enviro, OCD, EMNRD" <OCD.Enviro@state.nm.us>

Cc: wesley.mathews@dvn.com, dale.woodall@dvn.com

Bcc: Jramirez@vertex.ca, bschafer@vertex.ca

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled 3 liner inspections to be conducted for the following releases:

nAPP2129845429 DOR: 10/24/2021 Site Name: Green Wave 20 CTB 9

nAPP2134155628 DOR: 12/3/2021 Site Name: Billiken 6 CTB 1

nAPP2131553617 DOR: 11/5/2021 Site Name: Gaucho Unit 30 CTB 1

This work will be completed on behalf of Devon Energy Production Company.

On Friday, January 21, 2022 at approximately 8:00 a.m., John Ramirez will be on the first site to conduct a liner inspection and continue them throughout the day. He can be reached at 575-725-1809. If you need directions to the sites, please do not hesitate to contact him. If you have any questions or concerns regarding this notification, please give me a call at 701-301-1564.

Thank you,

**Brandon Schafer**

Project Manager

Vertex Resource Services Inc.

**P 701.645.3111 Ext. 706**

**C 701.301.1564**

**F 780.464.3731**

[www.vertex.ca](http://www.vertex.ca)

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**ATTACHMENT 5**



# Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	1/21/2022
Site Location Name:	Green Wave 20 CTB 9	Report Run Date:	1/21/2022 10:18 PM
Client Contact Name:	Wes Matthews	API #:	
Client Contact Phone #:	(575) 748-0176	Project Owner:	
Unique Project ID		Project Manager:	
Project Reference #			

## Summary of Times

Arrived at Site	1/21/2022 11:10 AM
Departed Site	1/21/2022 11:30 AM

## Field Notes

- 11:08** Arrived on site to perform liner inspection.
- 11:13** Inside and outside the wall dike does not appear to have any significant damage.
- 11:19** The liner does not appear to have any significant damage on the bottom between or around the tanks.
- 11:20** I don't see anything that brings up environmental concern.

## Next Steps & Recommendations

- 1** No recommendations at this time.



# Daily Site Visit Report

## Site Photos

Viewing Direction: North



Descriptive Photo - 9  
Viewing Direction: North  
Desc: Outside of wall dike east side.  
Created: 1/21/2022 11:10:32 AM  
Lat:32.025735, Long:-103.488721

Outside of wall dike east side.

Viewing Direction: East



Descriptive Photo - 10  
Viewing Direction: East  
Desc: Bottom of containment south side.  
Created: 1/21/2022 11:18:43 AM  
Lat:32.025766, Long:-103.488706

Bottom of containment south side.

Viewing Direction: North



Descriptive Photo - 11  
Viewing Direction: North  
Desc: Bottom of containment west side.  
Created: 1/21/2022 11:17:14 AM  
Lat:32.025762, Long:-103.488789

Bottom of containment west side.

Viewing Direction: Northwest

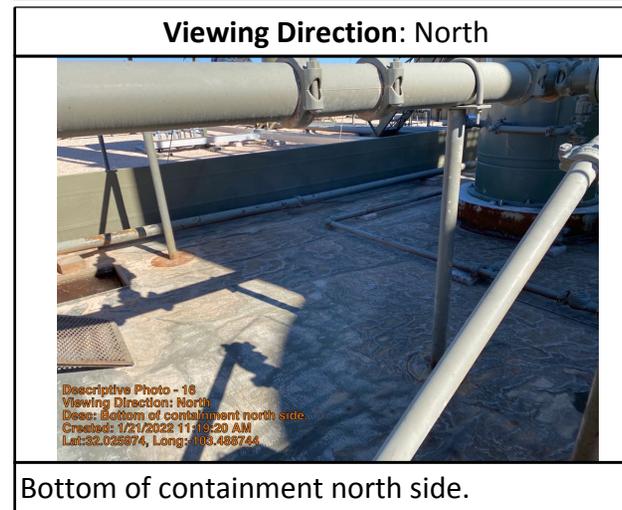
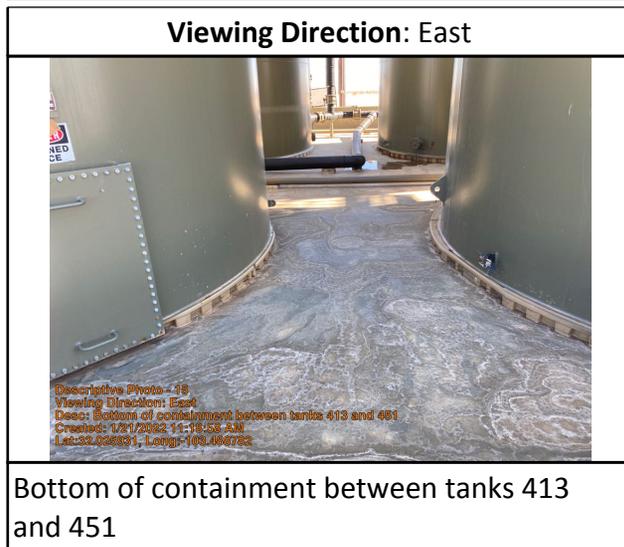
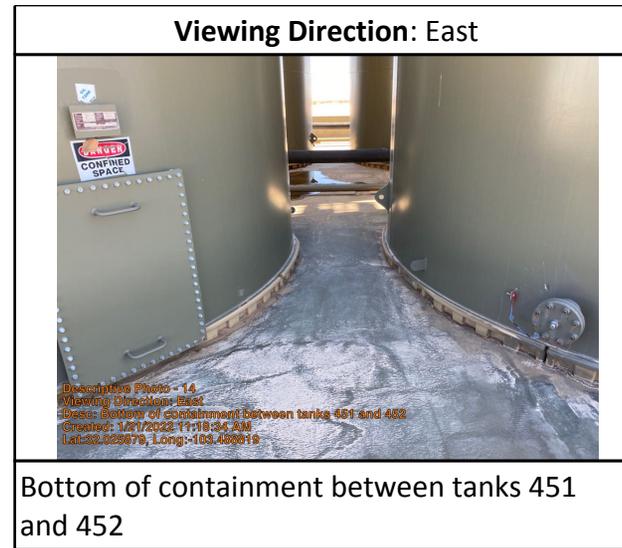
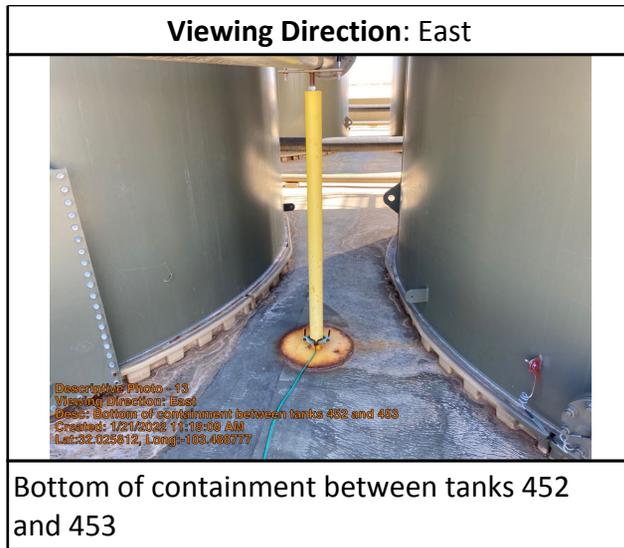


Descriptive Photo - 12  
Viewing Direction: Northwest  
Desc: Inside wall dike west side.  
Created: 1/21/2022 11:17:37 AM  
Lat:32.025777, Long:-103.488757

Inside wall dike west side.

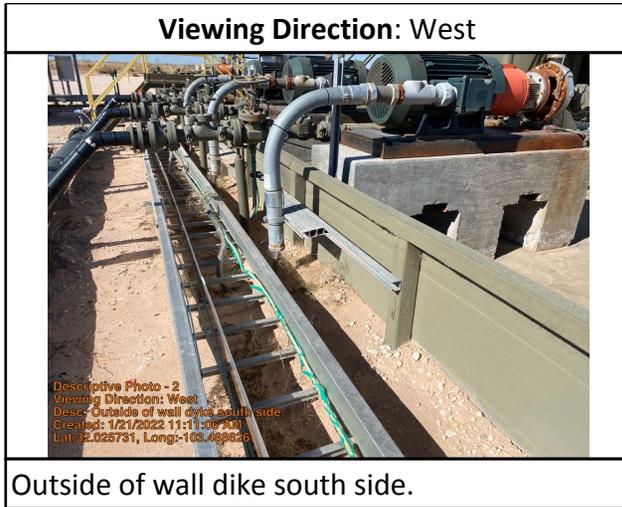


# Daily Site Visit Report

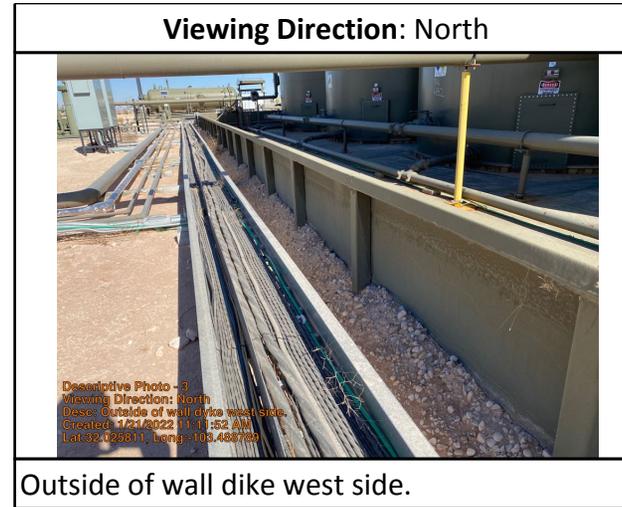




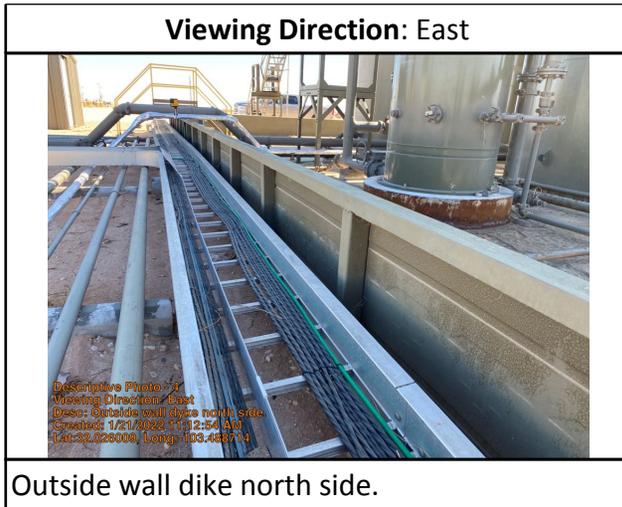
# Daily Site Visit Report



Outside of wall dike south side.



Outside of wall dike west side.



Outside wall dike north side.



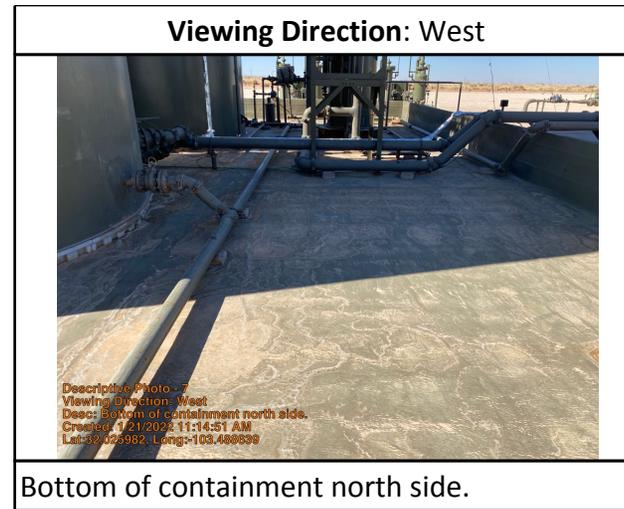
Inside wall dike east side



# Daily Site Visit Report



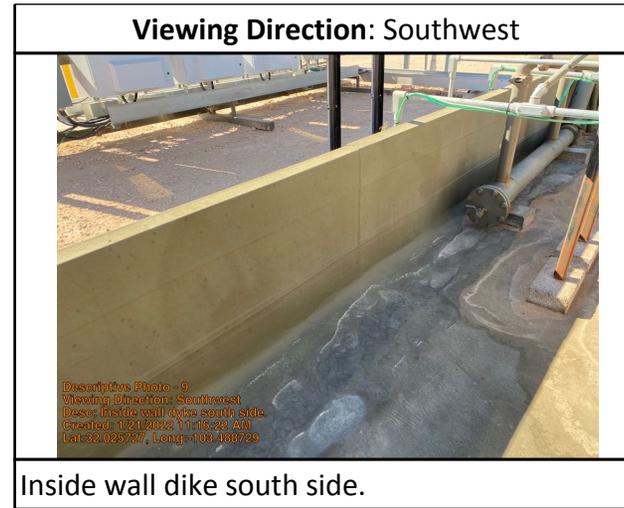
Bottom of containment east side.



Bottom of containment north side.



Bottom of containment between all tanks N-S



Inside wall dike south side.

# Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Chance Dixon

**Signature:** CD  
Signature

**ATTACHMENT 6**

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

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

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	nAPP2129845429
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party Devon Energy Production Company	OGRID 6137
Contact Name Dale Woodall	Contact Telephone
Contact email Dale.Woodall@dvn.com	Incident # (assigned by OCD)
Contact mailing address 6488 Seven Rivers Hwy Artesia, NM 88210	

### Location of Release Source

Latitude 32.025948 Longitude -103.488588  
*(NAD 83 in decimal degrees to 5 decimal places)*

Site Name Green Wave 20 CTB 9	Site Type Oil
Date Release Discovered 10/24/2021	API# (if applicable)

Unit Letter	Section	Township	Range	County
J	20	26S	34E	Lea

Surface Owner:  State  Federal  Tribal  Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 29.68 BBLS	Volume Recovered (bbls) 29.68 BBLS
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release Water transfer pump seal leaked.

State of New Mexico  
Oil Conservation Division

Page 2

Incident ID	nAPP2129845429
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? <b>This release is over 25 BBLs.</b>
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? <b>Notice given on OCD portal on 10/25/2021 by Dale Woodall.</b>	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:  	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kendra DeHoyos</u>	Title: <u>EHS Associate</u>
Signature: <u>Kendra DeHoyos</u>	Date: <u>11/2/2021</u>
email: <u>Kendra.DeHoyos@dvn.com</u>	Telephone: <u>575-748-0167</u>
<b><u>OCD Only</u></b>	
Received by: <u>Ramona Marcus</u>	Date: <u>11/2/2021</u>

NAPP2129845429

<b>Spills In Lined Containment</b>	
Measurements Of Standing Fluid	
Length(Ft)	100
Width(Ft)	40
Depth(in.)	0.5
Total Capacity without tank displacements (bbls)	29.68
No. of 500 bbl Tanks In Standing Fluid	
No. of Other Tanks In Standing Fluid	
OD Of Other Tanks In Standing Fluid(feet)	
Total Volume of standing fluid accounting for tank displacement.	29.68

**District I**  
 1525 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-8101 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rte Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-8178 Fax:(505) 334-0170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3482

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

CONDITIONS  
 Action 59369

**CONDITIONS**

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6197
	Action Number: 59369
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
marcus	None	11/2/2021

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
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1000 Rio Brazos Road, Aztec, NM 87410  
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State of New Mexico  
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Santa Fe, NM 87505

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	nAPP2129845429
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- N/A Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- N/A Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- N/A Laboratory data including chain of custody

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	nAPP2129845429
District RP	
Facility ID	
Application ID	

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

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

Printed Name: Dale Woodall Title: EHS Professional

Signature: *Dale Woodall* Date: Feb 3, 2022  
; Dale Woodall (Feb 3, 2022 15:54 MST)

email: Dale.Woodall@dvn.com Telephone: 575-748-1838

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**OCD Only**

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

State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2129845429
District RP	
Facility ID	
Application ID	

## Closure

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

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

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

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

Printed Name: Dale Woodall Title: EHS Professional  
 Signature: *Dale Woodall* Date: Feb 3, 2022  
Dale Woodall (Feb 3, 2022 15:54 MST)  
 email: Dale.Woodall@dnv.com Telephone: 575-748-1838

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
 Action 79951

**CONDITIONS**

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 79951
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
chensley	Closure Approved.	2/23/2022
chensley	NOTE: The OCD requires a copy of all correspondence relative to remedial projects be included in all proposal and/or final closure reports. Correspondence required to be included in reports may include, but not necessarily limited to, extension requests, liner inspection notifications, sample event notifications, spill/release/fire notifications, and variance requests. This will allow for notifications and requests to become a documented part of the incident file.	2/23/2022