Stephanie Garcia Richard, Commissioner of Public Lands
State of New Mexico

NMSLO Cultural Resources Cover Sheet Exhibit

NMCRIS Activity Number:
(if applicable)

Exhibit Type (select one)

ARMS Inspection/Review - Summarize the results (select one):

(A) The entire area of potential effect or project area has been previously surveyed to current standards and **no cultural properties** were found within the survey area.
(B) The entire area of potential effect or project area has been previously surveyed to current standards and **cultural properties were found** within the survey area.
(C) The entire area of potential effect or project area has **not** been previously surveyed or **has not been surveyed** to current standards. A complete archaeological survey will be conducted and submitted for review.

Archaeological Survey

Findings:

Negative - No further archaeological review is required.

Positive - Have avoidance and protection measures been devised? Select one:

Comments:

Project Details:

NMSLO Lease Number (if available):

Cultural Resources Consultant:

Project Proponent (Applicant):

Project Title/Description:

Project Location:

County(ies):

PLSS/Section/Township/Range):

For NMSLO Agency Use Only:

NMSLO Lease Number: Acknowledgment-Only:

Lease Analyst:

Date Exhibit Routed to Cultural Resources Office:

No person may alter the wording of the questions or layout of the cover sheet. The completion of this cover sheet by itself does not authorize anyone to engage in new surface disturbing activity before the review and approvals required by the Cultural Properties Protections Rule.

Form Revised 12 22

Trinity Oilfield Services & Rentals, LLC

May 9th, 2025

Environmental Compliance Office
310 Old Santa Fe Trail,
Santa Fe NM 87501

Re: **Remediation Plan Request**
North Vacuum Abo Unit 255
Tracking #: NAPP2106441019

Trinity Oilfield Services (Trinity), on behalf of Cross Timbers Energy, LLC, hereby submits the following Remediation Plan Request in response to a release that occurred at the above-referenced location, and further described below.

Site Information	
Incident ID	NAPP2106441019
Well API	30-025-28737
Lease ID	B015200004
NMSLO Site Name	North Vacuum Abo 120 Battery – Area 3
NMOCD Site Name	North Vacuum Abo Unit 255
Company	Cross Timbers Energy, LLC
Contact Name	Samanntha Avarello
Contact Email	SAVARELLO@TXOPARTNERS.COM
Contact Telephone	817-334-7747
County	Lea
ULSTR	A-14-17S-34E
GPS Coordinates (NAD 83)	32.83819002, -103.52467326
Landowner	State

HISTORICAL RELEASE BACKGROUND

Cross Timbers Energy, LLC was initially notified by the New Mexico State Land Office (SLO) of a historical release observed via satellite imagery. At the time, neither Cross Timbers nor Trinity Environmental Group had information on the date, type, or source of these releases. Upon further investigation, we discovered an error in the recorded coordinates within the NMOCD Incident Details, which led to the following clarifications.

The SLO incident North Vacuum Abo 120 Battery – Area 3 is NMOCD incident NAPP2106441019 North Vacuum Abo Unit 255. It appears that the Lat/Long on the NMOCD Incident Details corresponds to the coordinates of Well: 30-025-28737 (32.8333092, -103.5158539) rather than the actual coordinates of the release (32.83819002, -103.52467326).

A remediation plan was submitted to the SLO on 05/16/2024. On 05/28/2024, the NMSLO agreed to the proposed remediation excavation presented in the remediation plan and asked for additional delineation samples. An updated remediation plan was submitted to the SLO on 07/26/2024 and received approval on 08/15/2024. Moving forward, this release will be referred to as NAPP2106441019 North Vacuum Abo Unit 255.

NMOCD RELEASE INFORMATION

On 03/05/2021, Cross Timbers Energy, LLC reported a release at the North Vacuum Abo Unit 255. The release was caused when a flowline froze and busted. Approximately 44,442 sqft. of the Pasture was found to be affected by the release.

Release Information	
Date of Release	03/04/2021
Type of Release	Crude Oil & Produced Water
Source of Release	Freeze
Volume Released – Produced Water	30 bbl
Volume Recovered – Produced Water	0 bbl
Volume Released – Crude Oil	10 bbl
Volume Recovered – Crude Oil	0 bbl
Affected Area – Historical	Pasture - Approximately 4,085 sqft.
Affected Area – Lab Determined	Pasture – Approximately 44,442 sqft.
Site Location Map	Attached

CULTURAL AND BIOLOGICAL COMPLIANCE

A comprehensive analysis was conducted to ensure both cultural and biological parameters are fully addressed and appropriate for proposed activities at the site location.

Cultural Properties Protection:

An ARMS inspection and survey request was conducted by a state-permitted third-party archaeological consultant. The subject site has undergone a Class III Archaeological Survey, concluding with negative results. The ARMS inspection report cover sheet is attached for reference.

Biological Compliance:

A desktop review of the site location was conducted using two key environmental assessment tools: the New Mexico Department of Game and Fish Environmental Review Tool (ERT) and the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC).

The review analyzed environmental factors within the area of interest. The evaluation results indicate that no critical habitats, important plant areas, or important bird areas are located within the site boundaries. This suggests that the site does not contain significant ecological features or sensitive species requiring special consideration or protection under current environmental regulations.

Critical habitats refer to the areas essential for the conservation of species defined in the Endangered Species Act. Important plant areas in New Mexico are designated sites that either harbor a significant variety of vulnerable plant species or represent the last known habitats of the state's most endangered plants. Important bird areas are habitats that provide essential resources or support significant populations of bird species, particularly those of conservation concern. The absence of these critical ecological features in the site location implies that the proposed activities or developments can proceed with a lower risk of negatively impacting important natural resources.

Environmental Assessment	
NM Riparian Habitat Map	Negative
NMDGF Fish Management Plan Waters	Negative
Riparian Corridors	Negative
NM SWAP Conservation Opportunity Areas	Negative
NM Audubon Important Bird Areas	Negative
NM Important Plant Areas	Negative
USFWS Critical Habitat	Negative
USFWS Refuges	Negative
NM State Forestry Priority Landscapes	Negative

The IPaC report identifies the following species as potentially susceptible to impacts from activities proposed at this location.

Species	Status
Northern Aplomado Falcon	Experimental Population, Non-essential
Mexican Spotted Owl	Threatened
Monarch Butterfly	Candidate

The report indicates that no critical habitats for these species are present within the site. The report further highlights that no migratory Bird of Conservation Concern (BBC) in the United States is expected within the area of interest.

Additional analysis utilizing mapping services from the Bureau of Land Management (BLM) reinforces that the habitats of the Lesser Prairie-Chicken and the Dunes Sagebrush Lizard are not affected by the release area. This cross-referenced data from BLM serves to validate the initial findings and ensures that significant habitats for these species remain undisturbed by the planned activities.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

Depth to Groundwater/Wellhead Protection:

Data Source	Well Number	Data Date	Depth (ft.)
NM OSE	NA	NA	NA
USGS	324956103314001	03/06/2023	132'
Soil Bore	NA	NA	NA

A search of the groundwater well databases maintained by the New Mexico Office of the State Engineer (NMOSE) and the United States Geological Survey (USGS) was conducted to determine if any registered groundwater wells are located within a $^{1}/_{2}$ mile of the release site. The search revealed that One (1) well occurred in the databases that meet the NMOCD criteria for the age of data, the distance of the data point well from the release point, and a data point well having a diagram of construction.

On 03/06/2023, Trinity was on-site to gauge USGS 321956103314001 located within a ½ mile radius of the incident location. Groundwater was verified at a depth of 132'. The groundwater gauging log is attached for reference.

General Site Characterization:

Site Assessment	
Karst Potential	Low
Distance to Watercourse	> 500 ft.
Within 100 yr Floodplain	No
Pasture Impact	Yes

A risk-based site assessment/characterization was performed following the New Mexico Oil Conservation Division (NMOCD) Rule (Title 19 Chapter 15 Part 29) for releases on oil and gas development and production in New Mexico (effective August 14, 2018). To summarize the site assessment/characterization evaluation, the affected area has Low potential for cave and karst, and no other receptors (residence, school, hospital, institution, church, mining, municipal, or other ordinance boundaries) were located within the regulatorily promulgated distances from the site.

Soil Assessment	
Soil Series	Kimbrough-Lea
Fragile Soil Interpretive Class	Fragile
Erodibility Value	0.32
Wind Erodibility Group	5
Badland Soils	No
Gypsum Soils	No
Representative Slope	1%
Depth to Restrictive Feature	25 cm
Depth to Bedrock	> 200 cm
Severe Wildland Burn	No

A soil assessment/characterization was performed following the New Mexico State Land Office Environmental Compliance Office (ECO) Spill and Release Reporting Guidelines (Part 2 Letter D). To summarize, the affected area is classified as a sensitive soil.

Closure Criteria:

On-Site & Off-Site 4ft bgs | Recommended Remedial Action Levels (RRALs)	
Chlorides	20,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
TPH (GRO and DRO)	1,000 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

A reclamation standard of 600 mg/kg chloride and 100 mg/kg TPH will be applied to the top four feet of the pasture area if impacted by the release, per NMAC 19.15.29.13.D (1) for the top four feet of areas that will be reclaimed following remediation.

INITIAL ASSESSMENT AND REMEDIATION ACTIVITIES

Initial Sample Activities:

Delineation Summary	
Delineation Dates	02/23/2024 & 04/19/2024
Depths Sampled	0' - 4'
Delineation Map	Attached
Laboratory Results	Table 1

All soil samples were placed into laboratory-supplied glassware, labeled, and maintained on ice until delivery to an NMOCD-approved laboratory (Cardinal Laboratories of Hobbs, NM) for the analysis of chloride using Method SM4500 Cl-B, Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by EPA Method 8021 B and Total Petroleum Hydrocarbon (TPH) constituents the by EPA 8015M.

Confirmation Activities:

Remediation Summary		
Remediation Dates	Within 90 Days of NMOCD Approval	
Liner Variance Request	None	
Deferral Request	None	
Proposed Area of 5-point Confirmation Samples – Floors and Walls	400 sqft. as approved by NMSLO on 08/15/2024	
Proposed Depths Excavated	To Petrocalcic Horizon	Beyond Petrocalcic Horizon to 4'
Estimated Volume of Excavated Soil	2,222 yards	7,777 yards

REQUEST FOR VARIANCE

Trinity, on behalf of Cross Timbers Energy, LLC, respectfully requests a variance from rule 19.15.29.13 D(1) due to the presence of a petrocalcic horizon at a depth of approximately one foot, as documented in the attached photos from excavations in the immediate area.

According to the Procedures for Implementation of the Spill Rule (19.15.29 NMAC), issued on September 6, 2019, "the primary purpose of reclamation is to re-establish vegetative growth, with the root zone for most native plants being in the uppermost four feet.” While this guidance serves as a general standard, the field conditions at this site present an exception.

The petrocalcic horizon is a naturally occurring, cemented soil layer formed through the accumulation of calcium carbonate. Defined by USDA Soil Taxonomy and supported by NRCS soil surveys, it is a restrictive feature that significantly limits root penetration due to its dense structure. Additionally, soils below this layer tend to be highly alkaline, low in organic matter, and limited in nutrient availability—conditions that are not conducive to further root or plant development. Even when root penetration is possible, growth may be stunted, and plant health suffers as a result.

Given that the root zone does not extend to four feet in this area, applying a uniform four-foot clean material requirement is not appropriate. Removing the petrocalcic horizon would eliminate a natural barrier that protects groundwater, as fluid transport essentially ceases at contact with petrocalcic restrictive layers. Allowing this structure to remain provides better groundwater protection than removing it. Excavating through this naturally restrictive layer would not provide additional benefit to vegetative restoration and would instead result in unnecessary disturbance of the native soil profile.

This site-specific approach promotes more sustainable and efficient reclamation process by limiting excavation to the functional root zone. Reducing the volume of soil that must be removed and replaced decreases heavy equipment use, lowers emissions and traffic, and minimizes disruption to the native landform. It also preserves the existing soil structure where feasible. Thus, Trinity respectfully requests that Table 1 cleanup criteria be applied to the depth at which the petrocalcic horizon is encountered.

Per guidance from the NMSLO, excavation will proceed to the maximum extent practicable. Impacted soil within the off-site release margins will be excavated and temporarily stockpiled on a 6-mil plastic sheeting, pending final disposition. Excavation will advance to the petrocalcic horizon, with confirmation soil samples (five-point composites representing no more than 400 sqft. of the excavated area) collected from the floor and sidewalls, and analyzed for Chloride and TPH as approved by the NMSLO. Analytical results will be reviewed, and the excavation plan will be re-evaluated based on these findings.

Upon receiving laboratory analytical data showing that confirmation soil samples from the excavated areas yield results below the selected NMOCD Table 1 Closure Criteria, the impacted soil will be transported under manifest to an NMOCD-approved disposal facility. Upon approval, the excavated area will be backfilled with locally sourced, non-impacted "like" material.

Trinity kindly requests that the New Mexico Oil Conservation Division grant variance request approval for this site.

SITE RECLAMATION AND RESTORATION

Areas affected by the release and the associated remediation activities will be restored to a condition that existed before the release to the extent practicable. The affected area will be contoured to provide erosion control, stability, and preservation of surface water flow. The area will be fenced off to mitigate grazing and soil compaction by cattle.

Affected areas disturbed by remediation on native land, not on production pads and/or lease roads, will be reseeded with a prescribed NMSLO seed mixture, as defined in SLO Seed Mix Version 1-200808 for Coarse (CS) Sites, during the first favorable growing season following the closure of the site. Reclamation on State Trust Land will also be documented and monitored for successful vegetation growth and invasive/noxious weed populations.

REQUEST FOR REMEDIATION PLAN APPROVAL

Supporting Documentation	
Delineation Map	Attached
Depth to Groundwater Maps and Source	Attached
US NWI Map	Attached
FEMA Flood Hazard Map	Attached
USDA Soil Survey	Attached
SLO Seed Mix	Attached
Site Photography	Attached
Laboratory Analytics with COCs	Attached

The corrective actions will be completed within 90 days of receipt of approval of this remediation plan proposal by the NMOCD. Upon completion of the proposed tasks, a Remediation Closure Request will be submitted, documenting remediation activities and results of confirmation soil samples.

Trinity Oilfield Services respectfully requests that the New Mexico Oil Conservation Division grant approval for the detailed Remediation Plan.

Sincerely,

Josh Halcomb
Project Manager

Cynthia Jordan
Project Scientist

Site Assessment/Characterization

Complete this section with the most current information available at the time of the notification.
Revisions can be submitted to eco@slo.state.nm.us if new information becomes available.

What is the shallowest depth to groundwater beneath the area affected by the spill?	_____ft bgs	
Did the spill impact areas **not** on an exploration, development, production, or storage site?	Yes	No
Did this spill impact groundwater or surface water?	Yes	No
Did the spill occur in an area where groundwater is potentially less than 50 ft bgs?	Yes	No
Are the lateral extents of the spill within 300 feet of a continuously flowing watercourse or any other significant watercourse?	Yes	No
Are the lateral extents of the spill 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 spill within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	Yes	No
Are the lateral extents of the spill 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 spill within 1,000 feet of any other fresh water well or spring?	Yes	No
Are the lateral extents of the spill within incorporated municipal boundaries or within a defined municipal fresh water well field?	Yes	No
Are the lateral extents of the spill within 300 feet of a wetland?	Yes	No
Are the lateral extents of the spill overlying a subsurface mine?	Yes	No
Are the lateral extents of the spill overlying an unstable area such as karst geology?	Yes	No
Are the lateral extents of the spill within a 100-year floodplain?	Yes	No
Is the spill within 500 feet of any other sensitive receptor not documented above? If yes, list the receptor:	Yes	No

- If remediation has begun, please attach a narrative of actions to date with this initial spill notification.
- Submit subsequent workplans and closure reports to eco@slo.state.nm.us

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

CROSS TIMBERS ENERGY, LLC
NVA 120 BTY - AREA 3 - SLO
LEA COUNTY, NEW MEXICO

TRINITY OILFIELD SERVICES

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	VERTICAL/ HORIZONTAL	OFF-SITE/ ON-SITE	SAMPLE TYPE	SOIL STATUS	CHLORIDE (mg/Kg)	TPH C6-C36 (mg/Kg)	GRO+ DRO (mg/kg)	GRO C6-C10 (mg/Kg)	DRO C10-C28 (mg/Kg)	MRO C28-C36 (mg/Kg)	TOTAL BTEX (mg/Kg)	BENZENE (mg/Kg)
On-Site, & Deeper than 4' Pasture							**20000**	**2500**	**1000**	**NE**	**NE**	**NE**	**50**	**10**
Delineation Special Circumstance, NMOCD Delineation Limits Pasture to 4'							**600**	**100**	**NE**	**NE**	**NE**	**NE**	**50**	**10**
Vertical Delineation														
DV-001.0-00.0-P	0	2/23/2024	Vertical	Off-Site	Grab	In-Situ	1,200.0	3,190.0	1,860.0	<10.0	1,860.0	1,330.0	<10.0	<10.0
DV-001.0-01.0-P	1	2/23/2024	Vertical	Off-Site	Grab	In-Situ	480.0	342.0	178.0	<10.0	178.0	164.0	<10.0	<10.0
DV-001.0-04.0-P	4	4/19/2024	Vertical	Off-Site	Grab	In-Situ	1,490.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-002.0-00.0-P	0	2/29/2024	Vertical	Off-Site	Grab	In-Situ	2,060.0	13,120.0	9,750.0	<10.0	9,750.0	3,370.0	<10.0	<10.0
DV-002.0-04.0-P	4	4/19/2024	Vertical	Off-Site	Grab	In-Situ	976.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-003.0-00.0-P	0	2/29/2024	Vertical	Off-Site	Grab	In-Situ	272.0	16,230.0	10,900.0	<10.0	10,900.0	5,330.0	<10.0	<10.0
DV-003.0-02.0-P	2	2/29/2024	Vertical	Off-Site	Grab	In-Situ	384.0	194.7	142.0	<10.0	142.0	52.7	<10.0	<10.0
DV-003.0-03.0-P	3	4/19/2024	Vertical	Off-Site	Grab	In-Situ	256.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-003.0-04.0-P	4	4/19/2024	Vertical	Off-Site	Grab	In-Situ	144.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-004.0-00.0-P	0	5/30/2024	Vertical	Off-Site	Grab	In-Situ	240.0	22.9	22.9	<10.0	22.9	<10.0	<10.0	<10.0
DV-004.0-01.0-P	1	5/30/2024	Vertical	Off-Site	Grab	In-Situ	2,080.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-004.0-04.0-P	4	5/30/2024	Vertical	Off-Site	Grab	In-Situ	1,600.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-005.0-00.0-P	0	5/30/2024	Vertical	Off-Site	Grab	In-Situ	14,400.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-005.0-04.0-P	4	5/30/2024	Vertical	Off-Site	Grab	In-Situ	5,120.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-006.0-00.0-P	0	5/30/2024	Vertical	Off-Site	Grab	In-Situ	2,840.0	112.3	81.9	<10.0	81.9	30.4	<10.0	<10.0
DV-006.0-04.0-P	4	5/30/2024	Vertical	Off-Site	Grab	In-Situ	1,920.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-007.0-00.0-P	0	5/31/2024	Vertical	Off-Site	Grab	In-Situ	128.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-007.0-01.0-P	1	5/31/2024	Vertical	Off-Site	Grab	In-Situ	464.0	10.9	10.9	<10.0	10.9	<10.0	<10.0	<10.0
DV-007.0-02.0-P	2	5/31/2024	Vertical	Off-Site	Grab	In-Situ	432.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-007.0-03.0-P	3	5/31/2024	Vertical	Off-Site	Grab	In-Situ	96.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-007.0-04.0-P	4	5/31/2024	Vertical	Off-Site	Grab	In-Situ	32.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-008.0-00.0-P	0	5/31/2024	Vertical	Off-Site	Grab	In-Situ	160.0	1,747.0	998.0	<10.0	998.0	749.0	<10.0	<10.0
DV-008.0-01.0-P	1	5/31/2024	Vertical	Off-Site	Grab	In-Situ	112.0	288.0	158.0	<10.0	158.0	130.0	<10.0	<10.0
DV-008.0-02.0-P	2	5/31/2024	Vertical	Off-Site	Grab	In-Situ	192.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-008.0-03.0-P	3	5/31/2024	Vertical	Off-Site	Grab	In-Situ	128.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DV-008.0-04.0-P	4	5/31/2024	Vertical	Off-Site	Grab	In-Situ	96.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Horizontal Delineation														
DH-001.6-01.0-P	1	2/23/2024	Horizontal	Off-Site	Grab	In-Situ	144.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DH-002.1-01.0-P	1	2/23/2024	Horizontal	Off-Site	Grab	In-Situ	352.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DH-003.1-01.0-P	1	2/23/2024	Horizontal	Off-Site	Grab	In-Situ	144.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DH-004.5-01.0-P	1	2/23/2024	Horizontal	Off-Site	Grab	In-Situ	560.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DH-005.0-01.0-P	1	5/30/2024	Horizontal	Off-Site	Grab	In-Situ	352.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DH-006.0-01.0-P	1	5/30/2024	Horizontal	Off-Site	Grab	In-Situ	416.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DH-007.1-01.0-P	1	5/30/2024	Horizontal	Off-Site	Grab	In-Situ	320.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0

Legend

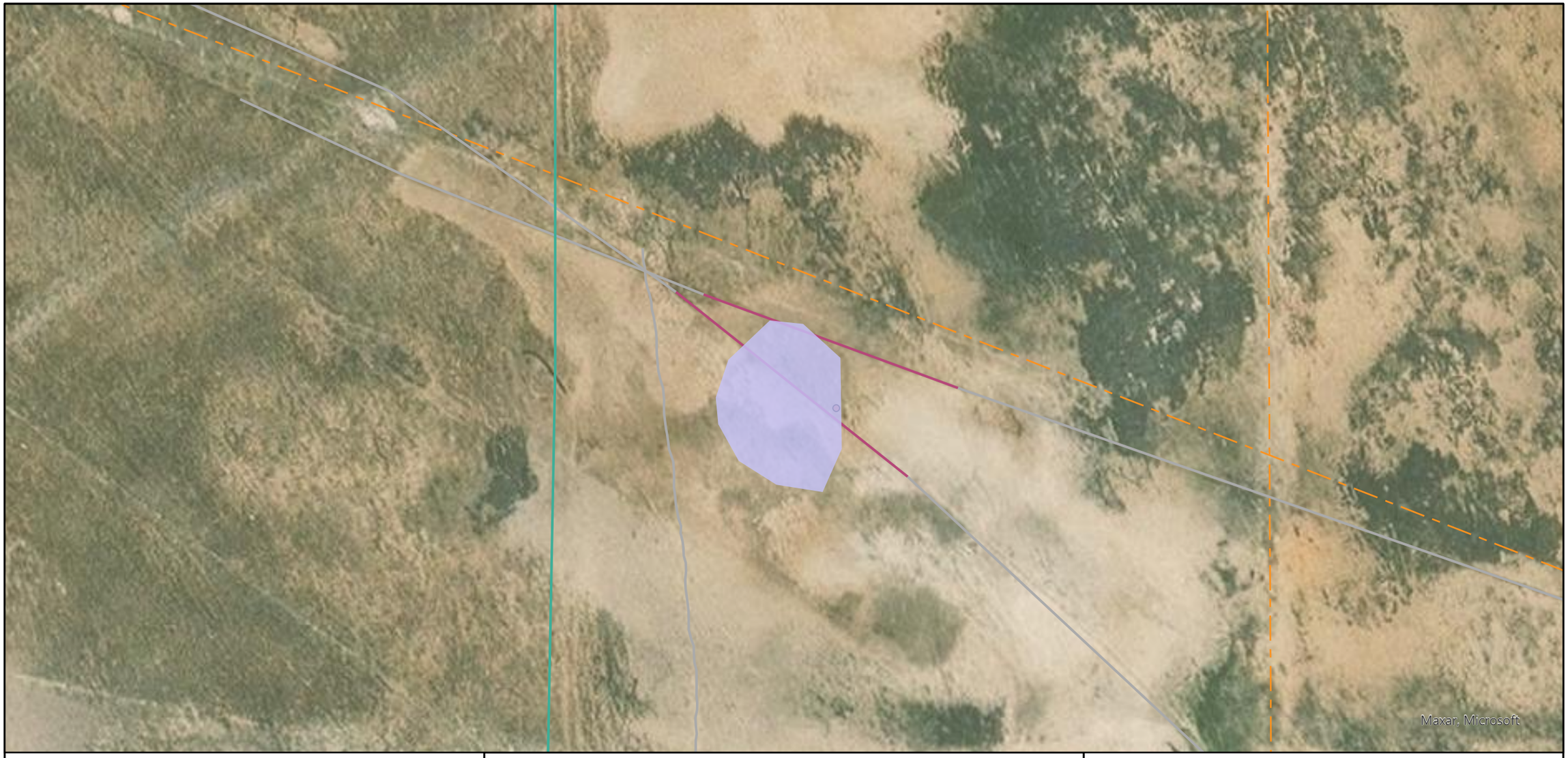
▲ Site Location

Site Location Map
Cross Timbers Energy, LLC
North Vacuum Abo 120 Battery - Area 3
Lea County, New Mexico
32.83819002, -103.52467326

0 500 1,000 2,000 Feet

TRINITY OILFIELD SERVICES

N



Legend:

Release Area

Above-Ground Lines
- Powerline
- Steel

Other

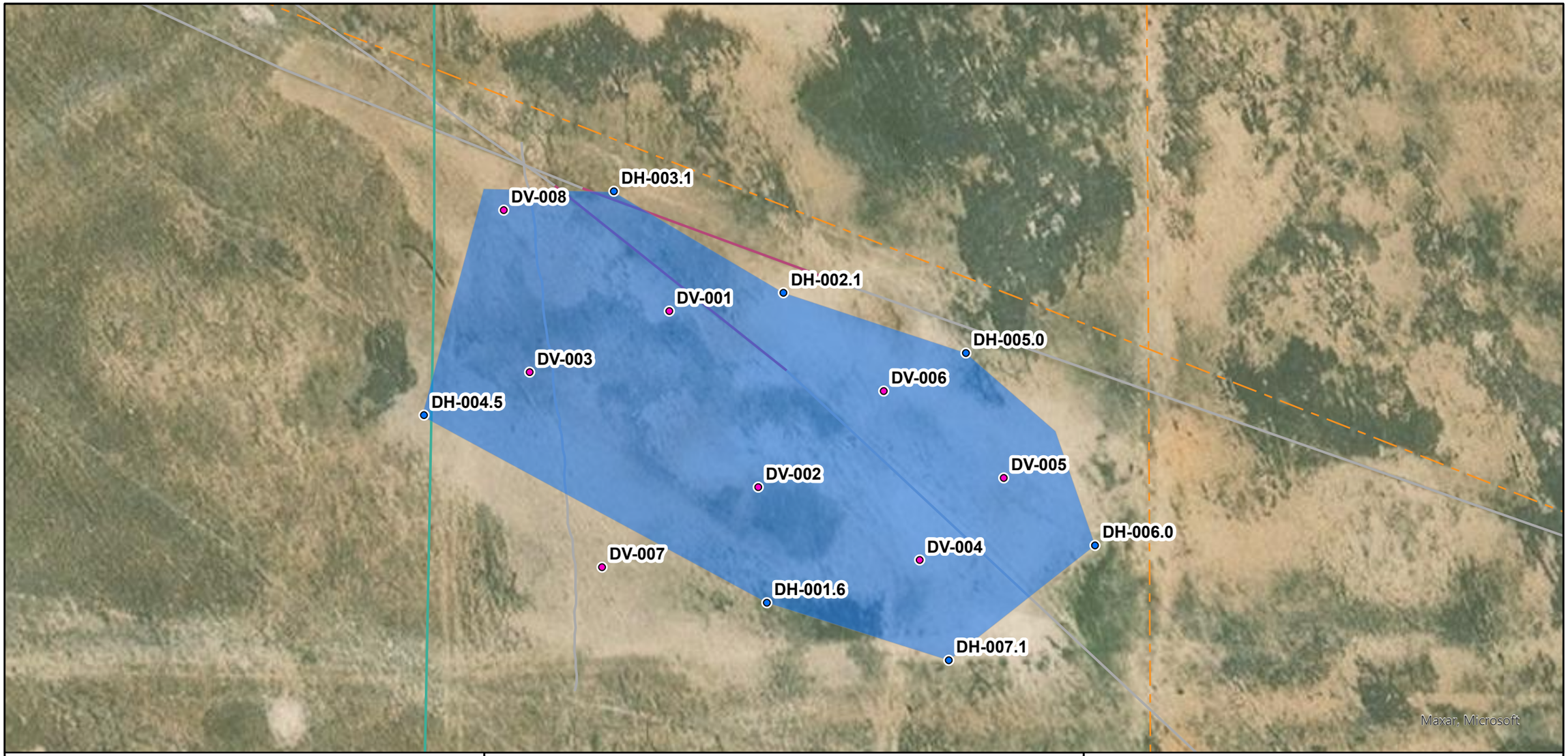
Below-Ground Lines
- Gas
- Other

Initial Release Area
Cross Timbers Energy, LLC
North Vacuum Abo 120 Battery - Area 3
32.83819002, -103.52467326
Lea County, New Mexico

0 55 110 220 Feet

N

TRINITY
OILFIELD SERVICES



Legend:

- Vertical Delineation
- Horizontal Delineation
- Lab Determined Extent of Excavation

Above-Ground Lines
- Powerline
- Steel
- Other

Below-Ground Lines
- Gas
- Other

Delineation Map
Cross Timbers Energy, LLC
North Vacuum Abo 120 Battery - Area 3
32.83819002, -103.52467326
Lea County, New Mexico

0 55 110 220 Feet

N

TRINITY OILFIELD SERVICES

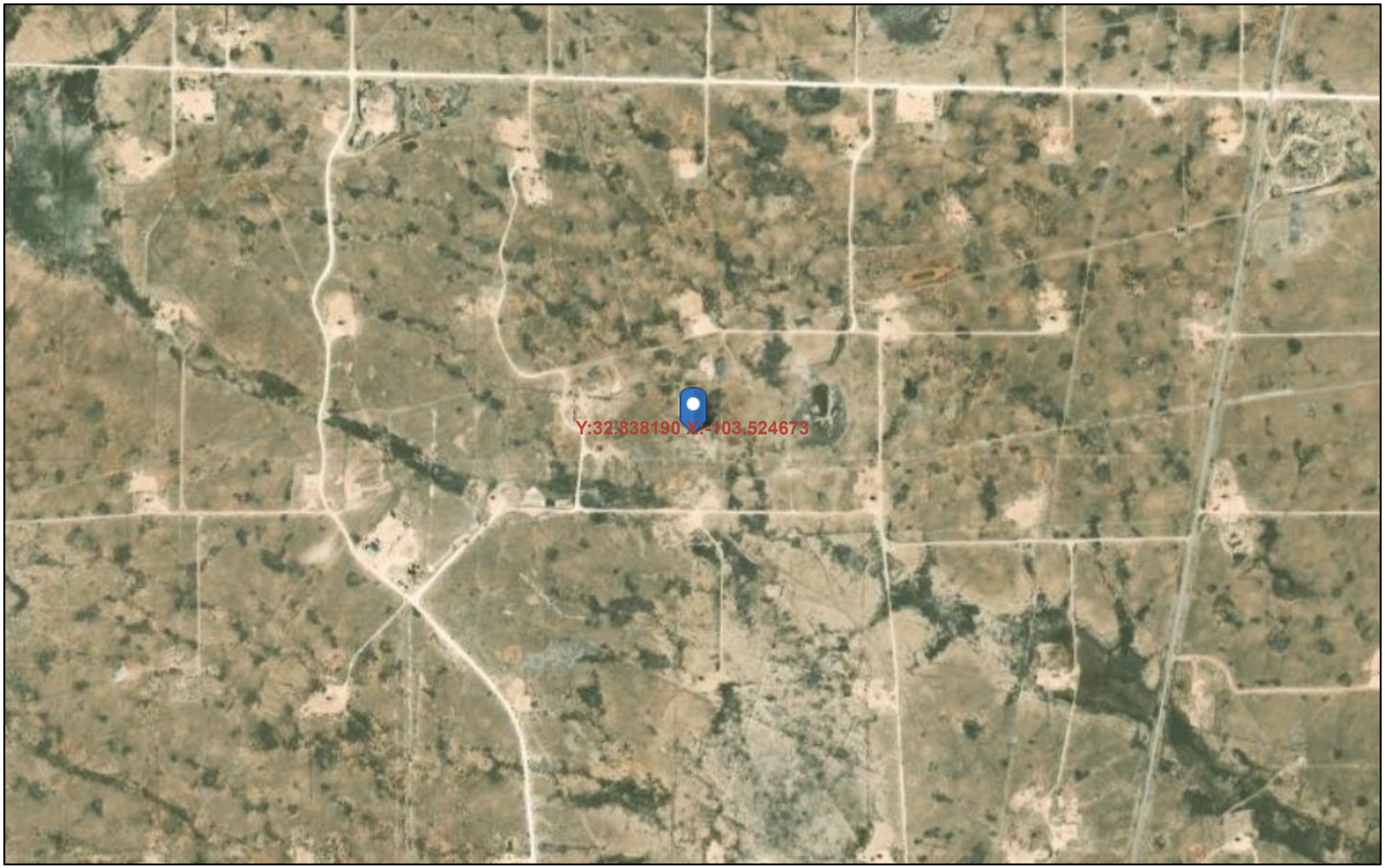
TRINITY
OILFIELD SERVICES

Initial Observation

Pasture:

Pasture:

NVA 120 BTY - Area 3



February 14, 2025

EMNRD -State Forestry Priority Landscapes
East Mountains
Enchanted Circle
NW Gila Priority Landscape
Pecos Riparian
Rio Chama CFLRP
Riparian - Middle Rio Grande
Sacramento Priority Landscape
San Juan Riparian
Santa Fe Fireshed
Southwest Jemez
Upper Mimbres PA
Zuni Top 500 Watersheds
bnd_fws_NM_wildlife_refuges
IPA_20171012
B1 - Outstanding
B2 - Very High
B3 - High
B4 - Moderate
NMAudubonIBA
New Mexico Riparian Corridor
NMDGF_Fish_Management_Plan_Data

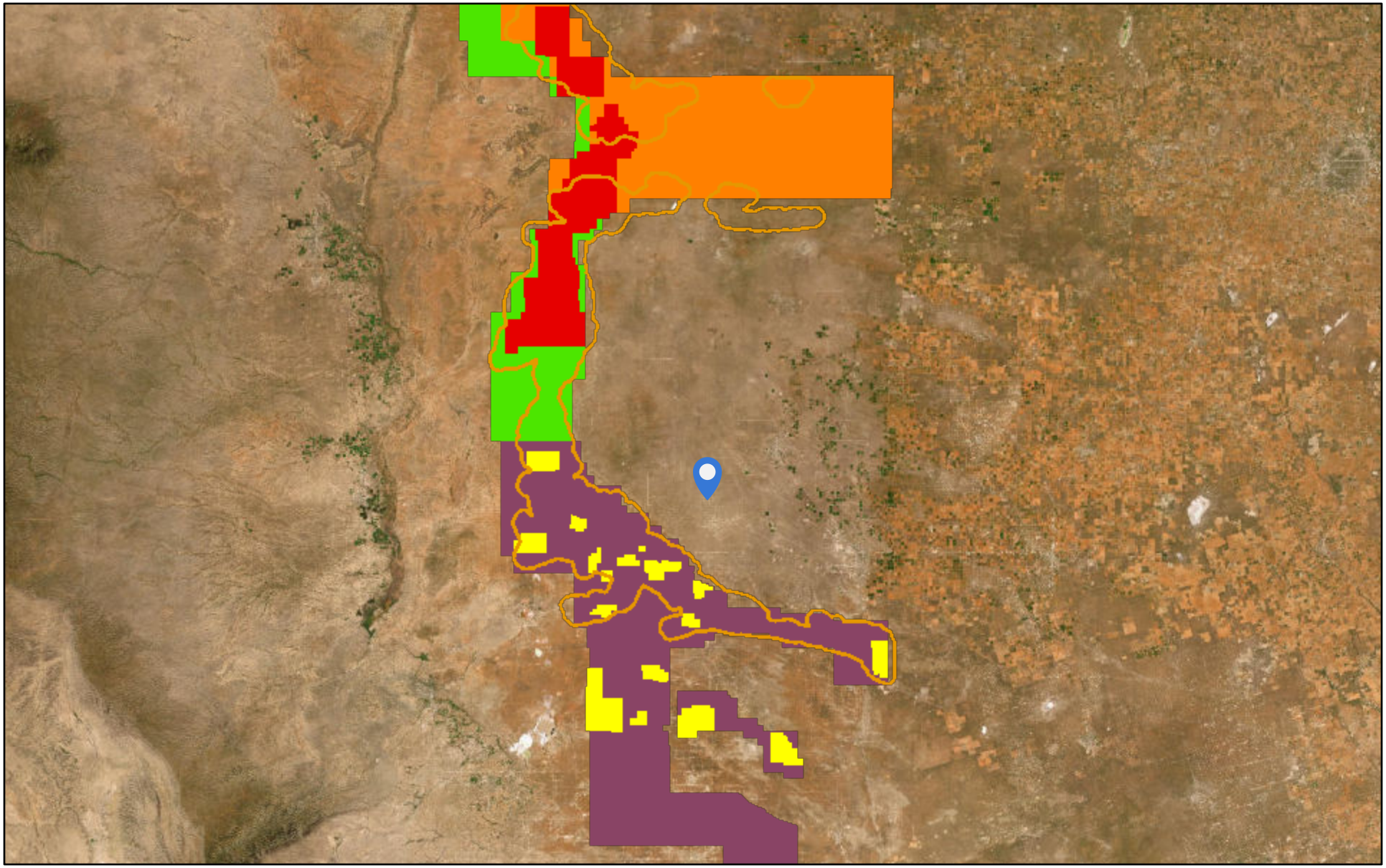
1:14,576

0 0.1 0.2 0.4 mi

0 0.15 0.3 0.6 km

Audubon.org, Maxar

NVA 120 BTY - Area 3



2/14/2025

Dunes Sage Brush Lizard Habitat
Lesser Prairie Chicken Habitat
Core Management Area
Habitat Evaluation Area
Isolated Population Area
Primary Population Area
Sparse and Scattered Population Area
World Imagery
Low Resolution 15m Imagery
High Resolution 60cm Imagery
High Resolution 30cm Imagery
Citations
150m Resolution Metadata

1:1,540,970

0 10 20 40 mi

0 15 30 60 km

Earthstar Geographics, Bureau of Land Management - New Mexico State Office

Species: Lesser Prairie-Chicken (Tympanuchus pallidicinctus) ×

DATE: Year-round, Past 10 years

LOCATION: Enter place name or address..

Zoom Tool

Full species range

- Terrain
- Street
- Satellite
- Hybrid

- Explore rich media
  Only show locations with photos, audio, or video
- Show Points Sooner
  Display points at broader scales when possible (2000 points max)
- Exclude Escapees

FREQUENCY

Exotic range shown in orange

- 40% - 100%
- 25% - 40%
- 10% - 25%
- 2% - 10%
- 0% - 2%
- Not reported

eBird

Submit Explore My eBird Science About News Help Donate

Species: Aplomado Falcon (Falco femoralis)

DATE: Year-round, Past 10 years

LOCATION: Enter place name or address..

Zoom Tool

Full species range

- Terrain
- Street
- Satellite
- Hybrid

- Explore rich media
  Only show locations with photos, audio, or video
- Show Points Sooner
  Display points at broader scales when possible (2000 points max)
- Exclude Escapees
- Exclude all exotics

RECENT

- Birding Hotspot
- Personal Location

OLDER (30+ days)

- Birding Hotspot
- Personal Location

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Lea County, New Mexico

Local office

New Mexico Ecological Services Field Office

(505) 346-2525
(505) 346-2542

2105 Osuna Road Ne
Albuquerque, NM 87113-1001

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Lesser Prairie-chicken Tympanuchus pallidicinctus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1924	Endangered
Northern Aplomado Falcon Falco femoralis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1923	EXPN

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The data in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information

help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (FWS). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The FWS interprets the MBTA to prohibit incidental take.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The data in this location indicates that no migratory birds of concern have been observed in this area. This does not mean birds of concern are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine what migratory birds of concern may be present (e.g. your local FWS field office, state surveys, your own surveys).

Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

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To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies.

Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

DTG Map | NVA 120 BTY - Area 3 - SLO

5/10/2024, 11:01:21 AM

1:9,028

OSE Water PODs
- Active
- Pending
- Capped
- Plugged
- USGS Historical GW Wells

PLSS Second Division

PLSS First Division

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

USGS, OCD, Maxar, BLM

TRINITY
OILFIELD SERVICES

Groundwater Gauging Log

Project Name: NVA 120 BTY
Incident ID: NAPP2300551151

Latitude: 32.835278
Longitude: -103.531389

Well ID	Date Measured	Top of Casing Elevation	Depth to Product	Depth to Water	PSH Thickness	Corrected Groundwater Elevation
USGS 324956103314001	03/06/2023	-	N/A	132	N/A	-

- = Not measured
N/A = Not applicable
Disclaimer This gauging log is intended to verify depth to groundwater.

U.S. Fish and Wildlife Service
National Wetlands Inventory

NVA 120 BTY - Area 3 - SLO

May 10, 2024

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

NAPP2106441019 | NORTH VACUUM ABO UNIT 255

March 7, 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 Flood Hazard Layer FIRMette

FEMA

103°31'48"W 32°50'33"N

103°31'10"W 32°50'2"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 Cross Sections with 1% Annual Chance
- 17.5 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 5/10/2024 at 1:08 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.

KARST Map | NVA 120 BTY - Area 3 - SLO

5/10/2024, 11:02:56 AM

Karst Occurrence Potential

- Low
- PLSS Second Division
- PLSS First Division

1:9,028

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

BLM, OCD, New Mexico Tech, OCD, Maxar, BLM

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 10, 2024

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.

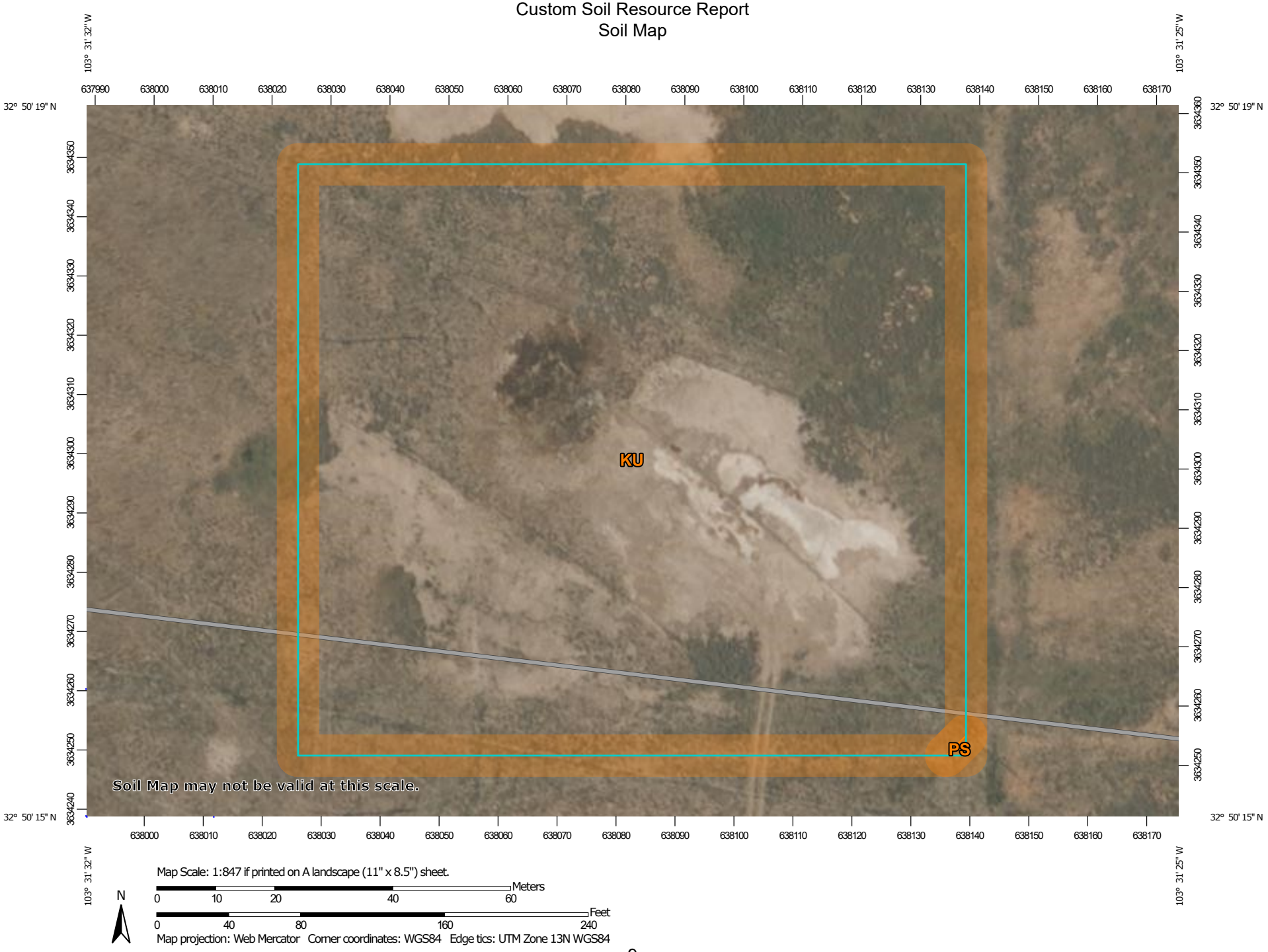
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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 20, Sep 6, 2023

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	2.8	100.0%
PS	Portales-Stegall loams	0.0	0.0%
Totals for Area of Interest		**2.8**	**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

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

Map Unit Setting

National map unit symbol: 2tw46
Elevation: 2,500 to 4,800 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Kimbrough and similar soils: 45 percent
Lea and similar soils: 25 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kimbrough

Setting

Landform: Playa rims, plains
Down-slope shape: Convex, linear
Across-slope shape: Concave, linear
Parent material: Loamy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 3 inches: gravelly loam
Bw - 3 to 10 inches: loam
Bkkm1 - 10 to 16 inches: cemented material
Bkkm2 - 16 to 80 inches: cemented material

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 4 to 18 inches to petrocalcic
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 95 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R077DY049TX - Very Shallow 12-17" PZ
Hydric soil rating: No

Description of Lea

Setting

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

Typical profile

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

Properties and qualities

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

Interpretive groups

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

Minor Components

Kenhill

Percent of map unit: 12 percent
Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R077DY038TX - Clay Loam 12-17" PZ
Hydric soil rating: No

Douro

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

Spraberry

Percent of map unit: 6 percent
Landform: Playa rims, plains
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: R077DY049TX - Very Shallow 12-17" PZ
Other vegetative classification: Unnamed (G077DH000TX)
Hydric soil rating: No

PS—Portales-Stegall loams

Map Unit Setting

National map unit symbol: dmqn
Elevation: 3,600 to 4,400 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 58 to 60 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Portales and similar soils: 45 percent
Stegall and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Portales

Setting

Landform: Plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous alluvium and/or calcareous eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 8 inches: loam
Bk - 8 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 3 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: 50 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R077DY042TX - Limy Upland 12-17" PZ
Hydric soil rating: No

Description of Stegall

Setting

Landform: Plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

A - 0 to 9 inches: loam
Bt - 9 to 28 inches: clay loam
Bkm - 28 to 38 inches: cemented material
BCk - 38 to 60 inches: variable

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to petrocalcic
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 90 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R077DY042TX - Limy Upland 12-17" PZ
Hydric soil rating: No

Minor Components

Lea

Percent of map unit: 8 percent
Ecological site: R077CY028TX - Limy Upland 16-21" PZ
Hydric soil rating: No

Mansker

Percent of map unit: 7 percent
Ecological site: R077CY028TX - Limy Upland 16-21" PZ
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Soil Health

Soil health interpretations are designed to be used as tools for evaluating and managing a soil's capacity to function as a vital living ecosystem that sustains plants, animals, and humans. Example interpretations include compaction, surface sealing, carbon sequestration, resistance and resilience, management systems and practices, and cover crops.

Fragile Soil Index

SOH - Soil Health

Soils can be rated based on their susceptibility to degradation in the "Fragile Soil Index" interpretation. Fragile soils are those that are most vulnerable to degradation. In other words, they can be easily degradedthey have a low resistance to degradation processes. They tend to be highly susceptible to erosion and can have a low capacity to recover after degradation has occurred (low resilience). Fragile soils are generally characterized by a low content of organic matter, low aggregate stability, and weak soil structure. They are generally located on sloping ground, have sparse plant cover, and tend to be in arid or semiarid regions. The index can be used for conservation and watershed planning to assist in identifying soils and areas highly vulnerable to degradation.

Depending on inherent soil characteristics and the climate, soils can vary from highly resistant, or stable, to vulnerable and extremely sensitive to degradation. Under stress, fragile soils can degrade to a new altered state, which may be less favorable or unfavorable for plant growth and less capable of performing soil functions. To assess the fragility of the soil, indicators of vulnerability to degradation

processes are used. They include organic matter, soil structure, rooting depth, vegetative cover, slope, and aridity.

The organic matter content indicates the capacity of the soil to resist and/or recover from degradation processes. Organic matter improves the soil pore structure, increases water infiltration, and reduces soil compaction and soil erosion. Soil structure indicates the capacity of the soil to resist degradation from accelerated water erosion (by increasing the amount of infiltration). Pore structure is the most important aspect of soil structure as pores provide habitat for organism. Shallow soils are more vulnerable to degradation processes because they have limited rooting depth and have a reduced amount of material from which to form new soil. As erosion removes the upper soil profile, productivity will decline if the subsoil is limiting for crop growth. Vegetative cover is very important as uncovered soil is most vulnerable to the processes of soil erosion, both by wind and water. Slope (a measure of the steepness or the degree of inclination) indicates the degree of vulnerability to erosion and mass movement. Aridity is defined by the shortage of moisture. Lack of water is a main factor limiting biological processes and the ability of the soil to resist and/or recover from degradation.

Soils are placed into interpretive classes based on their index rating, which ranges from 0 to 1. An index rating of 1 is the most fragile, while a rating of zero is the least fragile. Interpretative classes are as follows:

Not Fragile (index rating less than or equal to 0.009) These soils have a very high potential to resist degradation and be highly resilient. They are highly structured with an organic matter content greater than 5.7%, are nearly level, are deep or very deep, have greater than 85% vegetative cover, and are in a climate that is wet or very wet.

Slightly Fragile (index rating less than 0.009 and less than or equal to 0.209) These soils have a high potential to resist degradation and be resilient. They are:

— Poorly structured to weakly structured soils that have an extremely low to moderate content of organic matter, are very deep, have high vegetative cover, occur on nearly level ground, and are in wet or very wet climates;

— Highly structured soils that have a very high content of organic matter, are very shallow to moderately deep, have high vegetative cover, occur on nearly level ground, and are in wet or very wet climates;

— Highly structured soils that have a very high content of organic matter, are very deep, have low to moderately high vegetative cover, occur on nearly level ground, and are in wet or very wet climates;

— Highly structured soils that have a very high content of organic matter, are very deep, have high vegetative cover; are on slopes greater than 3%, and are in wet or very wet climates; or

— Highly structured soils that have a very high content of organic matter, are very deep, have high vegetative cover; occur on nearly level ground, and in semi-dry to mildly wet climates;

Moderately Fragile (index rating greater than 0.209 and less than or equal to 0.409) These soils have a moderate potential to resist degradation and be moderately resilient. They are:

— Highly structured soils that have a very high content of organic matter, are very shallow, have high vegetative cover, occur in nearly level to moderately sloping areas, and are in semi-dry climates;

— Poorly structured soils that have an extremely low content of organic matter, are deep, have low vegetative cover, occur in nearly level areas, and are in wet or very wet climates;

— Poorly structured soils that have an extremely low content of organic matter, occur on gentle to very steep slopes, have high vegetative cover, and are in wet or very wet climates;

— Weakly structured soils that have a very low content of organic matter, are deep, occur in nearly level to gently sloping areas, have high vegetative cover, and are in semi-dry climates; or

— Weakly structured soils that have a very low content of organic matter, are very shallow to very deep, occur in nearly level to strongly sloping areas, have high vegetative cover, and are in mildly wet climates.

Fragile (index rating greater than 0.409 and less than or equal to 0.609) These soils have a low potential to resist degradation and low resilience. They are:

— Well structured soils that have a low content of organic matter, are shallow to very deep, have moderate to moderately high vegetative cover, occur on steep slopes, and are in dry climates;

— Well structured soils that have a low content of organic matter, are shallow to very deep, have a low vegetative cover, occur in nearly level to gently sloping areas, and are in dry climates;

— Well structured soils that have a low content of organic matter, are deep, have low vegetative cover, occur on nearly level to very steep slopes, and are in a semi-dry climate;

— Moderately structured soils that have a very low content of organic matter, are deep, have moderately high vegetative cover, occur on moderately steep to very steep slopes, and are in semi-dry climates; or

— Weakly structured soils that have a low content of organic matter, occur on moderately steep to very steep slopes, have low vegetative cover, and are in wet or very wet climates.

Very Fragile (index rating greater than 0.609 and less than or equal to 0.809) These soils have a very low potential to resist degradation and very low resilience. They are:

— Weakly structured soils that have an extremely low content of organic matter, are deep, have low vegetative cover, occur on nearly level to very steep slopes, and are in dry climates;

— Weakly structured soils that have an extremely low content of organic matter, are shallow to very deep, have low vegetative cover, occur on nearly level to very steep slopes, and are in very dry climates; or

— Poorly structured soils that have an extremely low content of organic matter, are very shallow, have no vegetative cover, occur on steep slopes, and are in mildly wet to wet climates.

Extremely Fragile (index rating greater than 0.809 and less than or equal to 1.0) These soils can have no potential to resist degradation and no resilience. They are:

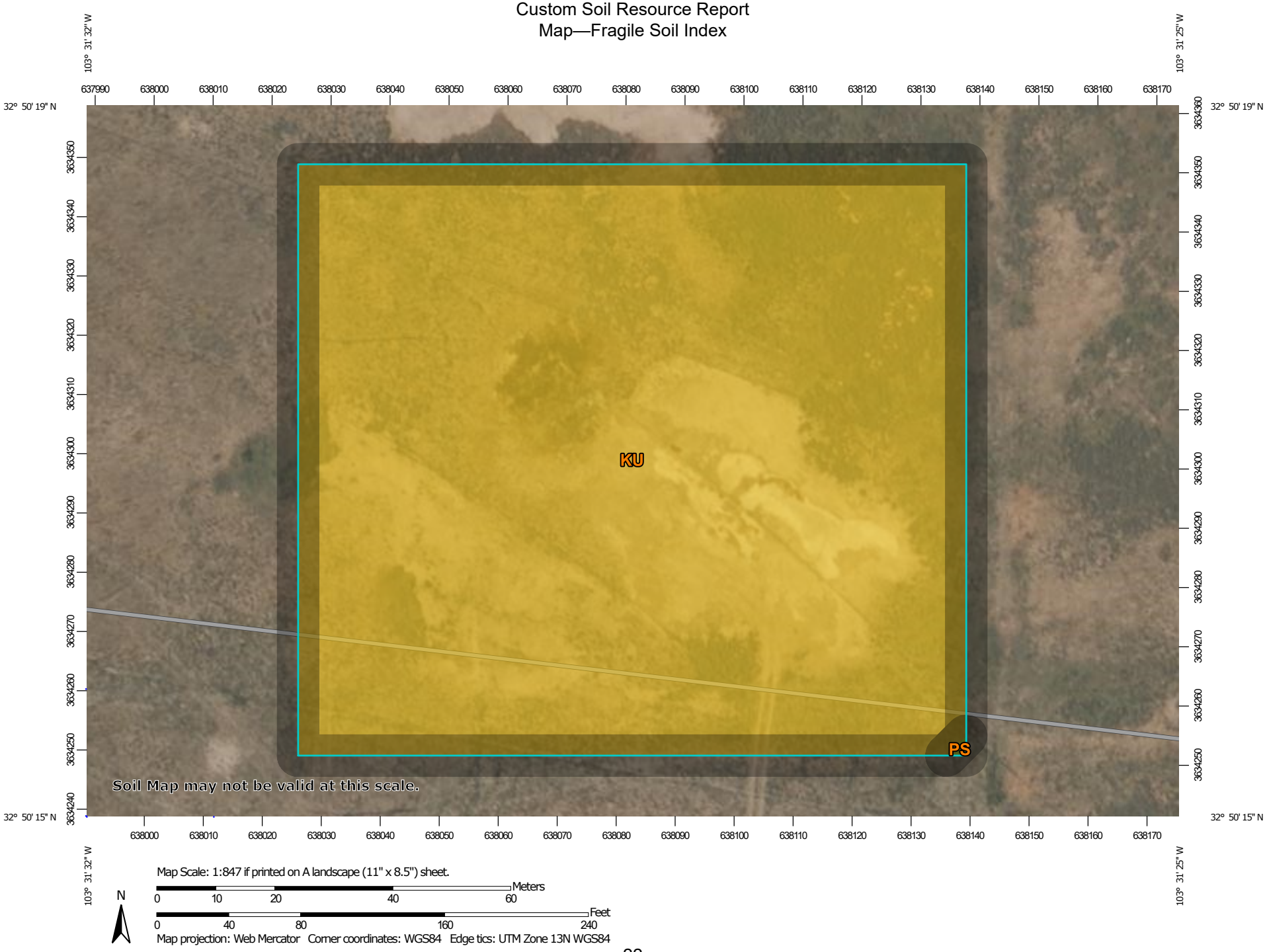
— Poorly structured soils that have an extremely low content of organic matter, are very shallow, have low vegetative cover, occur on very steep slopes, and are in dry or very dry climates;

— Weakly structured soils that have a very low content of organic matter, are nearly level to very deep, have low vegetative cover, occur on very steep slopes, and are in dry climates; or

— Very shallow soils on steep slopes.

The interpretive rating is based on soils that occur in the dominant land use for the map unit component and may not represent soils that occur in site-specific land uses.

Custom Soil Resource Report
Map—Fragile Soil Index



MAP LEGEND

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

Soils

Soil Rating Polygons
- Extremely fragile
- Highly fragile
- Fragile
- Moderately fragile
- Slightly fragile
- Not fragile
- Not rated or not available

Soil Rating Lines
- Extremely fragile
- Highly fragile
- Fragile
- Moderately fragile
- Slightly fragile
- Not fragile
- Not rated or not available

Soil Rating Points
- Extremely fragile
- Highly fragile
- Fragile
- Moderately fragile
- Slightly fragile
- Not fragile
- Not rated or not available

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.

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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 20, Sep 6, 2023

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

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

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Tables—Fragile Soil Index

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	Fragile	Kimbrough (45%)	Poor structure (1.00)	2.8	100.0%
				Dry (0.70)		
				Low organic matter (0.69)		
				Shallow (0.65)		
				High vegetative cover (0.07)		
			Kenhill (12%)	Poor structure (1.00)		
				Very low organic matter (0.91)		
				Dry (0.70)		
				Moderately deep (0.27)		
				Moderately-high vegetative cover (0.14)		
			Douro (12%)	Extremely low organic matter (0.95)		
				Weakly structured (0.75)		
				Dry (0.70)		
				Moderately deep (0.25)		
				Nearly level (0.02)		
			Spraberry (6%)	Extremely low organic matter (0.97)		
				Weakly structured (0.75)		
				Dry (0.70)		
				Moderately deep (0.45)		
				High vegetative cover (0.07)		
PS	Portales-Stegall loams	Moderately fragile	Portales (45%)	Very low organic matter (0.90)	0.0	0.0%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Weakly structured (0.75)		
				Dry (0.73)		
				High vegetative cover (0.08)		
				Nearly level (0.02)		
Totals for Area of Interest					**2.8**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Fragile	2.8	100.0%
Moderately fragile	0.0	0.0%
Totals for Area of Interest	**2.8**	**100.0%**

Rating Options—Fragile Soil Index

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Chemical Properties

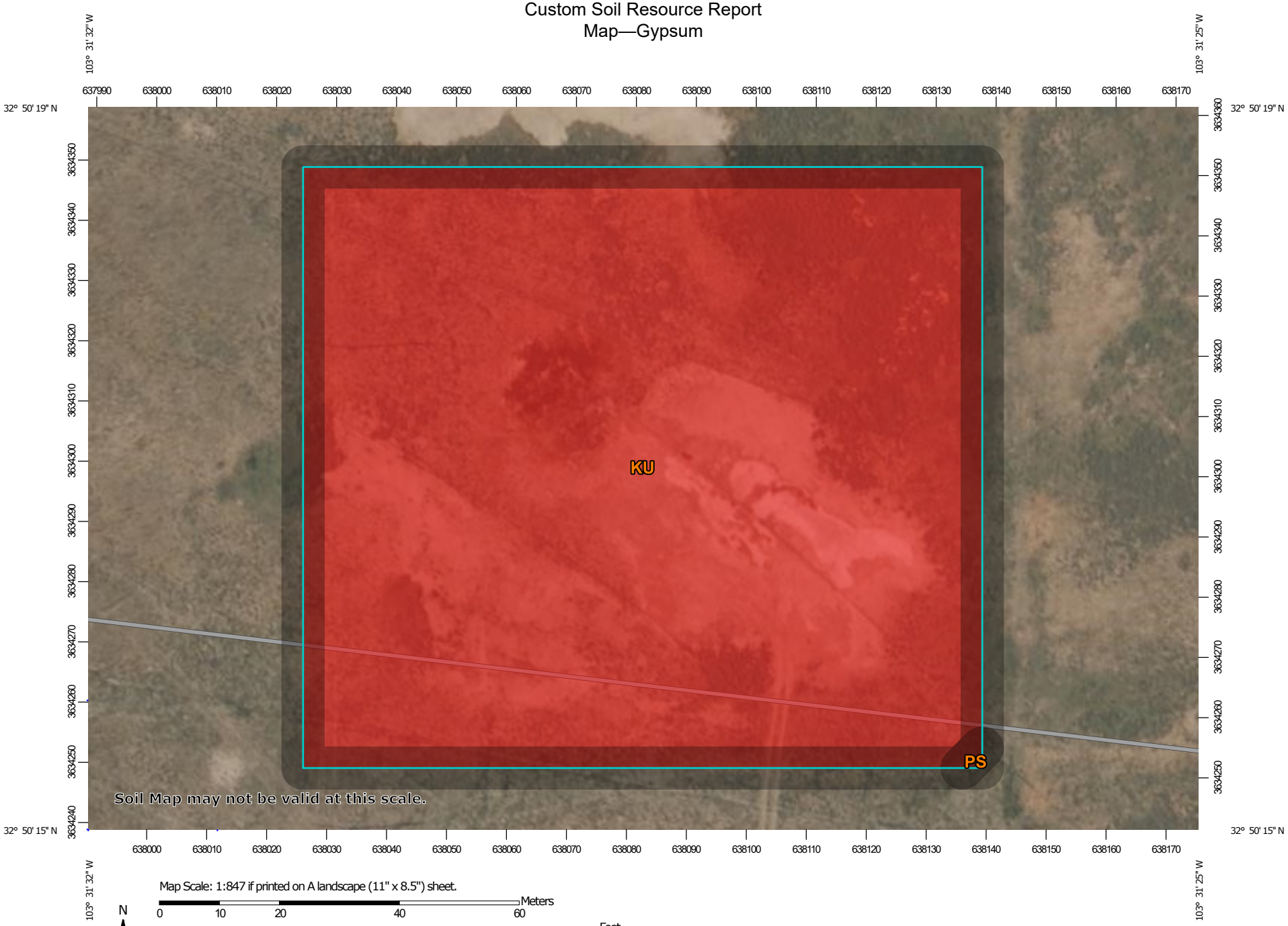
Soil Chemical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil chemical properties include pH, cation exchange capacity, calcium carbonate, gypsum, and electrical conductivity.

Gypsum

The content of gypsum is the percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils high in content of gypsum, such as those with more than 10 percent gypsum, may collapse if the gypsum is removed by percolating water. Gypsum is corrosive to concrete.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Gypsum



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

= 0

Not rated or not available

Soil Rating Lines

= 0

Not rated or not available

Soil Rating Points

= 0

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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Web Soil Survey URL:
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Table—Gypsum

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	0	2.8	100.0%
PS	Portales-Stegall loams	0	0.0	0.0%
Totals for Area of Interest			**2.8**	**100.0%**

Rating Options—Gypsum

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: Yes

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

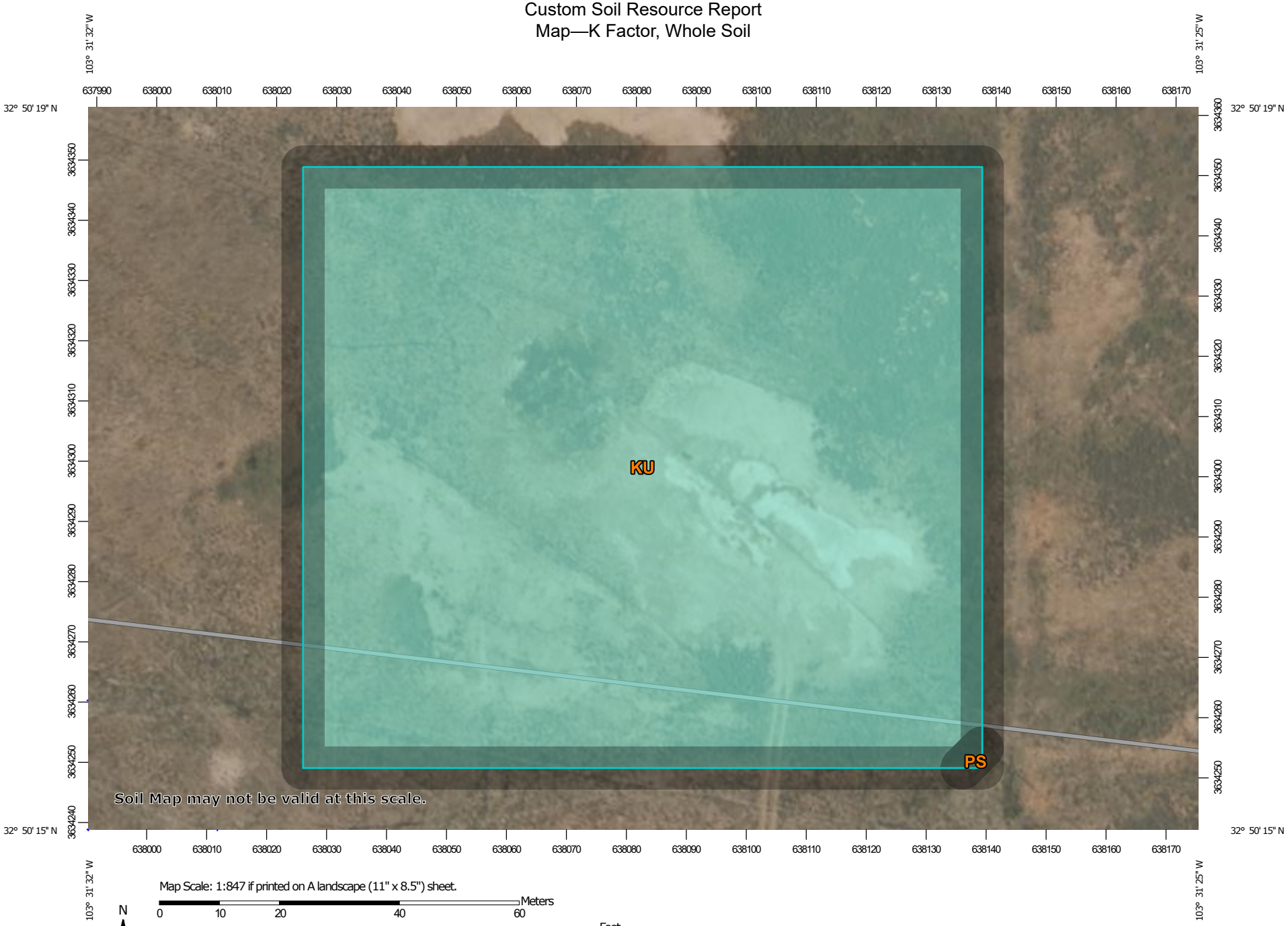
K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Custom Soil Resource Report
Map—K Factor, Whole Soil



Map Scale: 1:847 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 40 80 160 240

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 Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

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Table—K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	.32	2.8	100.0%
PS	Portales-Stegall loams	.28	0.0	0.0%
Totals for Area of Interest			**2.8**	**100.0%**

Rating Options—K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

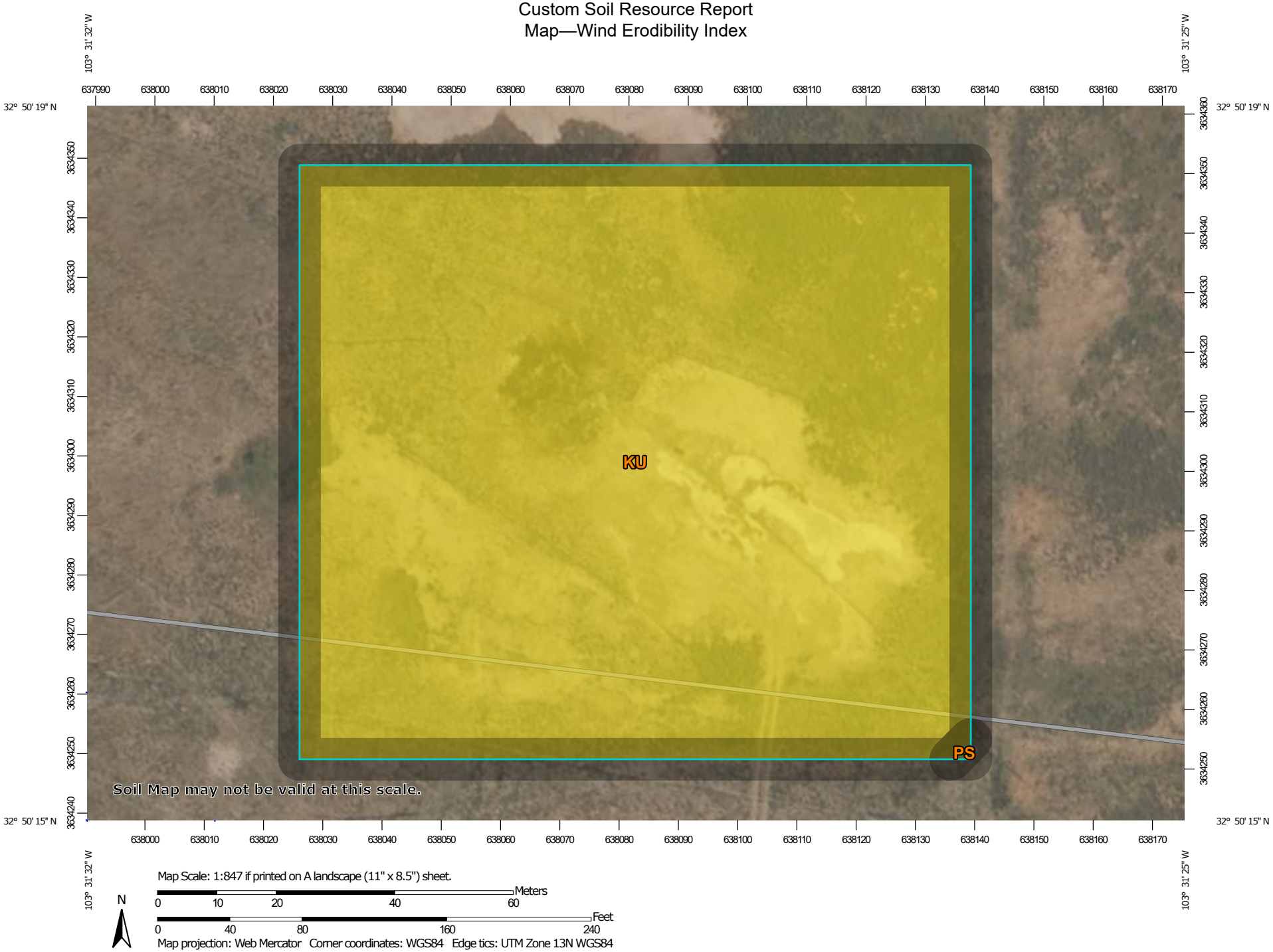
Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Wind Erodibility Index

The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Custom Soil Resource Report
Map—Wind Erodibility Index



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Lines

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Points

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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Table—Wind Erodibility Index

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	56	2.8	100.0%
PS	Portales-Stegall loams	86	0.0	0.0%
Totals for Area of Interest			**2.8**	**100.0%**

Rating Options—Wind Erodibility Index

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

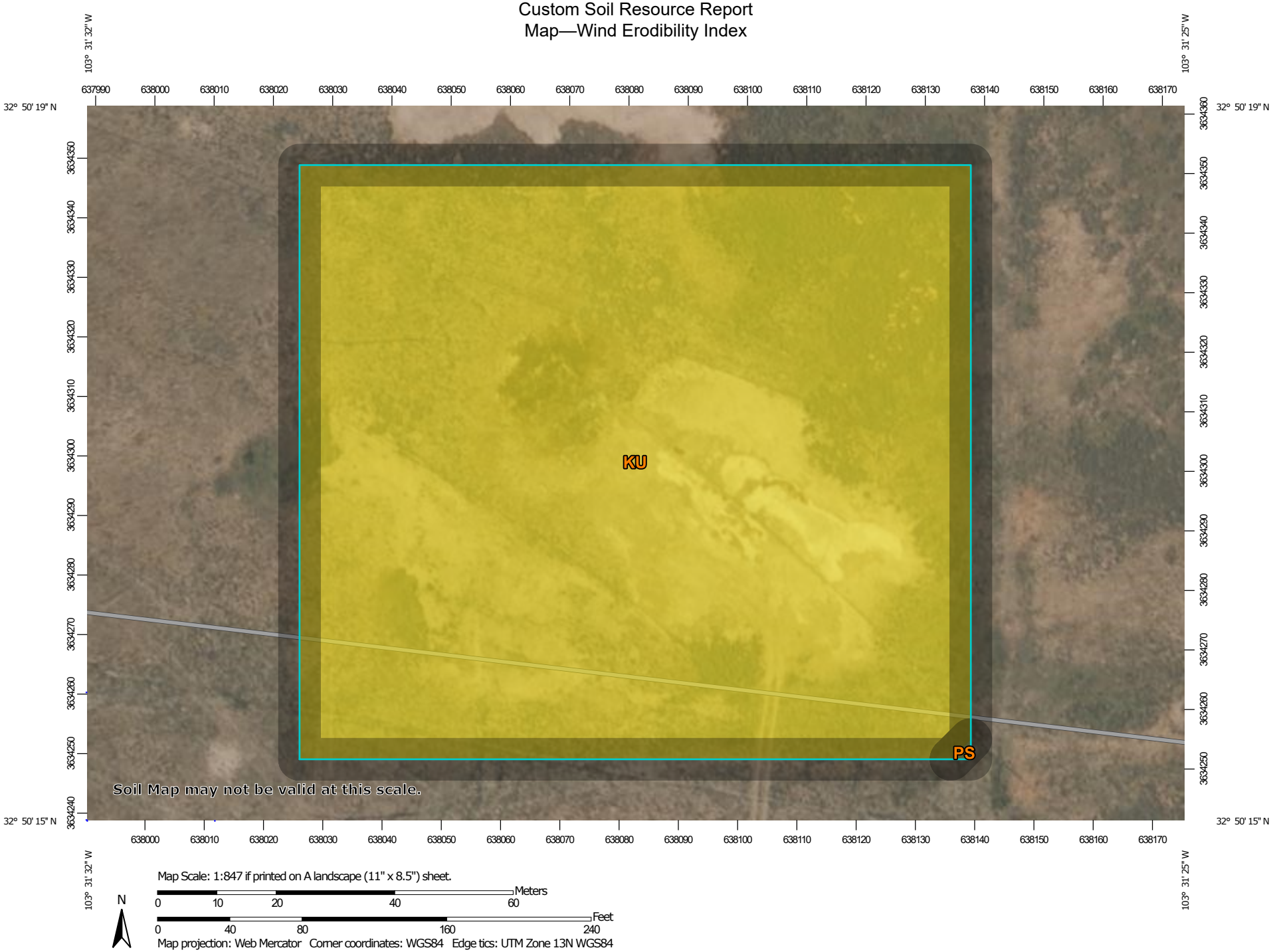
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Wind Erodibility Index

The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Custom Soil Resource Report
Map—Wind Erodibility Index



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Lines

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Points

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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Table—Wind Erodibility Index

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	56	2.8	100.0%
PS	Portales-Stegall loams	86	0.0	0.0%
Totals for Area of Interest			**2.8**	**100.0%**

Rating Options—Wind Erodibility Index

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

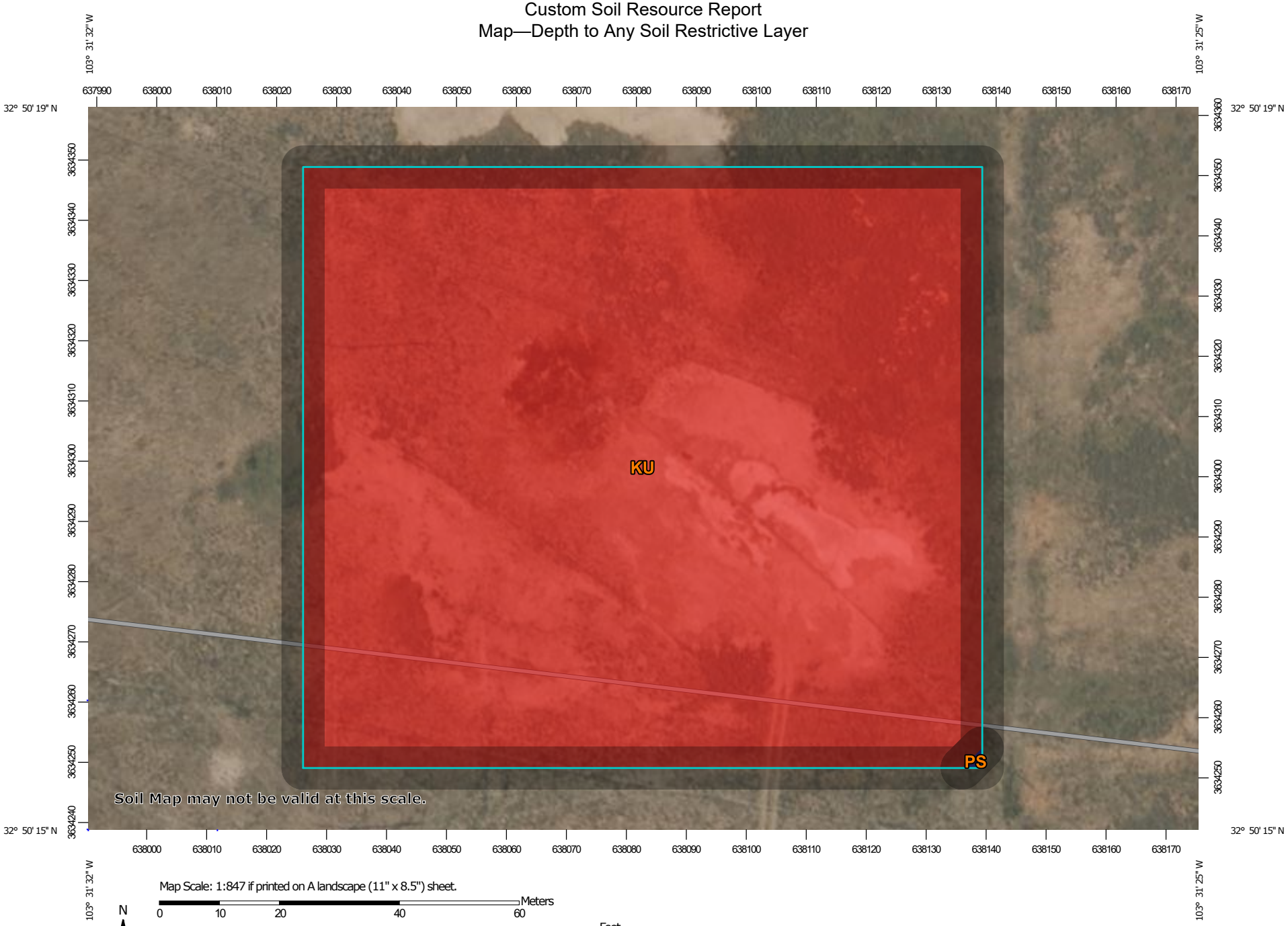
Depth to Any Soil Restrictive Layer

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "greater than 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer



Map Scale: 1:847 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 40 80 160 240

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 Rating Polygons
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features
- Streams and Canals

Transportation
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Table—Depth to Any Soil Restrictive Layer

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	25	2.8	100.0%
PS	Portales-Stegall loams	>200	0.0	0.0%
Totals for Area of Interest			**2.8**	**100.0%**

Rating Options—Depth to Any Soil Restrictive Layer

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Depth to Bedrock

The term bedrock in soil survey refers to a continuous root and water restrictive layer of rock that occurs within the soil profile.

There are many types of restrictions that can occur within the soil profile but this theme only includes the three restrictions that use the term bedrock. These are:

1) Lithic Bedrock

2) Paralithic Bedrock

3) Densic Bedrock

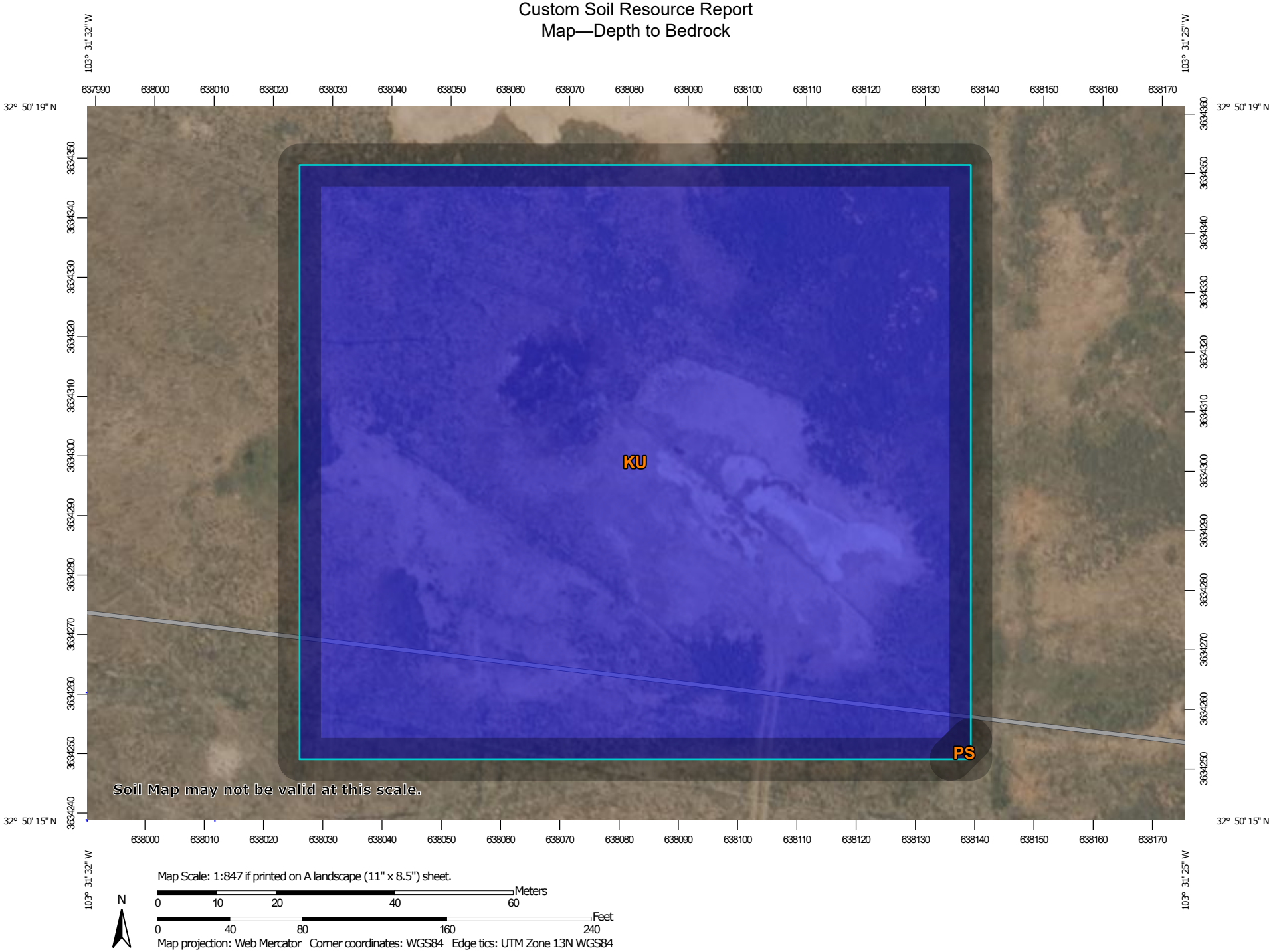
Lithic bedrock and paralithic bedrock are comprised of igneous, metamorphic, and sedimentary rocks, which are coherent and consolidated into rock through pressure, heat, cementation, or fusion. Lithic bedrock represents the hardest type of bedrock, with a hardness of strongly coherent to indurated. Paralithic bedrock has a hardness of extremely weakly coherent to moderately coherent. It can occur as a thin layer of weathered bedrock above harder lithic bedrock. Paralithic bedrock can also be much thicker, extending well below the soil profile.

Densic bedrock represents a unique kind of bedrock recognized within the soil survey. It is non-coherent and consolidated, dense root restrictive material, formed by pressure, heat, and dewatering of earth materials or sediments. Densic bedrock differs from densic materials, which formed under the compaction of glaciers, mudflows, and or human-caused compaction.

If more than one type of bedrock is described for an individual soil type, the depth to the shallowest one is given. If no bedrock is described in a map unit, it is represented by the "greater than 200" depth class.

Depth to bedrock is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Depth to Bedrock



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

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Major Roads

Local Roads

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Table—Depth to Bedrock

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	>200	2.8	100.0%
PS	Portales-Stegall loams	>200	0.0	0.0%
Totals for Area of Interest			**2.8**	**100.0%**

Rating Options—Depth to Bedrock

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

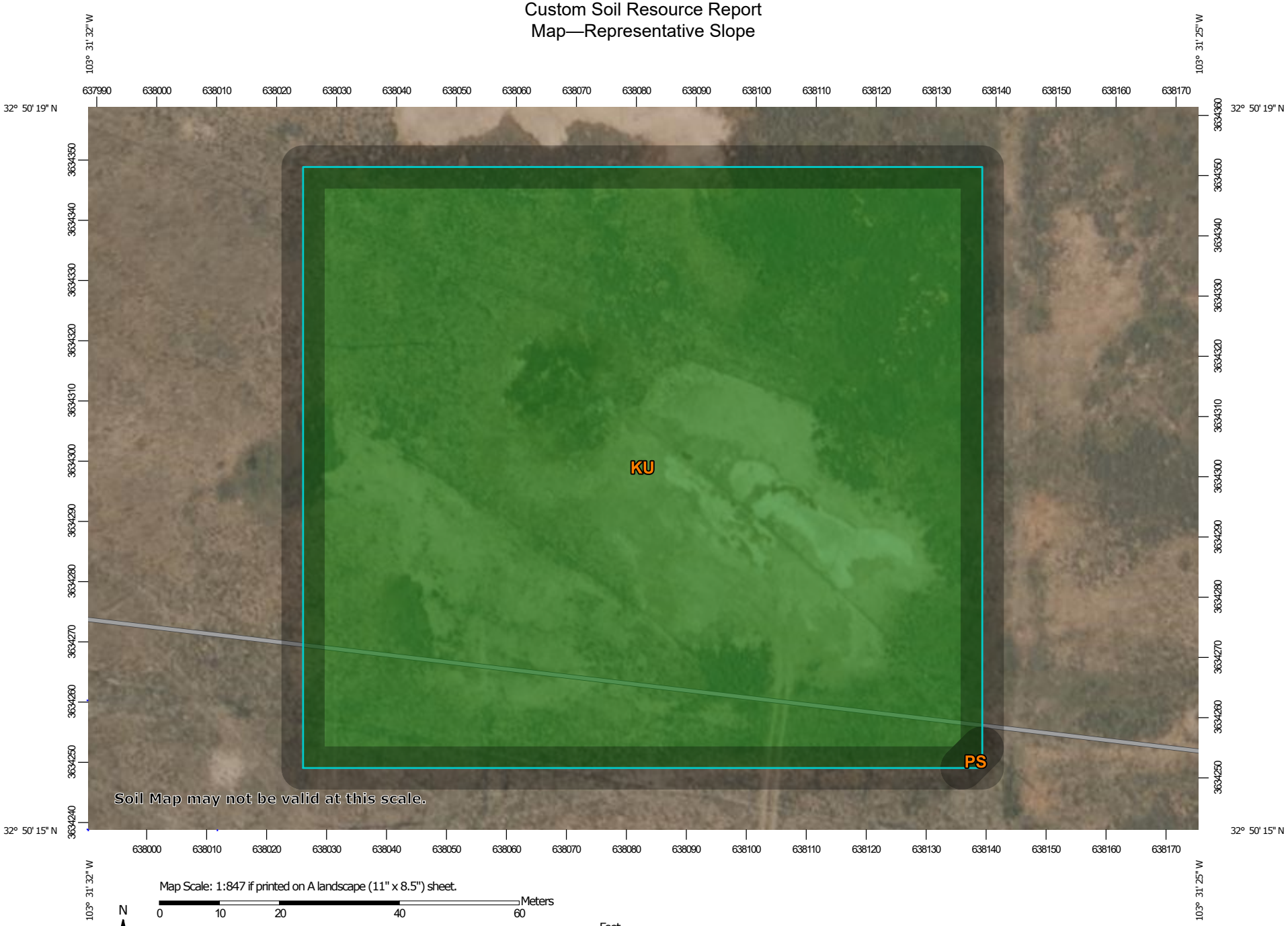
Interpret Nulls as Zero: No

Representative Slope

Slope gradient is the difference in elevation between two points, expressed as a percentage of the distance between those points.

The slope gradient is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Representative Slope



Map Scale: 1:847 if printed on A landscape (11" x 8.5") sheet.

N

0 10 20 40 60 Meters

0 40 80 160 240 Feet

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 Rating Polygons
- 0 - 5
- 5 - 15
- 15 - 45
- 45 - 60
- 60 - 100
- Not rated or not available

Soil Rating Lines
- 0 - 5
- 5 - 15
- 15 - 45
- 45 - 60
- 60 - 100
- Not rated or not available

Soil Rating Points
- 0 - 5
- 5 - 15
- 15 - 45
- 45 - 60
- 60 - 100
- Not rated or not available

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 20, Sep 6, 2023

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

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

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

Table—Representative Slope

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	1.0	2.8	100.0%
PS	Portales-Stegall loams	1.0	0.0	0.0%
Totals for Area of Interest			**2.8**	**100.0%**

Rating Options—Representative Slope

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

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NMSLO Seed Mix Coarse (CS)

COARSE (CS) SITES SEED MIXTURE:

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
Grasses:			
Sand bluestem	VNS, Southern	2.0	F
Sideoats grama	Vaughn, El Reno	2.0	F
Blue grama	Hachita, Lovington	1.5	D
Little bluestem	Cimmaron, Pastura	1.5	F
Sand dropseed	VNS, Southern	1.0	S
Plains bristlegrass	VNS, Southern	0.75	D
Forbs:			
Parry penstemon	VNS, Southern	1.0	D
Desert globemallow	VNS, Southern	1.0	D
White prairieclover	Kaneb, VNS	0.5	D
Sulfur buckwheat	VNS, Southern	0.5	D
Shrubs:			
Fourwing saltbush	VNS, Southern	1.0	D
Skunkbush sumac	VNS, Southern	1.0	D
Common winterfat	VNS, Southern	1.0	F
Fringed sagewort	VNS, Southern	0.5	F
	Total PLS/acre	**18.25**	

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box

- VNS, Southern – No Variety Stated, seed should be from a southern latitude collection of this species.
- Double above seed rates for broadcast or hydroseeding.
- If Parry is not available, substitute firecracker penstemon.
- If desert globemallow is not available, substitute scarlet globemallow.
- If one species is not available, provide a suggested substitute to the New Mexico Land Office for approval. Increasing all other species proportionately may be acceptable.

CARDINAL Laboratories

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

March 04, 2024

DAN DUNKELBERG

TRINITY OILFIELD SERVICES & RENTALS, LLC

P. O. BOX 2587

HOBBS, NM 88241

RE: NVA 120 BTY- AREA 3 - SLO

Enclosed are the results of analyses for samples received by the laboratory on 02/28/24 14:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	02/28/2024	Sampling Date:	02/23/2024
Reported:	03/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-001.0-00.0-P (H240984-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/01/2024	ND	2.39	120	2.00	6.62	
Toluene*	<0.050	0.050	03/01/2024	ND	2.20	110	2.00	8.10	
Ethylbenzene*	<0.050	0.050	03/01/2024	ND	2.22	111	2.00	8.01	
Total Xylenes*	<0.150	0.150	03/01/2024	ND	6.52	109	6.00	8.24	
Total BTEX	<0.300	0.300	03/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1200**	16.0	03/01/2024	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/29/2024	ND	197	98.3	200	0.202	
DRO >C10-C28*	**1860**	10.0	02/29/2024	ND	214	107	200	0.740	
EXT DRO >C28-C36	**1330**	10.0	02/29/2024	ND					

Surrogate: 1-Chlorooctane *106 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *108 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	02/28/2024	Sampling Date:	02/23/2024
Reported:	03/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-001.0-01.0-P (H240984-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/29/2024	ND	1.86	93.1	2.00	5.20	
Toluene*	<0.050	0.050	02/29/2024	ND	1.97	98.3	2.00	4.41	
Ethylbenzene*	<0.050	0.050	02/29/2024	ND	1.96	97.8	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/29/2024	ND	5.95	99.1	6.00	4.61	
Total BTEX	<0.300	0.300	02/29/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *122 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**480**	16.0	03/01/2024	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/29/2024	ND	197	98.3	200	0.202	
DRO >C10-C28*	**178**	10.0	02/29/2024	ND	214	107	200	0.740	
EXT DRO >C28-C36	**164**	10.0	02/29/2024	ND					

Surrogate: 1-Chlorooctane *99.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *101 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	02/28/2024	Sampling Date:	02/23/2024
Reported:	03/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DH-001.6-01.0-P (H240984-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/29/2024	ND	1.86	93.1	2.00	5.20	
Toluene*	<0.050	0.050	02/29/2024	ND	1.97	98.3	2.00	4.41	
Ethylbenzene*	<0.050	0.050	02/29/2024	ND	1.96	97.8	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/29/2024	ND	5.95	99.1	6.00	4.61	
Total BTEX	<0.300	0.300	02/29/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *119 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	03/01/2024	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/29/2024	ND	197	98.3	200	0.202	
DRO >C10-C28*	<10.0	10.0	02/29/2024	ND	214	107	200	0.740	
EXT DRO >C28-C36	<10.0	10.0	02/29/2024	ND					

Surrogate: 1-Chlorooctane *98.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *104 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	02/28/2024	Sampling Date:	02/23/2024
Reported:	03/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DH-002.1-01.0-P (H240984-04)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/29/2024	ND	1.86	93.1	2.00	5.20	
Toluene*	<0.050	0.050	02/29/2024	ND	1.97	98.3	2.00	4.41	
Ethylbenzene*	<0.050	0.050	02/29/2024	ND	1.96	97.8	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/29/2024	ND	5.95	99.1	6.00	4.61	
Total BTEX	<0.300	0.300	02/29/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	03/01/2024	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/29/2024	ND	197	98.3	200	0.202	
DRO >C10-C28*	<10.0	10.0	02/29/2024	ND	214	107	200	0.740	
EXT DRO >C28-C36	<10.0	10.0	02/29/2024	ND					

Surrogate: 1-Chlorooctane *113 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *120 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	02/28/2024	Sampling Date:	02/23/2024
Reported:	03/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DH-003.1-01.0-P (H240984-05)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/29/2024	ND	1.86	93.1	2.00	5.20	
Toluene*	<0.050	0.050	02/29/2024	ND	1.97	98.3	2.00	4.41	
Ethylbenzene*	<0.050	0.050	02/29/2024	ND	1.96	97.8	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/29/2024	ND	5.95	99.1	6.00	4.61	
Total BTEX	<0.300	0.300	02/29/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	03/01/2024	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/29/2024	ND	197	98.3	200	0.202	
DRO >C10-C28*	<10.0	10.0	02/29/2024	ND	214	107	200	0.740	
EXT DRO >C28-C36	<10.0	10.0	02/29/2024	ND					

Surrogate: 1-Chlorooctane *123 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *131 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	02/28/2024	Sampling Date:	02/23/2024
Reported:	03/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DH-004.5-01.0-P (H240984-06)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/29/2024	ND	1.86	93.1	2.00	5.20	
Toluene*	<0.050	0.050	02/29/2024	ND	1.97	98.3	2.00	4.41	
Ethylbenzene*	<0.050	0.050	02/29/2024	ND	1.96	97.8	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/29/2024	ND	5.95	99.1	6.00	4.61	
Total BTEX	<0.300	0.300	02/29/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *112 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**560**	16.0	03/01/2024	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/29/2024	ND	197	98.3	200	0.202	
DRO >C10-C28*	<10.0	10.0	02/29/2024	ND	214	107	200	0.740	
EXT DRO >C28-C36	<10.0	10.0	02/29/2024	ND					

Surrogate: 1-Chlorooctane *114 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *120 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Trinity Oilfield Services		**BILL TO**		
Project Manager:	Dan Dunkelberg		**P.O. #:**		
Address:	8426 N Dal Paso		**Company:**	Cross Timbers Energy	
City:	Hobbs	**State:** NM **Zip:** 88241	**Attn:**	Kevin Bennett	
Phone #:		**Fax #:**	**Address:**		
Project #:		**Project Owner:** (see below)	**City:**		
Project Name:	NVA 120 BTY - Area 3 - SLO	dan@trinityoilfieldservices.com	**State:**	**Zip:**	
Project Location:	Lea Co., NM		**Phone #:**		
Sampler Name:	GM		**Fax #:**		

FOR LAB USE ONLY: HZ40984

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chloride	TPH	BTEX
1	DV-001.0-00.0-P	G	1			X							2/23/2024		X	X	X
2	DV-001.0-01.0-P	G	1			X							2/23/2024		X	X	X
3	DH-001.6-01.0-P	G	1			X							2/23/2024		X	X	X
4	DH-002.1-01.0-P	G	1			X							2/23/2024		X	X	X
5	DH-003.1-01.0-P	G	1			X							2/23/2024		X	X	X
6	DH-004.5-01.0-P	G	1			X							2/23/2024		X	X	X

ANALYSIS REQUEST

Relinquished By:	**Date:** 2.28.24 **Time:** 1445	**Received By:**	**Verbal Result:**	Yes / No **Add'l Phone #:**
			All Results are emailed. Please provide Email address:	
Relinquished By:	**Date:** **Time:**	**Received By:**	**REMARKS:**	

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	**Observed Temp. °C** 5.9 **Corrected Temp. °C**	**Sample Condition** Cool: Yes / No Intact: Yes / No	**CHECKED BY:** (Initials)	**Turnaround Time:** Standard X / Rush **Thermometer ID #140** **Correction Factor 0 °C**

Bacteria (only) Sample Condition — Cool: Yes / No; Intact: Yes / No; Observed Temp. °C; Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

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

March 11, 2024

DAN DUNKELBERG

TRINITY OILFIELD SERVICES & RENTALS, LLC

P. O. BOX 2587

HOBBS, NM 88241

RE: NVA 120 BTY- AREA 3 - SLO

Enclosed are the results of analyses for samples received by the laboratory on 03/06/24 16:21.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	03/06/2024	Sampling Date:	02/29/2024
Reported:	03/11/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-002.0-00.0-P (H241137-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/08/2024	ND	2.09	104	2.00	0.994	
Toluene*	<0.050	0.050	03/08/2024	ND	2.22	111	2.00	6.60	
Ethylbenzene*	<0.050	0.050	03/08/2024	ND	2.30	115	2.00	8.69	
Total Xylenes*	<0.150	0.150	03/08/2024	ND	6.85	114	6.00	9.64	
Total BTEX	<0.300	0.300	03/08/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2060**	16.0	03/08/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	03/07/2024	ND	187	93.6	200	0.262	
DRO >C10-C28*	**9750**	50.0	03/07/2024	ND	199	99.4	200	0.369	
EXT DRO >C28-C36	**3370**	50.0	03/07/2024	ND					

Surrogate: 1-Chlorooctane *100 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *358 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	03/06/2024	Sampling Date:	02/29/2024
Reported:	03/11/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-003.0-00.0-P (H241137-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/08/2024	ND	2.09	104	2.00	0.994	
Toluene*	<0.050	0.050	03/08/2024	ND	2.22	111	2.00	6.60	
Ethylbenzene*	<0.050	0.050	03/08/2024	ND	2.30	115	2.00	8.69	
Total Xylenes*	<0.150	0.150	03/08/2024	ND	6.85	114	6.00	9.64	
Total BTEX	<0.300	0.300	03/08/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *111 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**272**	16.0	03/08/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	03/07/2024	ND	187	93.6	200	0.262	
DRO >C10-C28*	**10900**	50.0	03/07/2024	ND	199	99.4	200	0.369	
EXT DRO >C28-C36	**5330**	50.0	03/07/2024	ND					

Surrogate: 1-Chlorooctane *108 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *388 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	03/06/2024	Sampling Date:	02/29/2024
Reported:	03/11/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-003.0-02.0-P (H241137-03)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**384**	16.0	03/08/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2024	ND	187	93.6	200	0.262	
DRO >C10-C28*	**142**	10.0	03/07/2024	ND	199	99.4	200	0.369	
EXT DRO >C28-C36	**52.7**	10.0	03/07/2024	ND					

Surrogate: 1-Chlorooctane	*90.7 %*	*48.2-134*
Surrogate: 1-Chlorooctadecane	*116 %*	*49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Trinity Oilfield Services		**BILL TO**		
Project Manager:	Dan Dunkelberg		**P.O. #:**		
Address:	8426 N Dal Paso		**Company:**	Cross Timbers Energy	
City:	Hobbs	**State:** NM **Zip:** 88241	**Attn:**	Kevin Bennett	
Phone #:		**Fax #:**	**Address:**		
Project #:		**Project Owner:** (see below)	**City:**		
Project Name:	NVA 120 BTY - Area 3 - SLO	dan@trinityoilfieldservices.com	**State:**	**Zip:**	
Project Location:	Lea Co., NM		**Phone #:**		
Sampler Name:	TT		**Fax #:**		

FOR LAB USE ONLY: H241137

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: OIL	MATRIX: SLUDGE	MATRIX: OTHER :	PRESERV.: ACID/BASE:	PRESERV.: ICE / COOL	PRESERV.: OTHER :	SAMPLING: DATE	SAMPLING: TIME	Chloride	TPH	BTEX
1	DV-002.0-00.0-P	G	1			X							2/29/2024		X	X	X
2	DV-003.0-00.0-P	G	1			X							2/29/2024		X	X	X
3	DV-003.0-02.0-P	G	1			X							2/29/2024		X	X	

ANALYSIS REQUEST

Relinquished By:	**Date:** 3-6-24 **Time:** 1621	**Received By:**	**Verbal Result:** ☐ Yes ☐ No **Add'l Phone #:**
			All Results are emailed. Please provide Email address:
Relinquished By:	**Date:**	**Received By:**	**REMARKS:**
	Time:		

Delivered By: (Circle One)	**Observed Temp. °C** 5.2	**Sample Condition**	**CHECKED BY:**	**Turnaround Time:** Standard [X] Rush [ ]
Sampler - UPS - Bus - Other:	**Corrected Temp. °C**	**Cool** Yes [X] No [ ] **Intact** Yes [X] No [ ]	(Initials)	**Thermometer ID #140** **Correction Factor 0 °C**

Bacteria (only) Sample Condition
Cool: Yes [ ] No [ ] Intact: Yes [ ] No [ ] Observed Temp. °C Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

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

April 26, 2024

DAN DUNKELBERG

TRINITY OILFIELD SERVICES & RENTALS, LLC

P. O. BOX 2587

HOBBS, NM 88241

RE: NVA 120 BTY- AREA 3 - SLO

Enclosed are the results of analyses for samples received by the laboratory on 04/22/24 15:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	04/22/2024	Sampling Date:	04/19/2024
Reported:	04/26/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-001.0-04.0-P (H242130-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1490**	16.0	04/23/2024	ND	448	112	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/22/2024	ND	210	105	200	0.672	
DRO >C10-C28*	<10.0	10.0	04/22/2024	ND	206	103	200	0.580	
EXT DRO >C28-C36	<10.0	10.0	04/22/2024	ND					

Surrogate: 1-Chlorooctane	*90.8 %*	*48.2-134*
Surrogate: 1-Chlorooctadecane	*71.4 %*	*49.1-148*

Sample ID: DV-002.0-04.0-P (H242130-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**976**	16.0	04/23/2024	ND	448	112	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/22/2024	ND	210	105	200	0.672	
DRO >C10-C28*	<10.0	10.0	04/22/2024	ND	206	103	200	0.580	
EXT DRO >C28-C36	<10.0	10.0	04/22/2024	ND					

Surrogate: 1-Chlorooctane	*103 %*	*48.2-134*
Surrogate: 1-Chlorooctadecane	*80.9 %*	*49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	04/22/2024	Sampling Date:	04/19/2024
Reported:	04/26/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-003.0-03.0-P (H242130-03)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**256**	16.0	04/23/2024	ND	448	112	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/22/2024	ND	210	105	200	0.672	
DRO >C10-C28*	<10.0	10.0	04/22/2024	ND	206	103	200	0.580	
EXT DRO >C28-C36	<10.0	10.0	04/22/2024	ND					

Surrogate: 1-Chlorooctane	*101 %*	*48.2-134*
Surrogate: 1-Chlorooctadecane	*76.4 %*	*49.1-148*

Sample ID: DV-003.0-04.0-P (H242130-04)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	04/23/2024	ND	448	112	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/22/2024	ND	210	105	200	0.672	
DRO >C10-C28*	<10.0	10.0	04/22/2024	ND	206	103	200	0.580	
EXT DRO >C28-C36	<10.0	10.0	04/22/2024	ND					

Surrogate: 1-Chlorooctane	*96.4 %*	*48.2-134*
Surrogate: 1-Chlorooctadecane	*74.2 %*	*49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Trinity Oilfield Services		**BILL TO**		
Project Manager:	Dan Dunkelberg		**P.O. #:**		
Address:	8426 N Dal Paso		**Company:**	Cross Timbers Energy	
City:	Hobbs	**State:** NM **Zip:** 88241	**Attn:**	Kevin Bennett	
Phone #:		**Fax #:**	**Address:**		
Project #:		**Project Owner:** (see below)	**City:**		
Project Name:	NVA 120 BTY - Area 3 - SLO	dan@trinityoilfieldservices.com	**State:**	**Zip:**	
Project Location:	Lea Co., NM		**Phone #:**		
Sampler Name:	TT		**Fax #:**		

FOR LAB USE ONLY: H242130

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: OIL	MATRIX: SLUDGE	MATRIX: OTHER :	PRESERV.: ACID/BASE:	PRESERV.: ICE / COOL	PRESERV.: OTHER :	SAMPLING: DATE	SAMPLING: TIME	Chloride	TPH	BTEX
1	DV-001.0-04.0-P	G	1			X							4/19/2024		X	X	
2	DV-002.0-04.0-P	G	1			X							4/19/2024		X	X	
3	DV-003.0-03.0-P	G	1			X							4/19/2024		X	X	
4	DV-003.0-04.0-P	G	1			X							4/19/2024		X	X	

ANALYSIS REQUEST

Relinquished By:	**Date:** 4-22-24 **Time:** 1500	**Received By:**	**Verbal Result:** ☐ Yes ☐ No **Add'l Phone #:**
			All Results are emailed. Please provide Email address:
Relinquished By:	**Date:** **Time:**	**Received By:**	**REMARKS:**

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	**Observed Temp. °C** -3.0 **Corrected Temp. °C**	**Sample Condition** Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	**CHECKED BY:** (Initials) T.O.	**Turnaround Time:** Standard ☒ Rush ☐ **Thermometer ID #140** **Correction Factor 0 °C**

Bacteria (only) Sample Condition

Cool	Intact	Observed Temp. °C
☐ Yes	☐ Yes	
☐ No	☐ No	**Corrected Temp. °C**

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

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

June 04, 2024

DAN DUNKELBERG

TRINITY OILFIELD SERVICES & RENTALS, LLC

P. O. BOX 2587

HOBBS, NM 88241

RE: NVA 120 BTY- AREA 3 - SLO

Enclosed are the results of analyses for samples received by the laboratory on 05/30/24 16:41.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DH-005.0-01.0-P (H243040-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *90.3 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	06/03/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	<10.0	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *83.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *81.7 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DH-006.0-01.0-P (H243040-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.3 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**416**	16.0	06/03/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	<10.0	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *101 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *99.3 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DH-007.1-01.0-P (H243040-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *86.3 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**320**	16.0	06/03/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	<10.0	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *97.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *95.9 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Trinity Oilfield Services	BILL TO	
Project Manager:	Dan Dunkelberg	P.O. #:	
Address:	8426 N Dal Paso	Company:	Cross Timbers Energy
City:	Hobbs State: NM Zip: 88241	Attn:	Kevin Bennett
Phone #:	Fax #:	Address:	
Project #:	Project Owner: (see below)	City:	
Project Name:	NVA 120 BTY - Area 3 - SLO dan@trinityoilfieldservices.com	State: Zip:	
Project Location:	Lea Co., NM	Phone #:	
Sampler Name:	TT	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: Chloride	TPH	BTEX
H243040																	
1	DH-005.0-01.0-P	G	1			X							5/30/2024		X	X	X
2	DH-006.0-01.0-P	G	1			X							5/30/2024		X	X	X
3	DH-007.1-01.0-P	G	1			X							5/30/2024		X	X	X

Relinquished By:	Date: 5/30/24 Time: 16:41	Received By:	Verbal Result: Yes No Add'l Phone #:
			All Results are emailed. Please provide Email address:
Relinquished By:	Date: Time:	Received By:	REMARKS:

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 2.8 Corrected Temp. °C	Sample Condition: Cool Yes / No; Intact Yes / No	CHECKED BY: (Initials)	Turnaround Time: Standard X Rush; Thermometer ID #140; Correction Factor 0 °C

Bacteria (only) Sample Condition: Cool Yes / No; Intact Yes / No; Observed Temp. °C; Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

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

June 04, 2024

DAN DUNKELBERG

TRINITY OILFIELD SERVICES & RENTALS, LLC

P. O. BOX 2587

HOBBS, NM 88241

RE: NVA 120 BTY- AREA 3 - SLO

Enclosed are the results of analyses for samples received by the laboratory on 05/30/24 16:41.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-004.0-00.0-P (H243041-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.0 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	06/03/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	**22.9**	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *99.1 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *101 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-004.0-01.0-P (H243041-02)

BTEX 8021B mg/kg **Analyzed By: JH**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.7 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2080**	16.0	06/03/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	<10.0	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *101 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *98.4 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-004.0-04.0-P (H243041-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *86.8 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1600**	16.0	06/03/2024	ND	416	104	400	10.9	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	<10.0	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *99.5 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *98.7 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-005.0-00.0-P (H243041-04)

BTEX 8021B mg/kg **Analyzed By: JH**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *89.0 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**14400**	16.0	06/03/2024	ND	416	104	400	10.9	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	<10.0	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *93.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *93.3 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-005.0-04.0-P (H243041-05)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *87.6 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**5120**	16.0	06/03/2024	ND	416	104	400	10.9	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	<10.0	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *94.5 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *92.0 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-006.0-00.0-P (H243041-06)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.4 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2840**	16.0	06/03/2024	ND	416	104	400	10.9	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	**81.9**	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	**30.4**	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *89.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *89.8 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/30/2024	Sampling Date:	05/30/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-006.0-04.0-P (H243041-07)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/03/2024	ND	1.79	89.5	2.00	4.05	
Toluene*	<0.050	0.050	06/03/2024	ND	1.79	89.6	2.00	4.00	
Ethylbenzene*	<0.050	0.050	06/03/2024	ND	1.84	92.0	2.00	4.62	
Total Xylenes*	<0.150	0.150	06/03/2024	ND	5.33	88.8	6.00	4.85	
Total BTEX	<0.300	0.300	06/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.5 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1920**	16.0	06/03/2024	ND	416	104	400	10.9	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	216	108	200	3.83	
DRO >C10-C28*	<10.0	10.0	06/03/2024	ND	218	109	200	7.33	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					

Surrogate: 1-Chlorooctane *94.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *95.5 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL Laboratories

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

Company Name:	Trinity Oilfield Services	BILL TO	
Project Manager:	Dan Dunkelberg	P.O. #:	
Address:	8426 N Dal Paso	Company:	Cross Timbers Energy
City:	Hobbs State: NM Zip: 88241	Attn:	Kevin Bennett
Phone #:	Fax #:	Address:	
Project #:	Project Owner: (see below)	City:	
Project Name:	NVA 120 BTY - Area 3 - SLO dan@trinityoilfieldservices.com	State: Zip:	
Project Location:	Lea Co., NM	Phone #:	
Sampler Name:	TT	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: Chloride	TPH	BTEX
H243041-1	DV-004.0-00.0-P	G	1			X							5/30/2024		X	X	X
-2	DV-004.0-01.0-P	G	1			X							5/30/2024		X	X	X
-3	DV-004.0-04.0-P	G	1			X							5/30/2024		X	X	X
-5	DV-005.0-00.0-P	G	1			X							5/30/2024		X	X	X
-6	DV-005.0-04.0-P	G	1			X							5/30/2024		X	X	X
-7	DV-006.0-00.0-P	G	1			X							5/30/2024		X	X	X
	DV-006.0-04.0-P	G	1			X							5/30/2024		X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 5/30/24	Received By:	Verbal Result: Yes No Add'l Phone #:
	Time: 10:41		All Results are emailed. Please provide Email address:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		

Delivered By: (Circle One)	Observed Temp. °C 2.8	Sample Condition	CHECKED BY:	Turnaround Time:	Bacteria (only) Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp. °C	Cool: Yes / No — Intact: Yes / No	(Initials) SC	Standard X / Rush	Cool: Yes / No — Intact: Yes / No — Observed Temp. °C — Corrected Temp. °C
				Thermometer ID #140 Correction Factor 0 °C	

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

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

June 06, 2024

DAN DUNKELBERG

TRINITY OILFIELD SERVICES & RENTALS, LLC

P. O. BOX 2587

HOBBS, NM 88241

RE: NVA 120 BTY- AREA 3 - SLO

Enclosed are the results of analyses for samples received by the laboratory on 05/31/24 16:42.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-007.0-00.0-P (H243095-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/04/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/04/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/04/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/04/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *90.5 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	195	97.4	200	1.91	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	193	96.4	200	0.764	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *100 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *110 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-007.0-01.0-P (H243095-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/04/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/04/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/04/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/04/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.2 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**464**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	195	97.4	200	1.91	
DRO >C10-C28*	**10.9**	10.0	06/04/2024	ND	193	96.4	200	0.764	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *104 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *114 %* *49.1-148*

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-007.0-02.0-P (H243095-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/04/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/04/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/04/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/04/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.5 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**432**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	195	97.4	200	1.91	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	193	96.4	200	0.764	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *101 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *112 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-007.0-03.0-P (H243095-04)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/04/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/04/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/04/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/04/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *90.8 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	195	97.4	200	1.91	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	193	96.4	200	0.764	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *94.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *105 %* *49.1-148*

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-007.0-04.0-P (H243095-05)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/04/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/04/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/04/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/04/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/04/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.4 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	195	97.4	200	1.91	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	193	96.4	200	0.764	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *97.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *107 %* *49.1-148*

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-008.0-00.0-P (H243095-06)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *89.5 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	209	105	200	1.72	
DRO >C10-C28*	**998**	10.0	06/04/2024	ND	200	100	200	3.39	
EXT DRO >C28-C36	**749**	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *104 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *108 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-008.0-01.0-P (H243095-07)

BTEX 8021B mg/kg **Analyzed By: JH**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *90.0 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	209	105	200	1.72	
DRO >C10-C28*	**158**	10.0	06/04/2024	ND	200	100	200	3.39	
EXT DRO >C28-C36	**130**	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *103 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *97.7 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-008.0-02.0-P (H243095-08)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *89.3 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**192**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	209	105	200	1.72	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	200	100	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *104 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *103 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-008.0-03.0-P (H243095-09)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *90.3 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	209	105	200	1.72	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	200	100	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *107 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *104 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

TRINITY OILFIELD SERVICES & RENTALS, LLC
DAN DUNKELBERG
P. O. BOX 2587
HOBBS NM, 88241
Fax To: NONE

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	NVA 120 BTY- AREA 3 - SLO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shari Cisneros
Project Location:	CROSS TIMBERS-LEA CO NM		

Sample ID: DV-008.0-04.0-P (H243095-10)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2024	ND	1.93	96.4	2.00	6.13	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.0	2.00	4.24	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.96	97.9	2.00	3.08	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.66	94.3	6.00	2.94	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *89.8 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	06/05/2024	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	209	105	200	1.72	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	200	100	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane *111 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *108 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Trinity Oilfield Services		**BILL TO**		
Project Manager:	Dan Dunkelberg		**P.O. #:**		
Address:	8426 N Dal Paso		**Company:**	Cross Timbers Energy	
City:	Hobbs	**State:** NM **Zip:** 88241	**Attn:**	Kevin Bennett	
Phone #:		**Fax #:**	**Address:**		
Project #:		**Project Owner:** (see below)	**City:**		
Project Name:	NVA 120 BTY - Area 3 - SLO	dan@trinityoilfieldservices.com	**State:**	**Zip:**	
Project Location:	Lea Co., NM		**Phone #:**		
Sampler Name:	TT		**Fax #:**		

FOR LAB USE ONLY

H243095

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: OIL	MATRIX: SLUDGE	MATRIX: OTHER :	PRESERV.: ACID/BASE:	PRESERV.: ICE / COOL	PRESERV.: OTHER :	SAMPLING: DATE	SAMPLING: TIME	Chloride	TPH	BTEX
1	DV-007.0-00.0-P	G	1			X							5/31/2024		X	X	X
2	DV-007.0-01.0-P	G	1			X							5/31/2024		X	X	X
3	DV-007.0-02.0-P	G	1			X							5/31/2024		X	X	X
4	DV-007.0-03.0-P	G	1			X							5/31/2024		X	X	X
5	DV-007.0-04.0-P	G	1			X							5/31/2024		X	X	X
6	DV-008.0-00.0-P	G	1			X							5/31/2024		X	X	X
7	DV-008.0-01.0-P	G	1			X							5/31/2024		X	X	X
8	DV-008.0-02.0-P	G	1			X							5/31/2024		X	X	X
9	DV-008.0-03.0-P	G	1			X							5/31/2024		X	X	X
10	DV-008.0-04.0-P	G	1			X							5/31/2024		X	X	X

ANALYSIS REQUEST

Relinquished By:	**Date:** 5/31/24 **Time:** 16:42	**Received By:** Shaui Cisneros	**Verbal Result:**	Yes / No **Add'l Phone #:**
			All Results are emailed. Please provide Email address:	
Relinquished By:	**Date:**	**Received By:**	**REMARKS:**	
	Time:			

Delivered By: (Circle One)	**Observed Temp. °C** 3.8	**Sample Condition**	**CHECKED BY:**	**Turnaround Time:**	**Bacteria (only) Sample Condition**
Sampler - UPS - Bus - Other:	**Corrected Temp. °C**	Cool: Yes ☑ / No ☐ Intact: Yes ☑ / No ☐	(Initials) DC	Standard X / Rush ☐	Cool: Yes ☐ / No ☐ Intact: Yes ☐ / No ☐ Observed Temp. °C
				Thermometer ID #140	Corrected Temp. °C
				Correction Factor 0 °C	

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

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

QUESTIONS

Operator: CROSS TIMBERS ENERGY, LLC 400 West 7th Street Fort Worth, TX 76102	OGRID: 298299
	Action Number: 439759
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2106441019**
Incident Name	**NAPP2106441019 NORTH VACUUM ABO UNIT 255 @ 30-025-28737**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Plan Received**
Incident Well	**[30-025-28737] NORTH VACUUM ABO UNIT #255**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	NORTH VACUUM ABO UNIT 255
Date Release Discovered	03/04/2021
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	Cause: Freeze | Flow Line - Production | Crude Oil | Released: 10 BBL | Recovered: 0 BBL | Lost: 10 BBL.
Produced Water Released (bbls) Details	Cause: Freeze | Flow Line - Production | Produced Water | Released: 30 BBL | Recovered: 0 BBL | Lost: 30 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*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)	*Not answered.*

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QUESTIONS (continued)

Operator: CROSS TIMBERS ENERGY, LLC 400 West 7th Street Fort Worth, TX 76102	OGRID: 298299
	Action Number: 439759
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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: Samanntha Avarello Title: EHS Coordinator Email: savarello@txoenergy.com Date: 02/21/2025

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QUESTIONS (continued)

Operator: CROSS TIMBERS ENERGY, LLC 400 West 7th Street Fort Worth, TX 76102	OGRID: 298299
	Action Number: 439759
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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 100 and 500 (ft.)
What method was used to determine the depth to ground water	Direct Measurement
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 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 500 and 1000 (ft.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

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	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	14400
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	16230
GRO+DRO (EPA SW-846 Method 8015M)	10900
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
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	08/07/2025
On what date will (or did) the final sampling or liner inspection occur	08/07/2025
On what date will (or was) the remediation complete(d)	11/05/2025
What is the estimated surface area (in square feet) that will be reclaimed	44442
What is the estimated volume (in cubic yards) that will be reclaimed	2222
What is the estimated surface area (in square feet) that will be remediated	44442
What is the estimated volume (in cubic yards) that will be remediated	2222
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)

Operator: CROSS TIMBERS ENERGY, LLC 400 West 7th Street Fort Worth, TX 76102	OGRID: 298299
	Action Number: 439759
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	SUNDANCE SERVICES, INC [fKJ1600527371]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
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: Samanntha Avarello Title: EHS Coordinator Email: savarello@txoenergy.com Date: 05/09/2025
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)

Operator: CROSS TIMBERS ENERGY, LLC 400 West 7th Street Fort Worth, TX 76102	OGRID: 298299
	Action Number: 439759
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

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

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QUESTIONS (continued)

Operator: CROSS TIMBERS ENERGY, LLC 400 West 7th Street Fort Worth, TX 76102	OGRID: 298299
	Action Number: 439759
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	***{Unavailable.}***

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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CONDITIONS

Operator: CROSS TIMBERS ENERGY, LLC 400 West 7th Street Fort Worth, TX 76102	OGRID: 298299
	Action Number: 439759
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Remediation plan is approved with the following conditions; 1. The variance request to limit the excavation to the depth at which the petrocalcic horizon is encountered is denied. This horizon has not been completely determined where the release occurred. Cross Timbers must remediate according to 19.15.29.13D (1) NMAC or to the maximum extent practicable. 2. Alternative sampling plan request not to exceed 400 square feet (ft.2) for each five (5) point composite (5pc) from the excavation floor per 19.15.29.12D (1b) NMAC is approved. Sidewall confirmation sample(s) will abide at 200 ft.2 for each 5pc per 19.15.29.12D (1c) NMAC. All other provisions addressed in 19.15.29.12D NMAC remain in effect. 3. Prior to backfilling any open excavations per 19.15.29.12D (2) NMAC, Cross Timbers must collect a minimum of one (1) 5pcs from the media being used as backfill to verify that it meets non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/Kg	5/27/2025
nvelez	as analyzed by EPA Method 300.0, or other test methods approved by the division. This is especially important for the material being used within the top four (4) feet from the ground surface. 4. Cross Timbers has 90-days (August 25, 2025) to submit to OCD its appropriate or final remediation closure report.	5/27/2025