Souder, Miller & Associates ♦ 201 S. Halagueno St.♦ Carlsbad, NM 88220
(575) 689-8801

February 21, 2025 5E33088 BG#21

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

SUBJECT: Closure Request Report for the Dalmatian 3-2-23-27 Fee #411H, Incident ID # nAPP2435244383, API Number 30-015-45690, Eddy County, New Mexico.

1.0 Introduction

On behalf of Devon Energy Production Company, LP (Devon), Souder, Miller & Associates (SMA) has prepared this Closure Request Report. This report describes the corrective actions for a produced water incident related to oil and gas production activities at the Dalmatian 3-2-23-27 Fee #411H (Dalmatian), Incident ID nAPP2435244383, that occurred on December 16, 2024. The spill area is located at latitude N 32.333237 and longitude W -104.183682.

Devon completed a release notification to the New Mexico Energy, Minerals, and Natural Resources Department – Oil Conservation Division (OCD) via Operators Electronic Permitting and Payment Portal on December 17, 2024, for the submission of Notice of Release (NOR), followed by the submission of the Form C-141, Release Notification on December 18, 2024. This letter provides a description of the spill assessment and includes a request for spill closure.

Table 1: Release Information and Closure Criteria

Name	Dalmatian 2-3-23-27 Fee #411H	Company	Devon Energy Production Company, LP
API Number	30-015-45690	PLSS	L-03-23S-27E
Incident Number	nAPP2435244383	GPS	N 32.333237, W -104.183682
Lease ID	NM139351	County	Eddy
Date of Release	December 16, 2024	Land Status	Private
Source of Release	Nipple on separator developed a pinhole leak		
Released Volume	52 bbls	Recovered Volume	52 bbls
NMOCD Closure Criteria	Depth to groundwater <50 feet below ground surface (bgs) due to medium karst potential		

2.0 Background

On December 16, 2024, a nipple on the separator was discovered leaking resulting in a fluid release into the secondary lined containment. The total volume of released fluids was 52 barrels (bbls) of produced water. Initial response activities were conducted by the operator, including source elimination, photographs of standing fluids, recovery of approximately 52 bbls of produced water, and verification that the affected area was properly exposed and cleaned for visual observation. Photos of the facility layout including tanks, liner, and secondary containment are shown in the Site Assessment Photolog (Attachment 1).

3.0 Site Geology and Vegetation

The Geologic Map of New Mexico by New Mexico Bureau of Geology and Mineral Resources indicates the surface geology at the incident location area is comprised of primarily Qa–Alluvium (Holocene to upper Pleistocene), deposits of upland plains and piedmont areas, and calcic soils and eolian cover sediments of High Plains region.

The surrounding geography and terrain are associated with uplands, hill slopes, ridges, plains, terraces, and some fan remnants at elevations between 2,842 and 5,000 feet above mean sea level (amsl). The annual average rainfall and precipitation ranges between 8 to 14 inches. The soil tends to be well drained with low runoff.

The primary soil type on the location is Reagan loam complex. Soil features consist of being deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gysum horizon between 30 and 40 inches.

Surface textures are loam, silt loam, very fine sandy loam, or clay loam with substratum textures of loam, silty clay loam, clay loam, or silt loams. Subsoil textures are silt loam, clay loam, silty clay loam, gravelly loam, gravelly clay loam, or very gravelly loam. The permeability of these soils is moderate to slow with available water holding capacity ranging from high to moderate.

The ecological setting is vegetation of a grassland aspect. The location area is covered by grasses with shrubs and half-shrubs sparsely and evenly distributed. Tobosa, black grama, and blue grama are dominant, while subdominant shrubs are yucca, tarbush, cholla, mixed with forbs such as desert holly, scorpionweed, bladderpod, flax, nama, fleabane, Indianwheat, groundcherry, deerstongue, and rayless goldenrod.

4.0 Site Information and Closure Criteria

The Dalmatian is located approximately 2.41 miles southeast of Carlsbad, New Mexico, on private property at an elevation of approximately 3,112 feet amsl. SMA completed site assessment/characterization pursuant to 19.5.29.11-12 NMAC to determine potential environmental impacts and closure criteria. Site assessment and characterization results are included in Attachments 1 and 2.

There is no surface water located on site or within 300 feet of the site. The nearest significant watercourse is a riverine, irrigation canal, located approximately 0.06 miles to the west, a playa lake located 2.21 miles southeast, and a freshwater emergent wetland located 1.56 miles northwest of Dalmatian as defined in 19.15.17.7.P NMAC (U.S. Fish and Wildlife Service, National Wetlands Inventory, 2024). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features within the specified search distances outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Depth to ground water was determined using New Mexico Office of the State Engineer (NMOSE) Water Rights Pod Location: ArcGIS Interactive Online Map. The nearest active pod is C-00071, an irrigation well located 0.05 miles from Dalmatian. This well was reported via monthly meter reading, with a well depth of 205 feet bgs but no depth to groundwater readily available. A second NMOSE Pod, C-03000-Pod2, is located 0.26 miles south of Dalmatian and is a household domestic well with depth to groundwater reported as 80 feet bgs. Documentation of site characterization and depth to groundwater is included in Attachment 2.

Karst potential for the Dalmatian is medium and is 1.25 miles southwest of a high karst feature based on the New Mexico State Land Office Land Status Interactive Map (NMSLO).

According to FEMA's National Flood Hazard Layer, the Dalmatian is located in Zone X, an area of minimal flood hazard (>500-year flood zone). The nearest mapped 100-year floodplain (Zone A) is located 1.26 miles southeast of the site.

The closure criteria for the site are the constituent concentration limits associated with less than 50 feet depth to groundwater (DTGW), since karst potential for the area is medium, as stated in Table I of 19.15.29.12 NMAC.

Documentation of site characterization, including surface water features, depth to groundwater, nearest residence, unstable areas, and flood zone, is included in Attachment 2.

5.0 Remediation Activities

Notification of the liner inspection, scheduled for January 17, 2025, was provided to Devon through email by SMA personnel on January 13, 2025. Devon provided notification to NMOCD through the ENMRD Electronic Permitting and Payment Portal for Operators on January 13, 2025. Notification documentation is included in Attachment 3.

On January 17, 2025, SMA personnel performed an on-site visual inspection of the secondary containment to verify liner integrity as outlined in in Paragraph (5)(a) of Subsection A of 19.15.29.11 NMAC.

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

6.0 Conclusions and Recommendations

Based on the liner inspection and assessment, SMA concludes the liner integrity is adequate to contain the release related to incident nAPP2435244383. There is no evidence of a release to the environment. Based on the professional activities and site assessment, Devon Energy Production Company respectfully requests closure of the incident that occurred at Dalmatian 3-2-23-27 Fee #411H.

7.0 Scope and Limitations

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

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

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:

Monica Peppin, A.S.
Project Manager

Stephanie Hinds, P.E.
Senior Engineer

REFERENCES:

New Mexico Office of the State Engineer (NMOSE) online water well database
Httpe://gis.ose.state.nm.us/gisapps/ose_pod_locations/

USGS National Water Information System: Web interface online water well database
https://nwis.waterdata.usgs.gov/nwis/gwlevels?site_no=321205103544701&agency_cd=USGS&format=html

U.S. Fish and Wildlife Service: National Wetlands Inventory
Wetlands Mapper | U.S. Fish & Wildlife Service

New Mexico State Land Office: Land Status
NMSLO Land Status

United States Department of Agriculture: Natural Resources Conservation Service: Web Soil Survey
https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

USDA, USGS The National Map: Orthoimagry: FEMA's National Flood Hazard Layer (NFHL) Viewer
https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd

ATTACHMENTS:

Attachment 1: Site Assessment Photolog
Attachment 2: Closure Criteria Determination Research
Attachment 3: Correspondence

ATTACHMENT 1: SITE ASSESSMENT PHOTOLOG

Site Assessment Photolog

Client: Devon Energy Corporation
API #: 30-015-45690
Site: Dalmatian Fee #411H

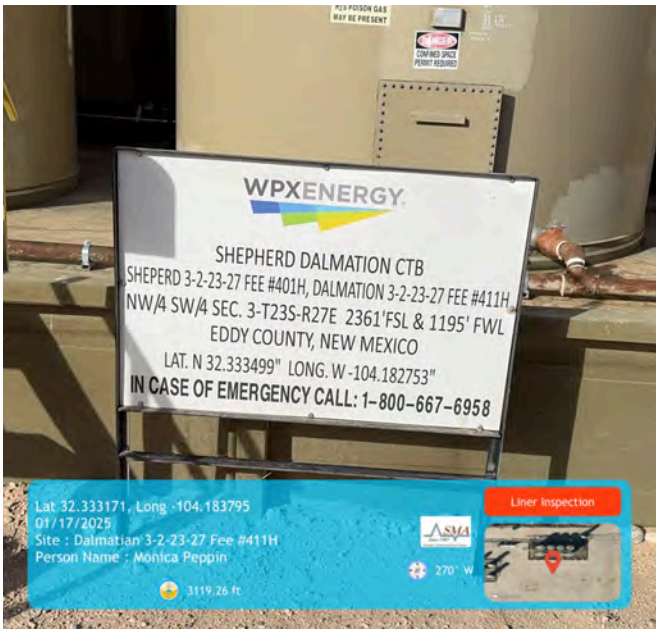
Incident ID: nAPP2435244383
Project Manager: Monica Peppin
Project Owner: Jim Raley

Field Notes

January 17, 2025

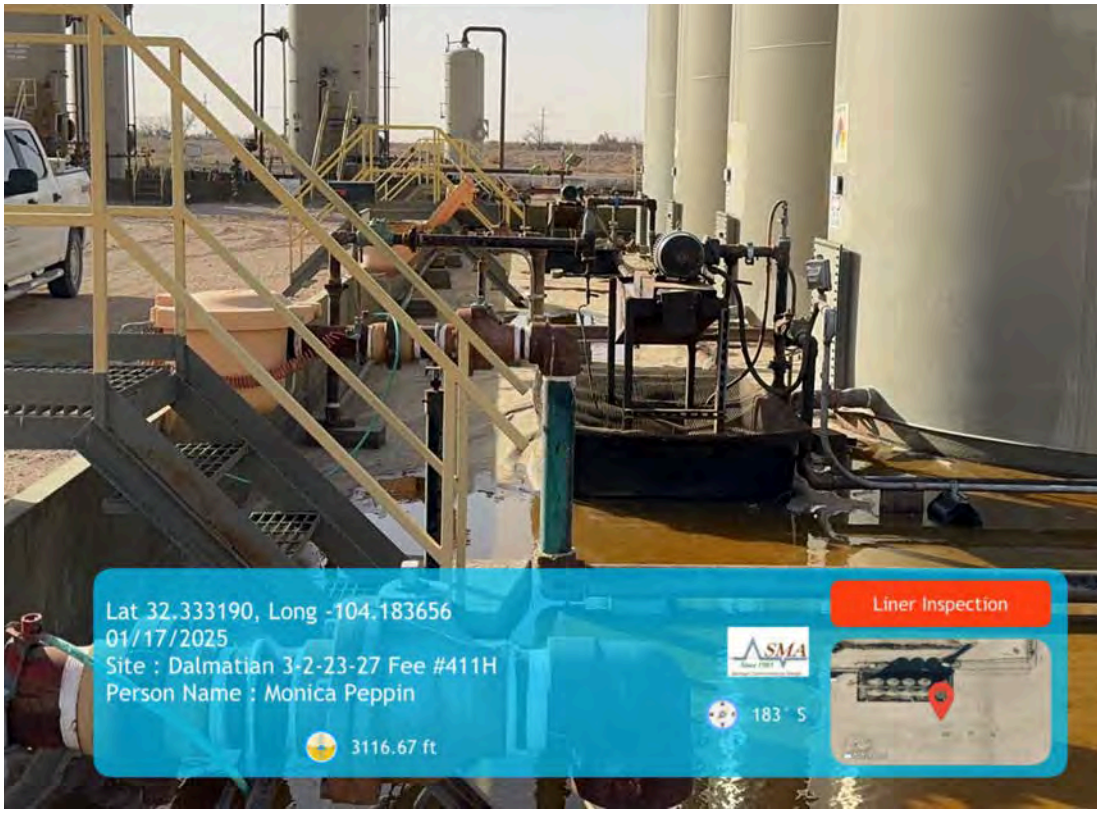
- Arrive on site
- Fill out JHA
- Begin inspection of secondary containment by walking around and inspecting liner.
- Standing water inside containment from rain storm day before inspection.
- Unaware of puddled up water until arrival on site.
- Pictures at different positions around the containment and between tanks in all cardinal directions.
- Inspected for any visible perforations, cuts, rips, tears, or substantial weathering that could result in a fluid release passed the secondary containment.
- Secondary containment liner integrity is confirmed and passed the inspection.

Photographs

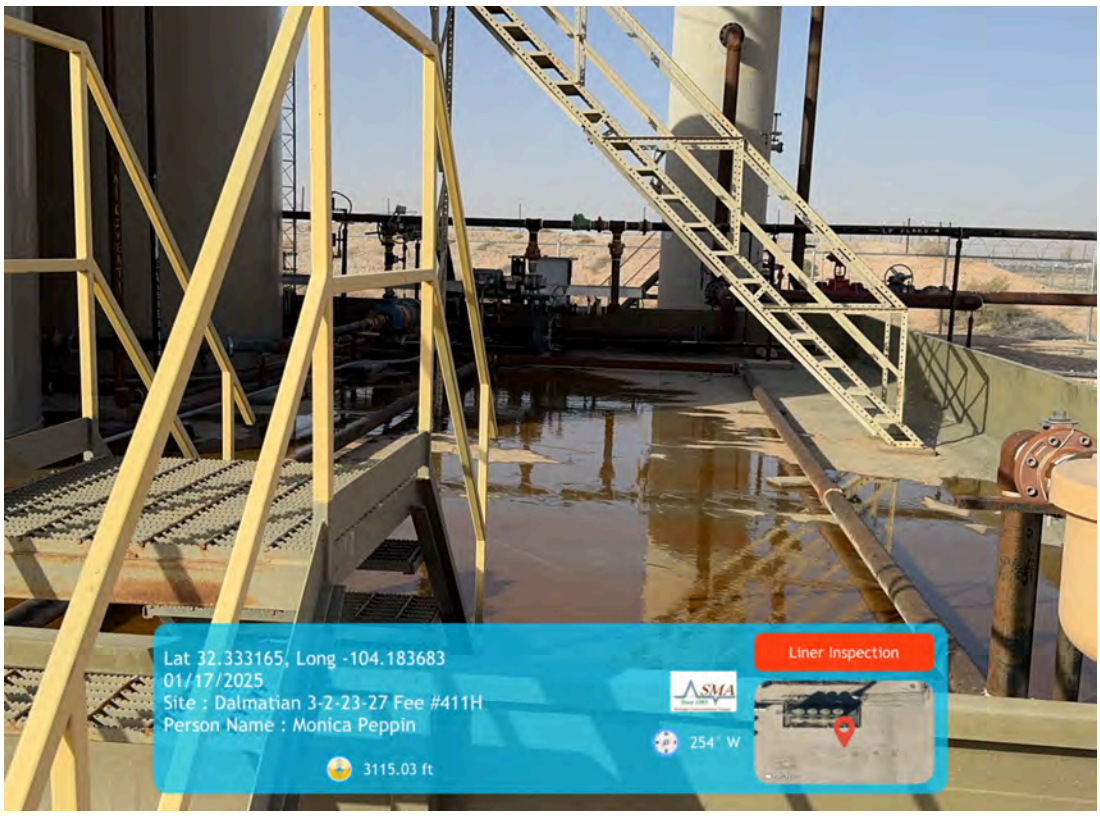


Photograph #1: Lease sign with site information and geographic data.

Photograph #2: View of liner between tanks south wall facing west.



Photograph #3: Facing west from southeast corner. Standing puddle of water from rain event day before.

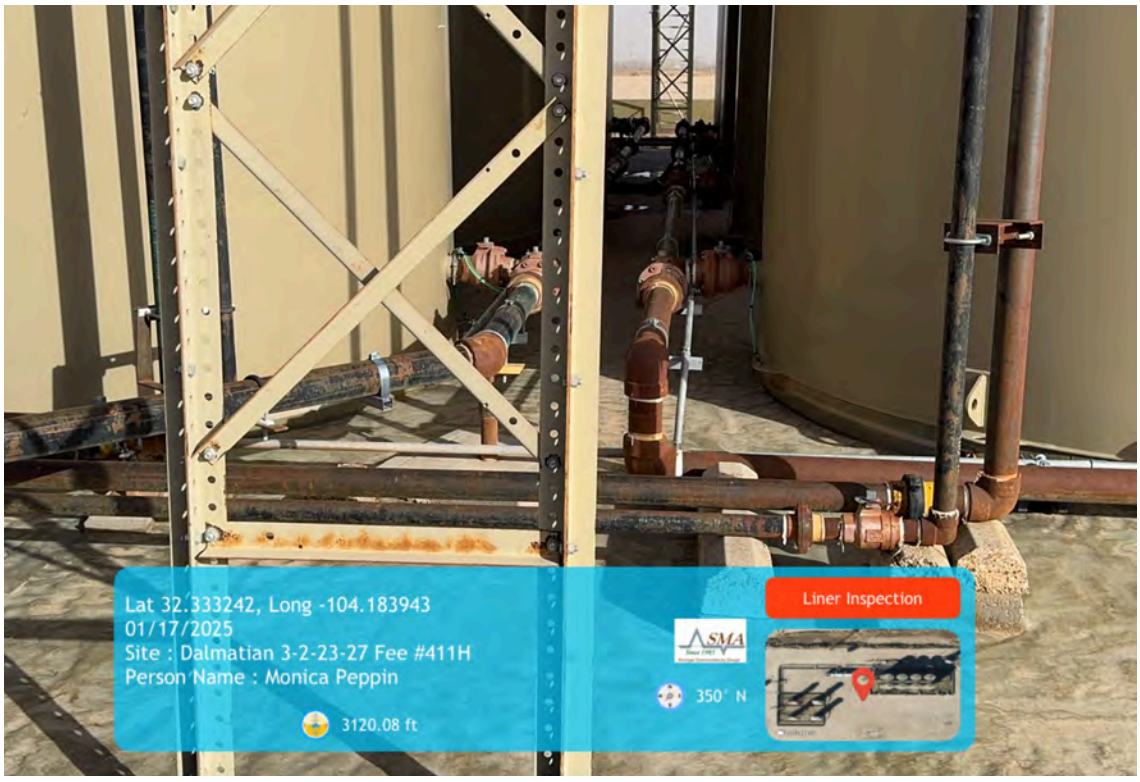


Photograph #4: Viewing east area facing north. Puddle of water from rain event day before inspection.

Photograph #5: North side of containment standing in southwest corner

Photograph #6: Liner between tanks on east end facing west.

Photograph #7: North wall view from east end facing west.



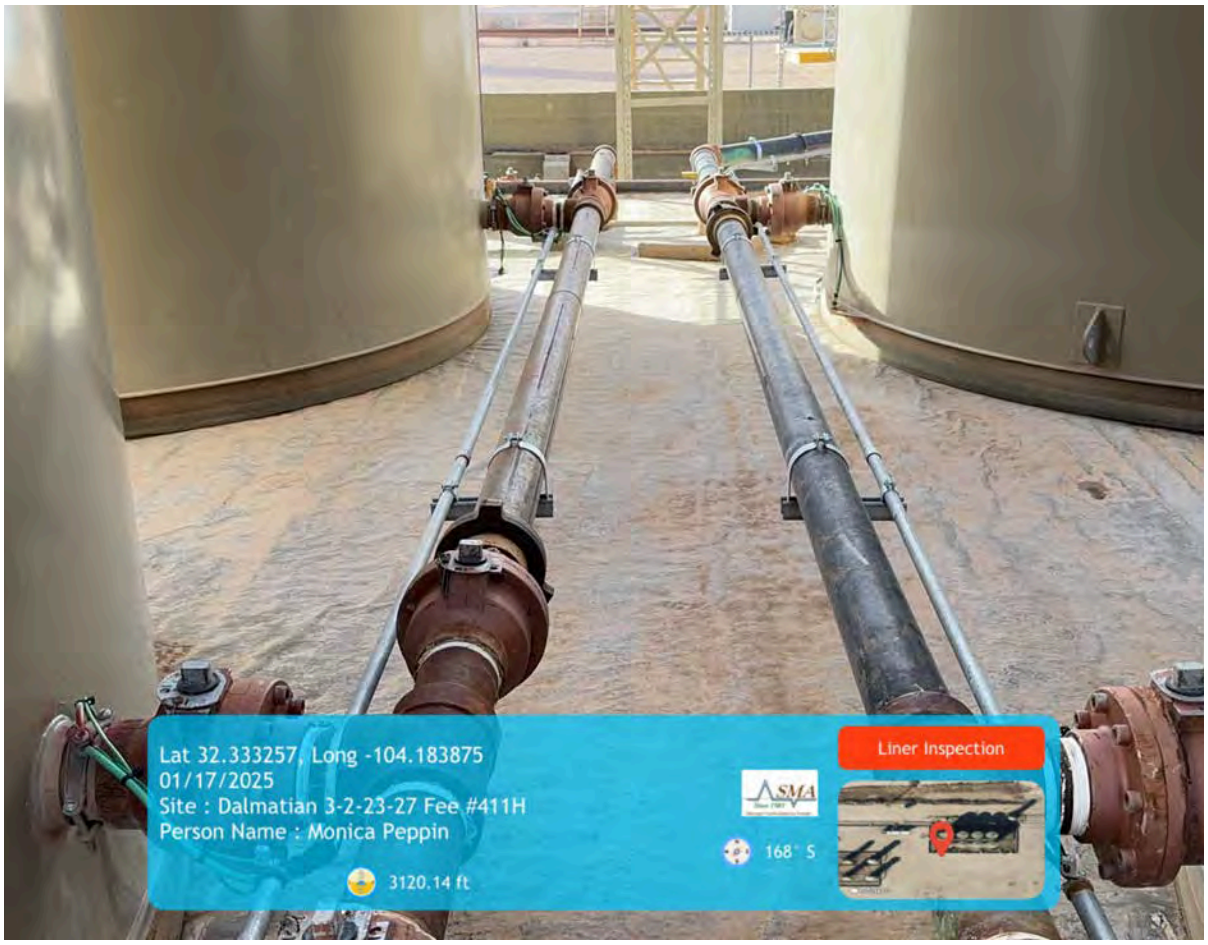
Photograph #8: View of liner between tanks from west side facing east.

Photograph #9: Facing south viewing east area of containment from northeast corner.

Photograph #10: Liner view of south area of containment from southwest corner facing east.

Photograph #11: North area of containment from west wall facing east.

Photograph #12: View of northwest corner of containment standing along northern wall.



Photograph #13: View of liner standng in middle area of tank battery containment facing west.

Technician: Monica Peppin Date: 1/17/2025

Signature: _____

ATTACHMENT 2: CLOSURE CRITERIA DETERMINATION RESEARCH

Dalmatian Fee #411H

Site Coordinates: 32.333237, -104.183682
Containment Area: Approximately 4,480 square feet

Dalmatian Fee #411H Distance to Nearest DTGW/Domestic Well

2/17/2025, 8:45:20 AM

Override 1

GIS WATERS PODs

Active

Pending

NHD Flowlines

Canal Ditch

Nearest Active Well
C-03000-Pod2
Distance to Well
0.26 miles/1,390 feet
Depth of Well
150 ft
Depth to Water
80 ft

1:4,709

0 0.03 0.07 0.13 mi

0 0.05 0.1 0.2 km

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

Online web user

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Dalmatian Fee #411H

Nearest Significant Watercourse: Riverine (Irrigation Canal)
Distance: 0.06 miles/321 feet

February 17, 2025

Wetlands

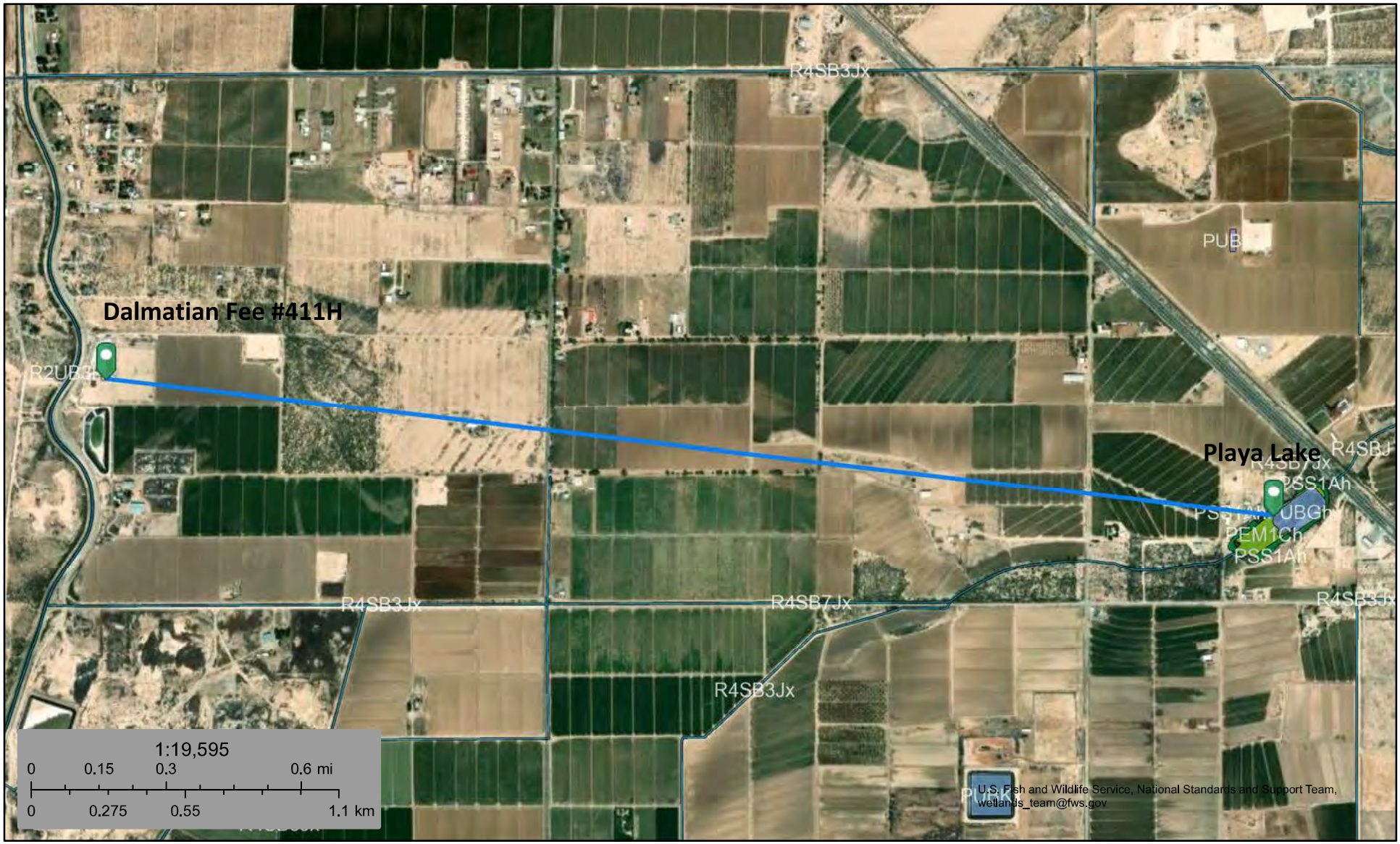
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Dalmatian Fee #411H
Nearest Playa Lake 2.21 miles/11,654 feet



February 17, 2025

Wetlands

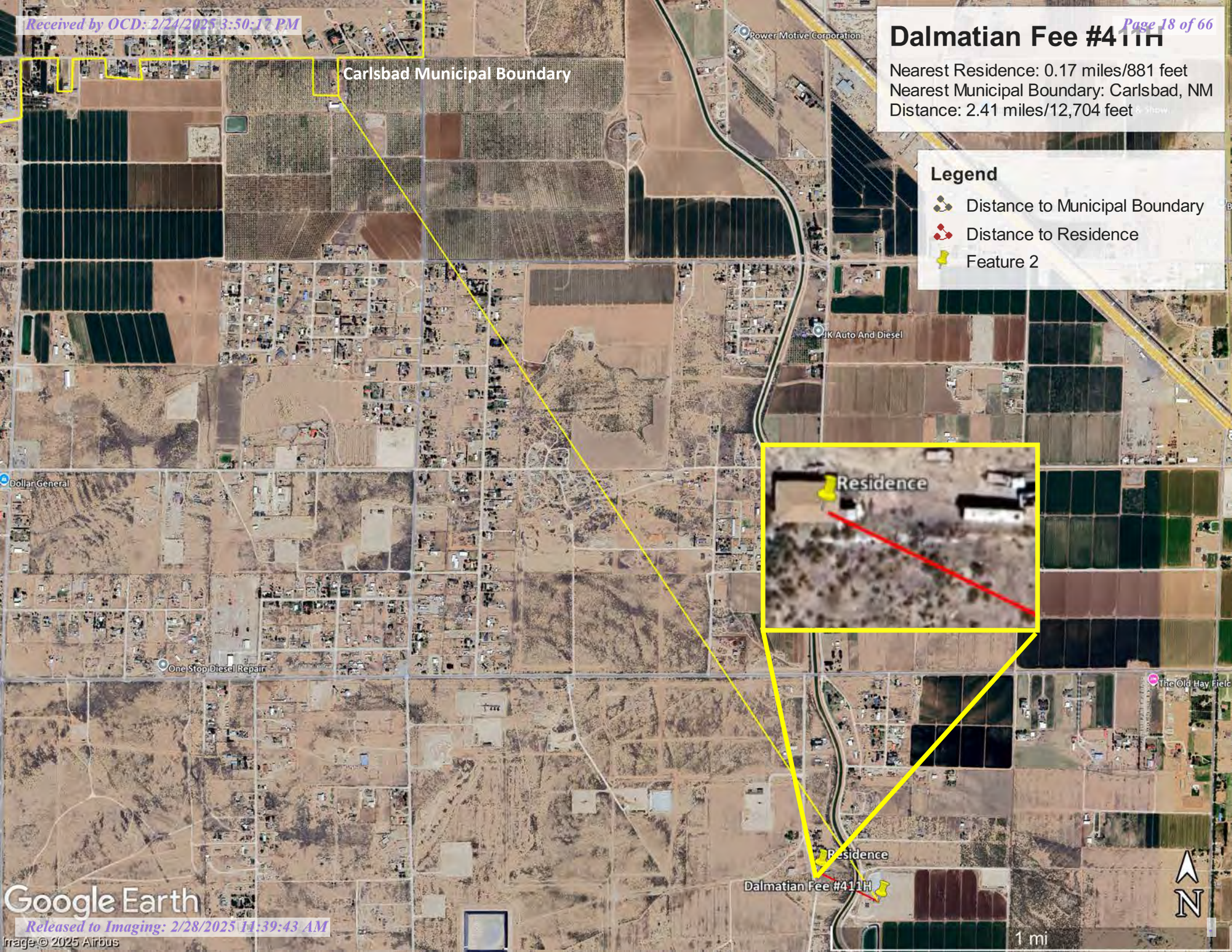
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Dalmatian Fee #411H

Nearest Residence: 0.17 miles/881 feet
Nearest Municipal Boundary: Carlsbad, NM
Distance: 2.41 miles/12,704 feet



U.S. Fish and Wildlife Service
National Wetlands Inventory

Dalmatian Fee #411H

Nearest Wetland: Freshwater Emergent Wetland
Distance: 1.56 miles/8,235 feet

February 17, 2025

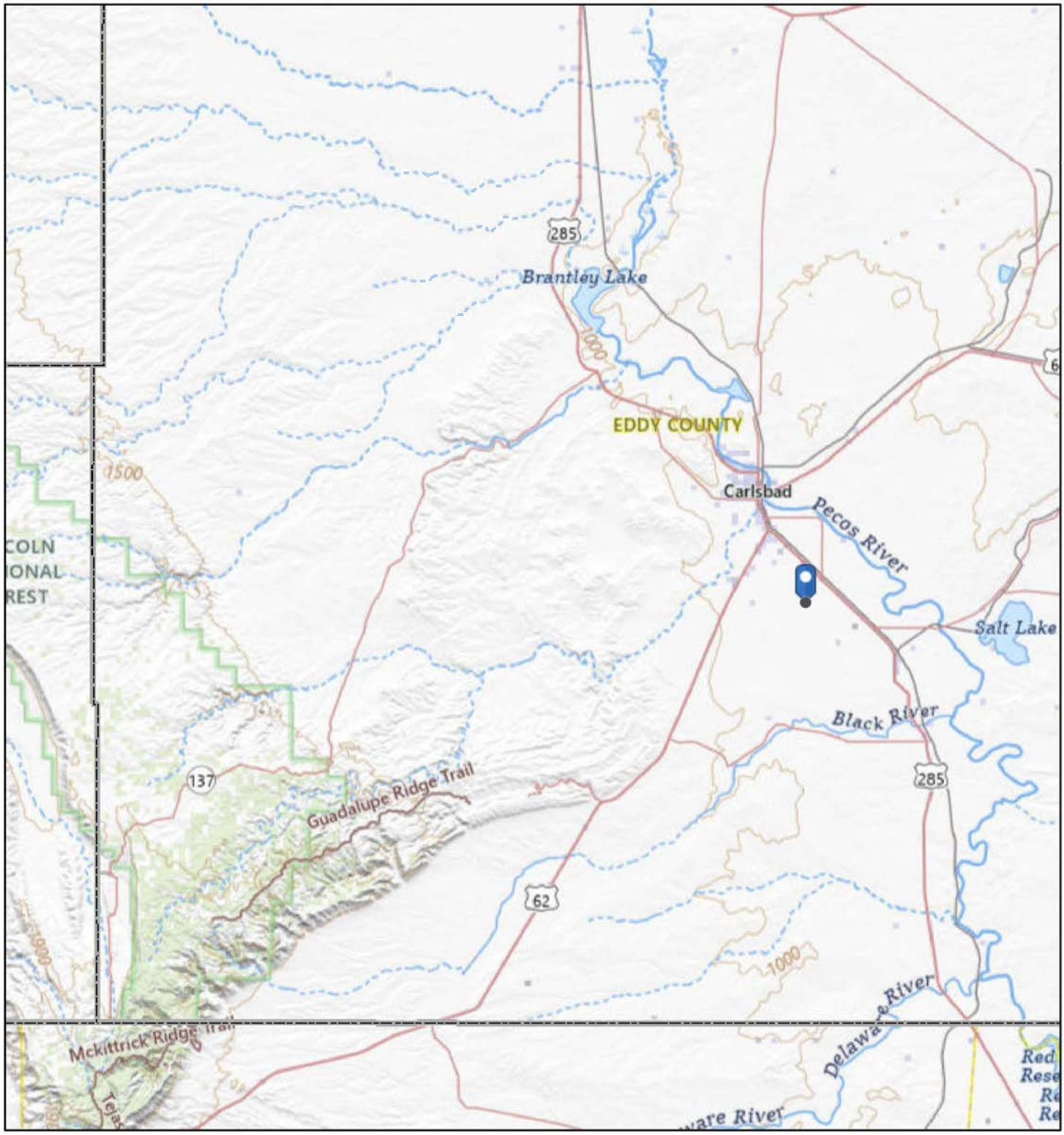
Wetlands

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

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

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Dalmatian Fee #411H - Subsurface Mine Map



2/17/2025, 1:14:58 PM

1:577,791

0 4.25 8.5 17 mi

0 5 10 20 km

Mining_Ghost_Towns

Counties

REE_Districts

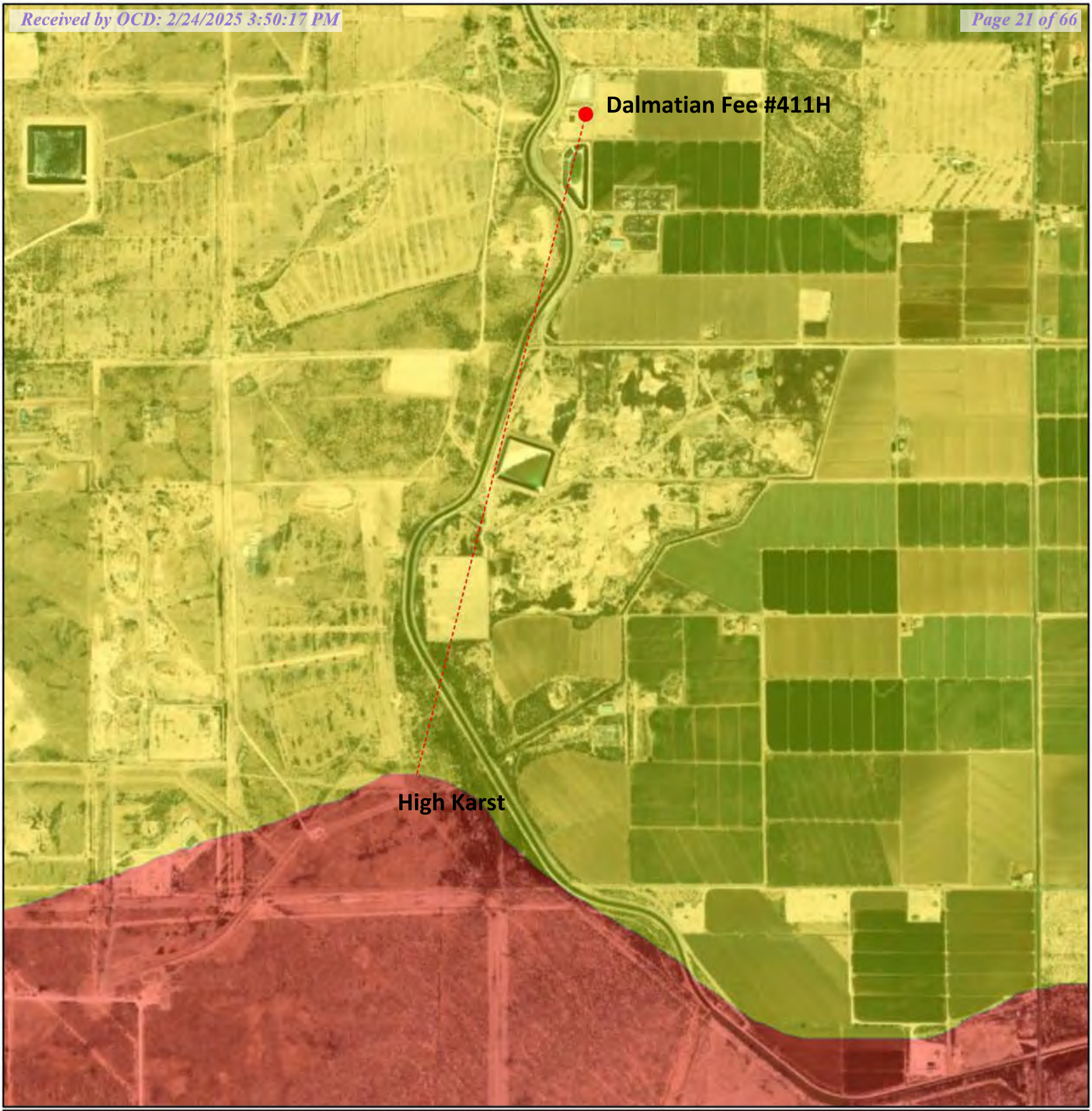
Fe skarn, carbonate-hosted Pb-Zn

REE-Th-U veins, fluorite veins

New Mexico Bureau of Geology and Mineral Resources, New Mexico Bureau of Geology & Mineral Resources, Esri, CGIAR, USGS, NMBGMR, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National

ArcGIS Web AppBuilder

New Mexico Bureau of Geology and Mineral Resources, New Mexico Bureau of Geology & Mineral Resources, Esri, CGIAR, USGS, NMBGMR, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National



Dalmatian Fee #411H Karst Potential & Distance

0 0.1 0.2 0.4 mi

N

New Mexico State Land Office

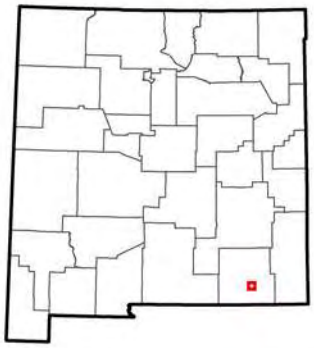
Disclaimer:
The New Mexico State Land Office assumes no responsibility or liability for, or in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.

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

Map Created: 2/17/2025

User drawn lines
User drawn points
Karst_Potential_NM
Potential
High
Medium
Low
Critical_Karst_Zone_NM

Karst Potential
Medium
Distance to High Karst
1.25 miles/6,612 feet



National Flood Hazard Layer FIRMette

FEMA

104°11'20"W 32°20'15"N

104°10'43"W 32°19'44"N

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

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

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

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

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

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

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

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

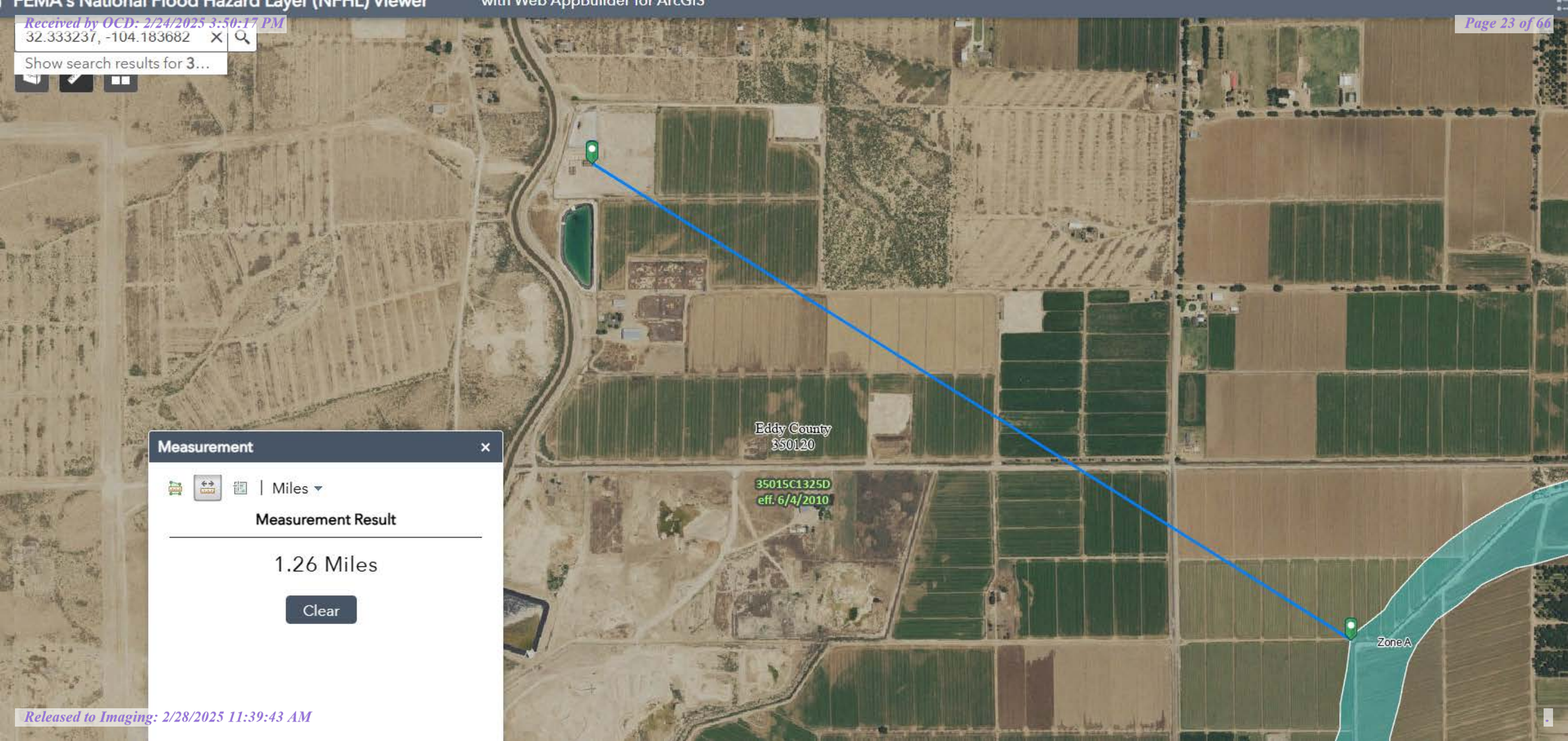
N

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

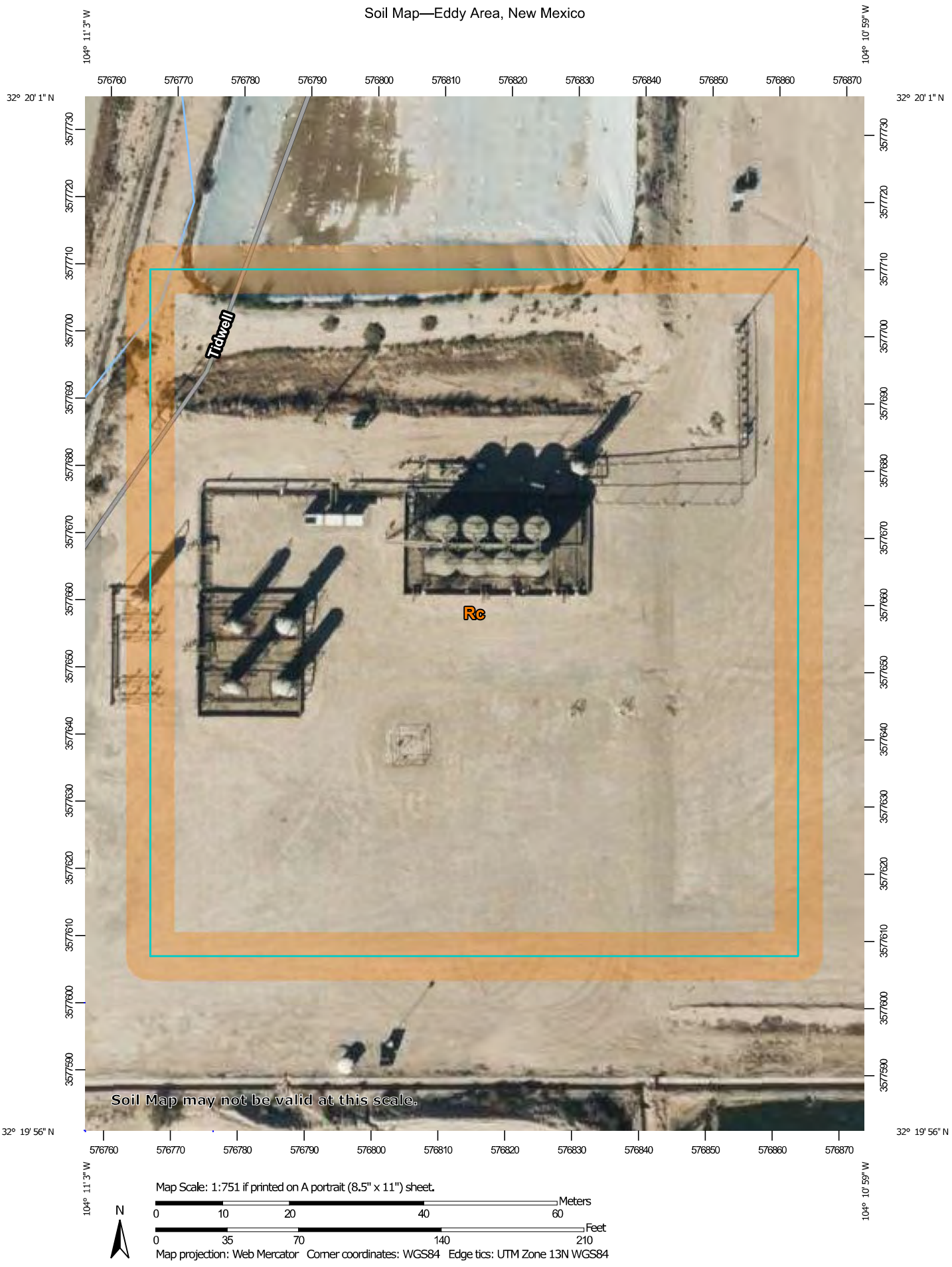
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/17/2025 at 4:41 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.



Soil Map—Eddy Area, New Mexico



Map Scale: 1:751 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 35 70 140 210

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

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: Eddy Area, New Mexico
Survey Area Data: Version 20, Sep 3, 2024

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

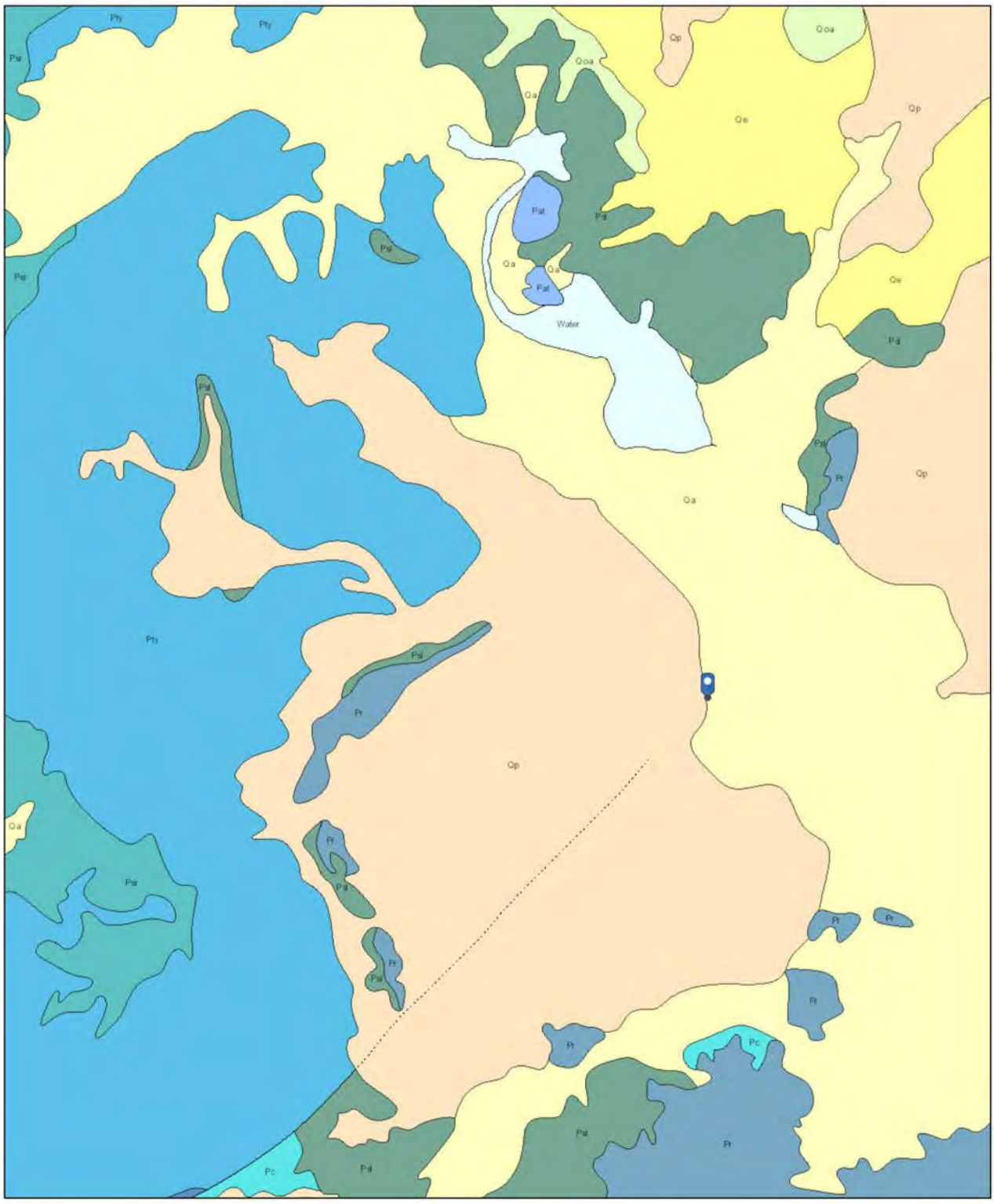
Date(s) aerial images were photographed: Nov 12, 2022—Dec 2, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Rc	Reagan loam, 0 to 1 percent slopes	2.5	100.0%
Totals for Area of Interest		**2.5**	**100.0%**

Dalmatian Fee #411 H Geological Map



2/17/2025 , 2:04:30 PM

Lithologic Units

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

1:144,448

0 1.25 2.5 5 mi

0 2.25 4.5 9 km

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

ArcGIS Web AppBuilder

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

Point of Diversion Summary

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

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
	C 00071	NE	NW	SW	03	23S	27E	576865.0	3577649.0 *	

* UTM location was derived from PLSS - see Help

Driller License:		**Driller Company:**			
Driller Name:	J.F. KIMWELL				
Drill Start Date:	1948-10-01	**Drill Finish Date:**	1948-10-31	**Plug Date:**	
Log File Date:		**PCW Rcv Date:**	1952-12-17	**Source:**	Shallow
Pump Type:	TURBIN	**Pipe Discharge Size:**		**Estimated Yield:**	2000
Casing Size:	16.00	**Depth Well:**	205	**Depth Water:**	

Meter Information

Meter Number:	608	**Meter Make:**	MCCROMETER
Meter Serial Number:	03-07165-10	**Meter Multiplier:**	1.0000
Number of Dials:	3	**Meter Type:**	Diversion
Unit of Measure:	Acre-Feet	**Reading Frequency:**	Monthly (No Reading Expected)

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
1998-12-29	1999	434.580	A	ms		0.000	
2000-01-06	1999	648.710	A	ms		214.130	
2000-10-20	2000	914.320	A	ms		265.610	
2001-01-11	2000	914.320	A	ms		0.000	
2001-05-09	2001	996.440	A	ms		82.120	
2001-07-25	2001	1109.770	A	ms		113.330	
2001-11-07	2001	1110.320	A	ms		0.550	
2002-06-12	2002	1110.320	A	ms		0.000	
2002-06-12	2002	1138.960	A	ms		28.640	

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
2002-06-12	2002	0.000	A	ms		0.000	
2002-09-04	2002	67.463	A	ms		67.463	
2002-10-23	2002	181.410	A	ms		113.947	
2003-01-16	2002	181.410	A	ms		0.000	
2003-04-03	2003	260.553	A	ms		79.143	
2003-06-05	2003	439.603	A	ms		179.050	
2003-08-20	2003	809.532	A	ab		369.929	
2003-10-28	2003	888.567	A	TW		79.035	
2004-01-07	2003	888.567	A	ab		0.000	
2004-04-27	2004	961.633	A	TW		73.066	
2004-07-15	2004	69.357	R	TW	Meter Rollover	107.724	
2004-10-20	2004	142.503	A	TW		73.146	
2005-01-03	2004	142.503	A	TW		0.000	
2005-03-30	2005	142.503	A	JW		0.000	
2005-07-06	2005	220.348	A	JW		77.845	
2005-10-19	2005	263.736	A	TW		43.388	
2006-01-09	2005	263.736	A	TW		0.000	
2006-04-12	2006	263.736	A	tw		0.000	
2006-07-12	2006	343.259	A	tw		79.523	
2007-01-09	2006	343.261	A	tw		0.002	
2007-07-10	2007	343.261	A	tw		0.000	
2007-10-11	2007	343.261	A	tw		0.000	
2008-01-03	2007	343.261	A	tw		0.000	
2008-04-24	2008	343.261	A	tw		0.000	
2008-07-17	2008	473.148	A	tw	rated	129.887	
2009-01-20	2008	0.000	A	tw		0.000	
2009-04-23	2009	24.011	A	tw		24.011	
2009-08-11	2009	192.145	A	tw		168.134	
2010-01-06	2009	206.041	A	tw		13.896	

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
2010-06-02	2010	259.451	A	tw		53.410	
2010-10-13	2010	286.681	A	tw		27.230	
2011-01-19	2010	299.199	A	tw		12.518	
2011-01-20	2011	0.000	A	tw		0.000	
2012-01-11	2011	187.018	A	tw		187.018	
2012-03-15	2012	255.501	A	tw		68.483	
2012-07-24	2012	604.564	A	tw		349.063	
2013-02-13	2012	717.807	A	tw		113.243	
2013-11-05	2013	953.744	A	tw		235.937	
2014-07-22	2014	11.457	R	tw	Meter Rollover	57.713	
2014-12-10	2014	25.462	A	tw		14.005	
2014-12-31	2014	0.000	A	tw		0.000	
2016-08-10	2016	14.971	A	tw		14.971	
2016-12-27	2016	58.999	A	tw		44.028	
2017-05-25	2017	58.999	A	tw		0.000	
2017-12-29	2017	58.999	A	tw		0.000	

YTD Meter Amounts:

Year	Amount
1999	214.130
2000	265.610
2001	196.000
2002	210.050
2003	707.157
2004	253.936
2005	121.233
2006	79.525
2007	0.000

Year	Amount
2008	129.887
2009	206.041
2010	93.158
2011	187.018
2012	530.789
2013	235.937
2014	71.718
2016	58.999
2017	0.000

11/26/24 11:08 PM MST **Point of Diversion Summary**

Well Tag	
POD File	C-03000-POD2
Use of Well	DOMESTIC
Permitted Use	DOM
Status	Permit
POD Status	Active
County	Eddy
Basin	Carlsbad
Aquifer	
Casing Size	7
% Shallow	100
cfs Conversion Factor	
cfs End Midday	
cfs Start Midday	
Contact First Name	
Contact Last Name	
Depth of Well	150
Depth to Water	80
Discharge	
Ditch Name	
Well Driller License#	1682
Drill Start Date	August 6 2012
Drill Finish Date	August 10 2012
Elevation	
Estimated Yield	
Well Log File Date	August 21 2012
Proof Completion of Well Recieved Date	
Ground Water Source	S
Land Grant	
Legal Description	

Zoom to

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

2012 AUG 21 A 11: 03

1 GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
C 03000	C 03000POD2
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
PHILLIP & MELISSA WALTERSHEID	575-361-3432
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
6430 TIDWELL ROAD	CARLSBAD / NM / 88220

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	19	46.00	N
LONGITUDE	104	10	59.87	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS

2 OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
¼	¼	¼	¼		☐ NORTH ☐ SOUTH	☐ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3 DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD1682	JOHN NORRIS	HUNGRY HORSE, LLC

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
8-6-2012	8-10-2012	150	150	

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 80

DRILLING FLUID: ☐ AIR ☑ MUD ☐ ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
0	150	8 3/4	7" STEEL	Welded	6 5/8	3/8	1/8

4 WATER-BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
13	29	16	SAND	UK
29	35	6	SAND CLAY	UK
85	95	10	SAND	UK
95	128	33	SAND CLAY	UK

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA	TOTAL ESTIMATED WELL YIELD (GPM)
N/A	

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	C-3000	POD NUMBER	2	TRN NUMBER	506486
LOCATION	Dom Repl	23S.27E.3.332			PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☐ SUBMERSIBLE ☐ JET ☐ NO PUMP – WELL NOT EQUIPPED
☐ TURBINE ☐ CYLINDER ☑ OTHER – SPECIFY: UNKNOWN

	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
ANNULAR SEAL AND GRAVEL PACK	0	20	14	CEMENT & GROUT	8	TOP

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0	2	2	TOPSOIL	☐ YES ☑ NO
2	13	11	CALICHE	☐ YES ☑ NO
13	29	16	SAND	☑ YES ☐ NO
29	35	6	SAND CLAY	☑ YES ☐ NO
35	68	33	CLAY	☐ YES ☑ NO
68	69	1	YELLOW CLAY	☐ YES ☑ NO
69	85	16	CLAY	☐ YES ☑ NO
85	95	10	SAND	☑ YES ☐ NO
95	128	33	SAND CLAY	☑ YES ☐ NO
128	132	4	GRAVEL	☐ YES ☑ NO
132	140	8	SANDSTONE	☐ YES ☑ NO
140	144	4	RED CLAY	☐ YES ☑ NO
144	146	2	ROCK	☐ YES ☑ NO
146	148	2	GRAVEL	☐ YES ☑ NO
148	150	2	CLAY	☐ YES ☑ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST
METHOD: ☐ BAILER ☐ PUMP ☐ AIR LIFT ☐ OTHER – SPECIFY: N/A
TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:

STATE ENGINEER OFFICE ROSWELL, NM
2012 AUG 21 A 10:03

8. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

John Mann — SIGNATURE OF DRILLER

8-10-12 — DATE

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	C-3900	POD NUMBER	2	TRN NUMBER	506486
LOCATION	Dom Rep	23S.27E.3.332			PAGE 2 OF 2

No. C-3000

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS IN ACCORDANCE WITH SECTIONS 72-12-1.1, 72-12-1.2, OR 72-12-1.3 NEW MEXICO STATUTES

For fees, see State Engineer website: http://www.ose.state.nm.us/

2-311647

1. APPLICANT(S)

Name: **Phillip Walterscheid** & Melissa Walterscheid	Name:
Contact or Agent: **Bill Bunten** check here if Agent ☐	Contact or Agent: check here if Agent ☐
Mailing Address: **3226 Tidwell Road**	Mailing Address:
City: **Carlsbad**	City:
State: **NM** Zip Code: **88220**	State: Zip Code:
Phone: **575-361-0854** ☐ Home ☒ Cell Phone (Work):	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional):	E-mail (optional):

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2012 JUN 26 A 8:53

2. WELL LOCATION NOTE: If more than one (1) well, complete form WR-08 (Attachment 1 – POD Descriptions)

Location (Required): Coordinate location must be New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)					
NM State Plane (NAD83) - In feet	NM West Zone ☐ NM Central Zone ☐ NM East Zone ☐			X (in feet): Y (in feet):	
UTM (NAD83) - In meters	UTM Zone 13N ☐ UTM Zone 12N ☐			Easting (in meters): Northing (in meters):	
Lat/Long (WGS84) - To 1/10th of second	Latitude:	32 deg	19 min	46.00 sec	
	Longitude:	104 deg	10 min	59.87 sec	

Land Grant Name (if applicable):

Point of Diversion is on Land Owned by (Required): Phillip Walterscheid (Walterscheid Trucking & Farms)

Other Location Information (complete the below, if applicable):

PLSS Quarters or Halves:	Section:	Township:	Range:	County:
NE/4 SW/4 SW/4	**03**	**23S**	**27E**	**Eddy**

Lot No: Block No: Unit/Tract: Subdivision:

Hydrographic Survey: Map: Tract:

Other description relating point of diversion to common landmarks, streets, or other: **Well Address: 6430 Tidwell Road**

Additional point of diversion descriptions are attached: ☐ **Yes** ☐ **No** If yes, how many_____

2012 JUN 26 A 8:53 STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

FOR OSE INTERNAL USE Application for Permit, Form wr-01, Rev8/25/11

File Number: C-3000		Trn Number: 506486	
Sub-basin: C	POD No. C-03000-POD2	Log Due Date: 6-30-2013	

2-316647

3. PURPOSE OF USE

- ☒ Domestic use for one household
- ☐ Livestock watering
- ☐ Domestic well to accompany a house or other dwelling unit constructed for sale
- ☐ Domestic use to serve _____ households
- ☐ Drinking and sanitary uses that are incidental to the operations of a governmental, commercial, or non-profit facility
- ☐ Prospecting, mining or drilling operations to discover or develop natural resources
- ☐ Construction of public works, highways and roads
- ☐ Domestic use for one household and livestock watering

4. WELL INFORMATION

File Information: (If existing well, provide OSE no. & indicate below if well is to be replacement, repaired or deepened, or supplemental. If new well, leave blank, as OSE must assign no.)

OSE Well No.(If Existing) **C-03000-POD1**	New Well No. (provided by OSE) **POD2**
Driller Name: Licensed Nm Driller	**Driller License Number:**
Approximate Depth of Well (feet): **150.00**	Outside Diameter of Well Casing (inches): **7.00**

☒ Replacement well (List all existing wells if more than one): **C-03000-POD1**	☐ Repair or Deepen: ☐ Clean out well to original depth ☐ Deepen well from _____ to _____ ft. ☐ Other (Explain):	☐ Supplemental well (List OSE No. for all wells this will supplement):

5. ADDITIONAL STATEMENTS OR EXPLANATIONS

Application for permit to replace existing single-household domestic well C-03000-POD1, permitted on 09-22-2003, which has lost production. Plan is to replace with new well C-03000-POD2 and plug failing well.

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2012 JUN 26 A 8:53

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Phillip Walterscheid for Walterscheid Trucking & Farms**
Print Name(s)

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

X _____ _____
Applicant Signature Applicant Signature

ACTION OF THE STATE ENGINEER (FOR OSE USE ONLY)

This application is approved subject to the attached general and specific conditions of approval.

Witness my hand and seal this 24th day of June 20 12, for the State Engineer,

By: _____ Bill Duemling
Signature Print

Title: Carlsbad Basin Supervisor
Print

FOR OSE INTERNAL USE Application for Permit, Form wr-01, Rev8/25/11

File Number: C-3000		Trn Number: 506486	
Sub-basin: C	POD No. C-03000-POD2	Log Due Date: 6-30-2013	

Page 2 of 4

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (A thru O)

06-A The maximum amount of water that may be appropriated under this permit is 3.000 acre-feet in any year.

06-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated. A licensed driller shall not be required for the construction of a driven well; provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter (Section 72-12-12).

06-C Driller's well record must be filed with the State Engineer within 20 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.

06-D The casing shall not exceed 7 inches outside diameter except under specific conditions in which reasons satisfactory to the State Engineer are shown.

06-E To request a change to the use of water authorized under this permit, the permittee shall file an application with the State Engineer.

06-F An application for a new 72-12-1.1 domestic well permit where the proposed point of diversion is to be located on the same legal lot of record as an operational 72-12-1.1 domestic well shall be treated as an application for a supplemental well.

06-G If artesian water is encountered, all rules and regulations pertaining to the drilling and casing of artesian wells shall be complied with.

06-H The drilling of the well and amount and uses of water permitted are subject to such limitations as may be imposed by a court or by lawful municipal or county ordinance which are more restrictive than the conditions of this permit and applicable State Engineer regulations.

06-I The permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

Trn Desc: C 03000-POD2: REPLACEMENT DOM. File Number: C 03000
Log Due Date: 06/30/2013 Trn Number: 506486
Form: wr-01 page: 1

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (Continued)

06-J The well shall be set back a minimum of 50 ft. from an existing well of other ownership unless a variance has been granted by the State Engineer. The State Engineer may grant a variance for a replacement well or to allow for maximum spacing of the well from a source of groundwater contamination. The well shall be set back from potential sources of contamination in accordance with rules and regulations of the NM Environment Department.

06-K Pursuant to section 72-8-1 NMSA, the permittee shall allow the State Engineer and his representatives entry upon private property for the performance of their respective duties, including access to the well for meter reading and water level measurement.

06-L The permit is subject to cancellation for non-compliance with the conditions of approval or if otherwise not exercised in accordance with the terms of the permit.

06-M The right to divert water under this permit is subject to curtailment by priority administration as implemented by the State Engineer or a court.

06-N In the event of any change of ownership to this permit the new owner shall file a change of ownership form with the State Engineer in accordance with Section 72-1-2.1 NMSA.

06-O This well permit shall automatically expire unless the well is completed and the well record is filed with the State Engineer within one year of the date of issuance of the permit. It is the responsibility of the permit holder to ensure that the well record has been properly filed with the State Engineer.

06-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between geologic zones.

SPECIFIC CONDITIONS OF APPROVAL

06-I The permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

Trn Desc: C 03000-POD2: REPLACEMENT DOM. File Number: C 03000
Log Due Date: 06/30/2013 Trn Number: 506486
Form: wr-01 page: 2

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

SPECIFIC CONDITIONS OF APPROVAL (Continued)

06-1A Depth of the well shall not exceed the thickness of the valley fill.

06-10 Total diversion from all wells under this permit number shall not exceed 3.000 acre-feet per annum.

06-11 This permit authorizes the diversion of water for domestic use to serve a single household. The total diversion of water under this permit shall not exceed 3.000 acre-feet per year. The diversion of water for domestic use may include the watering of non-commercial trees, lawn and garden not to exceed one acre.

06-18 Any diversion of water made in excess of the authorized maximum diversion amount shall be repaid with twice the amount of the over-diversion during the following calendar year. Repayment shall be made by either: (a) reducing the diversion from the well that is the source of the over-diversion; or (b) acquiring or leasing a valid, existing consumptive use water right in an amount equal to the repayment amount and submitting to the State Engineer for his approval a plan for the proposed repayment.

LOG This permit will automatically expire unless the well C 03000 POD2 is completed and the well record filed on or before 06/30/2013.

ACTION OF STATE ENGINEER

This application is approved for the use indicated, subject to all general conditions and to specific conditions listed above.

Witness my hand and seal this 29 day of Jun A.D., 2012

Scott A. Verhines, P.E., State Engineer

By: Bill Duemling
Bill Duemling, Basin Supv.

Trn Desc: C 03000-POD2: REPLACEMENT DOM. File Number: C 03000
Log Due Date: 06/30/2013 Trn Number: 506486
Form: wr-01 page: 3

Assessor Lookup

Owner Information

Owner # 118766 District CO
WALTERSCHEID, PHILLIP L & MELISSA

6430 TIDWELL RD
CARLSBAD NM 88220

Recap Value Information

Central Full Value	0	**Full Value**	729
Land Full Value	729	**Taxable Value**	243
Improvements Full value	0	**Exempt Value**	0
Personal Property Full Value	0	**Net Value**	243
Manufactured Home Full Value	0		
Livestock Full Value	0		

Property Information

Property Code 4160133095439
Book 261 **Page** 299 **Reception#** 0
Physical Address 6430 TIDWELL ROAD
Bldg **Apt**
Section 3 **Township** 23 S **Range** 27 E

BEG ON E ROW CANAL N 42 DEG 53' 36"
E 1309.13' FROM SW COR; S 89 DEG
23' E 255, S 0 DEG 37' W 22.7', S
89 DEG 23' E 25.5', S 0 DEG 37' W
212.55', N 89 DEG 23' W 324.2',
NELY 240' TO POB
MAP# 294-15.1
LOC 6430 TIDWELL ROAD

Property Value Information

010	Non-Residential	Special	243	0.00	0
113	Non-Residential	Land	1.62	150.00	729

Locator Tool Report

General Information:

Application ID:30 Date: 06-29-2012 Time: 11:13:49

WR File Number: C-03000-POD2
Purpose: POINT OF DIVERSION

Applicant First Name: WALTERSCHEID TRUCKING & FARMS
Applicant Last Name: REPLACEMENT SINGLE HOUSEHOLD DOMESTIC WELL

GW Basin: CARLSBAD
County: EDDY

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

SE 1/4 of NE 1/4 of SW 1/4 of SW 1/4 of Section 03, Township 23S, Range 27E.

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	19 Minutes	46.0 Seconds	N
Longitude:	104 Degrees	10 Minutes	59.9 Seconds	W

Universal Transverse Mercator Zone: 13N

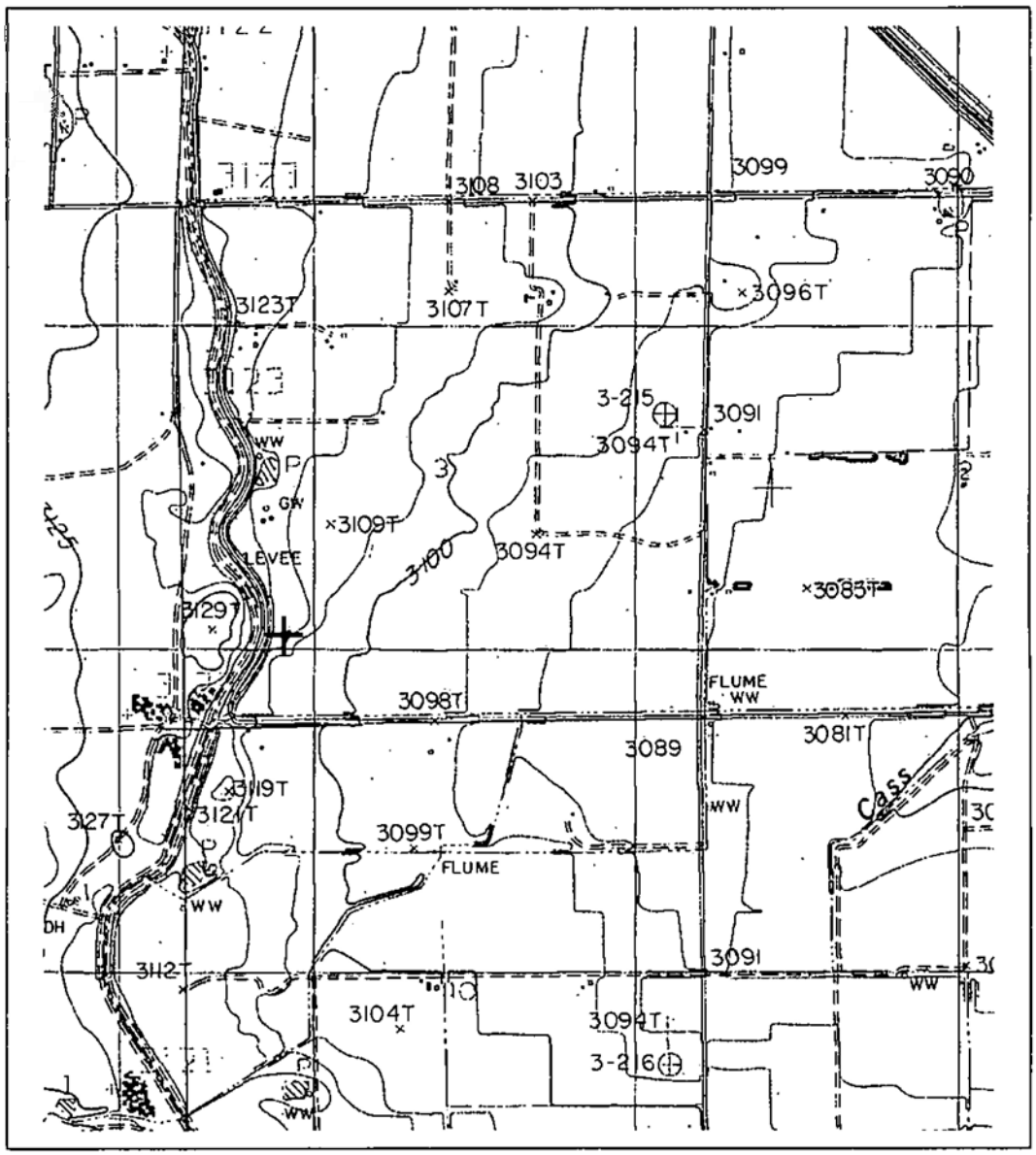
NAD 1983(92) (Meters)	N: 3,577,246	E: 576,866
NAD 1983(92) (Survey Feet)	N: 11,736,348	E: 1,892,601
NAD 1927 (Meters)	N: 3,577,044	E: 576,915
NAD 1927 (Survey Feet)	N: 11,735,686	E: 1,892,761

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 147,407	E: 179,125
NAD 1983(92) (Survey Feet)	N: 483,616	E: 587,680
NAD 1927 (Meters)	N: 147,389	E: 166,573
NAD 1927 (Survey Feet)	N: 483,557	E: 546,498

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report



WR File Number: C-03000-POD2 Scale: 1:22,464

Northing/Easting: UTM83(92) (Meter): N: 3,577,246 E: 576,866

Northing/Easting: SPCS83(92) (Feet): N: 483,616 E: 587,680

GW Basin: Carlsbad

Scott A. Verhines, P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 506486
File Nbr: C 03000

Jun. 29, 2012

PHILLIP WALTERSCHEID
6430 TIDWELL RD
CARLSBAD, NM 88220

Greetings:

Enclosed is your copy of the above numbered permit that has been approved in accordance with NM Statute Section 72-12-1 subject to the conditions set forth on the approval page.

Please review the conditions for any required submittals. If submittals are not made by the date(s) indicated in the conditions, your rights under this permit shall expire by the date indicated on your permit.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us or will be mailed upon request.

Sincerely,

Bill Duemling
(575)622-6521

Enclosure

wr_01app

Eddy Area, New Mexico

Rc—Reagan loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1w5l
Elevation: 1,100 to 5,300 feet
Mean annual precipitation: 7 to 15 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 200 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Reagan and similar soils: 97 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reagan

Setting

Landform: Fan remnants, alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 82 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B

Ecological site: R070BC007NM - Loamy
Hydric soil rating: No

Minor Components

Reeves
Percent of map unit: 1 percent
Ecological site: R070BC007NM - Loamy
Hydric soil rating: No

Upton
Percent of map unit: 1 percent
Ecological site: R070BC025NM - Shallow
Hydric soil rating: No

Reagan
Percent of map unit: 1 percent
Ecological site: R070BC007NM - Loamy
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 20, Sep 3, 2024

USDA Natural Resources Conservation Service

Ecological site R070BC007NM
Loamy

Accessed: 11/19/2024

General information

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

Figure 1. Mapped extent

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

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on uplands landforms, mainly on hill slopes, ridges, plains, terraces and some fan remnants. Slopes range from 1 to 5 percent and average about 3 percent. Average annual precipitation is about 8 to 14 inches. Elevations range from 2,842 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Plain (2) Terrace (3) Fan piedmont
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–5,000 ft
Slope	0–5%
Aspect	E, S, W

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 is in late March or early April, and the first killing frost is in late October or early November.

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Strong winds blow from the southwest in January through June rapidly drying out the soil during a critical time for cool season plant growth.

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

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced by wetland or streams.

Soil features

The soils of this site are deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gypsum horizon between 30 and 40 inches.

Surface textures are loam, silt loam, very fine sandy loam, or clay loam. Substratum textures are loam, silty clay loam, clay loam, or silt loams. Subsoil textures are silt loam , clay loam silty clay loam, gravelly loam, gravelly clay loam or very gravelly loam. Permeability is moderate to slow and the available water holding capacity is high to moderate. The Atoka, Reeves, Russler, Milner soils may have highr amounts of CaC03, ranging as high as 40 percent in the subsoil. Rock fragments range fro 5 to 50 percent in the subsoil. Reeves, Rusler, Milner, Holloman soils will have 40 to 80 percent gypsum in the underlying material.

Maximum and minimum values listed below represent the characteristic soils for this site.

Characteristic Soils:

Atoka (petrocalcic)
Bigetty
Reagan
Reakor
Reeves (gypsum)
Russler (gypsum)
Largo
Russler (gypsum)
Largo
Berino
Tinney
Midessa
Ratliff
Holloman (gypsum)
Milner (gypsum)

Table 4. Representative soil features

Surface texture	(1) Loam (2) Very fine sandy loam (3) Silt loam
Family particle size	(1) Loamy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to slow
Soil depth	30–72 in

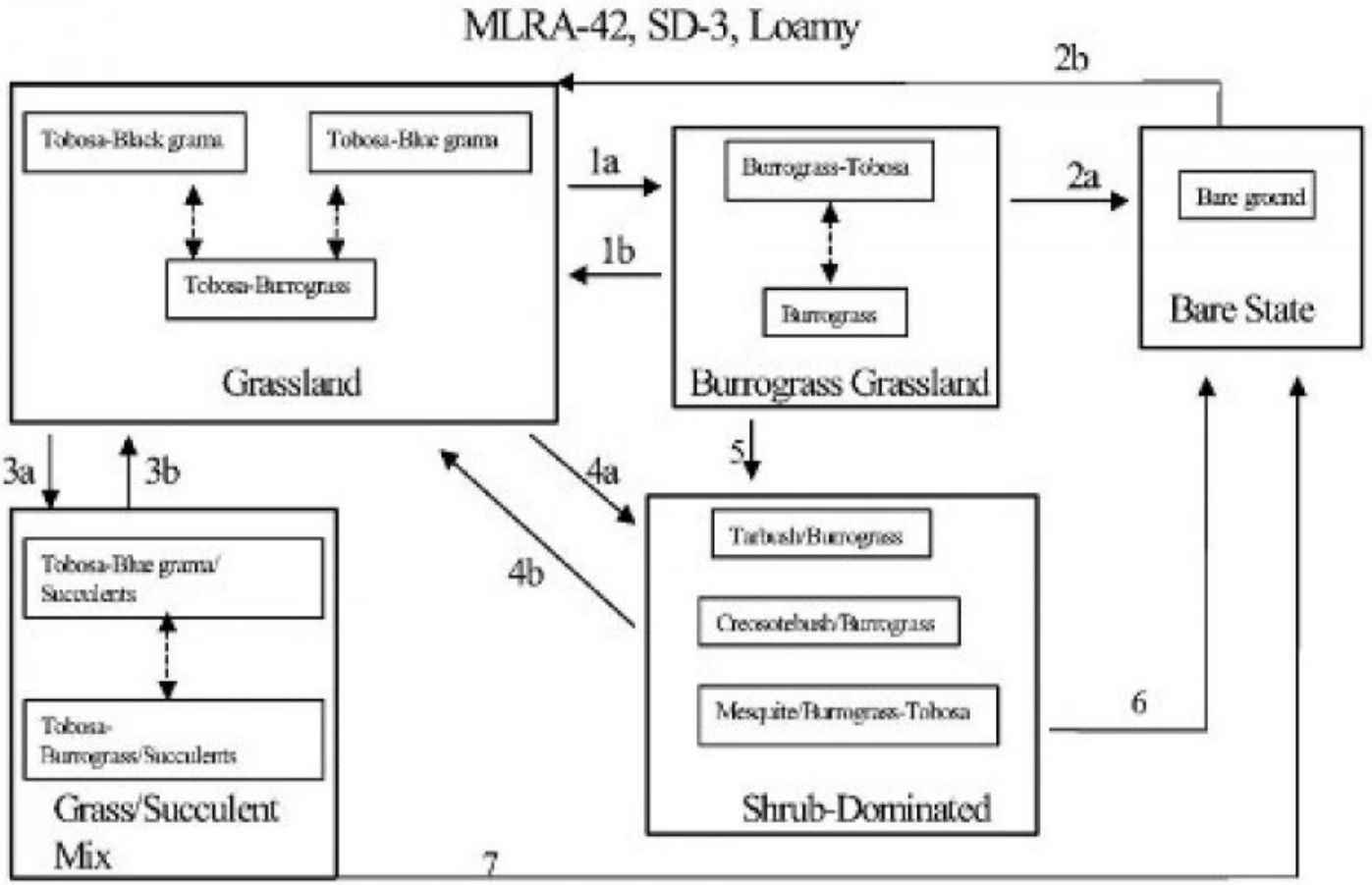
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	5–12 in
Calcium carbonate equivalent (0-40in)	0–10%
Electrical conductivity (0-40in)	0–8 mmhos/cm
Sodium adsorption ratio (0-40in)	0–6
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	0–5%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

Overview: The Loamy site is associated with the Gyp Upland ecological site with which it intergrades. There is a pronounced increase in alkali sacaton along this interface. The loamy site is also associated with the Gravelly and Shallow ecological sites from which it receives run-on water. The Draw site often dissects Loamy sites and is distinguished from the Loamy site by increased production or greater densities of woody species. The historic plant community has a grassland aspect, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Tobosa, black grama and blue grama are the dominant species. Retrogression within this state is characterized by a decrease in black and blue grama and an increase in burrograss. Continuous overgrazing and drought can initiate a transition to a Burrograss- Grassland state. Continued reduction in grass cover and resulting infiltration problems may eventually effect a change to a Bare State, with very little or no remaining grass cover. Alternatively, creosotebush, tarbush or mesquite may expand or invade. Transitions back to a Grassland State from a Bare or Shrub-Dominated state are costly and may not be economically feasible. Decreased fire frequency may play a part in the transition to the Grass/Succulent Mix state with increased amounts of cholla and prickly pear.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1a. Soil drying, overgrazing, drought, soil surface sealing. 1b. Restore natural overland flow, increase infiltration, prescribed grazing.

2a. Severe reduction in cover, soil surface sealing, decreased infiltration, erosion. 2b. Restore hydrology, break up physical crust, range seeding, prescribed grazing.

3a. Lack of fire, overgrazing, hail storms or other physical disturbance, drought. 3b. Prescribed fire, brush control, prescribed grazing.

4a. Seed dispersal of shrubs, persistent loss of grass cover, competition by shrubs, lack of fire. 4b. Brush control, range seeding -dependent on amount of grass (seed bank) remaining.

5. Loss of grass cover, seed dispersal of shrubs, competition by shrubs.

6. & 7. Brush control with continued loss of grass cover, soil sealing, erosion.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

State Containing Historic Climax Plant Community Grassland: The historic plant community has a grassland aspect, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Black grama, blue grama, and tobosa are the dominant grass species. There are a variety of perennial forbs and their production varies widely by season and year. Globemallow, verbena, groundsels, croton and filaree are forbs commonly found on this site. Fourwing saltbush and winterfat are two of the more palatable shrubs. The Loamy ecological site encompasses a

wide variety of soils, with surface textures ranging from sandy loams to clay loams. Soil depths range from shallow to very deep and can include sub surface features such as calcic, petrocalcic, and gypsic horizons. These variations cause differences in plant community composition and dynamics. Black grama is found at highest densities on coarser textured sandy loams, with blue grama preferring finer textured loam and silt loam, and tobosa favoring lower landscape positions and loam to clay loam surface textures. Burrograss may often be the dominant grass species on silty soils, perhaps in part due to the seedlings ability to auger into and establish on physically crusted soils. Gypsum influenced soils typically have greater amounts of tobosa, burrograss, and ephedra. There is greater representation of sideoats and vine mesquite within the tobosa-blue grama community. Retrogression under continuous heavy grazing results in a decrease of black grama, blue grama, sideoats grama, plains bristlegrass, bush muhly, cane bluestem, vine mesquite, winterfat, and fourwing saltbush. Species such as burrograss, threeawns, sand dropseed, sand muhly, and broom snakeweed increase under continuous heavy grazing or prolonged periods of drought. Under continued retrogression burrograss can completely dominate the site. Creosotebush, tarbush, and mesquite, can also dominate. Cholla and prickly pear can increase on areas that are disturbed or overgrazed. Diagnosis: Tobosa, black grama, and blue grama are the dominant species. Grass cover is uniformly distributed with few large bare areas. Shrubs are sparse and evenly distributed. Slopes range from level to gently sloping and usually display limited evidence of active rills and gully formation if plant cover remains intact. Litter movement associated with overland flow is limited to smaller size class litter and short distances. Other shrubs include: yucca, mesquite, tarbush, cholla and creosote bush. Other forbs include: desert holly, scorpionweed, bladderpod, flax, nama, fleabane, Indianwheat, Indian blanket flower, groundcherry, deerstongue, and rayless goldenrod.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	585	833	1080
Forb	39	55	72
Shrub/Vine	26	37	48
Total	**650**	**925**	**1200**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	15-30%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	25-30%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	40-50%

Figure 5. Plant community growth curve (percent production by month). NM2807, R042XC007NM Loamy HCPC. R042XC007NM Loamy HCPC Warm Season Plant Community..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	10	10	25	30	15	5	0	0

State 2

Burrograss-Grassland

Community 2.1
Burrograss-Grassland

Burrograss-Grassland: Changes in hydrology resulting in decreased available soil moisture, reduces grass cover and increases bare ground. Burrograss is the dominant grass. Tobosa cover is variable and can range from sizeable areas to small patches occupying only depressions or the lowest and wettest positions within the site. Threeawns, ear muhly, sand muhly, and fluffgrass occur at increased densities compared to the grassland state. Shrub densities may increase especially mesquite, creosotebush or tarbush. Retrogression within this state is characterized by a further decrease in grass cover and increased bare ground. Further deterioration of this site can result in the transition to a bare state or becoming shrub dominated. Diagnosis: Burrograss is the dominant species. Grass cover is no longer uniformly distributed, instead tending to be patchy with large areas of bare ground present. Physical crusts are present in bare areas reducing infiltration and suppressing seedling establishment by any grass species other than burrograss. Transition to Burrograss-Grassland (1a): Transitions from grassland to a burrograss-grassland state may occur due to changes in hydrology. Gullies, roads or obstructions that alter natural water flow patterns may cause this transition. Changes in surface hydrology may also occur due to overgrazing or drought. The reduction in grass cover promotes increased soil physical crusts and reduces infiltration. 5 Key indicators of approach to transition: ? Diversion of overland flow resulting in decreased soil moisture. ? Increase in amount of burrograss cover ? Reduction in grass cover and increase in size and frequency of bare patches. ? Formation of physical crusts—indicating reduced infiltration. ? Evidence of litter movement—indicating loss or redistribution of organic matter. Transition back to Grassland (1b) The natural hydrology of the site must be returned. Culverts, turnouts, or rerouting roads may help re-establish natural overland flow, if roads or trails have altered the hydrology. Erosion control structures or shaping and filling gullies may help regain natural flow patterns and establish vegetation if the flow has been channeled. Breaking up physical crusts by soil disturbance may promote infiltration and seedling emergence. Allow natural revegetation to take place. Prescribed grazing will help ensure proper forage utilization and reduce grass loss due to grazing.

State 3
Bare State

Community 3.1
Bare State

Bare State: Extremely low ground cover, soil degradation and erosion characterize this state. Very little vegetation remains. Burrograss is the dominant grass and cover is extremely patchy. Physical soil crusts are extensive. Erosion and resource depletion increase as site degrades. Diagnosis: Very little cover remains. Erosion is evident by soil sealing, water flow patterns, pedestals or terracettes. Rills and gullies may be present and active. Transition to Bare State (2a): Extended drought, continuous heavy grazing, or other disturbance that severely depletes grass cover can effect this transition. As grass cover decreases, sheet flow and erosion increase, and physical soil crusts form, thereby further reducing infiltration. Key indicators of approach to transition: ? Continued reduction in grass cover. ? Increased soil surface sealing. ? Increased erosion. ? Reduced aggregate stability in bare areas. Transition back to Grassland (2b) Restore the hydrology, see (1a). With the extent of grass loss range seeding may be necessary. Utilizing livestock or mechanical means to break up the physical crusts may increase infiltration and aid seedling establishment. Prescribed grazing will help ensure adequate deferment period following seeding, and proper forage utilization once the grass stand is well established. The degree to which this site is capable of recovery depends on the restoration of hydrology, extent of degradation to soil resources, and adequate rainfall necessary to establish grasses.

State 4
Grass/Succulent Mix

Community 4.1
Grass/Succulent Mix

Grass / Succulent Mix: Increased representations of succulents characterize this site. Increased densities of cholla or pricklypear is recognized as a management concern, but their impact on grass production is unclear. Light to

medium cholla or prickly pear infestation doesn't seem to greatly reduce grass production, however it limits access to palatable grasses and interferes with livestock movement and handling. Tobosa and blue grama are the dominant species on this site. Retrogression within this site is characterized by a decrease in blue grama and an increase in succulents, tobosa and burrograss. Diagnosis: Cholla or prickly pear is found at increased densities. Grass cover is variable ranging from uniformly distributed to patchy with frequent areas of bare ground present. Tobosa or blue grama is the dominant grass species. Transition to Grass/Succulent Mix (3a): If fire was historically a part of desert grassland ecosystem and played a role in suppressing seedlings of shrubs and succulents, then fire suppression may favor the increase of succulents.1 Heavy grazing by livestock or other physical disturbances may help disseminate seed and increase the establishment of succulents. Areas historically overgrazed by sheep are sometimes associated with higher densities of Succulents. Intense hailstorms can spread pricklypear by breaking off joints causing new plants to take root.3 During severe drought perennial grass cover can decline significantly, leaving resources available for use by more drought tolerant succulents. Cholla and pricklypear are both adapted to and favored by drought due to the ability of their shallow, wide spreading root systems to absorb and store water.4 Key indicators of approach to transition: ? Decrease or change in distribution of grass cover. ? Increase in amount of succulent seedlings. ? Increased cover of succulents. Transition back to Grassland (3b) Fire is an effective means of controlling cholla and prickly pear if adequate grass cover remains to carry fire.2 Cholla greater than two feet tall or pricklypear with a large amount of pads (>15-20) are harder to kill. Chemical control is effective in controlling prickly pear and cholla; apply when growth starts in May. Hand grubbing is also effective if cholla or pricklypear is severed 2-4 inches below ground and care is taken not to let broken joints or pads take root. Stacking and burning piles and grubbing during winter or drought help keeps broken joints and pads from rooting. Prescribed grazing will help ensure proper forage utilization and sustain grass cover.

State 5
Shrub Dominated

Community 5.1
Shrub Dominated

Shrub Dominated: Increased shrub cover characterizes this state. Mesquite, creosotebush, and/or tarbush are the dominant shrub species. Burrograss or tobosa is the dominant grass species. Grass cover is decreased, typically patchy with large bare areas present; however, sometimes grass cover can remain relatively high for extended periods when associated with light to moderate infestations of mesquite. Variations in soil characteristics play a part in determining which shrub species increase. Mesquite is well adapted to a wide range of soil types, but increases more often on deep soils low in carbonates, that have a sandy surface overlying finer textured soils. Tarbush prefers finer textured, calcareous soils, usually in lower positions that receive some extra water. Creosotebush is less tolerant of fine textured soils, preferring sandy, calcareous soils that have some gravel. Creosotebush also does well on soils that are shallow over caliche. Retrogression within this state is characterized by a decrease in tobosa, and an increase in burrograss. As the site continues to degrade shrub cover continues to increase and grass cover is severely reduced. Diagnosis: Mesquite, Creosotebush, and/or tarbush are the dominant shrubs. Blue grama and black grama cover is low or absent. Burrograss or tobosa are the dominant grasses. Typically grass cover is patchy with large interconnected bare areas present. Physical soil crusts are present, especially on silt loam surface soils. Transition to Shrub Dominated (4a): Wildlife and livestock consume and disperse mesquite seeds. Flood events may wash creosote or tarbush seeds off adjacent gravelly sites onto the loamy site and supply adequate moisture for germination. Persistent loss of grass cover due to overgrazing or drought can cause large bare patches, providing competition free areas for shrub seedling establishment. As shrub cover increases, competition for soil resources, especially water, becomes a major factor in further reducing grass cover. Reduction of fire, due to either fire suppression policy or loss of adequate fine fuels may increase the probability of shrub encroachment. Increased soil surface physical crusts and associated decreased infiltration, may prevent the establishment of grass seedlings. Transition to Shrub Dominated (5): The dispersal of creosotebush, tarbush or mesquite seed, combined with loss of grass cover and resource competition by shrubs may cause this transition. Key indicators of approach to transition: ? Decreased grass and litter cover. ? Increased bare patch size. ? Increased physical soil crusts. ? Increased amount of mesquite, creosotebush, or tarbush seedlings. ? Increased shrub cover. Transition back to Grassland (4b) Brush control will be necessary to remove shrubs and eliminate competition for resources necessary for grass establishment or reproduction. Seeding may be necessary on those sites where desired grass species are absent or very limited. Pitting and seeding may increase the chances of successful grass establishment. Prescribed grazing will help ensure adequate time is elapsed before grazing seeded area is allowed and proper forage utilization following seeding establishment. Transition to Bare State (6): If grass cover on the shrub-dominated state is

severely limited and shrubs are removed a bare state may result. This transition will depend on amount of grasses or seed remaining, whether site is seeded, or if seeding is successful. Transition to Bare State (7): Removal of succulents and continued overgrazing or drought may cause loss of remaining grasses and erosion. Soil surface physical crusting may also be an important factor in inhibiting grass seedling establishment

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Warm Season**			278–324	
	tobosagrass	PLMU3	*Pleuraphis mutica*	278–324	–
2	**Warm Season**			9–46	
	burrograss	SCBR2	*Scleropogon brevifolius*	9–46	–
3	**Warm Season**			231–278	
	black grama	BOER4	*Bouteloua eriopoda*	231–278	–
	blue grama	BOGR2	*Bouteloua gracilis*	231–278	–
4	**Warm Season**			28–46	
	sideoats grama	BOCU	*Bouteloua curtipendula*	28–46	–
5	**Warm Season**			46–93	
	bush muhly	MUPO2	*Muhlenbergia porteri*	46–93	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	46–93	–
6	**Warm Season**			9–28	
	Arizona cottontop	DICA8	*Digitaria californica*	9–28	–
7	**Warm Season**			46–93	
	threeawn	ARIST	*Aristida*	46–93	–
	muhly	MUHLE	*Muhlenbergia*	46–93	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	46–93	–
8	**Warm Season**			28–46	
	Graminoid (grass or grass-like)	2GRAM	*Graminoid (grass or grass-like)*	28–46	–
Shrub/Vine					
9	**Shrub**			9–28	
	fourwing saltbush	ATCA2	*Atriplex canescens*	9–28	–
	jointfir	EPHED	*Ephedra*	9–28	–
	winterfat	KRLA2	*Krascheninnikovia lanata*	9–28	–
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	5–24	–
	Arizona cottontop	DICA8	*Digitaria californica*	5–24	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	5–24	–
10	**Shrub**			9–28	
	javelina bush	COER5	*Condalia ericoides*	9–28	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	9–28	–
	Grass, annual	2GA	*Grass, annual*	5–15	–
11	**Shrubs**			9–28	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	9–28	–
Forb					

12	**Forb**			9–46	
	threadleaf ragwort	SEFLF	*Senecio flaccidus var. flaccidus*	9–46	–
	globemallow	SPHAE	*Sphaeralcea*	9–46	–
	verbena	VEPO4	*Verbena polystachya*	9–46	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	5–15	–
	pricklypear	OPUNT	*Opuntia*	5–15	–
13	**Forb**			9–28	
	croton	CROTO	*Croton*	9–28	–
	woolly groundsel	PACA15	*Packera cana*	9–28	–
14	**Forb**			9–28	
	Goodding's tansyaster	MAPIG2	*Machaeranthera pinnatifida ssp. gooddingii var. gooddingii*	9–28	–
	woolly paperflower	PSTA	*Psilostrophe tagetina*	9–28	–
15	**Forb**			9–28	
	redstem stork's bill	ERCI6	*Erodium cicutarium*	9–28	–
	Texas stork's bill	ERTE13	*Erodium texanum*	9–28	–
16	**Forb**			9–28	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	9–28	–

Animal community

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, black-tailed jackrabbit, black tailed prairie dog, yellow-faced pocket gopher, banner-tailed kangaroo rat, hispid cotton rat, swift fox, burrowing owl, horned lark, mockingbird, meadowlark, mourning dove, scaled quail, Great Plains toad, plains spadefoot toad, prairie rattlesnake and western coachwhip shake.

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
Atoka C
Bigetty B
Ratliff B
Reyab B
Holloman B
Largo B
Holloman B
Bigetty B
Berino B
Reagan B
Reakor B
Reeves B
Russler C

Recreational uses

This site offers limited potential for hiking, horseback riding, nature observation and photography. Game bird, antelope and predator hunting are also limited.

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, during all seasons of the year. Under retrogression, such plants as black grama, blue grama, sideoats grama, bush muhly, plains bristlegrass, Arizona cottontop, fourwing saltbush and winterfat decrease and there is an increase in burrograss, threeawns, sand dropseed, muhlys, broom snakeweed and javilinabush. Under continued retrogression, burrograss can completely dominate the site. Creosotebush, mesquite, and tarbush can also dominate. Grazing management alone will not improve the site in the above situation. This site is well suited 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 3.0 – 4.2
75 – 51 4.1 – 5.5
50 – 26 5.3 – 7.0
25 – 0 7.1 +

Inventory data references

Other 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 Chavez County.

Other references

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Contributors

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Rangeland health reference sheet

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

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

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

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

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

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

7. **Amount of litter movement (describe size and distance expected to travel):**

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial**

distribution on infiltration and runoff:

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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

---

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

---

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

---

14. **Average percent litter cover (%) and depth (in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

---

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

---

17. **Perennial plant reproductive capability:**

ATTACHMENT 3: CORRESPONDENCE

Outlook

RE: [EXTERNAL] nAPP2435244383 Dalmatian Fee #411H Liner Notification

From Raley, Jim <jim.raley@dvn.com>
Date Mon 1/13/2025 7:01 AM
To Monica Peppin <Monica.Peppin@soudermiller.com>

Submitted 1/13/2025

Jim Raley | Environmental Professional - Permian Basin
5315 Buena Vista Dr., Carlsbad, NM 88220
C: (575)689-7597 | jim.raley@dvn.com

devon

From: Monica Peppin <Monica.Peppin@soudermiller.com>
Sent: Monday, January 13, 2025 6:00 AM
To: Raley, Jim <Jim.Raley@dvn.com>
Cc: ocd.enviro@emnrd.nm.gov
Subject: [EXTERNAL] nAPP2435244383 Dalmatian Fee #411H Liner Notification

All: SMA anticipates conducting liner inspection activities at the following site on January 17, 2025, at approximately 1:00 PM.

Details Below:

Proposed Date:	**1.17.2025**
Time Frame:	**12:30 PM - 1:30 PM**
Site Name:	**Dalmatian Fee #411H**
Incident ID:	**nAPP2435244383**
API/Facility ID:	**30-015-45690**
Liner Inspection Notification	
Incident ID and Site Name:	**nAPP2435244383/Dalmatian Fee #411H**
API # and Corresponding Agency:	**30-015-45690/NMOCD**
Question	**Answer (Fill In)**
What is the liner inspection surface area in square feet (secondary containmet):	**Approximately 4,480 square feet**
Have all the impacted materials been removed from the liner and cleaned?	**Yes**
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC: 48 HOURS PRIOR TO INSPECTION	**Friday, January 17, 2025**
Time liner inspection will commence:	**1:00 PM**
Please provide any information necessary for observers to contact inspector: (Name and Number)	**Monica Peppin 575.909.3418**
Please provide any information necessary for navigation to liner inspection site and	**Intersection of East Derrick Rd and Tidwell, travel south on tidwell for 0.63 miles, turn right travel east onto**

coordinates (Lat/Long)	location through gate and turn left travel north for 0.03 miles arrive at containment on site 32.333237, -104.183682

Thank you,
Monica

Monica
Peppin, A.S.

Project
Manager

Direct/Mobile:
575.909.3418

Office:
575.689.7040

201 S
Halagueno St.

Carlsbad, NM
88220

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

QUESTIONS

Action 434837

QUESTIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 434837
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2435244383**
Incident Name	**NAPP2435244383 DALMATIAN 3 2 23 27 FEE #411H @ 30-015-45690**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Closure Report Received**
Incident Well	**[30-015-45690] DALMATIAN 3 2 23 27 FEE #411H**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	DALMATIAN 3 2 23 27 FEE #411H
Date Release Discovered	12/16/2024
Surface Owner	Private

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

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	*Not answered.*
Produced Water Released (bbls) Details	Cause: Normal Operations | Flow Line - Production | Produced Water | Released: 52 BBL | Recovered: 52 BBL | Lost: 0 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Nipple on seperator developed pinhole leak. Allowing release of 52 bbls produced water to lined secondary containment. Fluids fully recovered.

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QUESTIONS (continued)

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QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.**

With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*

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

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 02/24/2025

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QUESTIONS (continued)

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QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 75 and 100 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 300 and 500 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 500 and 1000 (ft.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between 1 and 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	Yes
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	12/28/2024
On what date will (or did) the final sampling or liner inspection occur	01/17/2025
On what date will (or was) the remediation complete(d)	01/17/2025
What is the estimated surface area (in square feet) that will be remediated	4480
What is the estimated volume (in cubic yards) that will be remediated	0
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

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	Action Number: 434837
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
Is (or was) there affected material present needing to be removed	Yes
Is (or was) there a power wash of the lined containment area (to be) performed	Yes
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 02/24/2025
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

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	Action Number: 434837
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Liner Inspection Information	
Last liner inspection notification (C-141L) recorded	**419729**
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC	**01/17/2025**
Was all the impacted materials removed from the liner	**Yes**
What was the liner inspection surface area in square feet	**4480**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**Yes**
What was the total surface area (in square feet) remediated	4480
What was the total volume (cubic yards) remediated	0
Summarize any additional remediation activities not included by answers (above)	Secondary Containment inspection completed. No breach through liner

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

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 02/24/2025

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CONDITIONS

Action 434837

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CONDITIONS

Created By	Condition	Condition Date
nvelez	Liner inspection approved, release resolved.	2/28/2025