June 18, 2020 Vertex Project #: 20E-00141-051

Spill Closure Report: Arena Roja 15 Central Tank Battery (CTB) 2
Unit I, Section 15, Township 26 South, Range 35 East
County: Lea
Tracking Number: NRM2010659709

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

New Mexico Oil Conservation Division – District 1 – Hobbs
1625 North French Drive
Hobbs, New Mexico 88240

Devon Energy Production Company (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for a produced water release that occurred at Arena Roja 15 CTB 2 (hereafter referred to as "Arena Roja"). Devon provided immediate notification of the release to New Mexico Oil Conservation Division (NM OCD) District 1 and the Bureau of Land Management (BLM), who owns the property, on April 7, 2020, via email. The initial C-141 Release Notification was submitted on April 15, 2020 (Attachment 1). The NM OCD tracking number assigned to this release is NRM2010659709.

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

Incident Description

On April 6, 2020, a release occurred at Devon's Arena Roja site when a seal on a transfer pump began to leak. This incident resulted in the release of approximately 110 barrels (bbls) of produced water into the lined secondary containment. Upon discovery of the release, the pump was isolated to stop the flow of produced water and a hydrovac truck was dispatched to the site to recover free liquids. Approximately 109 bbls of produced water were recovered from the secondary containment and removed for disposal off-site. All fluids were contained within the lined Spill Prevention Control and Countermeasures containment and no produced water was released into undisturbed areas or waterways.

Site Characterization

The release at Arena Roja occurred on federally-owned land, N 32.04041, W 103.34902, approximately 10 miles southwest of Jal, New Mexico. The legal description for the site is Unit I, Section 15, Township 26 South, Range 35 East, Lea County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland. An aerial photograph and site schematic are included in Attachment 2.

Arena Roja is typical of oil and gas exploration and production sites in the western portion of the Permian Basin, and is currently used for oil and gas production, and storage. The following sections specifically describe the area surrounding the constructed wellpad where the storage tanks are located.

The surrounding landscape is associated with sandy plains and is not prime farmland. The climate is semi-arid, with average annual precipitation ranging between 10 and 12 inches. The historical plant community is a uniformly distributed grassland dominated by black grama, dropseeds and bluestems, with scattered shinnery oak and sand sage. Perennial and annual forbs are common, but their abundance and distribution fluctuate with precipitation. Litter and, to a lesser extent, bare ground, make up a significant proportion of the ground cover (United States Department of Agriculture, Natural Resources Conservation Service, 2020). Limited to no vegetation is allowed to grow on the compacted wellpad.

The *Geological Map of New Mexico* indicates the surface geology at Arena Roja is comprised primarily of Qep-Eolian and piedmont deposits (Holocene to middle Pleistecene) characterized by interlaid eolian sand and piedmont deposits (New Mexico Bureau of Geology and Mineral Resources, 2020). The National Resources Conservation Service Web Soil Survey characterizes the soil at the site as Pyote and Maljamar fine sands, which are associated with sandy eolian deposits derived from sedimentary rock, and tend to be fine sand and sandy clay loam over a cemented material. This type of soil, typically found at elevations of 3,000 to 3,900 feet above sea level, tends to be well-drained with very low runoff and low available moisture in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2020). There is low potential for karst geology to be present near Arena Roja (United States Department of the Interior, Bureau of Land Management, 2020).

There is no surface water located on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is a draw located approximately 0.91 miles northeast of the site (New Mexico Office of the State Engineer, Interstate Stream Commission, 2020). There are no continuously flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest recent groundwater well to Arena Roja is a New Mexico Office of the State Engineer well from 2015 located 1.9 miles southeast of the site. Data for that well shows a depth to groundwater at 250 feet below ground surface (bgs; New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2020). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

Closure Criteria Determination

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

Based on data included in the closure criteria determination worksheet, the release at Arena Roja would not be subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC and the closure criteria for the site would be determined to be associated with depth to groundwater. The nearest groundwater well is farther than ½ mile from the release site, which would nullify the depth to groundwater determination and change the closure criteria for the site to the below constituent concentration limits.

Table 1. Closure Criteria for Soils Impacted by a Release		
Depth to Groundwater	**Constituent**	**Limit**
< 50 feet	Chloride	600 mg/kg
	TPH[1] (GRO + DRO + MRO)	100 mg/kg
	BTEX[2]	50 mg/kg
	Benzene	10 mg/kg

[1]Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)
[2]Benzene, toluene, ethylbenzene and xylenes (BTEX)

Remedial Actions

On May 20, 2020, after the production equipment within secondary containment was cleaned, Vertex provided 48-hour notification of the liner inspection to the BLM and NM OCD, as required by Subparagraph (a) of Paragraph (5) of Subsection A 19.15.29.11 NMAC (Attachment 4). On May 22, 2020, Vertex conducted a visual inspection of the production equipment secondary containment liner for cracks, tears, cuts and other signs of damage to verify that the liner remained intact and had the ability to contain the release. The Daily Field Report (DFR) associated with the inspection is included in Attachment 5.

Closure Request

Vertex recommends no remediation action to address the release at Arena Roja. The secondary containment liner appeared to be intact and had the ability to contain the release in question, as shown in the inspection photographs included with the DFR (Attachment 5). There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Vertex requests that incident NRM2010659709 be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Devon certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NM OCD requirements to obtain closure on the April 6, 2020, release at Arena Roja.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 505.506.0040 or ngordon@vertex.ca.

Sincerely,

Natalie Gordon
PROJECT MANAGER

Attachments

References

New Mexico Bureau of Geology and Mineral Resources. (2020). *Interactive Geologic Map.* Retrieved from http://geoinfo.nmt.edu.

New Mexico Office of the State Engineer, Interstate Stream Commission. (2020). *OSE POD Locations*. Retrieved from https://gis.ose.state.nm.us/gisapps/ose_pod_locations/.

New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2020). *Water Column/Average Depth to Water Report.* Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html.

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

United States Department of Agriculture, Natural Resources Conservation Service. (2020). *Web Soil Survey*. Retrieved from https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

United States Department of the Interior, Bureau of Land Management. (2020). *New Mexico Cave/Karsts*. Retrieved from https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico.

Limitations

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

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

ATTACHMENT 1

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NRM2010659709
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Devon Energy Production Company	OGRID 6137
Contact Name Lupe Carrasco	Contact Telephone 575-748-0176
Contact email Lupe.Carrasco@dvn.com	Incident # *(assigned by OCD)*
Contact mailing address 6488 Seven Rivers Hwy Artesia, NM	

Location of Release Source

Latitude 32.04041 Longitude -103.34902
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Arena Roja 15 CTB 2	Site Type Central Tank Battery
Date Release Discovered April 6, 2020	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
I	15	26S	35E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 110	Volume Recovered (bbls) 109
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Release was due to a seal leaking on a transfer pump. The pump was isolated and a vacuum truck dispatched to recover fluid. All fluid was contained within the lined containment.

State of New Mexico
Oil Conservation Division

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Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? >25 barrels

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Immediate notification was given by email to the District 1 office and BLM on April 7, 2020.

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.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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

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

Printed Name: Lupe Carrasco Title: EHS Professional

Signature:  Date: 4/13/20

email: Lupe.Carrasco@dvn.com Telephone: 575-748-0765

OCD Only

Received by: Ramona Marcus Date: 4/15/2020

NRM2010659709

Spills In Lined Containment	
Measurements Of Standing Fluid	
Length(Ft)	112
Width(Ft)	60
Depth(in.)	1.42
Total Capacity without tank displacements (bbls)	141.63
No. of 500 bbl Tanks In Standing Fluid	8
No. of Other Tanks In Standing Fluid	
OD Of Other Tanks In Standing Fluid(feet)	
Total Volume of standing fluid accounting for tank displacement.	109.83

State of New Mexico
Oil Conservation Division

Incident ID	NRM2010659709
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	250 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NRM2010659709
District RP	
Facility ID	
Application ID	

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

Printed Name: Amanda Davis . Title: EnvironmentalRepresentative

Signature: Amanda Davis Date: 6/19/2020

email: Amanda.Davis@dvn.com . Telephone: 575-748-0176

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NRM2010659709
District RP	
Facility ID	
Application ID	

Closure

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

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

[X] A scaled site and sampling diagram as described in 19.15.29.11 NMAC

[X] Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

[NA] Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

[X] Description of remediation activities

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

Printed Name: Amanda Davis Title: Environmental Representative

Signature: Amanda Davis Date: 6/19/2020

email: Amanda.Davis@dvn.com Telephone: 575-748-0176

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

ATTACHMENT 2

Lease Boundary

Secondary Containment

Release

VERTEX

0 2550 100 150 200 250 Feet

Map Center:
Lat/Long: 32.042748, -103.348929

NAD 1983 UTM Zone 13N

Date: Jun 01/20

N

Site Schematic
Arena Roja 15 CTB 2

FIGURE:
1

devon

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

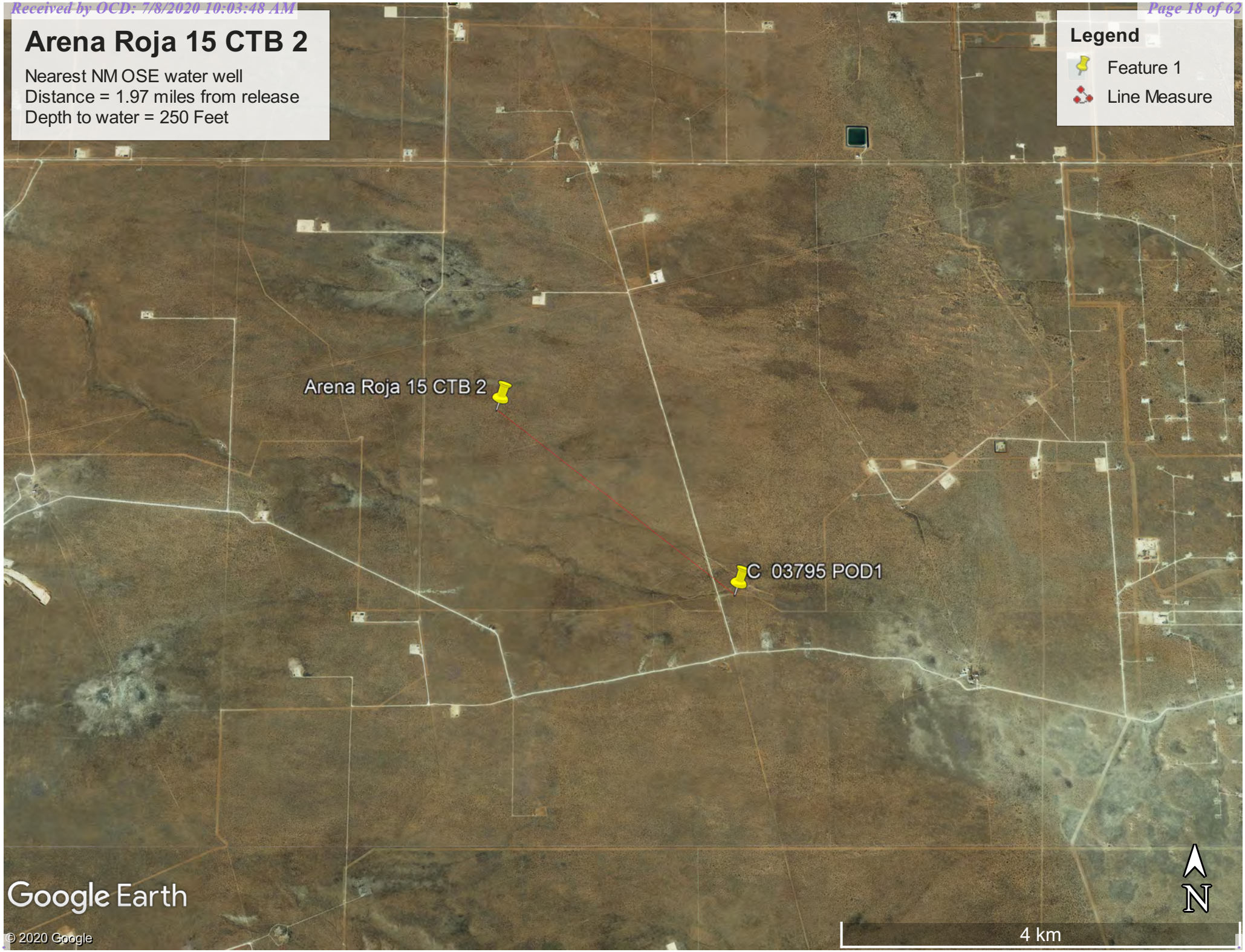
Note: Imagery from ESRI, 2018.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\20E-001411\051 - Arena Roja 15 CTB 2\Fig 1 Initial Characterization Arena Roja 15 CTB 2.mxd

ATTACHMENT 3

Table 1.			
Site Name: Arena Roja 15 CTB 2			
Spill Coordinates:		**X: 32.0404**	**Y: -103.34902**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**250**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	158928	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	16115	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	15808	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	10402	feet
	ii) Within 1000 feet of any fresh water well or spring	10402	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	3856	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	Undetermined	year
NMAC 19.15.29.12 E (Table 1) Closure Criteria		>100'	<50' 51-100' >100'


Arena Roja 15 CTB 2
Nearest NM OSE water well
Distance = 1.97 miles from release
Depth to water = 250 Feet
Legend
Feature 1
Line Measure
Arena Roja 15 CTB 2
C 03795 POD1
Google Earth
© 2020 Google
N
4 km

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 03795 POD1	4	4	3	24	26S	35E	658419	3544221

Driller License: 1607 **Driller Company:** DURAN DRILLING

Driller Name: DURAN, LUIS (TONY)

Drill Start Date:	02/02/2015	**Drill Finish Date:**	02/06/2015	**Plug Date:**	
Log File Date:	02/19/2015	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	180 GPM
Casing Size:	7.00	**Depth Well:**	496 feet	**Depth Water:**	250 feet

Water Bearing Stratifications:	Top	Bottom	Description
	320	324	Sandstone/Gravel/Conglomerate
	460	492	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	195	495

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

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03795 POD1		C	LE	4	4	3	24	26S	35E	658419	3544221	3106	496	250	246
J 00005 POD1		J	LE	2	2	2	13	26S	35E	659200	3547174*	3480	601	230	371
J 00041 POD1		J	LE	1	1	1	19	26N	36E	659404	3545621	3523		270	
J 00001	R	J	LE	1	1	3	18	26S	36E	659416	3546374*	3524	550	253	297
J 00001 POD3		J	LE	1	1	3	18	26S	36E	659416	3546374*	3524	550	253	297
J 00002 X3		J	LE		3	1	19	26S	36E	659536	3545067*	3759	710	216	494
J 00002 X2		J	LE		4	3	18	26S	36E	659929	3545879*	4025	650	214	436
J 00043 POD1		J	LE	1	1	2	19	26S	36E	660221	3545607	4337			
J 00001 POD4		J	LE	1	3	2	19	26S	36E	660244	3545180*	4423	640	250	390
J 00001 X		J	LE	1	3	2	19	26S	36E	660244	3545180*	4423	640	250	390
CP 01170 POD1		CP	LE	3	3	3	06	26S	36E	659282	3548984	4473	500	280	220
CP 01170 POD1	C	CP	LE	3	3	3	06	26S	36E	659282	3548984	4473	500	280	220
CP 01267 POD1		CP	LE	3	4	3	06	26S	36E	659759	3548807	4738	585	200	385

Average Depth to Water: **245 feet**
Minimum Depth: **200 feet**
Maximum Depth: **280 feet**

Record Count: 13

UTMNAD83 Radius Search (in meters):

Easting (X): 655906.63 **Northing (Y):** 3546048.55 **Radius:** 5000

***UTM location was derived from PLSS - see Help**

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

5/28/20 8:41 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: C 03795 **Subbasin:** C **Cross Reference:** -

Primary Purpose: STK 72-12-1 LIVESTOCK WATERING

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 3 **Cause/Case:** -

Owner: BECKHAM RANCH INC

Contact: M STAPLETON LLC

Owner: BUREAU OF LAND MANAGEMENT

Contact: GEORGE MACDONEIL

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	564689	COWNF	2015-03-09	CHG	PRC	C 03795	T		0	
get images	556733	72121	2014-10-24	PMT	LOG	C 03795 POD1	T		3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
C 03795 POD1		Shallow	4	4	3	24	26S	35E	658419	3544221	

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

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater ▼ Geographic Area: New Mexico ▼ GO

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Click to hide state-specific text

Search Results -- No sites found

No sites were found for groundwater level data using your search criteria.

The sites you requested may be available offline. For more information, contact USGS Water Data Inquiries.

lat_long_bounding_box =

Position	Latitude	Longitude
Corner 1	32.039822	-103.349135
Corner 2	32.039822	-103.349135

Coordinates are entered as Decimal Degrees. DMS values are converted to Decimal degrees using NAD83 as the datum. Make your bounding box bigger if you are using NAD27 Datum for your DMS values

Minimum number of levels = 1

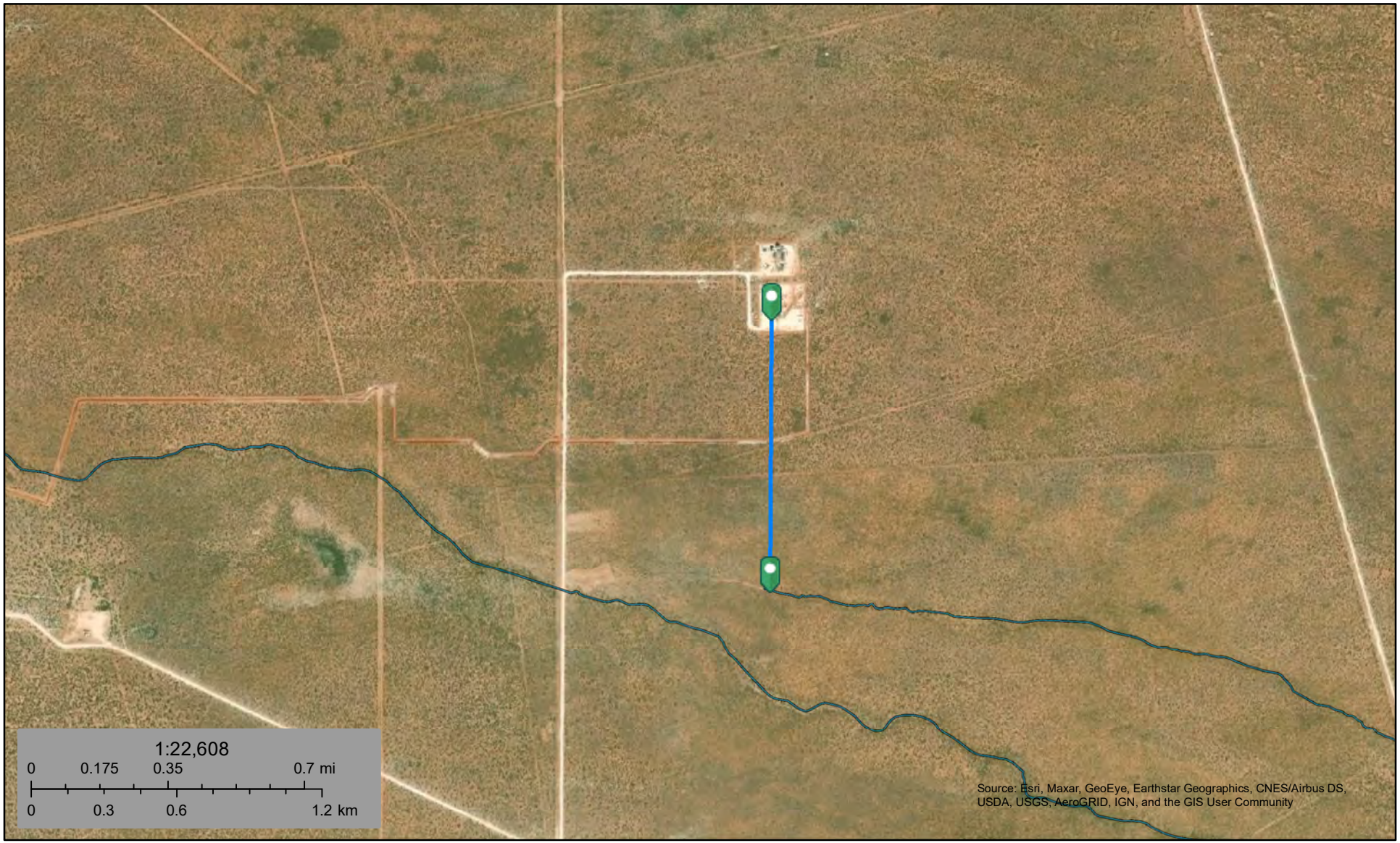
Use the "Back" button on your browser to change your search criteria.

Return To Previous Page

U.S. Fish and Wildlife Service

National Wetlands Inventory

Arena Roja 15 CTB 2 - 0.60 Miles



June 18, 2020

Wetlands

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

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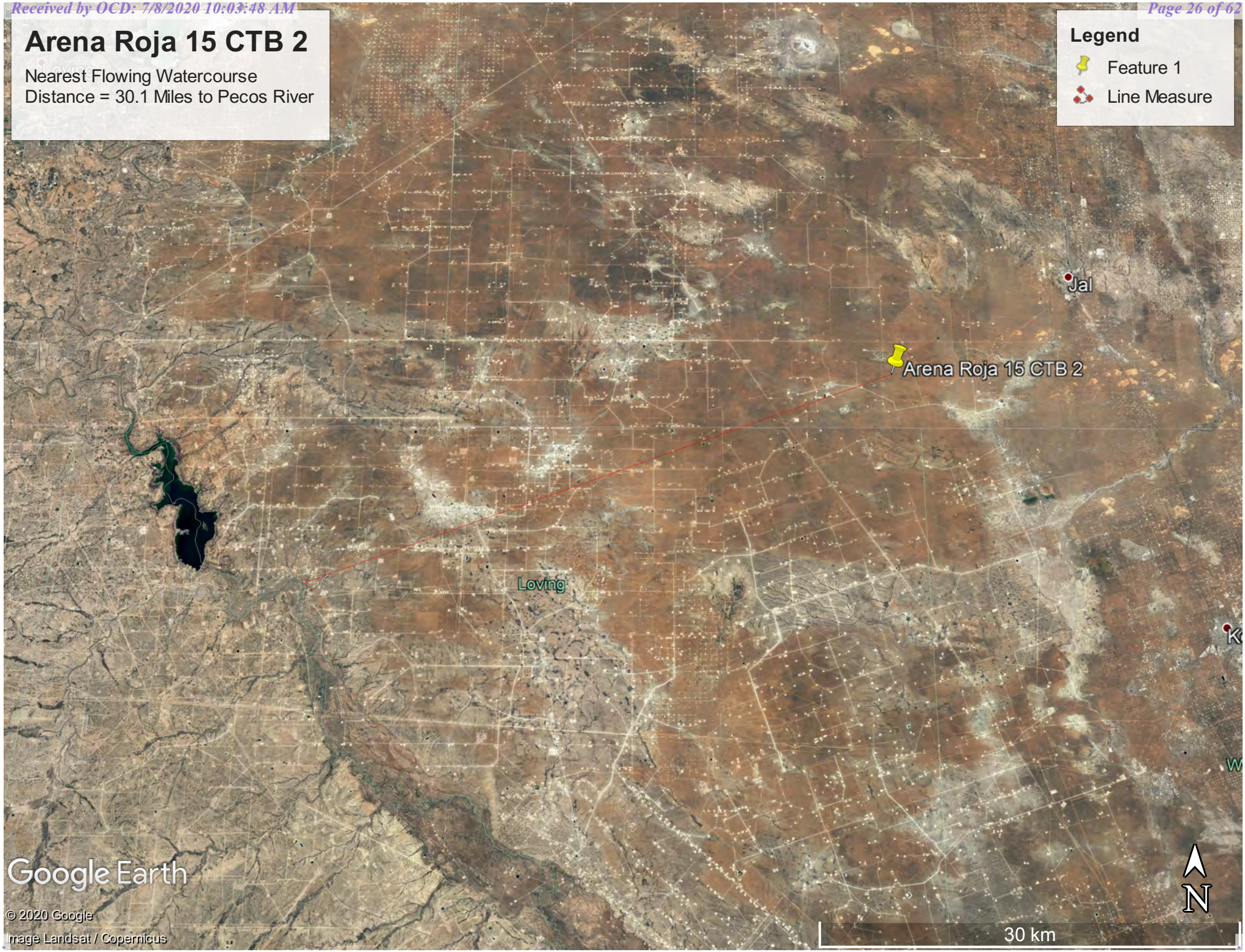
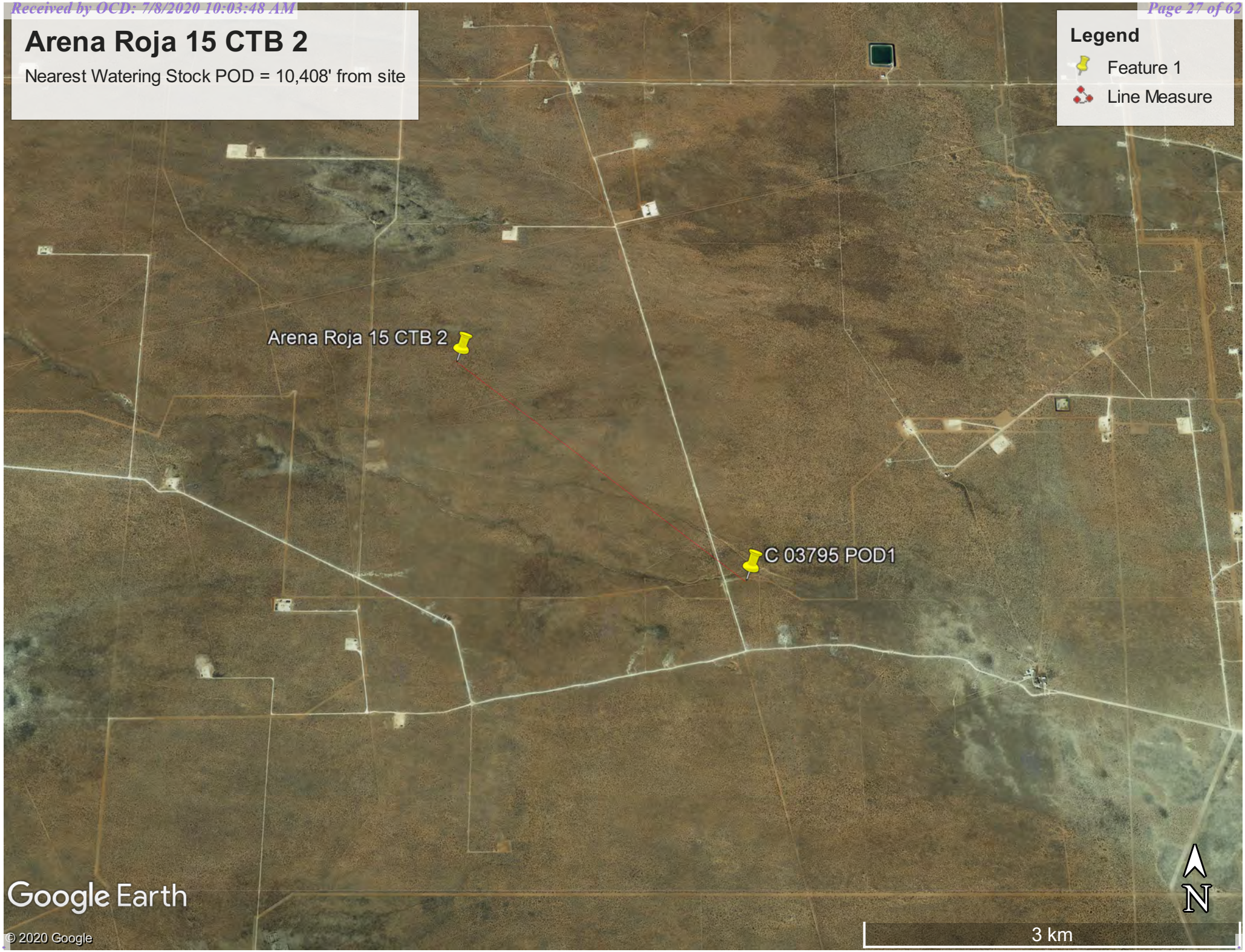
Arena Roja 15 CTB 2

Nearest Flowing Watercourse
Distance = 30.1 Miles to Pecos River



Arena Roja 15 CTB 2

Nearest Watering Stock POD = 10,408' from site



New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum) (R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 64	q 16	q 4	Sec	Tws	Rng	X	Y	Distance
J 00002	J	MUN	986	CITY OF JAL	LE	J 00002 X						3	4	13	26S	35E	658717	3545861*	2841
					LE	J 00002						3	2	13	26S	35E	658705	3546666*	2876
C 03795	C	STK	3	BUREAU OF LAND MANAGEMENT	LE	C 03795 POD1			NON	Shallow	4	4	3	24	26S	35E	658419	3544221	3153
C 03845	C	PRO	0	DEVON ENERGY CO	LE	C 03795 POD1			NON	Shallow	4	4	3	24	26S	35E	658419	3544221	3153
C 03846	C	PRO	0	DEVON ENERGY CO	LE	C 03795 POD1			NON	Shallow	4	4	3	24	26S	35E	658419	3544221	3153
C 03847	C	PRO	0	DEVON ENERGY CO	LE	C 03795 POD1			NON	Shallow	4	4	3	24	26S	35E	658419	3544221	3153
J 00003	J	COM	30	NGL SOUTH RANCH INC	LE	J 00003	NA			Shallow		4	2	13	26S	35E	659042	3546648	3205
C 02272	C	STK	3	BUREAU OF LAND MANAGEMENT	LE	C 02272					4	4	3	24	26S	35E	658439	3544144*	3215
J 00005	J	MUN	383.97	EL PASO NATURAL GAS COMPANY	LE	J 00005 POD1				Shallow	2	2	2	13	26S	35E	659200	3547174*	3485
J 00005 A	J	COM	0	EL PASO NATURAL GAS COMPANY	LE	J 00005 POD1				Shallow	2	2	2	13	26S	35E	659200	3547174*	3485
J 00042	J	EXP	0	GLORIETA GEOSCIENCE INC	LE	J 00042 POD1	NA				3	1	3	18	26S	36E	659423	3546152	3538
J 00001	J	MUN	600	CITY OF JAL	LE	J 00001		R		Shallow	1	1	3	18	26S	36E	659416	3546374*	3541
					LE	J 00001 POD3				Shallow	1	1	3	18	26S	36E	659416	3546374*	3541
J 00041	J	EXP	0	CITY OF JAL	LE	J 00041 POD1	NA				1	1	1	19	26N	36E	659404	3545621	3551
C 04021	C	DOM	1	MARCOS YANEZ	LE	C 04021 POD1			NON		2	4	4	26	26S	35E	657601	3542791	3724
J 00002	J	MUN	986	CITY OF JAL	LE	J 00002 X3				Shallow		3	1	19	26S	36E	659536	3545067*	3793
J 00045	J	EXP	0	CITY OF JAL	LE	J 00045 POD1	NA				3	4	3	18	26S	36E	659827	3545781	3954
J 00002	J	MUN	986	CITY OF JAL	LE	J 00002 X2				Shallow		4	3	18	26S	36E	659929	3545879*	4049
					LE	J 00002 X4		R				3	1	20	26S	36E	660021	3546381*	4145
J 00043	J	EXP	0	GLORIETA GEOSCIENCE INC	LE	J 00043 POD1	NA			Shallow	1	1	2	19	26S	36E	660221	3545607	4363
J 00001	J	MUN	600	CITY OF JAL	LE	J 00001 POD4				Shallow	1	3	2	19	26S	36E	660244	3545180*	4454
					LE	J 00001 X				Shallow	1	3	2	19	26S	36E	660244	3545180*	4454
CP 01170	CP	COM	300	NGL SOUTH RANCH INC	LE	CP 01170 POD1				Shallow	3	3	3	06	26S	36E	659281	3548984	4457
CP 01194	CP	CLS	0	BECKHAM RANCH INC	LE	CP 01170 POD1		C		Shallow	3	3	3	06	26S	36E	659281	3548984	4457
CP 01170	CP	COM	300	NGL SOUTH RANCH INC	LE	CP 01267 POD1				Shallow	3	4	3	06	26S	36E	659759	3548807	4727
CP 01263	CP	COM	200	NGL SOUTH RANCH INC	LE	CP 01267 POD1				Shallow	3	4	3	06	26S	36E	659759	3548807	4727
CP 01267	CP	EXP	0	BECKHAM RANCH INC	LE	CP 01267 POD1				Shallow	3	4	3	06	26S	36E	659759	3548807	4727

CP 01292	CP	PRO	0	CONCHO OIL AND GAS	LE	CP 01267 POD1			Shallow	3	4	3	06	26S	36E	659759	3548807		4727
CP 01293	CP	PRO	0	GRR, INC	LE	CP 01267 POD1			Shallow	3	4	3	06	26S	36E	659759	3548807		4727
CP 01294	CP	PRO	0	CONCHO OIL AND GAS	LE	CP 01267 POD1			Shallow	3	4	3	06	26S	36E	659759	3548807		4727
CP 01263	CP	COM	200	NGL SOUTH RANCH INC	LE	CP 01263 POD2				2	4	1	07	26S	36E	660060	3548343		4741
CP 01170	CP	COM	300	NGL SOUTH RANCH INC	LE	CP 01170 POD2				2	3	3	06	26S	36E	659541	3549183		4784
CP 01342	CP	CLS	0	BECKHAM RANCH INC	LE	CP 01170 POD2		C		2	3	3	06	26S	36E	659541	3549183		4784
J 00002	J	MUN	986	CITY OF JAL	LE	J 00003 POD2			Shallow	1	1	2	30	26S	36E	660265	3543972		4868
J 00003	J	COM	30	NGL SOUTH RANCH INC	LE	J 00003 POD2			Shallow	1	1	2	30	26S	36E	660265	3543972		4868
J 00004	J	COM	5	NGL SOUTH RANCH INC	LE	J 00003 POD2			Shallow	1	1	2	30	26S	36E	660265	3543972		4868
J 00022	J	DOL	0	BECKHAM RANCH, INC.	LE	J 00003 POD2			Shallow	1	1	2	30	26S	36E	660265	3543972		4868
J 00025	J	COM	500	NGL SOUTH RANCH INC	LE	J 00003 POD2			Shallow	1	1	2	30	26S	36E	660265	3543972		4868
J 00026	J	COM	500	NGL SOUTH RANCH INC	LE	J 00003 POD2			Shallow	1	1	2	30	26S	36E	660265	3543972		4868
CP 01305	CP	COM	100	FULFER OIL & CATTLE COMPANY	LE	CP 01305 POD1			Artesian		1	4	31	25S	37E	655627	3551065		4974

Record Count: 40

UTMNAD83 Radius Search (in meters):

Easting (X): 655884.98 **Northing (Y):** 3546097.51 **Radius:** 5000

Sorted by: Distance

***UTM location was derived from PLSS - see Help**

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Arena Roja 15 CTB 2 - Pond = 16115'

May 28, 2020

Wetlands

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

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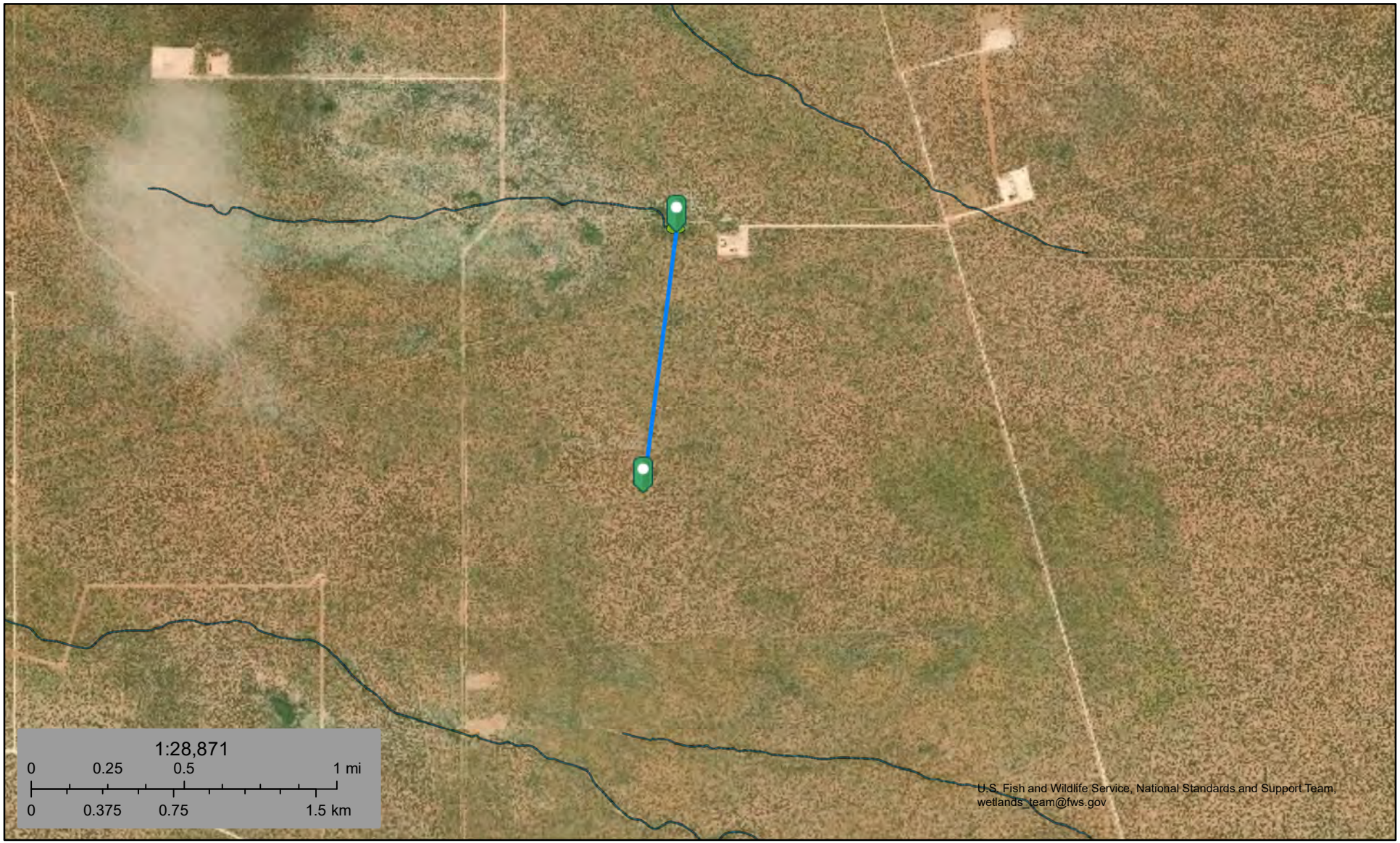
U.S. Fish and Wildlife Service

National Wetlands Inventory

Arena Roja 15 CTB 2 - Wetland = 3,856'



May 28, 2020

Wetlands

- Estuarine and Marine Deepwater
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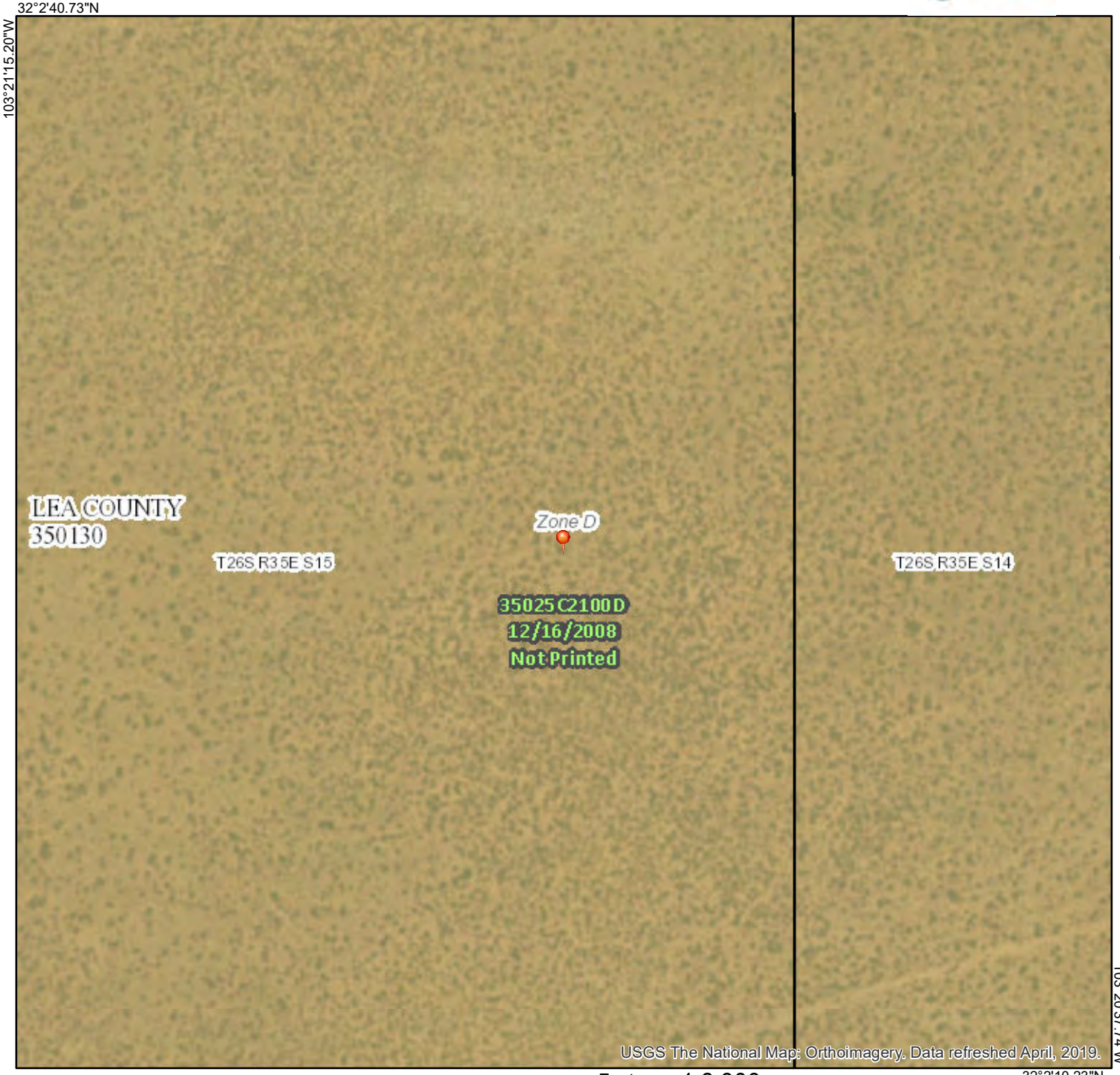
National Flood Hazard Layer FIRMette

FEMA

32°2'40.73"N

103°21'15.20"W



103°20'37.47"W

32°2'10.23"N

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

1:6,000

Legend

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

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

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

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

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

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 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

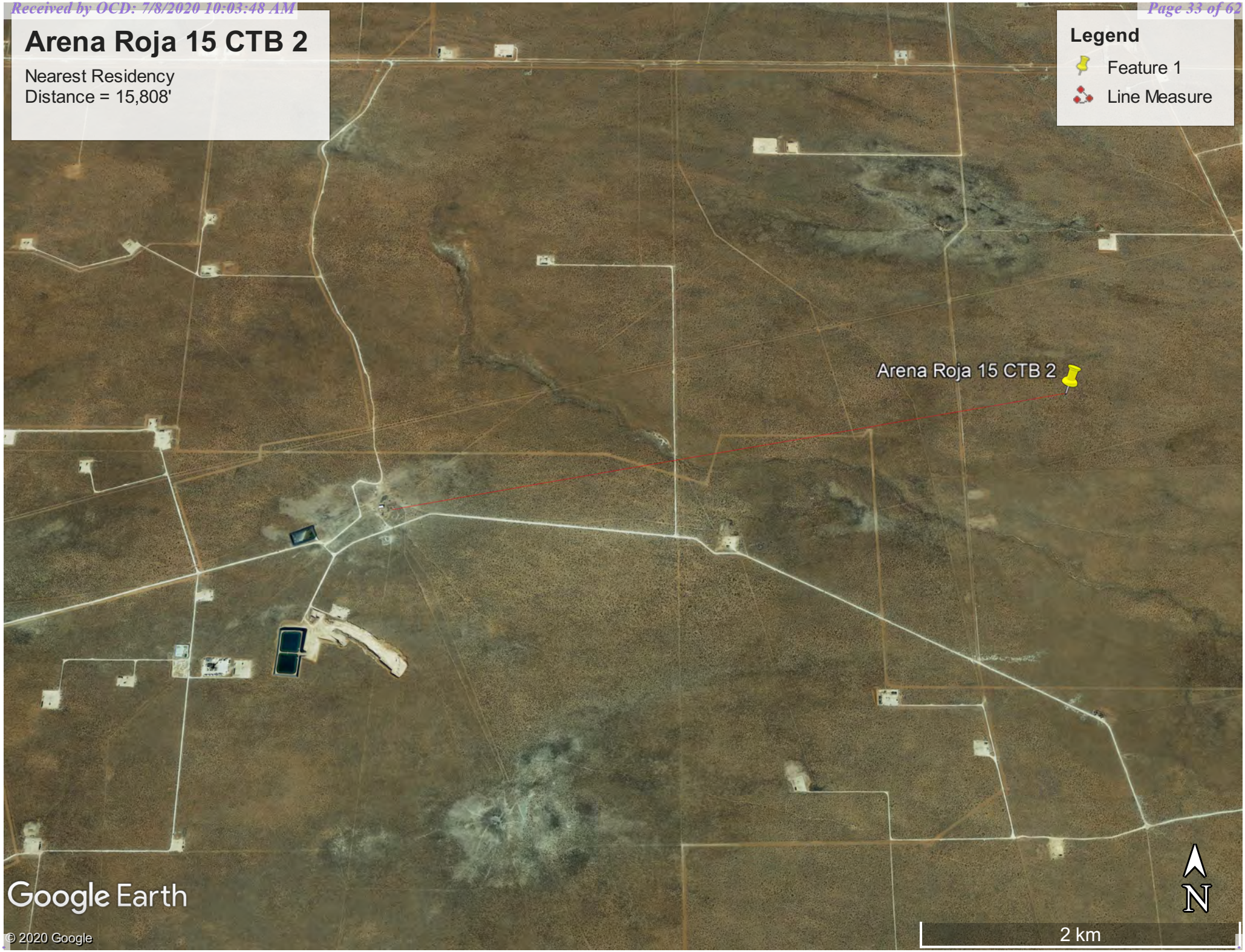
N

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 5/29/2020 at 3:15:56 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.


Arena Roja 15 CTB 2
Nearest Residency
Distance = 15,808'
Legend
Feature 1
Line Measure
Arena Roja 15 CTB 2
Google Earth
© 2020 Google
N
2 km

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Lea County, New Mexico

May 29, 2020

Preface

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

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

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

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

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

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

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Contents

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

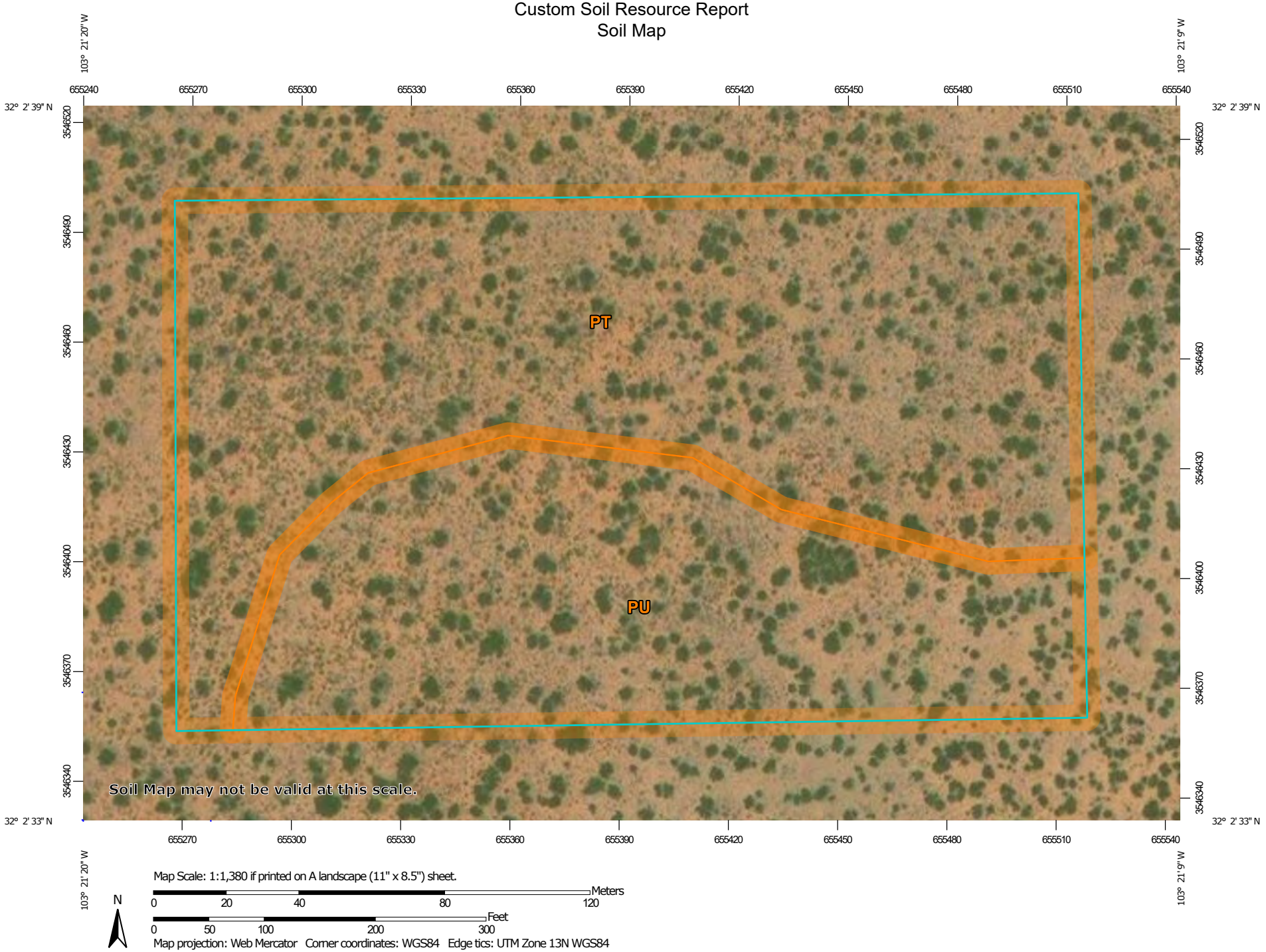
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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

Soil Map

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

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 16, Sep 15, 2019

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 19, 2017

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
PT	Pyote loamy fine sand	5.4	60.6%
PU	Pyote and maljamar fine sands	3.5	39.4%
Totals for Area of Interest		**8.9**	**100.0%**

Map Unit Descriptions

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

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

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

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

onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

Lea County, New Mexico

PT—Pyote loamy fine sand

Map Unit Setting

National map unit symbol: dmqp
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Pyote and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pyote

Setting

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

Typical profile

A - 0 to 25 inches: loamy fine sand
Bt - 25 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

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

Minor Components

Maljamar

Percent of map unit: 8 percent
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Palomas

Percent of map unit: 7 percent
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

PU—Pyote and maljamar fine sands

Map Unit Setting

National map unit symbol: dmqq
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Maljamar and similar soils: 45 percent
Pyote and similar soils: 45 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maljamar

Setting

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

Typical profile

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

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 40 to 60 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.6 inches)

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

Description of Pyote

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

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

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.1 inches)

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

Minor Components

Kermit
Percent of map unit: 10 percent

Ecological site: Sandhills (R042XC022NM)
Hydric soil rating: No

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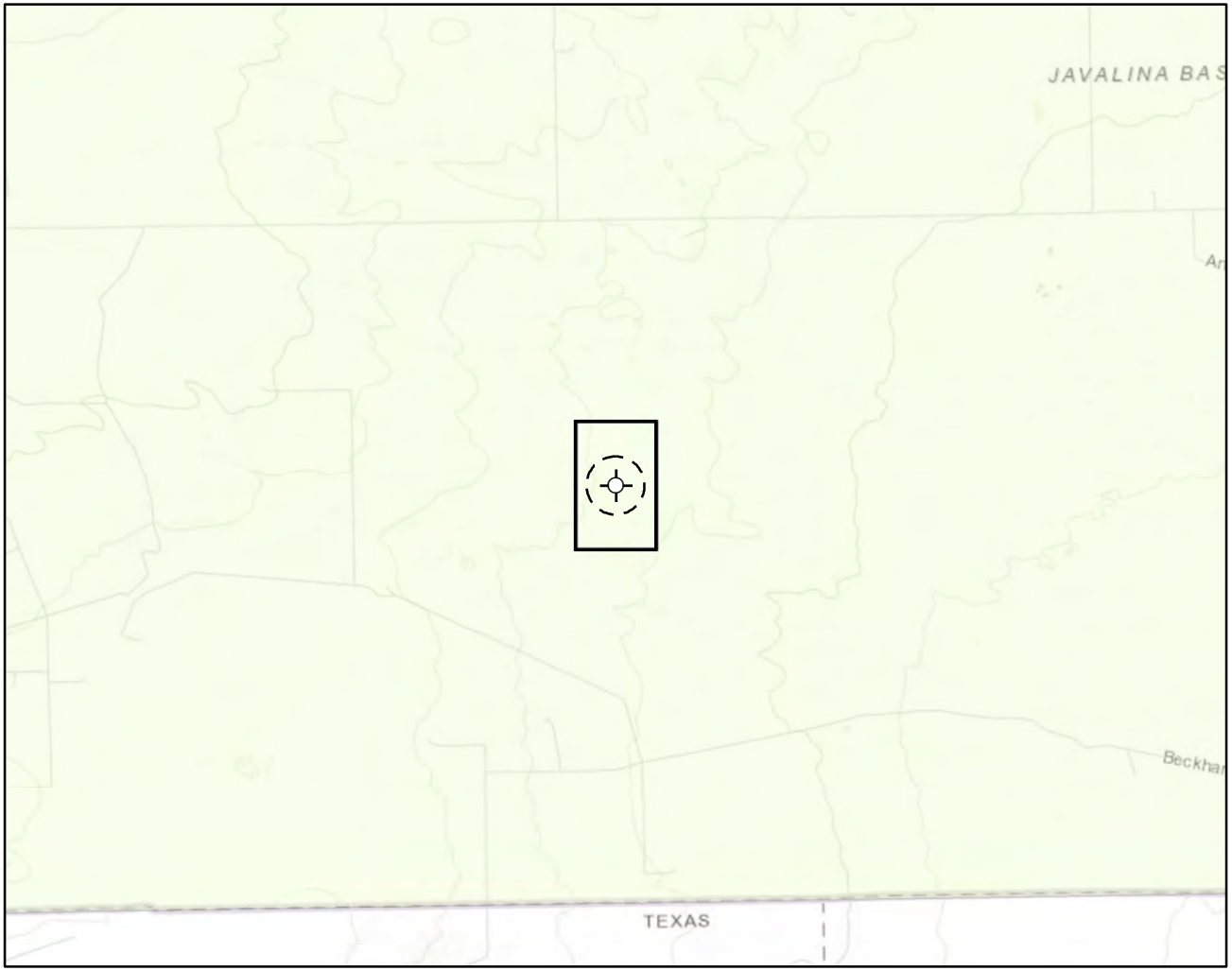
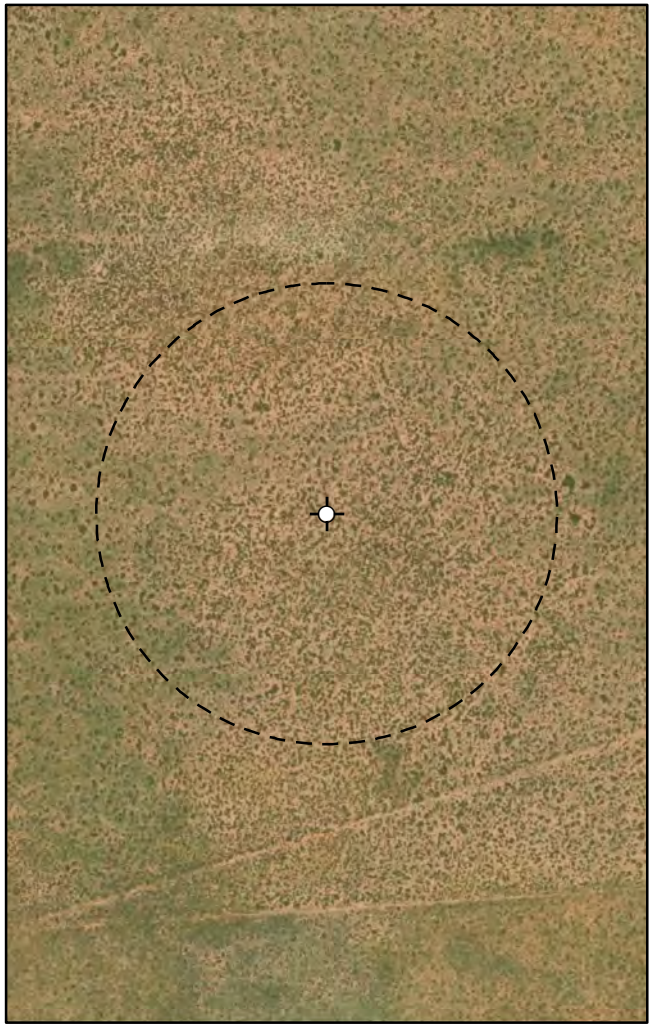


Overview Map

0 0.25 0.5 1 mi



Detail Map

0 150 300 600 ft.

Karst Potential

- Critical
- High
- Medium
- Low

- Site
- Site Buffer

VERTEX

Map Center:
Lat/Long: 32.039841, -103.349150

NAD 1983 UTM Zone 13N
Date: May 28/20

N

Karst Potential
Arena Roja 15 CTB 2

FIGURE:
X

devon

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

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

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\20E-00141\051 - Arena Roja 15 CTB 2\Fig X Karst Potential Arena Roja 15 CTB 2.mxd

Active Mines in New Mexico

5/28/2020, 9:57:30 AM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Registered Mines

Aggregate, Stone etc.

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

ATTACHMENT 4

Natalie Gordon

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Wednesday, May 20, 2020 1:55 PM
To: Natalie Gordon
Subject: Fwd: NRM2010659709: Arena Roja 15 CTB 2 48-hr Notification of Liner Inspection

---------- Forwarded message ---------
From: **Dhugal Hanton** <vertexresourcegroupusa@gmail.com>
Date: Wed, May 20, 2020 at 1:54 PM
Subject: NRM2010659709: Arena Roja 15 CTB 2 48-hr Notification of Liner Inspection
To: EMNRD-OCD-District1spills <emnrd-ocd-district1spills@state.nm.us>, Bratcher, Mike, EMNRD <Mike.Bratcher@state.nm.us>, CFO_Spill, BLM_NM <blm_nm_cfo_spill@blm.gov>, Amos, James A <Jamos@blm.gov>, Kelsey <KWade@blm.gov>
Cc: <Lupe.Carrasco@dvn.com>, <amanda.davis@dvn.com>, <wesley.mathews@dvn.com>, <tom.bynum@dvn.com>

All,

Please accept this email as 48-hr notification that Vertex Resource Services Inc. has scheduled a liner inspection to be conducted at Arena Roja 15 CTB 2 for the following open release:

NRM2010659709 - DOR: April 6, 2020

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

On Friday, May 22, 2020 at approximately 2:00p.m., Vertex will be onsite to conduct a final liner inspection for closure of the above reference incident. If you need directions to the site or have any questions or concerns regarding this notification, please give me a call at 505-506-0040.

Thank you,
Natalie

Natalie Gordon
Project Manager

Vertex Resource Group Ltd.
213 S. Mesa Street
Carlsbad, NM 88220

P 575.725.5001 ext 709
C 505.506.0040
F

www.vertex.ca

Confidentiality Notice: This message and any attachments are solely for the intended recipient and may contain confidential or privileged information. If you are not the intended recipient, any disclosure, copying, use, or distribution of the information included in this message and any attachment is prohibited. If you have received this communication in error, please notify us by reply email and immediately and permanently delete this message and any attachments. Thank you.

ATTACHMENT 5

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	5/22/2020
Site Location Name:	Arena Roja 15 CTB 2	Report Run Date:	5/28/2020 2:32 PM
Project Owner:		File (Project) #:	
Project Manager:		API #:	N/A
Client Contact Name:	Amanda Davis	Reference	
Client Contact Phone #:	(575) 748-0176		

Summary of Times

Left Office	5/22/2020 1:01 PM
Arrived at Site	5/22/2020 1:01 PM
Departed Site	5/22/2020 1:45 PM
Returned to Office	5/22/2020 3:46 PM

Summary of Daily Operations

13:18 Conduct liner inspection

Next Steps & Recommendations

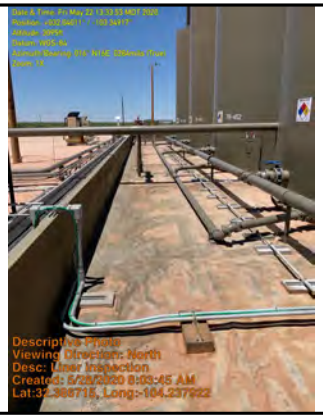
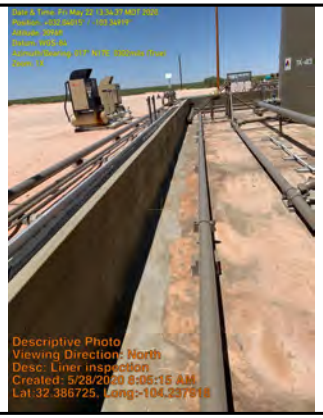
1 No tears, cracks or leaking areas identified in liner. No remediation necessary.

2 Upload photos and notes for closure report.

3 Complete closure report.

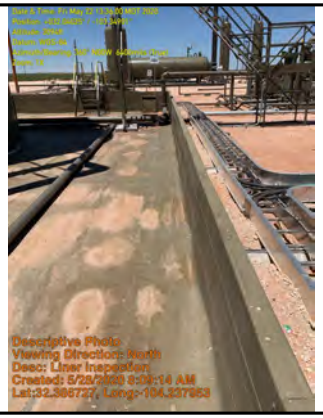
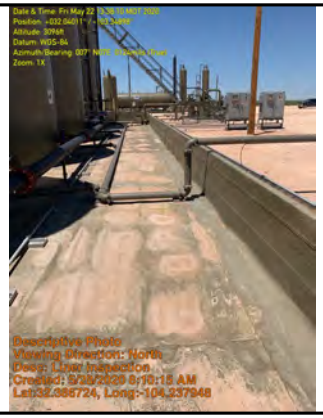
Daily Site Visit Report

Site Photos

Viewing Direction: North	**Viewing Direction**: East
	
Liner inspection	Liner inspection
Viewing Direction: North	**Viewing Direction**: East
	
Liner inspection	Liner inspection

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: South
	
Liner inspection	Liner inspection

Viewing Direction: North	**Viewing Direction**: North
	
Liner inspection	Liner inspection

Daily Site Visit Report

Viewing Direction: North	**Viewing Direction**: West
	
Liner inspection	Liner inspection

Viewing Direction: West	**Viewing Direction**: East
	
Area adjacent to containment	Area outside of containment

Daily Site Visit Report

Viewing Direction: North	**Viewing Direction**: West
	
Area outside of containment	Area outside of containment

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Kevin Smith

Signature: 
Signature