CRITICAL ISSUES ANALYSIS

Approximately 25.0 Acres

200 South Frontage Road

Pecos, Reeves County, Texas

DATE: JULY 18, 2024

PROJECT: 24-0909.01

DOC NO.: REP-24-0909-001 REV 1

PREPARED FOR:

Reliability Design & Development

2505 Kolbe Reach Lane

Houston, Texas 77080

ESE Partners, LLC

5910 Courtyard Dr

Suite 170

Austin, Texas 78731

Telephone: 512 859 6500

www.esepartners.com

Document Production / Revision Status						
Rev	**Description**	**Date**	**Contributors**	**Author**	**Technical Review**	**Internal Standards Review**
1	Final Draft	07/18/2024	Mason Finley	☒	☒	☐
			Stephanie Sartain	☐	☒	☒
			Aaron Brewer, P.G.	☒	☒	☒

Contents

FIGURES

APPENDICES

ABBREVIATIONS

AMSL	Above Mean Sea Level
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
C	Candidate Species
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
DoD	Department of Defense
DoT	Department of Transportation
E	Endangered Species (State)
EMST	Ecological Mapping System of Texas
ESE	Environmental Science and Engineering Partners, LLC
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GIS	Geographic Information System
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
LE	Listed Endangered Species (Federal)
LESA	Land Evaluation and Site Assessment
MBTA	Migratory Bird Treaty Act
MS4	Municipal Separate Storm Sewer System
NAAQS	National Ambient Air Quality Standards
NCP	Native Contingency Plan
NEC	National Electrical Code
NEHRPA	National Earthquake Hazards Reduction Program Act
NEHRP	National Earthquake Hazards Reduction Program
NFPA	National Farmland Protection Act
NHD	National Hydrography Dataset

NHPA	National Historic Preservation Act of 1966
NO_2	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
O_3	Ozone
OSHA	Occupational Safety and Health Administration
Pb	Lead
PGA	Peak Ground Acceleration
PM	Particulate Matter
ROG	Reactive Organic Gases
RTE	Rare, Threatened, and Endangered
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SWP3	Stormwater Pollution Prevention Plan
T	Threatened Species
TCEQ	Texas Commission on Environmental Quality
THC	Texas Historical Commission
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WHAP	Wildlife Habitat Assessment Program
WOTUS	Waters of the United States

EXECUTIVE SUMMARY

ESE Partners, LLC (ESE) was retained to conduct a critical issues analysis on behalf of Reliability Design & Development for the proposed powerplant facility located on approximately 25 acres at 200 South Frontage Road, Pecos, Reeves County, Texas (referred to herein as the Site). The analysis was conducted to identify potential critical environmental permitting or environmental-related development issues that would require special attention during the project design, engineering, permitting, and construction phases. The following summarizes ESE's significant findings.

Findings

The Site is located in the Pecos East Level IV Ecoregion. Topography is generally flat within the Site.

The National Wetlands Inventory (NWI) and National Hydrography Dataset (NHD) do not map any aquatic features within the Site. No known records for endangered or threatened species exist within the Site; however, there is potential habitat on the Site for protected species including the Northern Aplomado Falcon, Zone-tailed Hawk, Texas Horned Lizard, and Monarch Butterfly. There are no historical markers or cemeteries located on or near the vicinity of the Site.

The Texas Railroad Commission (TXRRC) has one (1) current oil well mapped within the western portion of the Site.

Conclusions

Critical issues likely to require special attention during design, engineering, permitting, and/or construction of the proposed project identified during the preparation of this CIA are summarized in the table below along with recommendations:

Resource	Regulation	Findings/Conclusion	Recommendation
Wetlands and Waters of the U.S.	Section 404 Clean Water Act (CWA)	No suspected wetlands or other aquatic features were identified on the Site during review of maps and aerial photographs. There was a reported vegetable washing operation located northwest of the Site that ceased operations circa 2014. The vegetable washing operation had some constructed ponds and canals that appear abandoned, dried out, and isolated. No waters of the U.S. (WOTUS) are suspected on the Site.	Although the presence of wetlands or other aquatic features is unlikely, the proponent could conduct a Wetland and Surface Waters Delineation for additional assurance. Seek a No Permit Required letter from USACE, Alburquerque District, if documentation is desired and assuming delineation does not reveal regulated waterways on the Site.
	Section 402 CWA / National Pollutant Discharge Elimination System (NPDES) Title 30 Texas Administrative Code (TAC), TPDES	Construction general permit is likely required for stormwater permitting during construction. Industrial stormwater permit may be required for facility operation depending on SIC code.	Conduct stormwater planning and permit prior to construction. Once the facility is designed, evaluate whether stormwater permit is required for operation.
U.S. Army Corps of Engineers (USACE) Civil Works	33 USC Section 408	No navigable waters, dams, or levees were identified in the vicinity of the Site; therefore, no USACE civil works projects are likely to intersect the Site.	No requirement for Section 408 approvals have been identified in connection with the Site.
Floodplain	FEMA Special Flood Hazard	No Special Flood Hazard Zones were mapped on or adjacent to the Site.	No further action is recommended.

Resource	Regulation	Findings/Conclusion	Recommendation
Federally Listed Threatened and Endangered Species	Federal Endangered Species Act of 1973 (ESA)	Habitat for the Northern Aplomado Falcon may be present at the Site.	Pre-construction surveys should be conducted prior to construction activities by a qualified biologist to determine the presence or absence of special status species. If the project may affect a species, informal consultation with USFWS is advised to assist with ESA compliance.
State Listed Threatened and Endangered Species	Sections 65.171-177 and 69.1-9 of TAC	Texas Horned Lizard and Zone-tailed Hawk have potential habitat at the Site.	Conduct Biological Resources Evaluation (BRE) to confirm whether Texas Horned Lizard and Zone-tailed Hawk may be present and what steps can be taken for compliance. Consult with Texas Parks and Wildlife Department (TPWD).
Migratory Birds	Migratory Bird Treaty Act (MBTA)	Habitat exists for migratory birds to be present on Site, at least seasonally.	Avoid clearing vegetation during nesting season (March 15 through September 15) or conduct pre-clearing nesting surveys.
Bald and Golden Eagles	Bald and Golden Eagle Protection Act (BGEPA)	Site does not contain habitat for bald or golden eagles.	Observe for nests during biological resource evaluation and MBTA nest surveys.
Cultural and Historical Resources	Section 106 of National Historic Preservation Act (NHPA)	Although there are no known historical sites located within the Site, there is the potential for previously undiscovered historical and cultural sites to exist.	Due to the apparent lack of WOTUS, NHPA Section 106 compliance is not required.

Resource	Regulation	Findings/Conclusion	Recommendation
	Antiquities Code of Texas	The Site is owned by the Town of Pecos City; an apparent political subdivision of the State and requires cultural resources review and concurrence with Texas Historical Commission (THC).	For ACT compliance, a Cultural Resources Survey (CRS) and THC concurrence may be required.
Land Use and Zoning	Town of Pecos City ordinances	The Site is located within the municipal boundary of the Town of Pecos City, which has ordinances regulating property within its boundaries.	Meet with Town of Pecos officials to identify any development issues or requirements.
Airports and Military Operations	CFR Title 14, Part 77.9. Title 49 USC, Section 44718	An inquiry to the Department of Defense (DoD) Siting Clearinghouse (Informal Review) would be required to determine if the Site construction or operation would interfere with airport operations or military operations. Construction or alteration to structures in proximity to an airport must submit Form 7460-1 to the FAA.	Submit request for Informal Review as soon as possible. Submit Form 7460-1 to the FAA.

Resource	Regulation	Findings/Conclusion	Recommendation
Air Quality	Federal Clean Air Act Texas Clean Air Act	Permits and regulations anticipated to be required: -Air Permit or Permit Registration requiring an air permit applicability determination -Electric Generating Unit Standard Permit -Prevention of Significant Deterioration (PSD) permit -Title V permit in accordance with the Acid Rain Program -Meet federal regulation emission standards under NSPS 40 CFR 60, Subpart JJJJ	Early coordination with TCEQ is recommended.
Seismic activity	N/A	Seismic activity is not anticipated to affect the Site but has been increasing in frequency and intensity due to wastewater injection wells in West Texas.	Review and monitor seismic events in the vicinity of the Site to evaluate potential impact on the proposed project.
Soils	Physical Properties and Farmland Protection Policy Act	The soil survey identifies soil map units at the site as somewhat limited for development. The Site has no Prime Farmland.	Geotechnical studies are recommended.
Noise	Local ordinances possibly applicable.	Power plants are known to generate noise due to their equipment and operation. The golf course located 0.1 miles northwest of the Site and ballpark located approximately 0.5 miles north-northeast of the Site may be sensitive receptors.	Local ordinances may have noise ordinances that should be reviewed with Town of Pecos City staff and evaluated for compliance.

Resource	Regulation	Findings/Conclusion	Recommendation
Hazardous Materials	N/A	There are no Superfund or Brownfield sites within a 1.5-mile radius of the Site, however, there are three (3) RCRA sites and two (2) underground storage tanks within 1.5 miles of the Site. There are multiple pipelines adjacent to the Site's parcel.	None.
Compliance	Spill Prevention, Control, and Countermeasure Plan (SPCC)	Once facility plan is complete, determination for SPCC applicability can be made.	Complete facility plan and determine whether SPCC plan will be required for operation.
Wells	Texas Railroad Commission rules	The Texas Railroad Commission mapped one (1) oil well on the west end of the Site and two (2) additional wells near the east end of the Site.	If wells are located on the Site they may require abandonment and/or avoidance.

1 INTRODUCTION

ESE was retained by Reliability Design & Development. to conduct a Critical Issues Analysis (CIA) for the proposed powerplant facility located on approximately 25 acres at 200 South Frontage Road, Pecos, Reeves County, Texas (referred to herein as the Site). The scope of work for this review was detailed in ESE's proposal (PROP-24-0909-001 Rev 0), dated June 6, 2024.

1.1 Overview

Reliability Design & Development is evaluating the construction and operation of the proposed project Near Pecos Airport, a powerplant facility, located in Reeves County, Texas (**Figure 1**).

This CIA evaluates critical environmental permitting and environmental-related development constraints that may adversely affect the project's schedule or budget, including project development issues that relate to: municipal policy, soils and agricultural resources, biological and ecological resources, including geology, cultural resources, air quality, floodplain and water quality, seismicity and construction operations, hazards and hazardous materials, noise, and visual resources. The purpose of this report is to identify potential critical environmental permitting or environmental-related development issues that would require special attention during the project design, engineering, permitting, and construction phases. Additionally, this report includes an environmental permitting matrix of required discretionary permits and approvals from federal, state, local, and/or tribal authorities. Furthermore, future study and survey recommendations are included.

It should be noted that this evaluation was performed in advance of any project specific design plans under a limited due diligence period; information contained within this report is based on project specific location desktop evaluations, scientific research, and experience-based assumptions.

2 SITE DESCRIPTION

2.1 Site Location

The Site is located near the Pecos Municipal Airport, approximately 0.27 miles southwest of the intersection of County Road (CR) 115 and CR 118 in the Town of Pecos City, Reeves County (**Figure 1**).

The approximately 25.0-acre Site is located within the Town of Pecos City Limits and is located directly east of the Pecos Municipal Airport and the Reeves County Golf Course. According to a Property Owner Interview conducted during the Phase I Site Investigation (provided in a separate report), stock ponds located directly northwest of the Site were utilized for vegetable washing activities. The water from the washing area was then pumped onto the land for evaporation, which can be seen in a grid pattern within the Site. This operation has reportedly been out of operation for at least a decade. The land does not appear to be currently in use. Reeves County is bordered by Eddy County (New Mexico) to the north, Loving and Ward Counties to the northeast, Pecos County to the southeast, Jeff Davis County to the southwest, Culberson County to the west.

2.1.1 Land Uses

Based on review of aerial imagery, the primary land use within the Site appears to be mostly undeveloped or agricultural. Additionally, the Reeves County Golf Course is located to the northwest of the Site, while the Pecos Municipal Airport is located directly west of the Site (**Figure 4**).

Surrounding Land Uses

Land use in areas to the north, east, and south of the Site are similar to on-site conditions; agricultural and/or undeveloped. To the northwest of the Site, the Reeves County Golf Course is present, while the Pecos Municipal Airport is located to the southwest of the Site.

2.1.2 Site Access

The Site can be accessed via CR 115 and CR 118.

2.2 Project Description

The Site currently consists of approximately 25.0-acres, which is being considered for the development of a thermal power plant. Project features typical for powerplant development include:

- Unpaved access roads
- Equipment

- Fuel gas supply unit
- Radiator
- Oily water collecting pit
- Fire/raw water tank
- Transformers

2.3 Ecological Description

The Site is located in the Chihuahuan Basins and Playas Level IV Ecoregion of the Chihuahuan Deserts Level III Ecoregion.

According to Griffith, et al (2007), *the Chihuahuan Basins and Playas ecoregion includes alluvial fans, internally drained basins, and river valleys below 3500 feet. The major Chihuahuan basins in the Chihuahuan Basins and Playas, such as the Hueco, Salt, and Presidio basins, formed during the Basin and Range tectonism when the Earth's crust stretched and fault collapse resulted in sediment-filled basins. These low elevation areas represent the hottest and most arid habitats in Texas, with less than 12 inches of precipitation per year. Precipitation amounts are highest in July, August, and September, and winter precipitation is relatively sparse. The playas and basin floors have saline or alkaline soils and areas of salt flats, dunes, and windblown sand. The typical desert shrubs and grasses growing in these environments, such as creosotebush, tarbush, fourwing saltbush, blackbrush, gyp grama, and alkali sacaton, must withstand large diurnal ranges in temperature, low available moisture, and an extremely high evapotranspiration rate. The alien saltcedar and common reed have invaded riparian areas. Land use, particularly grazing, is limited in desert areas due to sparse vegetation and lack of water. However, limited areas of agriculture exist near El Paso and Dell City, where irrigation water is available to produce cotton, pecans, alfalfa, tomatoes, onions, and chile peppers.*

2.3.1 Vegetation Description

The vegetation types mapped by the EMST throughout the Site appears to be comprised of two (2) different vegetation types demonstrated in the table below. The Salty Desert Grassland appears to be concentrated within the eastern portion of the Site, while the Salty Desert Scrub appears to be concentrated within the western portion of the Site. EMST data is depicted in **Figure 3**.

EMST Type	Description	Acreage	Percent of Total
Trans-Pecos: Salty Desert Grassland	This type is mapped on salty, moist soils, especially along the Pecos River but also in other salty basins and alluvial fans. Alkali sacaton is often dominant, and species such as Russian thistle, false Rhodes grass, pink pappusgrass, tobosa, burrow grass, desert seepweed and pickle-weed are	14.94	59.8%

EMST Type	Description	Acreage	Percent of Total
	often present. Shrubs and small trees such as mesquite, four-wing saltbush, allthorn, lotebush, and saltcedar are often present.		
Trans-Pecos: Salty Desert Scrub	This type is mapped on salty, moist soils, especially along the Pecos River but also in other salty basins and alluvial fans. Shrubs such as mesquite, four-wing saltbush, saltcedars, allthorn, pickle-weed, southern Jimmy-weed, and lotebush are common components. Herbaceous species may include species such as alkali sacaton, Russian thistle, false Rhodes grass, pink pappusgrass, and desert seepweed.	10.04	40.2%

2.4 Topographical Features

Topographical features have been assessed using the following United States Geological Survey (USGS) 7.5-minute topographical quadrants for Pecos East, Texas (1981) (USGS 2002). The Site is located approximately 2,595 feet above mean sea level (AMSL). The Site is mapped as being relatively flat. The topographic map depicts a woodland located throughout the central portion of the Site (**Figure 5**).

2.5 Geology

Geology underlying the Site consists of Alluvium (Qal) (**Figure 6**). Description of the geologic unit is included below (USGS 2007):

Geologic Unit	Description
Alluvium (Qal)	Floodplain and alluvial plain deposits; floodplain deposits include low terrace deposits near floodplain level, bedrock locally in stream channels; alluvial plain deposits include fan deposits and colluvium locally near margins, coarser material toward margins, mostly sandy silt elsewhere, subject to modification by sheetwash action.

3 DATA RESOURCES

3.1 Data Inventory and Mapping

Resource data were obtained from a variety of sources including federal and state environmental databases. The inventory data was collected to inform resource-specific evaluations and constraints analysis related to municipal policy, soils and agricultural resources, biological and ecological resources, including geology, cultural resources, air quality, floodplain and water quality, seismicity and construction operations, hazards and hazardous materials, noise, and visual resources.

The data was mapped and overlaid using ESRI geographic information systems (GIS) to identify potential constraints, and to determine the necessary permits required for the project. The data obtained for each resource category was researched and quality review of the data was completed.

3.1.1 Municipal Policy and Zoning

Project-related land use impacts were evaluated through review of applicable local and municipal regulations subject to land use designations or zoning regulations. Google Earth was utilized to identify the closest airport to the Site for potential impacts.

3.1.2 Soils and Agricultural Importance

Potential impacts to agricultural resources were assessed based on a review of the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey. Properties and qualities of the soils found on the Site were evaluated, as available through the NRCS Web Soil Survey, to determine if the Site is classified as Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, or Unique Farmland, as defined by the USDA. The farmland classifications definitions are as follows:

- **Prime Farmland.** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland similar to prime farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Farmland of Local Importance.** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

- **Unique Farmland.** Farmland of lesser quality soils used to produce the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.

3.1.3 Biological and Ecological Resources

Biological resources inventory data were obtained from several federal and state databases including, the United States Fish and Wildlife Service (USFWS) (USFWS 2024), TPWD (TPWD 2024a and 2024b), USFWS designated Critical Habitat (USFWS 2024a), National Wetlands Inventory (USFWS 2024a), the National Conservation Easement Database (NCED) (NCED 2024), the Texas Water Development Board (TWDB) (Hayes 2016) and the National Hydrography Database (NHD) (NHD 2023). These databases were reviewed to determine the potential occurrence of special status species in the Site.

3.1.4 Cultural Resources

A desktop review of the National Register of Historic Places (NRHP), and the Texas Historic Commission's Texas Historic Sites Atlas (THC 2024) were conducted to determine the presence and/or absence of courthouses, National Register Properties, state antiquities landmarks, historical markers, cemeteries, and museums located within the Site. A review of historical aerial imagery, as available through Google Earth (Google 2024), was also conducted. This scope of work does not include a Phase 1 Cultural Resources Assessment or outreach with Native American tribes.

3.1.1 Air Quality

Potential air quality impacts were evaluated based on a literature review of the federal and state ambient air quality standards, rules, and regulations.

3.1.2 Floodplain and Water Quality

Existing data on existing floodplain conditions were obtained from the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FEMA 2024). Literature review of the federal and state ambient water quality standards, rules, and regulations was conducted to evaluate potential impacts and required permitting.

3.1.3 Seismicity and Construction Requirements

Federal and state earthquake and building regulations were evaluated through literature review to identify any applicable polices and/or permits (USGS 2014).

3.1.4 Hazards and Hazardous Materials

The following federal and state environmental databases documenting potential hazardous conditions at, or near the Site were reviewed: U.S. Environmental Protection Agency (EPA) (EPA 2024) Superfund List, U.S. EPA Resource Conservation and Recovery Act (RCRA) List, Texas Commission on Environmental Quality (TCEQ) Brownfield Sites, Emergency Response Incident Summaries, Petroleum Storage Tank Facility Data and the Texas Railroad Commission (TXRRC) (TXRRC 2024). The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental impacts.

3.1.5 Noise and Visual Resources

Project-related noise impacts were evaluated by reviewing applicable state and Town of Pecos City regulations. The visual resources data inventory included the identification of visually sensitive corridors, points, and receptors in and around the Site. Aerial imagery was reviewed, as available through Google Earth, and USGS topographical maps of the Site to identify and evaluate sensitive receptors and scenic resources and potential impacts to sensitive noise receptors.

4 MUNICIPAL LAND USE RESTRICTIONS AND ZONING ORDINANCES

4.1 Resource Evaluations and Considerations

4.1.1 Central Appraisal District

The 25.0-acre Site consists of a portion of a singular parcel in Reeves County. ***Appendix A*** includes county-specific parcel information. The taxing districts were identified as TRZ 2 – Minerals, ESD #1, ESD #2, Town of Pecos City, Reeves County Hospital District, Reeves County, PBT ISD, and RCGWCD.

Properties within the Town of Pecos City are subject to land use and zoning restrictions in accordance with the Town's ordinances.

4.1.2 Airport Land Use Conflicts

The nearest airport to the Site is the Pecos Municipal Airport, which is located directly southwest of the Site. An inquiry to the Department of Defense (DoD) Siting Clearinghouse (Informal Review) would be required to determine if the Site construction or operation would interfere with airport operations.

4.2 Conclusions

Development projects in the Town of Pecos City Limits are subject to land use designations and zoning regulations. It is advised that the project meet with the Town to discuss plans and compliance with land use restrictions and zoning requirements.

The proponent must submit a request for informal review to the DoD Siting Clearinghouse to determine if the facility would interfere with military or airport operations.

5 SOILS AND AGRICULTURAL ENTERPRISES

5.1 Soils

According to the USGS Web Soil Survey (USGS 2024), the Site is comprised of the following soils as shown in tables below:

Reeves County Soil Map Units

Map Unit Symbol	Map Unit Name	Acres in Site	Percent of Site	Prime Farmland Status
37	Saragosa association, nearly level	25.0	100%	Not prime farmland

Other soil characteristics and factors examined through the web soil survey include ponding, flooding, depth to saturated zone, shrink-swell ratios, and steel corrosion. Site soils do present some limitations that may need to be addressed by site-specific geotechnical evaluations and ground-interface design. A factor worth noting includes soil suitability and limitations for steel corrosion. Site soils were identified as “somewhat limited” within the entirety of the Site. Additional information on soil properties and qualities can be found in ***Appendix B***.

5.2 Prime Farmland Status

The quality of prime farmland is assessed by the NRCS. The quality of farmland is based on soil types, slopes, moisture supply, acidity or alkalinity and other factors. The Farmland Protection Policy Act of 1981 requires that federal programs minimize the “unnecessary and irreversible conversion of farmland to nonagricultural purposes.” “Farmland” is defined to include prime farmland, farmland of statewide significance, and unique farmland. To determine if designated farmland is present on a site, a project which receives federal assistance may be required to conduct a Land Evaluation and Site Assessment (LESA). A LESA would be conducted by the NRCS and would generally take up to eight weeks to complete. The purpose of the LESA is to give state and local governments the information required to make land use decisions; the assessment in itself does not mandate any specific action.

In addition, the State of Texas has its own Prime Farmland criteria, based on the soil map unit. Prime farmland must meet or exceed standards defined in the criteria, such as the moisture supply specific to the moisture zone, temperature, hydrogen ion concentration (pH), drainage and water table, salinity, flooding, slope and erosion, permeability, rock fragments and calcium carbonate equivalent (USDA 2017b).

5.3 Conclusion

Based on a review of the Web Soil Survey, 0.0% of Site soils are designated as Prime Farmland (see **Figure 7** and **Appendix B**). Therefore, if the project has federal funding or federal assistance,

it would not be subject to the Farmland Protection Policy Act (USDA 2017a). Additionally, soil types mapped within the Site are rated as “somewhat limited” in terms of suitability for building site development of steel. Limitations may need to be addressed by site-specific geotechnical evaluations and ground-interface design.

6 BIOLOGY AND TERRESTRIAL ECOLOGY

6.1 Federal Regulatory Background

Endangered Species Act

The USFWS has legislative authority to list and monitor the status of species whose populations are considered to be imperiled. This federal legislative authority for the protection of threatened and endangered species derives from the ESA (USFWS 1973) and its subsequent amendments. Regulations supporting this act are codified and regularly updated in Sections 17.11 and 17.12 of Title 50 of the Code of Federal Regulations. The federal process stratifies potential candidates based upon the species' biological vulnerability. Species listed as endangered or threatened by the federal government are provided full protection under the law. This protection not only prohibits the direct possession (take) of a protected species, but also includes a prohibition of indirect take, such as encroachment and/or destruction of designated critical habitat. Listed plant species are not protected from take, although it is illegal to collect or maliciously harm them on Federal land. The ESA and accompanying regulations provide the necessary authority and incentive for individual states to establish their own regulatory vehicle for the management and protection of threatened and endangered species.

Migratory Bird Treaty Act

The USFWS has legislative authority to prohibit, unless permitted by regulations, the kill, capture, collect, possess, buy, sell, trade, or transport of any migratory bird, nest, young, feather, or egg in part or in whole. The Migratory Bird Treaty Act of 1918 (MBTA) (MBTA 1918) and its subsequent amendments (16 U.S.C. 703-712) give the federal legislative authority for protection of migratory bird species. Regulations supporting this act are codified and regularly updated in Part 10 and 21 of Title 50 of the Code of Federal Regulations.

Bald and Golden Eagle Protection Act

Under the provisions of the Bald and Golden Eagle Protection Act (BGEPA), the taking or possession of and commerce of Bald and Golden Eagles (*Haliaeetus leucocephalus* and *Aquila chrysaetos*, respectively), parts, feathers, nests, or eggs, with limited exceptions, is prohibited. The term "disturb" under the BGEPA was defined via a final rule published in the Federal Register on June 5, 2007 as "means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity by substantially interfering with normal breeding, feeding or sheltering behavior, or 3) nest abandonment by substantially interfering with normal breeding, feeding or sheltering behavior" (USFWS 2007).

Clean Water Act

Wetlands and other waters of the United States are protected under Section 404 of the Clean Water Act (CWA) (EPA 1989). Any activity that involves any discharge of dredged or fill material into Waters of the United States, including wetlands, is subject to regulation by the U.S. Army Corps of Engineers (USACE). Waters of the United States are defined to encompass navigable waters of the United States; interstate waters; all other waters where their use, degradation, or destruction could affect interstate or foreign commerce; tributaries of any of these waters; and wetlands that meet any of these criteria or are adjacent to any of these waters or their tributaries.

6.2 State Regulatory Background

Section 12.0011 of the Texas Parks and Wildlife Code

Endangered species legislation was passed in Texas in 1973 (USFWS 1973). Subsequently, revisions to the TPWD code in 1975, 1981, and 1985 established a state regulatory vehicle for the management and protection of threatened and endangered species. Chapters 67 and 68 (1975 revisions) of the code authorize the TPWD to formulate lists of threatened and endangered fish and wildlife species and to regulate the taking or possession of those species. A 1981 revision (and 1985 amendment) to the code provides authority for the TPWD to designate plant species as threatened or endangered and to prohibit commercial collection or sale of these species without permits. The TXNDD catalogs, monitors, and provides information on rare species and communities of concern.

The ensuing TPWD regulations are Sections 65.171-177 and 69.1-9 of the Texas Administrative Code (TAC) (Chapters 67, 68, and 88 of the TPWD Code). These sections regulate the taking, possessing, transporting, exporting, processing, selling/offering for sale, or shipping of endangered or threatened species of fish, wildlife, or plants. Neither specific criteria for the listing of plant and animal species nor protection from indirect take (i.e. destruction of habitat or unfavorable management practices) is found in either of the above-mentioned statutes or regulations. Based on this information, unlike the federally listed species, there is no protection of habitat afforded to species that are only listed by the state.

Rare species are those that “carry a global conservation status indicating a species is critically imperiled, very rare, vulnerable to extirpation, or uncommon” (TPWD 2008). These species do not carry regulatory status and any efforts to protect them are not required by law.

Additionally, Chapter 64 TPWD Code Title 5, Subtitle B Chapter 64 Birds, Subchapter A, Section 64.002 states that no person may: (1) catch, kill, injure, pursue, or possess, dead or alive, or purchase, sell, expose for sale, transport, ship, or receive or deliver for transportation, a bird that is not a game bird; (2) possess any part of the plumage, skin, or body of a bird that is not a game bird; or (3) disturb or destroy the eggs, nest, or young of a bird that is not a game bird. No

exemptions to this regulation exist for incidental take. Additionally, there is no permitting process for incidental take of non-game birds.

6.3 Resource Evaluations and Considerations

Biological resource issues that may become critical in the approval, permitting, and development of the project include potential impacts to special status plant and wildlife species (particularly those protected by federal and state laws), and to sensitive habitats such as wetlands. Potential impacts to special status species and other sensitive biological resources may require season-specific protocol surveys, extensive mitigation measures, and negotiations with the USFWS, National Marine Fisheries Service, USACE, and the TPWD.

6.3.1 Special Status Species

Threatened and endangered species, and other special status species, are those with specific regulatory protection under the federal and/or state ESA(s) or other federal and state laws. The USFWS Endangered Species database, and the TPWD federal and state listed species in Texas database were reviewed to obtain a list of threatened, endangered, rare, and other species (RTE) that might be found in or near the Site. Additionally, the TPWD Reeves County Endangered Species Report and USFWS draft IPaC (USFWS 2024c) report can be found in ***Appendix C.*** The table below presents a list of the state and federally listed species, and other special status species, identified in Reeves County or with potential to occur at the Site. The potential for habitat to exist at the Site is based on the desktop evaluation of maps and other resources to qualify the habitat likely present compared to the habitat requirements and current, known distribution of these species.

Reeves County Special Status Species

Common Name	Scientific Name	Federal Status	State Status	Potential Habitat Present?
Mexican Spotted Owl	*Strix occidentalis lucida*	T		Habitat not likely present.
Northern Aplomado Falcon	*Falco femoralis septentrionalis*	E		Foraging habitat potentially present.
Piping Plover	*Charadrius melodus*	LT	T	Habitat not likely present. Only needs to be considered for wind energy projects
Rufa Red Knot	*Calidris canutus rufa*	LT	T	Habitat not likely present. Only needs to be considered for wind energy projects.
White-faced Ibis	*Plegadis chihi*		T	Habitat not likely present.
Zone-tailed Hawk	*Buteo albonotatus*		T	Foraging habitat potentially present.
Diminutive Amphipod	*Gammarus hyalelloides*	LE	E	Habitat not likely present.
Comanche Springs Pupfish	*Cyprinodon elegans*	LE	E	Habitat not likely present.
Headwater Catfish	*Ictalurus lupus*		T	Habitat not likely present.
Pecos Gambusia	*Gambusia nobilis*	LE	E	Habitat not likely present.
Pecos Pupfish	*Cyprinodon pecosensis*		T	Habitat not likely present.

Roundnose Minnow	*Dionda episcopa*		T	Habitat not likely present.
Speckled Chub	*Dionda episcopa*		T	Habitat not likely present.
Black Bear	*Ursus americanus*		T	Habitat not likely present.
Pecos Assiminea Snail	*Assiminea pecos*	LE	E	Habitat not likely present.
Phanom Springsnail	*Pyrgulopsis texana*	LE	E	Habitat not likely present.
Phantom Tryonia	*Tryonia cheatumi*	LE	E	Habitat not likely present.
Texas Hornshell	*Popenaias popeii*	LE	E	Habitat not likely present.
Texas Horned Lizard	*Phrynosoma cornutum*		T	Habitat potentially present.
Monarch Butterfly	*Danaus plexippus*	C		Habitat potentially present.
Pecos Sunflower	*Helianthus paradoxus*	T	T	Habitat not likely present.

*LE-Listed Endangered, LT-Listed Threatened, C-Candidate, PT-Proposed Threatened, PE- Proposed Endangered, T-Threatened, E-Endangered

6.3.2 TXNDD Element Occurrences Records

Additional GIS data were also requested from the Texas Natural Diversity Database (TXNDD) for RTE species within five (5) miles of the Site, which includes federal- and state-listed and tracked threatened, endangered, and rare species. That request yielded the information illustrated in **Figure 8**.

The TXNDD has an element occurrence (EO) record for state-listed Pecos Pupfish near the Site. The buffer for the EO record is large and intersects the Site, but Pecos Pupfish are unlikely to occur at the Site due to a lack of aquatic features on or adjacent to the Site.

TXNDD data does not provide a definitive statement as to the presence, absence, or condition of special status species, natural communities, or other significant features within the Site; therefore, this data cannot substitute for an on-site evaluation by qualified biologists.

6.3.3 TPWD Correspondence

The TPWD Wildlife Habitat Assessment Program (WHAP) assists project developers in identifying, evaluating, and addressing potential impacts to natural resources of conservation concern in Texas (TPWD 2020). After completion of an on-Site Biological Resources Evaluation (BRE) Best Management Practices (BMPs) may be developed and concurrence sought with TPWD.

6.3.4 Habitats

The Site consists of open grassland with no canopy cover. The landscape may provide habitat opportunities for a variety of species. Based on a review of USFWS critical habitat web mapper, there are no critical habitat areas located on, or adjacent to the Site (USFWS 2024b).

Based on review of the records described above, the following species have the potential to occur within the Site:

- Northern Aplomado Falcon: The Northern Aplomado Falcon, federally listed as endangered, may utilize the Site for foraging as the Site appears to provide open canopy necessary for hunting prey. The species is unlikely to nest within the Site due to the apparent lack of trees or tall shrub cover.
- Zone-tailed Hawk: The Zone-tailed Hawk, state listed as threatened, may utilize the Site for foraging as the Site appears to provide open canopy necessary for hunting prey. The species is unlikely to nest within the Site due to the apparent lack of trees or tall shrub cover.
- Texas Horned Lizard: The Texas Horned Lizard, state listed as threatened, may occupy the Site as it appears to provide ample arid habitat with open areas and sparse plant cover. Additionally, the Site may provide necessary loose sand or loamy soils necessary for hibernation.
- The Monarch Butterfly, a candidate for federal listing, is a generalist species found in a wide variety of habitats. The Site may provide flowering plants, a necessary nectar source, or milkweed, a necessary host plant. Species listed as “candidates” do not have protection under the ESA until the listing is made final.

6.3.5 Conservation Easements

Based on review of the National Conservation Easement Map, there are no easements mapped within, or in the vicinity of, the Site (NCED 2024).

6.3.6 Surface Water

According to the National Hydrology Database (NHD) (USGS 2023), no aquatic features are identified within or adjacent to the Site. The Site is located approximately four (4) miles southwest of the Pecos River and spans through the Mosquito Lake- Pecos River watershed, the Lateral Number One – Pecos River sub-watershed, the Lower Pecos – Red Bluff Reservoir sub-basin, and the Rio Grande River basin.

6.3.7 Subsurface Hydrology

According to the Texas Water Development Board (Hayes, Major Aquifers of Texas 2016), the Site is located over the Edwards-Trinity (Plateau) Aquifer.

The Edwards-Trinity (Plateau) Aquifer is a major aquifer extending across much of the southwestern part of the state. The water-bearing units are composed predominantly of limestone and dolomite of the Edwards Group and sands of the Trinity Group. The saturated thickness of this aquifer system increases from less than 100 feet in the north to greater than 800 feet down-dip to the south. Freshwater saturated thickness averages 433 feet.

Springs occur along the margins of the aquifer where the water table intersects the ground surface. San Felipe Springs is the largest exposed spring along the southern margin. Springs also discharge groundwater along the eastern flanks of the Trans-Pecos Mountains; the lower Pecos River canyons in Del Rio are the largest of these springs. As water levels have declined in the western portion of the aquifer due to increased irrigation pumping, springflows in those areas have also declined. In addition, many small springs that once flowed throughout the plateau have ceased flowing.

The water in the Edwards-Trinity (Plateau) Aquifer is generally a hard, calcium bicarbonate type and typically has total dissolved solids concentrations ranging from 400 to 1,000 milligrams per liter. Water quality in the unconfined portion of the aquifer is generally fresh, with only small, localized areas of slightly saline groundwater. Water typically increases in salinity to the west within the Trinity Group and in the confined portion of the aquifer where the groundwater is generally slightly to moderately saline.

More than two-thirds of groundwater pumped from this aquifer is used for irrigation, with the remainder used for municipal and livestock supplies. Water levels have remained relatively stable because recharge has generally kept pace with the relatively low amounts of pumping over the extent of the aquifer.

6.3.8 Jurisdictional Waters of the United States

Wetlands and other waters of the United States are protected under Section 404 of the CWA (EPA 1989). Regulated activities that involve discharge of dredged or fill material into Waters of the United States, including wetlands, is subject to regulation by the USACE. Waters of the United States are defined to encompass navigable waters of the United States; interstate waters; all other waters where their use, degradation, or destruction could affect interstate or foreign commerce; tributaries of any of these waters; and wetlands that meet any of these criteria or are adjacent to any of these waters or their tributaries.

The NWI does not map any aquatic features within or adjacent to the Site (USFWS 2024a) (see **Figure 10**). No aquatic features were identified on or adjacent to the Site in the USGS topographic map (**Figure 5**). No special flood hazards are identified in the FEMA Floodplain Map (**Figure 12**). The Web Soil Survey identified one (1) soil map unit at the Site named the Saragosa association, nearly level. The soil unit has a hydric rating of 5% meaning that approximately 5% of the map unit is typically considered hydric (formed in saturated conditions typically associated with wetlands). No aquatic features were visible on or adjacent to the Site in recent aerial photographs observed on the Google Earth platform; however, remnants of a reported vegetable washing operation are visible adjacent to the northwest of the Site.

According to the Phase I ESA Landowner Interview detailed in the separate Phase I ESA document, the area northwest of the Site has not been used for vegetable washing for

approximately 10 years. Based on aerial review, it appears that the former irrigation canals have not been maintained and no longer convey water. Due to the desert landscape characteristics present within the surrounding area, it is improbable the Site contains any aquatic features that may be considered WOTUS.

6.4 Conclusions

Review of records does not indicate the presence of wetlands or other aquatic features on the Site. The historic vegetable washing operation northwest of the Site had some ponds and channels associated with it, but they are out of use and otherwise isolated from major waterways in the region. No WOTUS are likely to exist on the Site.

The Northern Aplomado Falcon, Zone-tailed Hawk, Texas Horned Lizard, and Monarch Butterfly have the potential to occur within the Site. The Northern Aplomado Falcon is federally listed endangered. The Monarch Butterfly is a candidate for listing and therefore not currently protected under the ESA. The Texas Horned Lizard and Zone-tailed Hawk are state listed species. Consultation with TPWD is advised for assistance mitigating potential impacts to state listed species.

There is potential habitat on the Site for birds protected under the MBTA. Vegetation clearing during nesting season (March 15 through September 15) should be preceded by nesting surveys to help comply with MBTA. Eagles are not likely to occur on the Site.

A Biological Resource Evaluation (BRE) can provide additional details about the potential for protected species to occur on the Site and mitigation methods for possible species impacts.

7 CULTURAL AND HISTORICAL RESOURCES

7.1 Federal Regulatory Background

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), as amended, established the National Register of Historic Places (NRHP), which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 Code of Federal Regulations (CFR) 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events.
- It is associated with significant people in the past.
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction.
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves, and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

7.2 State Regulatory Background

Antiquities Code of Texas

The Antiquities Code of Texas was enacted in 1969 to protect archeological sites and historic buildings on public land. The Code requires state agencies and political subdivisions of the state including cities, counties, river authorities, municipal utility districts, and school districts, to notify the Texas Historical Commission (THC) of ground-disturbing activity on public land. The law also established the designation of State Antiquities Landmark, which may be applied to historic buildings as well as archeological sites. The Antiquities Code (Texas Natural Resource Code, Title 9, Chapter 191) and accompanying Rules of Practice and Procedure (Texas Administrative Code, Title 13, Chapter 26) can be found under Statutes, Regulations, and Rules (Texas Historical Commission 2024).

Examples of projects that require review under the Antiquities Code of Texas include, but are not limited to:

- Construction of reservoirs by river authorities and water districts

- Construction of recreational parks or the expansion of existing facilities by city governments
- Energy exploration by private companies on public land.
- Construction of water and wastewater lines and treatment plants.
- Rehabilitation or demolition of a building owned by a state agency or university that is at least 50 years old.
- Rehabilitation or demolition of a building owned by a political subdivision of the state that is listed in the National Register of Historic Places, individually or as part of a historic district, or that has other state or local designations (Texas Historical Commission 2024).

Title 13 Cultural Resources Texas Administrative Code

Title 13 contains the THC's rules related to the Antiquities Code of Texas, Historic Preservation by Counties, and General Provisions Relating to Cemeteries (Texas Historical Commission 2024). The rules pertain to THC programs including:

- Chapter 12: Texas Historic Courthouse Preservation Program.
- Chapter 13: State Franchise Tax Credits for Certified Rehabilitation of Certified Historic Structures.
- Chapter 15. Rule 15.6: Certified Local Governments
- Chapter 17, Rule 17.2: Review of Work on County Courthouses
- Chapter 22. Cemeteries
- Chapter 24: Restricted Cultural Resource Information. The exact mapped location of archeological sites is information that is legally restricted from access by the general public.
- Chapter 26: Rules of Practice and Procedure for the Antiquities Code of Texas, including requirements for State Antiquities Landmark designation and permits.
- Chapter 28: Historic Shipwrecks.
- Chapter 29: Management and Care of Artifacts and Collections.

Texas Health and Safety Code

On September 1, 2009, the Texas Health and Safety Code was amended to include a requirement for the recording of unknown or abandoned cemeteries with the county clerk in the county where the cemetery is located. The law clearly defines a cemetery as "a place that is used or intended to be used for interment, and includes a graveyard, burial park, mausoleum, or any other area containing one or more graves."

The Health & Safety Code further states:

a. A person who discovers an unknown or abandoned cemetery shall file notice of the cemetery with the county clerk of the county in which the cemetery is located not later than the 10th day after the date of discovery. The notice must contain a legal description of the land on which the unknown or abandoned cemetery was found and describe the approximate location of the cemetery and the evidence of the cemetery that was discovered.

b. A county clerk may not charge a fee for filing notice under this section.

c. The county clerk shall send a copy of the notice to the THC and file the notice in the deed records of the county, with an index entry referencing the land on which the cemetery was discovered.

d. The THC has no formal role in the enforcement or filing of the notice requirements mandated under Chapter 711 of the Health and Safety Code. However, to facilitate the recording of unknown or abandoned cemeteries in accordance with Section 711.011, a sample notice for archeological discoveries is available on the THC website (www.thc.state.tx.us). Once the notice is completed and notarized, it may be recorded in the county clerk's office in accordance with Section 711.011.

7.3 Resource Evaluations and Considerations

Based on a review of historical aerial imagery and Site reconnaissance and land owner interviews conducted under the Phase I review provided in a separate report, the an abandoned vegetable washing facility was located northwest of the Site and they historically disposed of washed materials on the Site. The Site is otherwise vacant land.

Per the Texas Historic Sites Atlas (Texas Historical Commission 2024), there are no courthouses, National Register Properties, State Antiquities Landmark, Historical Markers, cemeteries, or museums located on the Site (**Figure 11**).

The Antiquities Code of Texas (ACT) requires cultural resources review and THC concurrence for properties owned by political subdivisions of the state, which typically includes city-owned property.

If federal jurisdiction is triggered (e.g., a Section 404 Clean Water Act Nationwide Permit is used), the National Historic Preservation Act (NHPA) would apply and consultation with the THC would be necessary. Data pertaining to cultural resources is restricted information, and can only be accessed by a professional archeologist and/or a THC steward.

The Comanche Nation of Oklahoma and the Tonkawa Tribe of Oklahoma have identified Reeves County as mapped area of interest to their tribes. In addition, the THC maintains a list of tribes which do not have mapped areas of interest, but who should also be consulted during consultation reviews (Texas Historical Commission 2024).

7.4 Conclusions

Based upon the desktop review, there are no known cultural deposits, or historic structures located on the Site (**Figure 11**). There is potential that buried cultural deposits, or buried historic debris that could be encountered within the Site during construction. Compliance with ACT is assumed a requirement due to the ownership of the land by the Town of Pecos City. A Cultural Resources Survey is required followed by concurrence by THC.

Due to the apparent lack of WOTUS, it is unlikely that the project will have to comply with Section 106 of the NHPA.

8 AIR QUALITY AND COMPLIANCE

8.1 Federal Regulatory Background

CLEAN AIR ACT AND NATIONAL AMBIENT AIR QUALITY STANDARDS

The federal Clean Air Act (CAA), promulgated in 1963 and amended several times thereafter, including the 1990 Clean Air Act amendments (CAAA) (EPA 1993), establishes the framework for modern air pollution control. The CAA directs the EPA to establish national ambient air quality standards (NAAQS) for six criteria pollutants: ozone (O_3), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), sulfur dioxide (SO_2) and particulate matter (PM). The NAAQS are divided into primary and secondary standards; the primary standards are set to protect human health within an adequate margin of safety, and the secondary standards are set to protect environmental values, such as plant and animal life. The CAA requires states to submit a state implementation plan (SIP) for areas in nonattainment for NAAQS. The SIP, which is reviewed and approved by EPA, must demonstrate how the NAAQS would be achieved. Failing to submit a plan or secure approval can lead to denial of federal funding and permits. In cases where the SIP fails to demonstrate achievement of the standards, EPA is directed to prepare a federal implementation plan. The table below presents the federal ambient air quality standards.

National Ambient Air Quality Standards (NAAQS)

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead (Pb)	Primary and Secondary	Rolling 3-month average	0.15 µg/m^3*	Not to be exceeded
Nitrogen Dioxide (NO_2)	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and Secondary	1 year	53 ppb**	Annual Mean
Ozone (O_3)	Primary and Secondary	8 hours	0.070 ppm***	Annual fourth-highest daily maximum 8-hour

					concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	Primary	1 year	12.0 µg/m^3	Annual mean, averaged over 3 years
		Secondary	1 year	15.0 µg/m^3	Annual mean, averaged over 3 years
		Primary and Secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary and Secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		Primary	1 hour	75 ppb****	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

***** In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m^3 as a calendar quarter average) also remain in effect.
****** The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
******* Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.
******** The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

CLEAN AIR NON-ROAD DIESEL RULE

To reduce emissions from off-road diesel equipment, the EPA established a series of increasingly strict emission standards for new engines. Locomotives and marine vessels are exempt from this rule. Manufacturers of off-road diesel engines are required to produce engines meeting certain emission standards based on the model year the engine was manufactured according to the following compliance schedule:

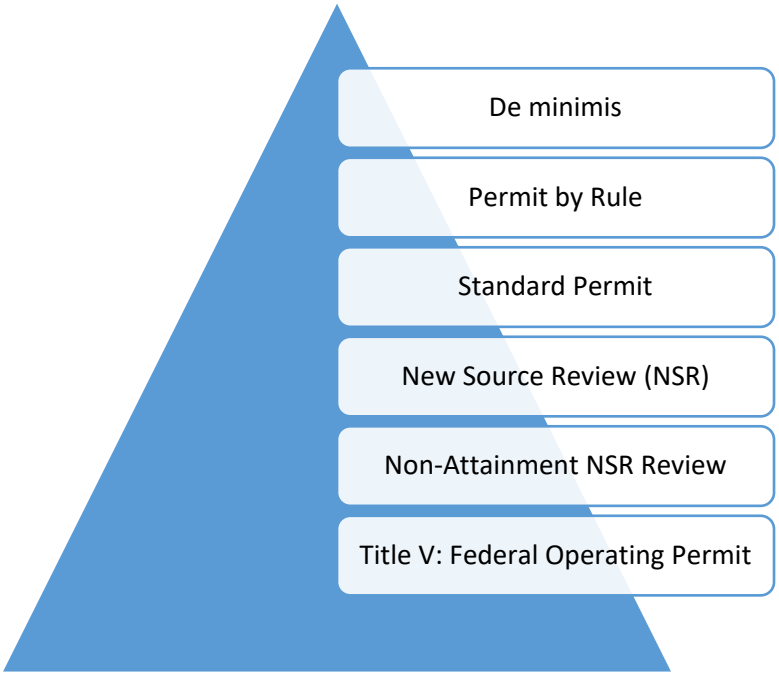
- Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category.
- Tier 2 standards were phased in from 2001 to 2006.

- Tier 3 standards were phased in from 2006 to 2008.
- Tier 4 standards, which require add-on emissions-control equipment to attain them, are currently being phased in, from 2008 to 2015.

8.2 State Regulatory Background

The Clean Air Act (CAA) establishes a number of permitting programs designed to carry out the goals of the act. Some of these programs are directly implemented by EPA's South Central Region (Region 6), but most are carried out by the Texas Commission on Environmental Quality (TCEQ). The facility, which will be located in Ector County, will fall under TCEQ Region 7.

Any person who plans to construct a new facility or engage in the modification of an existing facility, which emits air contaminants into the atmosphere, is required to obtain authorization from the TCEQ or at minimum show compliance by keeping on-site documentation of permit applicability determination indicating a permit registration is not required. TCEQ offers the following potential air quality authorizations:



De Minimis Facilities/Sources

Facilities/sources that meet the conditions of de minimis as defined in 30 Texas Administrative Code (TAC) § 116.119(a), do not have to obtain any registration or authorization prior to construction. However, on-site record keeping indicating that the source is either categorically excluded or emissions are anticipated to be below the de minimis levels, is required.

Permit by Rule Authorizations

Permit by Rule (PBR) authorizations allows facilities to operate under certain established requirements and claim or register facilities accordingly. There are 108 individual PBRs that may be claimed or registered. Most of the PBRs require only on-site record keeping but certain PBRs require registration prior to construction. 30TAC106.50 specifies certain exclusions and provisions for reduced fees, but in general a $450.00 fee is required for all other registrations to TCEQ.

Standard Permits

Owners/operators with facilities that meet the established standard permit criteria may qualify for a standard permit. A set of Standard permits are offered as an efficient mechanism for qualifying facilities to acquire authorization by by-passing modeling and public notice. A review of standard permit application ranges from 45 to 60 days and requires a $900 application fee to TCEQ.

Nonattainment Permits

If the facility is located in a nonattainment area designated by the U.S. Environmental Protection Agency, additional permitting requirements apply and permitting threshold changes. Nonattainment permit review is required if the facility has emissions above the major source and significant thresholds for the specific county designated as nonattainment. Nonattainment permitting also requires the installation of the lowest achievable emission rate control technology and the acquisition of emission reductions to offset the proposed emissions increases. However, this would not apply to the Site as the Town of Pecos City is in attainment.

New Source Review Permits

Facilities that do not qualify for PBRs or standard permits may qualify under case-by-case new source review (NSR) permit application under 30 TAC Chapter 116.

An NSR permit review involves an administrative and technical review by TCEQ. Public notice, modeling requirements and operating permit requirements are triggered during NSR permit review. If a public notice is triggered during administrative review, a 30-day comment period will be added to the review period. The technical review primarily relates to source identification and air emission quantification, analysis of the off-property health impacts of those emissions, determination of best available control technology, and applicability of any source category or emission-based state and federal regulations. The applicant may also be required to publish a second public notice and posting of signs around the proposed facility location for an additional 30-day comment period.

Flexible Permits

A flexible permit allows an owner/operator more flexibility in managing the operations by staying under an overall emissions cap or individual emission limitation. The owner/operator is allowed to structure the flexible permit to best serve their needs. Flexible permits follow the same permitting requirements for NSR permits.

Prevention of Significant Deterioration Permits

If the new facility is a major stationary source (or construction is a major modification) located in attainment or unclassifiable area, a Prevention of Significant Deterioration (PSD) permit will be required. In addition to the requirements of NSR permits, the PSD review requires Best Available Control Technology (BACT) review, and air quality analysis or impacts analysis, and a public notice.

Title V Federal Operating Permits –

If the facility is major source, per 30 TAC Chapter 122, the owner/operator of the facility must submit an Title V permit application before the start-up.

Texas Clean Air Act (TCAA):

The TCEQ regulates the release of air contaminants in the state of Texas through the TCAA, codified in Chapter 382 of the THSC. In regulating air quality, the TCEQ develops rules, including those in 30 TAC Chapters 116 and 106; additionally, TCEQ implements requirements of the FCAA and the federal regulations implementing the FCAA which are in Title 40 of the CFR through commission orders and rules, most of which are approved as part of the SIP.

Permitting Thresholds

Below is a table for general idea for permitting thresholds in tons per year for few criteria pollutants that may be applicable to this project.

Permitting Thresholds	VOC	NOx	CO	PM_{10}	HAPs
PBR	25	250	250	15	10
Major Source	100	100	100	100	10
Major Source Modification	40	40	100	15	
Non-attainment Marginal/Moderate	100	100	100	100	
Non-attainment Severe Major source/Major Modification	25	25	50		

In addition to the above ranges, individual constituents of chemicals of concern will have to meet specific hourly and annual emission limits to be permitted.

8.3 Resource Evaluations and Considerations

The project would allow for the construction, operation, and maintenance of a reciprocating engine power plant for the long-term generation of renewable energy.

Equipment and Chemical Usage Analysis:

From evaluation of the equipment list provided, it is anticipated that at minimum a Electric Generating Unit Standard Permit registration would be required and meeting 30 TAC Chapter 116, Subchapter F relating to standard permits.

Exemption Applicability:

Fuel cell systems not exceeding one megawatt that have a hydrogen reformer which uses only natural gas, propane, or liquid petroleum gas to produce the hydrogen for the fuel cell are categorically or conditionally exempt from air permitting requirements as a listed source in De Minimis Facilities or Sources (dated December 2015) by TCEQ.

Standard Permit for Electric Generating Units:

The Air Quality Standard Permit for Electric Generating Units was effective on May 21, 2007. The standard permit authorizes electric generating units that generate electricity for use by the owner or operator, and/or generate electricity to be sold to the electric grid. Standard permit requires registration under 30 TAC 116.611 provisions.

The standard permit requirements do not apply to wind and solar units, since they do not have air emissions. The TCEQ does not regulate wind or solar units under the Texas Clean Air Act (TCEQ 2007) as they do not have air emissions. However, equipment associated with wind and solar units, that have potential to emit air emissions, may need air permit under 30 TAC 106 or 116. Equipment like emergency generators and stationary engines would need permitting under 30 TAC 106.511 or 30 TAC 106.512.

Emissions Associated with Construction:

Construction of the project has the potential to create temporary air quality impacts through the use of heavy-duty construction equipment, worker vehicle trips, and haul truck trips. In addition, earthmoving activities would result in minor fugitive dust emissions. Short-term emissions of ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$ would be generated during the construction activities.

Pollutant emissions would vary daily, depending on the level of activity, specific operations, and prevailing weather. Mass criteria pollutant emissions generated by these sources would need to be quantified using standard air quality models and project-specific information provided by Blue Power Partners. Construction emissions would be short-term, and would only occur during the construction phase; therefore, long-term emissions are not anticipated to be associated with the project.

To control fugitive dust emissions during construction of the project, the following mitigation measures are proposed:

- Use either water application or chemical dust suppressant application to control dust emissions from onsite unpaved road travel and unpaved parking areas.

- Use vacuum sweeping of paved road surfaces to remove buildup of loose material to control dust emissions from travel on the paved access road (including adjacent public streets impacted by construction activities) and paved parking areas.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Limit traffic speeds on all unpaved site areas to 15 miles per hour (mph).
- Install erosion-control measures to prevent silt runoff to roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Install rumble tracks at each construction site exit.
- Mitigate fugitive dust emissions from wind erosion of areas disturbed from construction activities (including storage piles) by application of either water or chemical dust suppressant.

8.4 Conclusions

It is anticipated that the project would adhere to the TCEQ permit regulations and standard control measures to mitigate potential impacts.

An air permit or permit registration is generally required prior to beginning of construction. Thus, an air permit applicability determination is required once the facility design is finalized. The facility design should include equipment details, throughputs, and chemical usage estimates; based on which, a site-wide potential to emit (PTE) emission estimation is calculated for the applicability determination purposes.

From evaluation of the equipment, engine run times and emissions, it is anticipated that a Prevention of Significant Deterioration (PSD) permit would be required for the planned equipment and facilities at this site. Also it would be anticipated that a Title V Permit would be required as applicable to the Acid Rain Program which requires applications to be submitted 24 months before the start of operation.

Based on the total number of engines (10) and the calculated emissions that will be generated at the facility, the facility will be identified as major source. A Title V permit application must be submitted before the start-up.

From evaluation of the spark ignition internal combustion engine specification sheet provided, it is anticipated that the facility will be required to meet the federal regulation emission standards under NSPS 40 CFR 60, Subpart JJJJ. Below is a table for regulation standards based on permitting thresholds in grams/horsepower per hour for pollutants that are applicable to this project.

NSPS 40 CFR 60 JJJJ – Regulations Table

Pollutant	Emission Limit	Standard	Monitoring/ Testing	Recordkeeping	Reporting
NO_X	1.0 g/HP-hr	§60.4233(e)-Table 1|6 [R]§60.4234 [D]§60.4243(a)(2) [D]§60.4243(a)(2)(i) [D]§60.4243(a)(2)(ii) [D]§60.4243(a)(2)(iii) [R]§60.4243(b) [D]§60.4243(b)(1) [D]§60.4243(b)(2) [D]§60.4243(b)(2)(ii) [D]§60.4243(e) [R]§60.4243(g)	[D]§60.4243(a)(2)(ii) [D]§60.4243(a)(2)(iii) [D]§60.4243(b)(2)(ii) [D]§60.4243(e) [D]§60.4244(a) [D]§60.4244(b) [D]§60.4244(c) [D]§60.4244(d)	[D]§60.4243(a)(1) [D]§60.4243(a)(2)(i) [D]§60.4243(a)(2)(ii) [D]§60.4243(a)(2)(iii) [D]§60.4243(b)(2)(ii) [D]§60.4243(e) [R]§60.4245(a) [D]§60.4245(a)(1) [R]§60.4245(a)(2) [D]§60.4245(a)(3) [D]§60.4245(a)(4)	[GD]§60.4245(c) [D]§60.4245(d)
CO	2.0 g/HP-hr	§60.4233(e)-Table 1|19 [R]§60.4234 [D]§60.4243(a)(2) [D]§60.4243(a)(2)(i) [D]§60.4243(a)(2)(ii) [D]§60.4243(a)(2)(iii) [R]§60.4243(b) [D]§60.4243(b)(1) [D]§60.4243(b)(2) [D]§60.4243(b)(2)(ii) [D]§60.4243(e) [R]§60.4243(g)	[D]§60.4243(a)(2)(ii) [D]§60.4243(a)(2)(iii) [D]§60.4243(b)(2)(ii) [D]§60.4243(e) [D]§60.4244(a) [D]§60.4244(b) [D]§60.4244(c) [D]§60.4244(e)	[D]§60.4243(a)(1) [D]§60.4243(a)(2)(i) [D]§60.4243(a)(2)(ii) [D]§60.4243(a)(2)(iii) [D]§60.4243(b)(2)(ii) [D]§60.4243(e) [R]§60.4245(a) [D]§60.4245(a)(1) [R]§60.4245(a)(2) [D]§60.4245(a)(3) [D]§60.4245(a)(4)	[GD]§60.4245(c) [D]§60.4245(d)
VOC	0.7 g/HP-hr	§60.4233(e)-Table 1|28 [R]§60.4234 [D]§60.4243(a)(2) [D]§60.4243(a)(2)(i) [D]§60.4243(a)(2)(ii) [D]§60.4243(a)(2)(iii) [R]§60.4243(b) [D]§60.4243(b)(1) [D]§60.4243(b)(2) [D]§60.4243(b)(2)(ii) [D]§60.4243(e) [R]§60.4243(g)	[D]§60.4243(a)(2)(ii) [D]§60.4243(a)(2)(iii) [D]§60.4243(b)(2)(ii) [D]§60.4243(e) [D]§60.4244(a) [D]§60.4244(b) [D]§60.4244(c) [D]§60.4244(f) [D]§60.4244(g)	[D]§60.4243(a)(1) [D]§60.4243(a)(2)(i) [D]§60.4243(a)(2)(ii) [D]§60.4243(a)(2)(iii) [D]§60.4243(b)(2)(ii) [D]§60.4243(e) [R]§60.4245(a) [D]§60.4245(a)(1) [R]§60.4245(a)(2) [D]§60.4245(a)(3) [D]§60.4245(a)(4)	[GD]§60.4245(c) [D]§60.4245(d)

9 FLOODPLAINS AND WATER QUALITY

9.1 Federal Regulatory Background

Clean Water Act

The CWA established a basic structure for regulating discharges of pollutants into Waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972 (EPA 1972a). The “Clean Water Act” became the Act’s common name with amendments in 1977.

Under the CWA, the EPA has implemented pollution control programs and established water quality standards for all contaminants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source, discrete conveyances such as pipes or manmade ditches, into navigable waters, unless a National Pollutant Discharge Elimination System (NPDES) permit was obtained. While residential structures that are either connected to a municipal system or otherwise do not discharge into surface waters are not required to obtain an NPDES permit, industrial, municipal, and similar facilities must obtain permits to discharge directly into surface waters.

National Pollutant Discharge Elimination System (NPDES) Permit

The NPDES was established per 1972 amendments to the Federal Water Pollution Control Act (EPA 1972b), to control discharges of pollutants from point sources (Section 402). Under Federal Regulations, 1987 amendments to the Clean Water Act, created a new section of the Act devoted to storm water permitting (Section 402[p]), with individual states designated for administration and enforcement of the provisions of the Clean Water Act and the NPDES permit program.

Under the General Construction Permit, construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater discharges, or be covered by the Construction General Permit. Coverage under the Construction General Permit is accomplished by completing and filing a NOI with the TCEQ. Each Applicant under the Construction General Permit is required to prepare both a Stormwater Pollution Prevention Plan (SWP3) prior to the commencement of grading activities, and implement the SWP3 during construction activities. The primary objective of the SWP3 is to identify, construct, implement, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction activities. BMPs may include programs, technologies, processes, practices, and devices that control, prevent, remove, or reduce pollution. The SWP3 would also address BMPs developed specifically to reduce pollutants in stormwater discharges following the completion of construction activities.

9.2 State Regulatory Background

Texas Pollutant Discharge Elimination System

The State of Texas assumed the authority to administer the NPDES program in Texas on September 14, 1998 (TCEQ 1998). The TCEQ Texas Pollutant Discharge Elimination System (TPDES) program now has federal regulatory authority over discharges of pollutants to Texas surface water, except for discharges associated with oil, gas, and geothermal exploration and development activities for those industries, which are regulated by the Railroad Commission of Texas.

General Construction Permit

Under the TPDES, a General Construction Permit (TXR150000) is required for all construction sites that discharge stormwater associated with construction activity located in the State of Texas. Large construction permits which would disturb 5 acres or more are regulated under this permit. Under the General Construction Permit, small projects which would disturb equal to or greater than 1 acre but less than 5 acres of land and are located in areas with low potential for erosion, may receive automatic authorization, if all criteria are met as outlined in TXR150000. Large Construction activities include clearing, grading, and excavating that result in land disturbance of equal to or greater than five acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original purpose of the site (for example, the routing grading of existing dirt roads, asphalt overlays of existing roads the routing clearing of existing rights-of-way, and similar maintenance activities) (TCEQ 2019). For the authorization of large construction activities, operators are required to develop the following and meet the following conditions:

1. Develop a SWP3 according to the provisions of the General Construction Permit that covers either the entire site or all portions of the site for which Reliability Design & Development is the operator and implement that plan prior to commencing construction activities.
2. Reliability Design & Development must submit a NOI, using a form provided by the executive director, at least seven days prior to commencing construction activities, or if utilizing electronic submittal, prior to commencing construction activities. If an additional primary operator is added after the initial NOI is submitted, the new primary operator must submit an NOI at least seven days before assuming operational control, or if utilizing electronic NOI submittal, prior to assuming operational control. If the primary operator changes after the initial NOI is submitted, the new primary operator must submit a paper NOI or an electronic NOI at least ten days before assuming operational control.
3. All operators of large construction activities must post a site notice in accordance with Part III.D.2. of the General Construction Permit. The site notice must be located where it is

safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction, and must be maintained in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities).

4. Prior to commencing construction activities, all primary operators must:
    - Provide a copy of the signed NOI to the operator of any Municipal Separate Storm Sewer System (MS4) receiving the discharge and to any secondary construction operator. The MS4 is defined as a separate storm sewer system owned or operated by the United States, a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, that discharges to surface water in the state (TCEQ 2019).
    - List in the SWP3 the names and addresses of all MS4 operators receiving a copy.
5. All persons meeting the definition of “secondary operator” in Part I of the General Construction Permit are hereby notified that they are regulated under the General Construction Permit, but are not required to submit an NOI, provided that a primary operator at the site has submitted an NOI, or is required to submit an NOI, and the secondary operator has provided notification to the operator(s) of the need to obtain coverage (with records of notification available upon request). Any secondary operator notified under this provision may alternatively submit an NOI under the General Construction Permit, may seek coverage under an alternative TPDES individual permit, or may seek coverage under an alternative TPDES general permit if available.
6. All secondary operators must provide a copy of the signed and certified Secondary Operator construction site notice to the operator of any MS4 receiving the discharge prior to commencement of construction activities (TCEQ 2019).

9.3 Resource Evaluations and Considerations

9.3.1 Floodplains

FEMA mapping does not indicate any flood hazard zones within the Site, as shown on **Figure 12** (FEMA 2018).

9.3.2 Construction Activities

Project grading and construction activities have the potential to create short-term discharge of sediment, erosion material, and other nonpoint source pollutants into onsite stormwater that could drain to offsite areas and degrade the local water quality, thereby potentially violating water quality standards.

For this analysis, it is assumed approximately 25.0-acres of permanent grading disturbance would occur for project improvements. Soil compaction, soil strengthening agents, or geo fabric may be used for access and circulation roads. Compaction may also be required for the construction of inverter pads, switching stations, and roads. Road construction would require soil conditioning to achieve proper compaction. Roads and other work areas would be periodically sprayed with water to reduce dust.

Activities related to the construction of the project would create the potential for soil erosion and possibly increase sedimentation, both onsite and downstream of the Site. Construction activities also increase the potential for accidental release of pollutants that could affect not only surface waters, but the beneficial uses associated with them. Such pollutants include oil and gas from machinery, chemicals associated with construction, and waste material. Many construction-related pollutants have the potential to degrade water quality by increasing constituent levels in surface waters and could lead to an exceedance of water quality standards.

Construction of the project could result in the introduction of sediment and other nonpoint source pollutants into offsite drainage channels. Therefore, the project would be required to submit and implement a SWP3, in accordance with TPDES General Construction Permit. The SWP3 would identify applicable BMPs to maintain surface water quality conditions of adjacent waters that could receive discharge or runoff from the Site.

Prior to construction-related ground disturbance, the project and project contractors would acquire any necessary regulatory approvals from the TCEQ to ensure compliance with and coverage under the TPDES General Construction Permit to the extent that existing approvals do not cover project construction. Per the General Construction Permit regulations, Reliability Design & Development would prepare and implement a SWP3, submit the NOI to TCEQ, post site notice, and submit a copy of the NOI to the MS4 operator (TCEQ 2019).

9.3.3 Operation and Maintenance

Once operational, the project would not involve any earthmoving activities, and would not result in the short-term discharge of sediment, erosion material, or other nonpoint source pollutants into onsite stormwater. As such, operation of the project would not likely degrade the local water quality, or violate water quality standards.

9.4 Conclusions

Prior to construction-related ground disturbance, the project and project contractors need to acquire any necessary regulatory approvals from the TCEQ to ensure compliance with and coverage under the TPDES General Construction Permit to the extent that existing approvals do not cover project construction. The project would prepare and implement a SWP3, submit the NOI to TCEQ (large projects only), post site notice, and submit a copy of the NOI to the MS4 operator (TCEQ 2019).

Once the project design is complete, compliance with industrial stormwater permits through the Texas Stormwater Multi-Sector General Permit can be evaluated with the applicable SIC code. Once the facility design is complete, compliance with Spill Prevention, Control, and Countermeasure (SPCC) requirements can be evaluated.

10 SEISMICITY AND CONSTRUCTION REQUIREMENTS

10.1 Federal Regulatory Background

Federal Earthquake Hazards Reduction Act

In 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program. The act established the National Earthquake Hazards Reduction Program (NEHRP 1977). The National Earthquake Hazards Reduction Program Act (NEHRPA) significantly amended this program in 1990 by refining the description of the agency responsibilities, program goals, and objectives.

The NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post -earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRPA designates FEMA as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation and the USGS.

10.2 State Regulatory Background

The Texas Railroad Commission regulates injection wells that are most associated with increased frequency and intensity of seismic activity in West Texas.

10.2.1 Regional Seismicity

Based on a review of the National Seismic Hazard Maps, no earthquake fault lines were identified on, or near the Site (USGS 2014). According to the Texas 2014 Seismic Hazard Map for this location, the earthquake peak ground acceleration (PGA), which has a 2 percent chance of being exceeded in 50 years, has a value of between 8 to 10 percent gravity. This is considered a moderate risk (USGS 2014). Injection wells related to oil and gas produced water disposal have been associated with recent increased intensity and frequency of seismic activity.

10.3 Conclusions

Seismic activity is not expected to impact the Site; however, it is advisable to monitor the increasing seismic activity related to oil and gas disposal wells for potential project impacts.

11 HAZARDS AND HAZARDOUS MATERIALS

11.1 Federal Regulatory Background

Resources Conservation and Recovery Act

The Resources Conservation and Recovery Act (RCRA) (EPA 1976) set up the federal regulatory program for hazardous substances. The EPA has the authority to regulate the generation, transport, treatment, and disposal of hazardous substances in a “cradle to grave” system. Under the RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. This regulatory system includes tracking all generators of hazardous waste.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; 42 USC Chapter 103) and associated Superfund Amendments provide the U.S. EPA with the authority to identify hazardous sites, to require site remediation, and to recover the costs of site remediation from polluters. CERCLA also enabled the revision of the National Oil and Hazardous Substances Pollution Contingency Plan, also known as the National Contingency Plan. The NCP provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants (EPA 1980).

1984 Hazardous and Solid Waste Amendment Act

RCRA was amended by the 1984 Hazardous and Solid Waste Amendment Act, which prohibited the use of certain techniques for the disposal of certain hazardous wastes (EPA 1984). The Emergency Planning and Community Right-to-Know Act of 1986 impose safety requirements to protect local communities in the event of accidental release of hazardous substances. The requirements provide measures so that the risks from interaction with hazardous materials, such as handling, storage, and disposal, are mitigated or prevented. This law protects human health and the environment if the unintended release of hazardous materials was to occur (EPA 1984).

Hazardous Materials Transportation Act

The transport of hazardous materials is regulated by the U.S. Department of Transportation (DOT) under Hazardous Materials Transportation Act. To accomplish this, the Federal Aviation Administration, Federal Motor Carrier Safety Administration, Federal Railway Administration, Pipeline and Hazardous Materials Safety Administration, and the U.S. Coast Guard have been given authority to enforce hazardous material transport regulations (TCEQ 2021).

Occupational Safety and Health Administration

The Occupational Safety and Health Act of 1970 created the Occupational Safety and Health Administration (OSHA), which is responsible for protecting the health of workers, such as during the handling of hazardous materials. OSHA has created regulation to set federal standards of workplace safety including exposure limits, mandatory workplace training, accident and injury reporting, and safety procedures. These regulations are recorded in the Code of Federal Regulations Title 29 (EPA 1970).

11.2 Resource Evaluations and Considerations

11.2.1 Hazardous Materials Sites on and Near the Site

A review of federal and state environmental databases was conducted to identify sites known to be associated with releases of hazardous materials or wastes within 1.5-mile radius of the Site, unless otherwise noted. The table below identifies the federal and state databases that were reviewed and the search results. Data involving emergency response incident summaries were not available during the time of this report. Data regarding emergency response incidents can only be viewed by purchasing the data from the TCEQ.

Hazardous Materials Database Searches

Agency	Database	Search Results
U.S. EPA	Superfund List (including National Priorities List)	No sites identified within 1.5 miles of the Site.
U.S. EPA	RCRA List	Three (3) sites identified within 1.5 miles of the Site: • Exxon Mobile Corporation (Inactive) [RN 110005047911], 0.9 miles northwest • Sun Coast Resources (Active) [RN 110071334328], 0.8 miles northeast • Texas-New Mexico Power Company (Inactive) [RN 110005090757], 1.1 miles north
U.S. EPA	Brownfield Sites	No sites identified within 1.5 miles of the Site.
Texas Commission of Environmental Quality	Emergency Response Incident Summaries	Files must be purchased from the TCEQ. Provides information on hazardous spills reported to the TCEQ from 1972 to present.
Texas Commission of Environmental Quality	Petroleum Storage Tank Data	There are two (2) Underground Storage Tanks within 1.5 miles of the Site

		• Allsup's Convenience Store [RN 102031606], 1.3 miles north • Flying J Travel Plaza 736 [RN 102054145], 1.3 miles northeast
Texas Railroad Commission (search conducted only within and directly adjacent to Site)	Well Locations and Pipeline Locations	One (1) oil well is mapped within the western portion of the Site (45H37561) (**Figure 13**). Two (2) wells, (46H37559 and 15H37558) are mapped within close proximity of the Site (TXRRC 2024).

This search, which covered a 1.5-mile radius centered on the Site unless otherwise noted, confirmed that the project would not be located on a site that is included on a list of hazardous materials sites, however it should be noted that a mapped oil well location is shown within the Site.

ESE conducted a Phase I Environmental Site Assessment (ESA) dated May 29, 2024. The Phase I ESA found no recognized environmental conditions (REC) in connection with the Site. There were some nearby facilities represented in government environmental databases, but based on our review of the database listings, they are not likely to impact the Site.

11.2.2 Emergency Response Routes

There are no identified emergency response plans or evacuation routes delineated within the Site, nor would the Site likely be used for emergency evacuation, since there are no substantial populations nearby. The nearest emergency evacuation route is Interstate Highway 35, approximately 315 miles to the southeast, which is designated as a Major Evacuation Route by the Texas Department of Transportation (TXDOT 2024).

11.3 Conclusions

There are no identified hazardous materials impacts located on or near the Site. Hazardous substances are not expected to be an impediment to development. The RRC mapped one (1) oil well on the west end of the Site and two (2) additional wells near the east end of the Site and multiple pipelines adjacent to the Site's parcel. If wells are located on the Site, they may require abandonment and/or avoidance.

12 NOISE AND VISUAL IMPACTS

12.1 Federal Regulatory Background

Generally, the federal government sets noise standards for transportation-related noise sources closely linked to interstate commerce. These include aircraft, locomotives, and trucks. No federal noise standards are directly applicable to the project.

National Scenic Byways Program

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established the National Scenic Byways Program, implemented by Federal Highway Administration (FHWA). Under the National Scenic Byways Program, (23 USC 162) a roadway can be designated as a state scenic byway, a National Scenic Byway, or an All-American Road based upon intrinsic scenic, historic, recreational, cultural, archeological, or natural qualities. A road must exemplify the criteria for at least one of these six intrinsic qualities to be designated a National Scenic Byway. For the All-American Roads designation, criteria must be met for a minimum of two intrinsic qualities. The jurisdiction of the municipal, county, state, tribal, or Federal Governments that govern the designated highway and the lands adjacent to it remains unchanged. The byway's intrinsic qualities are typically protected by those jurisdictions (FHWA 1991).

12.2 State Regulatory Background

Title 7, Texas Transportation Code

Section 547.604. Muffler Required

a. A motor vehicle shall be equipped with a muffler in good working condition that continually operates to prevent excessive or unusual noise.

b. A person may not use a muffler cutout, bypass, or similar device on a motor vehicle.

12.3 Resource Evaluations and Considerations

12.3.1 Visual Impacts

Analysis of visual impacts can be difficult because visual impacts are subject to personal preferences and sensitivities. However, in most cases changes to the existing viewshed within a certain area due to human development can cause undesired impacts.

12.3.2 Noise Receptors

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are considered to be more sensitive to noise intrusion than are commercial or industrial activities. Ambient noise levels can also affect the perceived desirability or livability of a development. Potential sensitive receptors in the Site were determined by reviewing current aerial imagery and conducting Site reconnaissance, which found some residential properties located within and near the site parcels.

12.3.3 Existing Conditions

The existing noise environment in a Site is characterized by the area's general level of development because the level of development and ambient noise levels tend to be closely correlated. Areas which are not urbanized are relatively quiet, while areas which are more urbanized are noisier, as a result of roadway traffic, industrial activities, and other human activities.

The Site is located near a municipal airport at the edge of a small city. Ambient noise levels are expected to be affected by nearby industrial activities and the airport. The immediate vicinity of the Site includes ranchland and oil/gas well activity with a ballfield approximately 0.5 mile north-northeast and a golf course 0.1 mile to the northwest. The park and golf course are potential sensitive receptors for both noise and visual impacts.

According to the National Scenic Byways Database, the Site is not located along a scenic byway and there are no State Parks or National Parks located within the vicinity of the Site (FHWA 2024).

12.3.4 Construction

Construction noise represents a short-term increase in ambient noise levels and would create temporary changes in views of and from the Site. Noise impacts from construction activities associated with the project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. Construction activities would introduce construction equipment and associated vehicles, into the viewshed of surrounding property owners. The construction activities for the project are anticipated to include fine site grading of the Site and construction of the powerplant. To reduce construction noise in the Site, a combination of daily scheduling, equipment controls, and monitoring procedures could ensure potential impacts are reduced. Dust control could be implemented during construction to reduce the potential for slowly moving dust clouds that would attract attention from visual receptors and reduce the availability of views of the savanna prairie landscape. The Town of Pecos City may have codes related to noise produced from the facility. In addition, the following recommended measures could reduce potential noise and visual impacts:

- If nighttime construction were required, measures to reduce nighttime construction noise levels may include using noise barriers, or reducing the amount of construction activity until noise levels are below the nighttime significance criterion.
- Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools.
- All equipment shall have sound control devices no less effective than those provided by the manufacturer. This is in accordance with Title 7, Section 547.604 of the State of Texas Transportation Code.
- Material stockpiles and vehicle staging areas shall be located as far as practicable from residences.
- The topography of the surrounding area is relatively flat, with the primary public views from CR 115 and CR 118. In the area of the project, views from CR 115 and CR 118 include electrical distribution lines on either side of the highway. Additionally, the Reeves County Golf Course and Pecos Municipal Airport are likely within the viewshed of the Site.
- Construction would not take place over an extended period of time, and visual changes resulting from construction are considered short-term and temporary. Construction occurring past daylight hours, which varies by season, could require the use of lighting to illuminate construction activities that occur in the dark.

12.3.5 Operation and Maintenance

Gas turbines, steam turbines, large-scale boilers, fans, blowers, pumps, and transformers, are the kinds of equipment typically found at power plants, and transmission and distribution stations. Due to their size and power these systems have the potential to exceed regulatory noise limits. Their infrastructure also entails large transformers, reactors, and filters which produce noise both because of magnetostrictive hum, and because of the necessary ancillary cooling systems, which usually require large arrays of fans. Additionally, power generating facilities need to be located as close as possible to the industries and homes which use that power, which often puts large noise-producing plants close to people.

At standard roadway speeds, views of the Site would be of short duration and roadway users are fleetingly aware of surrounding traffic, road signs, their immediate surroundings within the automobile, and other visual features. These viewers generally have a lower sensitivity to their surroundings because their focus is concentrated on driving and roadway conditions. The nearby golf course and ballpark may also be affected by the visual impacts from the powerplant, but no associated regulations have been identified that would prevent construction based on potential visual impacts.

12.4 Conclusions

Appropriate noise control measures could be implemented throughout construction and would be implemented for a temporary period of time.

Operation of the project could result in increased noise and there are potential receptors at the nearby golf course and ballpark. Noise modeling and coordination with Town of Pecos City staff could ensure compliance.

No significant constraints have been identified in association with visual resource impacts from construction of the proposed project.

13 DISCRETIONARY PERMITTING MATRIX

ESE prepared a Permit Matrix enclosed in ***Appendix D*** that identifies the anticipated discretionary approvals required from local, state, and federal authorities for the project.

14 REFERENCES

ESE does not warrant the data of regulatory agencies or other third parties supplying information used in the preparation of this report. Documents and commercial information services used in the preparation of this report, as listed below, are all current as most recently published.

Environmental Protection Agency (EPA). 1970. Occupational Safety and Health Administration. OSH Act of 1970. Accessed June 10, 2024. https://www.osha.gov/laws-regs/oshact/completeoshact

__. 1972a. Summary of the Clean Water Act. Accessed June 10, 2024. https://www.epa.gov/laws-regulations/summary-clean-water-act

__. 1972b. National Pollution Discharge Elimintation System (NPDES). Accessed June 10, 2024. https://www.epa.gov/npdes

__. 1976. Summary of the Resource Conservation and Recovery Act. Accessed June 10, 2024. https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act#:~:text=The%20Resource%20Conservation%20and%20Recovery%20Act%20(RCRA)%20gives%20EPA%20the,of%20non%2Dhazardous%20solid%20wastes.

__. 1980. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Federal Facilities. Accessed June 10, 2024. https://www.epa.gov/enforcement/comprehensive-environmental-response-compensation-and-liability-act-cercla-and-federal#:~:text=The%20Comprehensive%20Environmental%20Response%2C%20Compensation,hazardous%20substances%20into%20the%20environment.

__. 1984. Summary of the Resource Conservation and Recovery Act. Accessed June 10, 2024. https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act#:~:text=HSWA%20%2D%20the%20Federal%20Hazardous%20and,as%20corrective%20action%20for%20releases.

__. 1989. Federal Enforcement for the Section 404 Program of the Clean Water Act. Memorandum Between The Department of the Army and The Environmental Protection Agency (Jnauary 1989). Accessed June 10, 2024. https://www.epa.gov/cwa-404/federal-enforcement-section-404-program-clean-water-act

__. 1993. Overview of the Clean Air Act and Air Pollution. Accessed June 10, 2024. https://www.epa.gov/clean-air-act-overview

__. 2024. *RCRAINFO Search*. Accessed June 10, 2024. https://enviro.epa.gov/facts/rcrainfo/search.html.

Federal Emergency Management Agency (FEMA). 2024. *National Flood Hazard Layer (NFHL) Viewer.* Accessed June 10, 2024.

https://hazardsfema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-97.8052667566524,26.098433299153907,-97.7948812433476,26.10325065978834.

Federal Highway Administration (FHWA). 1991. 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) Implementation Maintenance Program. Accessed June 10, 2024. https://www.fhwa.dot.gov/preservation/052192.cfm

__. 2024. National Scenic Byways & All-American Roads. Accessed June 10, 2024. https://fhwaapps.fhwa.dot.gov/bywaysp/

Google. 2024. *earth.google.com/web/.* Accessed June 10, 2024.

Griffith, Glenn, Sandy Bryce, James Omernik, and Anne Rogers. 2007. *Ecoregions of Texas.* Austin, Texas: Texas Commission on Environmental Quality.

Hayes, Mark. 2016. Major Aquifers of Texas. Austin, Texas: Texas Water Development Board. Accessed June 10, 2024. www.twdb.state.tx.us.

International Code Council (ICC). 2018. Internationl Building Code 2018. Accessed June 10, 2024. https://www.iccsafe.org/products-and-services/i-codes/2018-i-codes/ibc/

National Conservation Easement Database (NCED). 2024. National Conservation Easement Database Interactive Map. Accessed June 10, 2024. https://www.conservationeasement.us/interactivemap/.

National Earthquake Hazards Reduction Program (NEHRP). 1997. Accessed June 10, 2024. https://www.nehrp.gov/

National Fire Protection Assocaition (NFPA). 2023. National Electrical Code. Accessed June 10, 2024. https://www.nfpa.org/codes-and-standards/nfpa-70-standard-development/70

Smyrl, Vivian E. 2020. *Burnet County*. Accessed June 10, 2024. https://www.tshaonline.org/handbook/entries/burnet-county

Texas Commission on Environmental Quality (TCEQ). 1998. What Is the "Texas Pollutant Discharge Elimination System" (TPDES). Accessed June 10, 2024. https://www.tceq.texas.gov/permitting/wastewater/pretreatment/tpdes_definition.html

__. 2007. "Air Quality Standard Permit for Electric Generating Units." *Texas Commission on Environmental Quality.* Accessed June 10, 2024. https://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/Combustion/egu_techsum_sp.pdf.

—. 2019. *Stormwater General Permit for Construction Activities.* Accessed June 10, 2024. https://www.tceq.texas.gov/permitting/stormwater/construction.

—. 2020. *TCEQ Geographic Web Apps.* Accessed June 10, 2024. https://www.tceq.texas.gov/gis/tceq-geographic-data-viewers.

__. 2021. Federal Hazardous Materials Transporation Law: An Overview. Accessed June 10, 2024. https://www.phmsa.dot.gov/standards-rulemaking/hazmat/federal-hazardous-materials-transportation-law-overview.

Texas Department of Licensing & Regulation (TDLR). 2023. Texas Electircal Safety and Licensing Act. Accessed June 10, 2024. https://www.tdlr.texas.gov/electricians/laws-rules.htm

Texas Historical Commission (THC). 2024. *Regulatory Archeology in Texas.* Accessed June 10, 2024. https://www.thc.texas.gov/project-review/statutes-regulations-rules.

—. 2024. *Texas Historic Sites Atlas.* Accessed June 10, 2024. https://www.thc.texas.gov/preserve/texas-historic-sites-atlas.

—. 2024. *Tribal Contacts.* Accessed June 10, 2024. https://thc.texas.gov/review/consultation-process/tribal-consultation-guidelines.

Texas Parks and Wildlife Department (TPWD). 2008. Notes for County Lists of Texas' Special Species. Accessed June 10, 2024. https://tpwd.texas.gov/gis/rtest/AcountyCodeKeyForWebESDatabases.pdf

__. 2020. *Wildlife Habitat Assessment Program*. Accessed June 10, 2024. https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/habitat_assessment/.

__. 2024a. *Rare, Threatened, and Endangered Species of Texas by County*. Accessed June 10, 2024 from https://tpwd.texas.gov/gis/rtest/

__. 2024b. Texas Natural Diversity Database. Accessed June 10, 2024. https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/txndd/

Texas Department of Transportation (TXDOT). 2023. "Hurricane Information." Accessed June 10, 2024. https://ftp.txdot.gov/pub/txdot-info/trv/evacuation/all-districts.pdf.

Railroad Commission of Texas (TXRRC). 2024. *RRC Public GIS Viewer.* Accessed June 10, 2024. https://gis.rrc.texas.gov/GISViewer/.

United States Census Bureau (USCB). 2024. *QuickFacts Burnet County, Texas.* Accessed June 10, 2024. https://www.census.gov/quickfacts/bexarcountytexas.

United States Department of Agriculture (USDA). 2017a. "Census of Agriculture." *National Agriculture Statistics Service.* Accessed June 10, 2024 https://www.nass.usda.gov/Publications/AgCensus/2017/index.php#full_report

__. 2017b. Prime Farmland - Texas Criteria. Accessed June 10, 2024. https://efotg.sc.egov.usda.gov/references/public/TX/TX_2b_Prime_Farmland.docx

U.S. Fish and Wildlife Service (USFWS). 1918. Migratory Bird Treaty Act of 1918. Accessed June 10, 2024. https://www.fws.gov/law/migratory-bird-treaty-act-1918

__. 1973. Endangered Species Act. Accessed June 10, 2024. https://www.fws.gov/law/endangered-species-act

__. 2007. "National Bald Eagle Management Guidelines." Accessed June 10, 2024. https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf.

__. 2019. *Coastal Barrier Resource System Mapper.* Accessed June 10, 2024. https://www.fws.gov/cbra/Maps/Mapper.html.

—. 2024a. *National Wetlands Inventory*. Accessed June 10, 2024. https://www.fws.gov/wetlands/

__. 2024b. *Critical Habitat Portal.* Accessed June 10, 2024. http://criticalhabitat.fws.gov/.

__. 2024c IPaC Information for Planning and Consultation. Accessed June 10, 2024. https://ipac.ecosphere.fws.gov/

United States Geological Survey (USGS). 2002. *Historical Topographic Map Explorer.* Accessed June 10, 2024. https://livingatlas.arcgis.com/topoexplorer/index.html

__. 2007. *Geologic Database of Texas.* USGS. Accessed June 10, 2024 <http://mrdata.usgs.gov/geology/state/state.php?state=TX.

__. 2014. *2014 Seismic Hazard Map- Texas.* Accessed June 10, 2024. https://www.usgs.gov/media/images/2014-seismic-hazard-map-texas.

__. 2023. National Hydrography Dataset. Accessed June 10, 2024. https://www.usgs.gov/national-hydrography/national-hydrography-dataset

__. 2024. National Resource Conservation Service Web Soil Survey. Accessed June 10, 2024. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

15 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

CRITICAL ISSUES ANALYSIS

APPROXIMATELY 25.0 ACRES

200 SOUTH FRONTAGE ROAD

PECOS, REEVES COUNTY, TEXAS

JULY 18, 2024

Mason Finley

Staff Biologist II

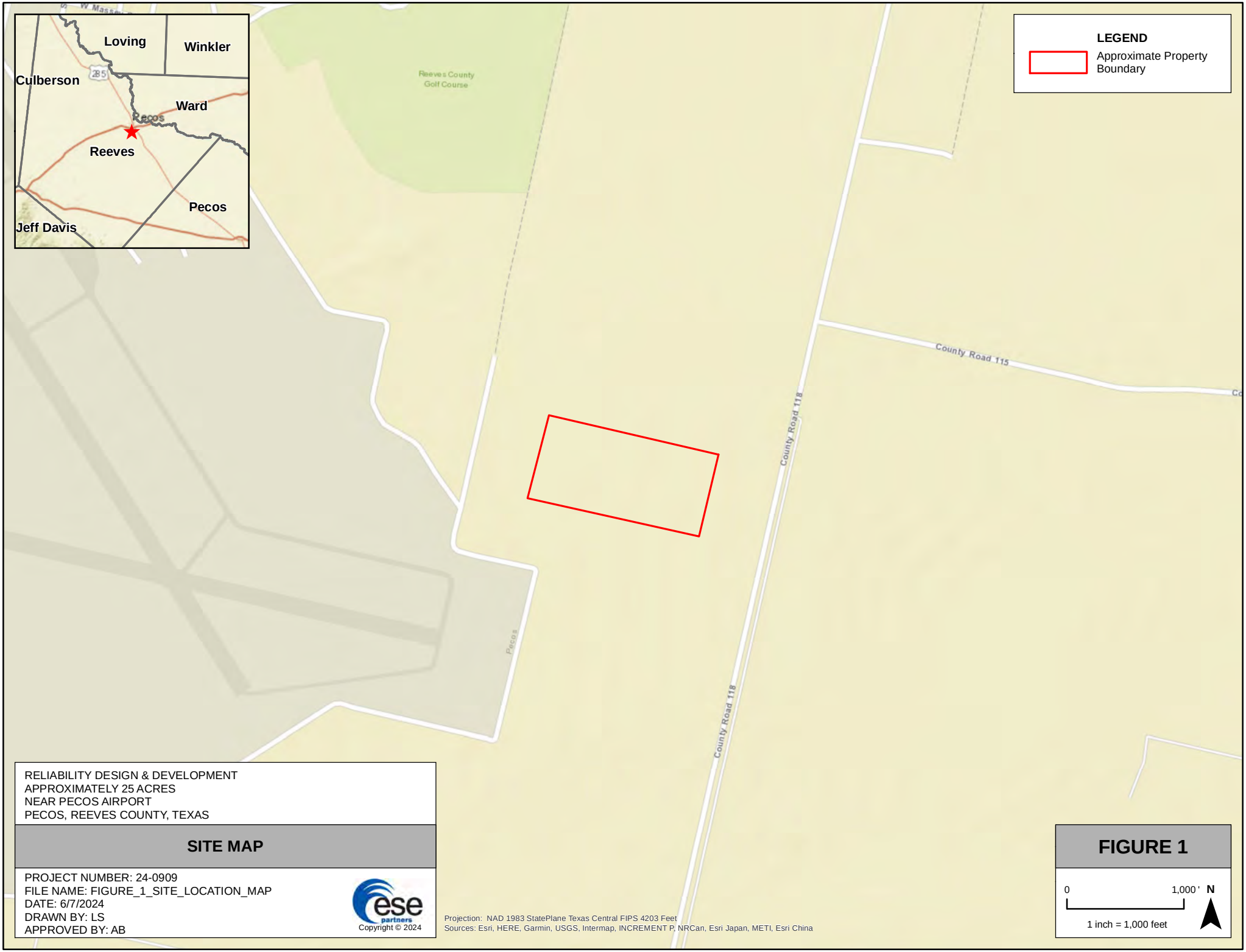
Stephanie Sartain

Staff Environmental Scientist

Aaron Brewer, P.G.

Managing Director, Natural Resources

FIGURES



RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

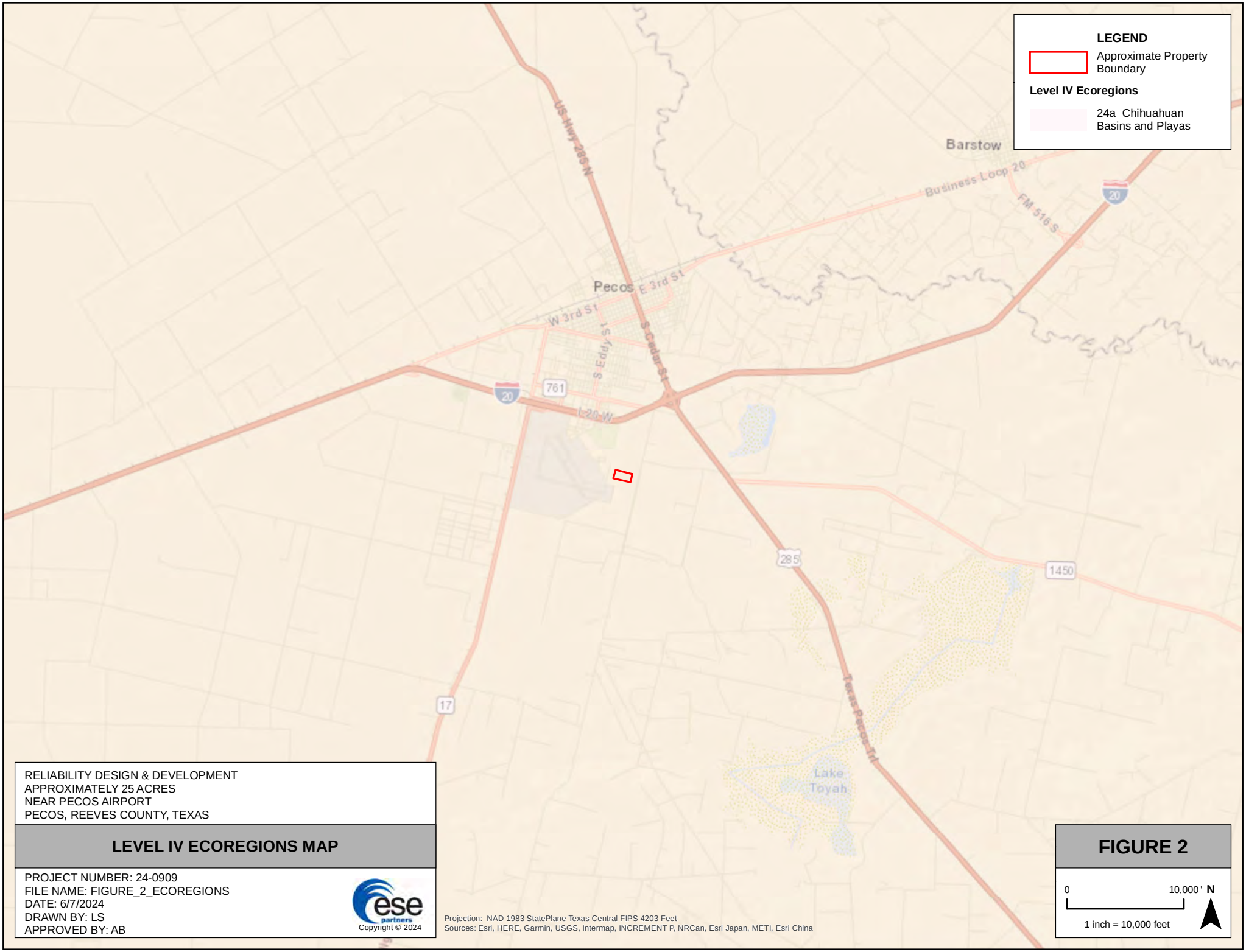
SITE MAP

PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_1_SITE_LOCATION_MAP
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China

FIGURE 1

0 1,000 ' N
1 inch = 1,000 feet



RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

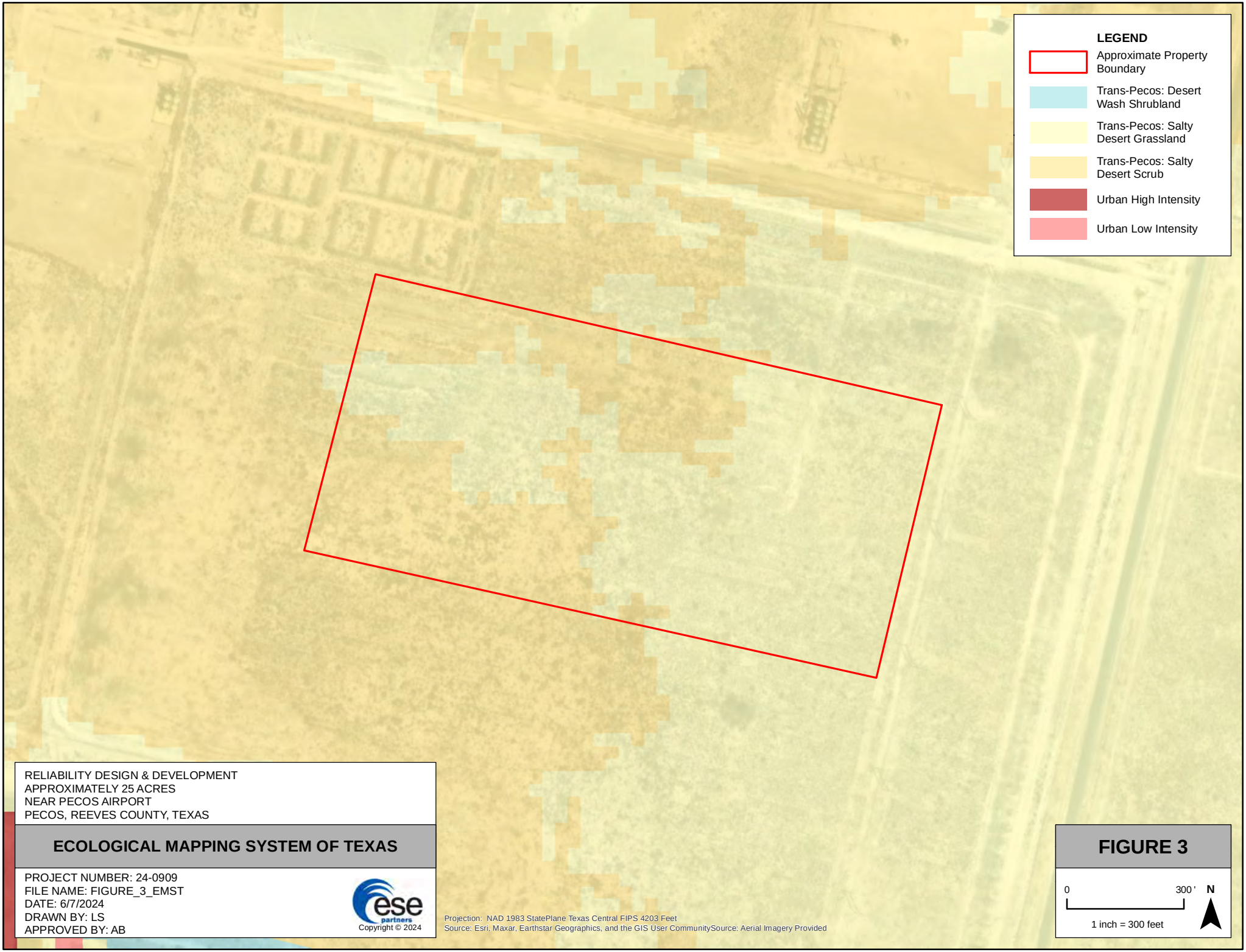
LEVEL IV ECOREGIONS MAP

PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_2_ECOREGIONS
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China

FIGURE 2

0 10,000 ' N
1 inch = 10,000 feet



RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

ECOLOGICAL MAPPING SYSTEM OF TEXAS

PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_3_EMST
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Source: Esri, Maxar, Earthstar Geographics, and the GIS User CommunitySource: Aerial Imagery Provided

FIGURE 3

0 300 ' N

1 inch = 300 feet

RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

AERIAL MAP

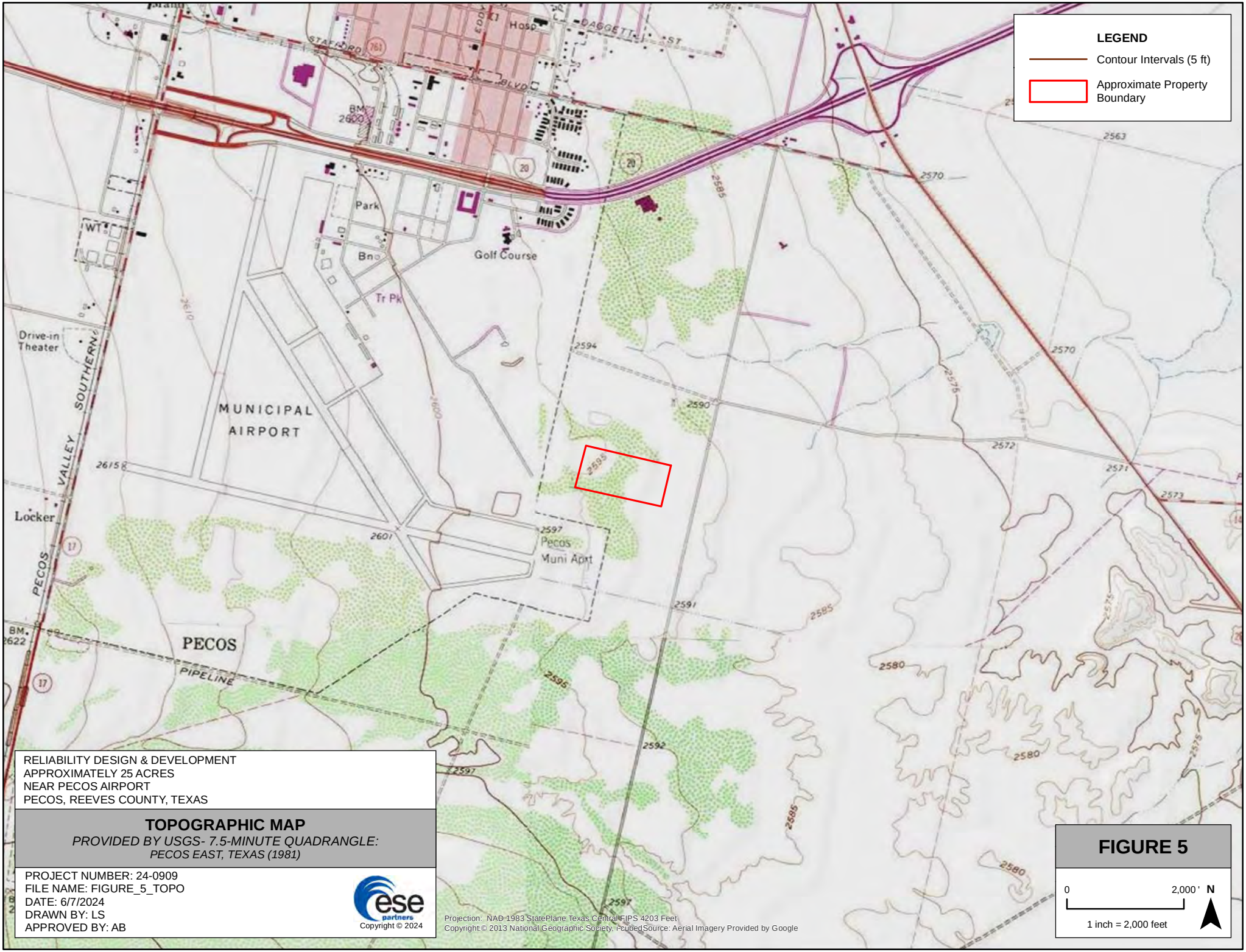
PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_4_AERIAL
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Source: Esri, Maxar, Earthstar Geographics, and the GIS User CommunitySource: Aerial Imagery Provided

FIGURE 4

0 400' N

1 inch = 400 feet



RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

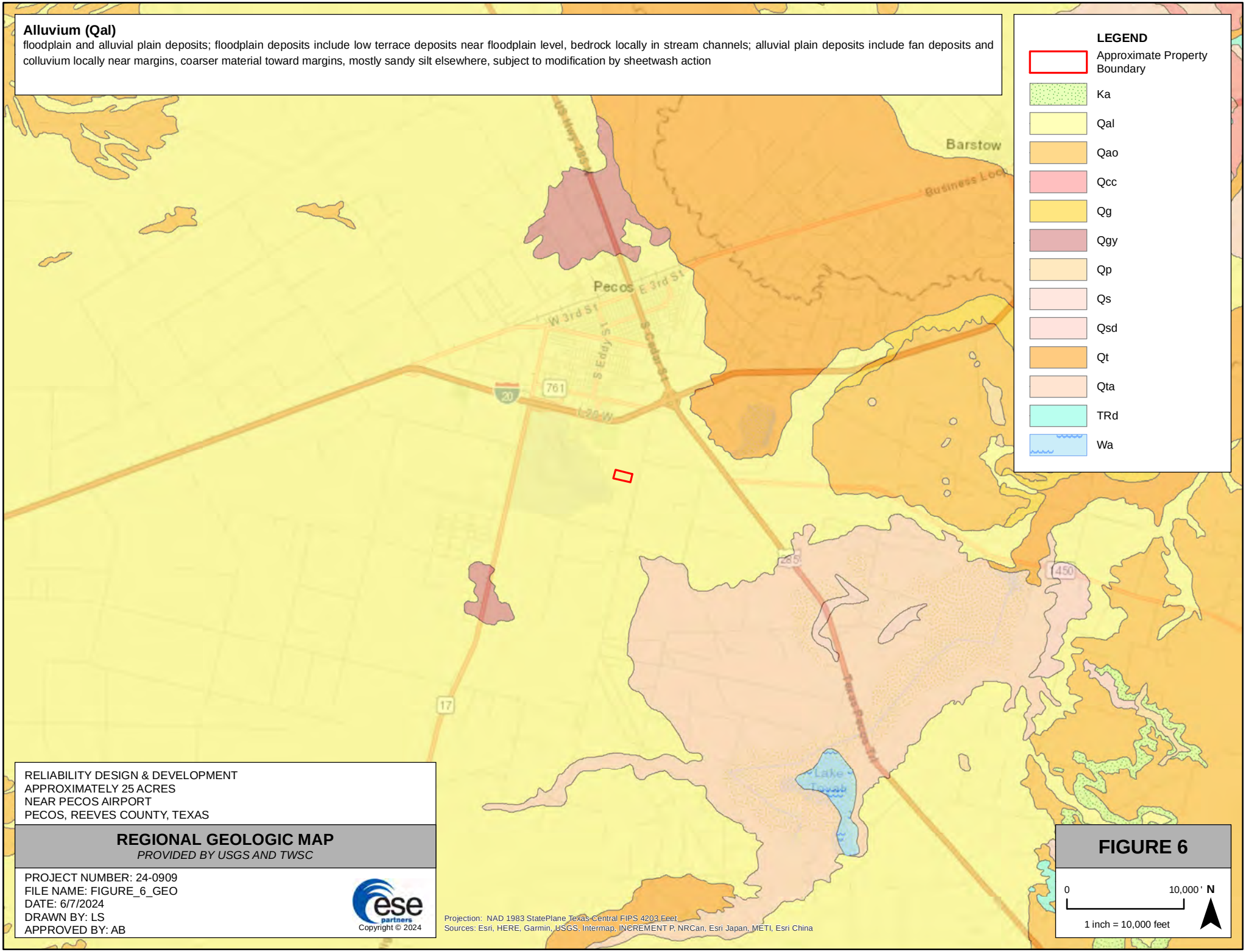
TOPOGRAPHIC MAP

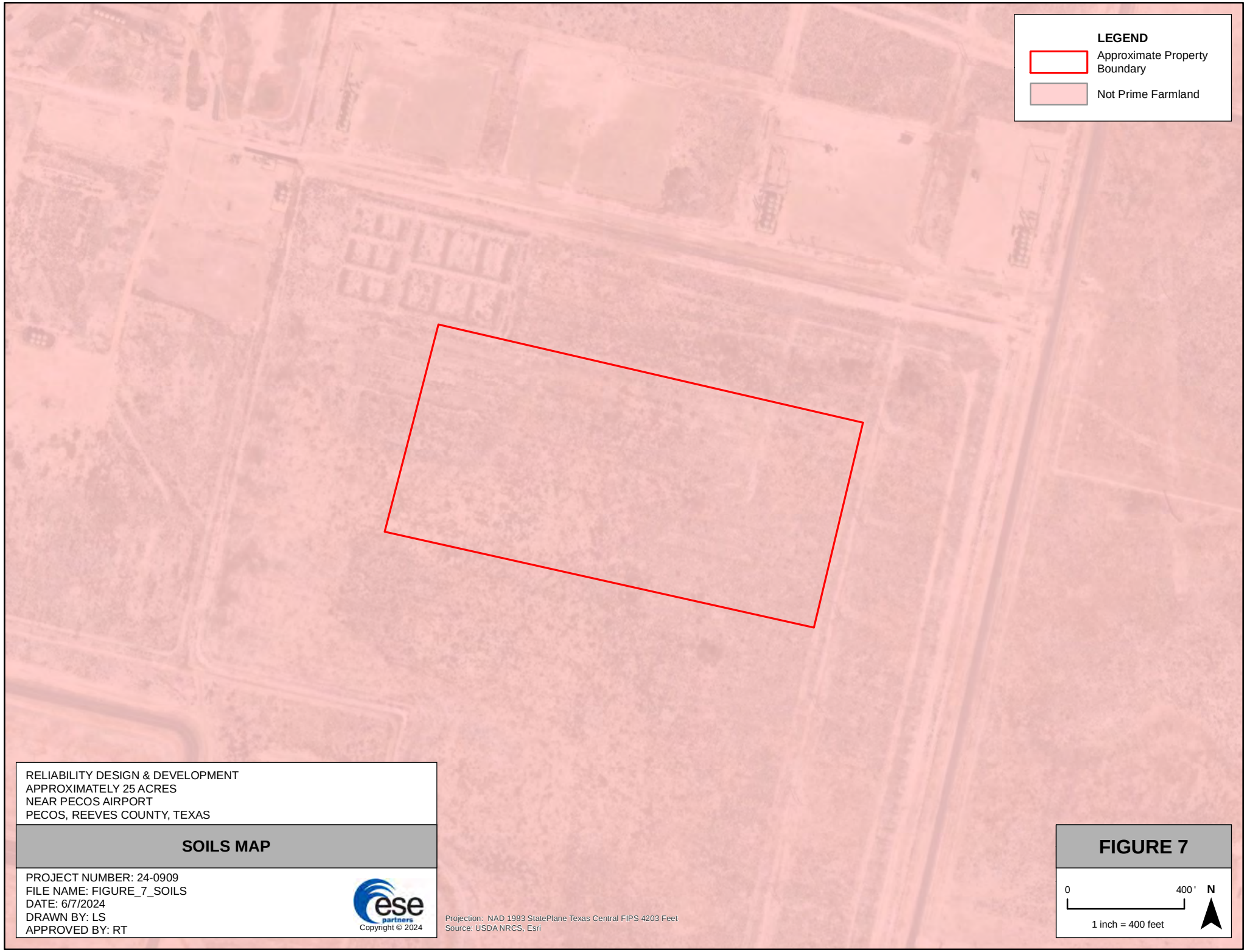
PROVIDED BY USGS- 7.5-MINUTE QUADRANGLE:
PECOS EAST, TEXAS (1981)

PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_5_TOPO
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet

FIGURE 5


Alluvium (Qal)
floodplain and alluvial plain deposits; floodplain deposits include low terrace deposits near floodplain level, bedrock locally in stream channels; alluvial plain deposits include fan deposits and colluvium locally near margins, coarser material toward margins, mostly sandy silt elsewhere, subject to modification by sheetwash action
LEGEND
Approximate Property Boundary
Ka
Qal
Qao
Qcc
Qg
Qgy
Qp
Qs
Qsd
Qt
Qta
TRd
Wa
Barstow
Business Loop
Pecos
E 3rd St
W 3rd St
S Eddy St
S Cedar St
761
20
I-20-W
285
450
17
Texas Pacific Rd
Lake Toyah
RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS
REGIONAL GEOLOGIC MAP
PROVIDED BY USGS AND TWSC
PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_6_GEO
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB
Copyright © 2024
Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China
FIGURE 6
0
10,000 '
N
1 inch = 10,000 feet



RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

SOILS MAP

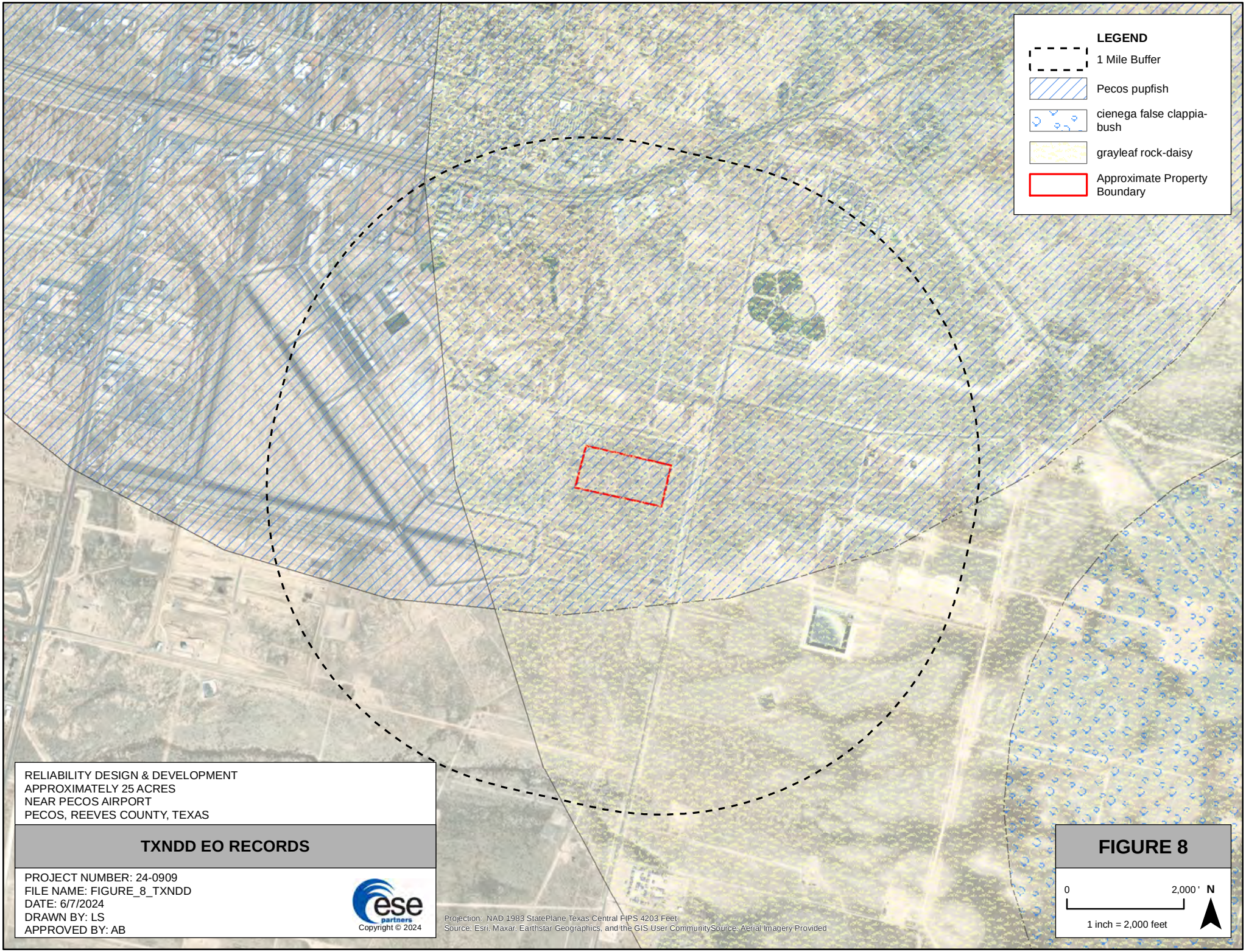
PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_7_SOILS
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: RT

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Source: USDA NRCS, Esri

FIGURE 7

0 400' N

1 inch = 400 feet



RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

TXNDD EO RECORDS

PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_8_TXNDD
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Source: Esri, Maxar, Earthstar Geographics, and the GIS User CommunitySource: Aerial Imagery Provided

FIGURE 8

0 2,000 ' N

1 inch = 2,000 feet

RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

NATIONAL HYDROGRAPHY DATASET

PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_9_NHD
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Source: Esri, Maxar, Earthstar Geographics, and the GIS User CommunitySource: Aerial Imagery Provided

FIGURE 9

0 300 ' N

1 inch = 300 feet

RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

NATIONAL WETLANDS INVENTORY

PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_10_NWI
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Source: Esri, Maxar, Earthstar Geographics, and the GIS User CommunitySource: Aerial Imagery Provided

FIGURE 10

0 300 ' N

1 inch = 300 feet

RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

HISTORIC RESOURCE MAP

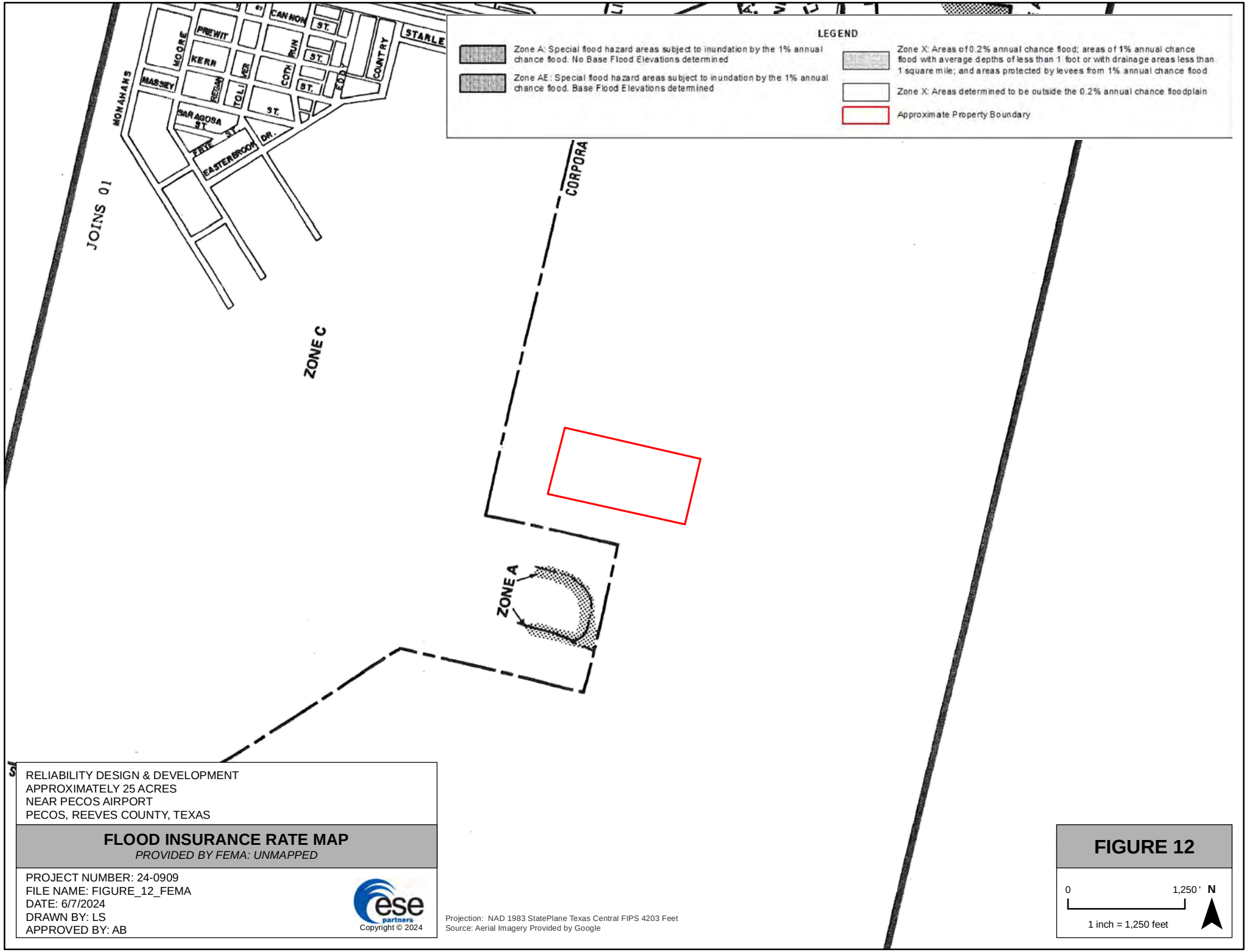
PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_11_HISTORIC
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Source: Esri, Maxar, Earthstar Geographics, and the GIS User CommunitySource: Aerial Imagery Provided

FIGURE 11

0 300 ' N

1 inch = 300 feet



RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

FLOOD INSURANCE RATE MAP

PROVIDED BY FEMA: UNMAPPED

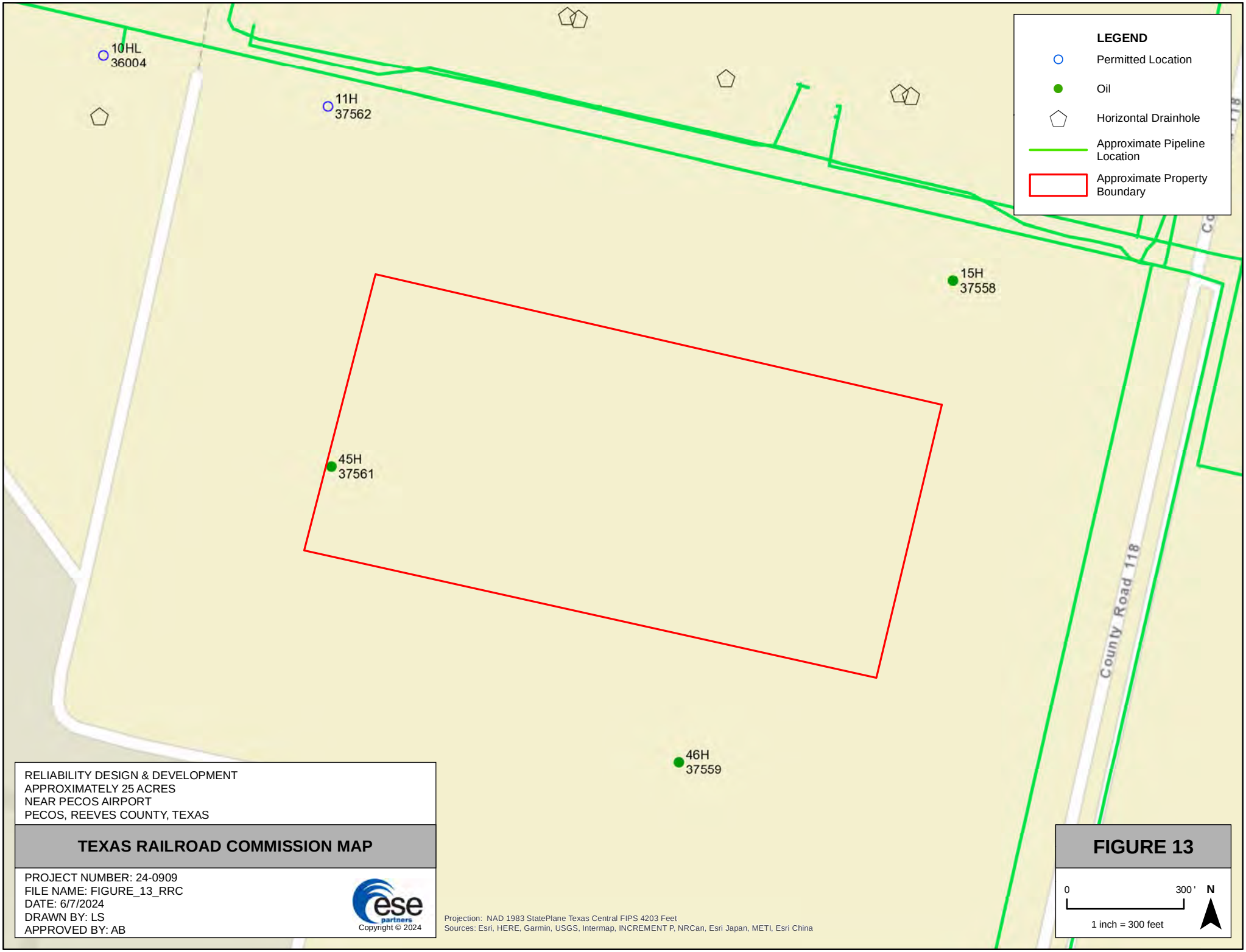
PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_12_FEMA
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Source: Aerial Imagery Provided by Google

FIGURE 12

0 1,250 ' N

1 inch = 1,250 feet



RELIABILITY DESIGN & DEVELOPMENT
APPROXIMATELY 25 ACRES
NEAR PECOS AIRPORT
PECOS, REEVES COUNTY, TEXAS

TEXAS RAILROAD COMMISSION MAP

PROJECT NUMBER: 24-0909
FILE NAME: FIGURE_13_RRC
DATE: 6/7/2024
DRAWN BY: LS
APPROVED BY: AB

Projection: NAD 1983 StatePlane Texas Central FIPS 4203 Feet
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China

FIGURE 13

0 300 ' N
1 inch = 300 feet

APPENDICES

APPENDIX A
APPRASIAL DISTRICT PARCEL DATA

GENERAL INFO

ACCOUNT

Property ID: 535
Geographic ID: 00950-02320-00000-000000
Type: R
Zoning:
Agent:
Legal Description: AB 1460 BLK 5 SEC 24H&GN NE/4 "BERM"
Property Use:

LOCATION

Address: 200 S FRONTAGE RD, PECOS TX 79772
Market Area:
Market Area CD: P-100
Map ID:

PROTEST

Protest Status:
Informal Date:
Formal Date:

OWNER

Name: PECOS 4B ECONOMIC DEVELOPMENT
Secondary Name:
Mailing Address: PO Box 1493 Pecos TX USA 79772-1493

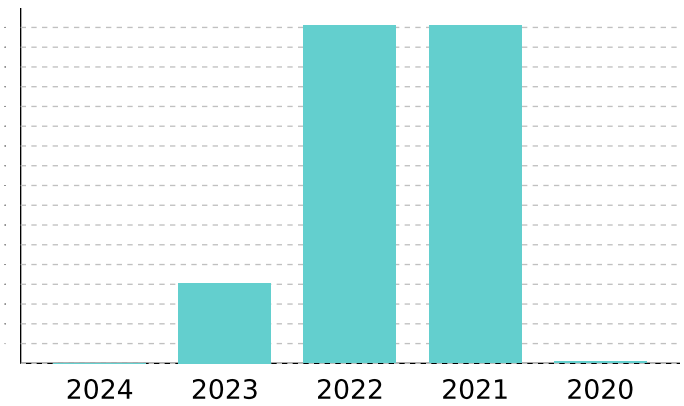
Owner ID: 142673
% Ownership: 100.00
Exemptions: EX-XV - Other Exemptions (including

VALUES

CURRENT VALUES

Land Homesite:	$0
Land Non-Homesite:	$2,026,063
Special Use Land Market:	$0
Total Land:	$2,026,063
Improvement Homesite:	$0
Improvement Non-Homesite:	$0
Total Improvement:	$0
Market:	$2,026,063
Special Use Exclusion (-):	$0
Appraised:	$2,026,063
Value Limitation Adjustment (-):	$0
Net Appraised:	$2,026,063

VALUE HISTORY



VALUE HISTORY

Year	Land Market	Improvement	Special Use Exclusion	Appraised	Value Limitation Adj (-)	Net Appraised
2024	N/A	N/A	N/A	N/A	N/A	N/A
2023	$2,026,063	$0	$0	$2,026,063	$0	$2,026,063
2022	$8,547,450	$0	$0	$8,547,450	$0	$8,547,450
2021	$8,547,450	$0	$0	$8,547,450	$0	$8,547,450
2020	$50,440	$0	$0	$50,440	$0	$50,440

TAXING UNITS

Unit	Description	Tax Rate	Net Appraised	Taxable Value
T2	TRZ 2 - MINERALS	0.000000	$2,026,063	$0
20	ESD #1	0.079464	$2,026,063	$0
25	ESD #2	0.078983	$2,026,063	$0
10	TOWN OF PECOS CITY	0.413480	$2,026,063	$0
65	REEVES COUNTY HOSIPITAL DISTRI	0.116760	$2,026,063	$0
01	REEVES COUNTY	0.380000	$2,026,063	$0
30	P-B-T I.S.D	1.020000	$2,026,063	$0
15	RCGWCD	0.003000	$2,026,063	$0

DO NOT PAY FROM THIS ESTIMATE. This is only an estimate provided for informational purposes and may not include any special assessments that may also be collected. Please contact the tax office for actual amounts.

IMPROVEMENT

LAND

Land	Description	Acres	SQFT	Cost per SQFT	Market Value	Special Use Value
CML	LOT/LAND_COMMERCIAL	145.3500	6,331,446	$0.32	$2,026,063	$0

DEED HISTORY

Deed Date	Type	Description	Grantor/Seller	Grantee/Buyer	Book ID	Volume	Page	Instrument
10/15/15	Legacy	Legacy Deed				1205	0198	15-09634
6/21/13	Legacy	Legacy Deed				1007	507	13-04382
3/23/12	Legacy	Legacy Deed						12-02150
7/29/02	Legacy	Legacy Deed				653	34	
9/1/01	Legacy	Legacy Deed				0	0	
12/2/92	Legacy	Legacy Deed				522	123	

APPENDIX B
NRCS SOIL SURVEY

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 Reeves County, Texas

June 11, 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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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 Scale: 1:2,720 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Reeves County, Texas
Survey Area Data: Version 24, 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: Mar 20, 2020—Mar 22, 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
37	Saragosa association, nearly level	25.0	100.0%
Totals for Area of Interest		**25.0**	**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.

Reeves County, Texas

37—Saragosa association, nearly level

Map Unit Setting

National map unit symbol: 1yxz
Elevation: 2,500 to 4,000 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Saragosa

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Gypsiferous loamy lacustrine deposits

Typical profile

H1 - 0 to 4 inches: clay loam
H2 - 4 to 60 inches: gypsiferous material
H3 - 60 to 80 inches: gypsiferous material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 70 percent
Maximum salinity: Strongly saline (32.0 to 99.0 mmhos/cm)
Sodium adsorption ratio, maximum: 120.0
Available water supply, 0 to 60 inches: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: C
Ecological site: R070BD252TX - Salty, Desert Grassland
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Hydric soil rating: No

Unnamed, hydric

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

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.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Corrosion of Steel

ENG

Engineering

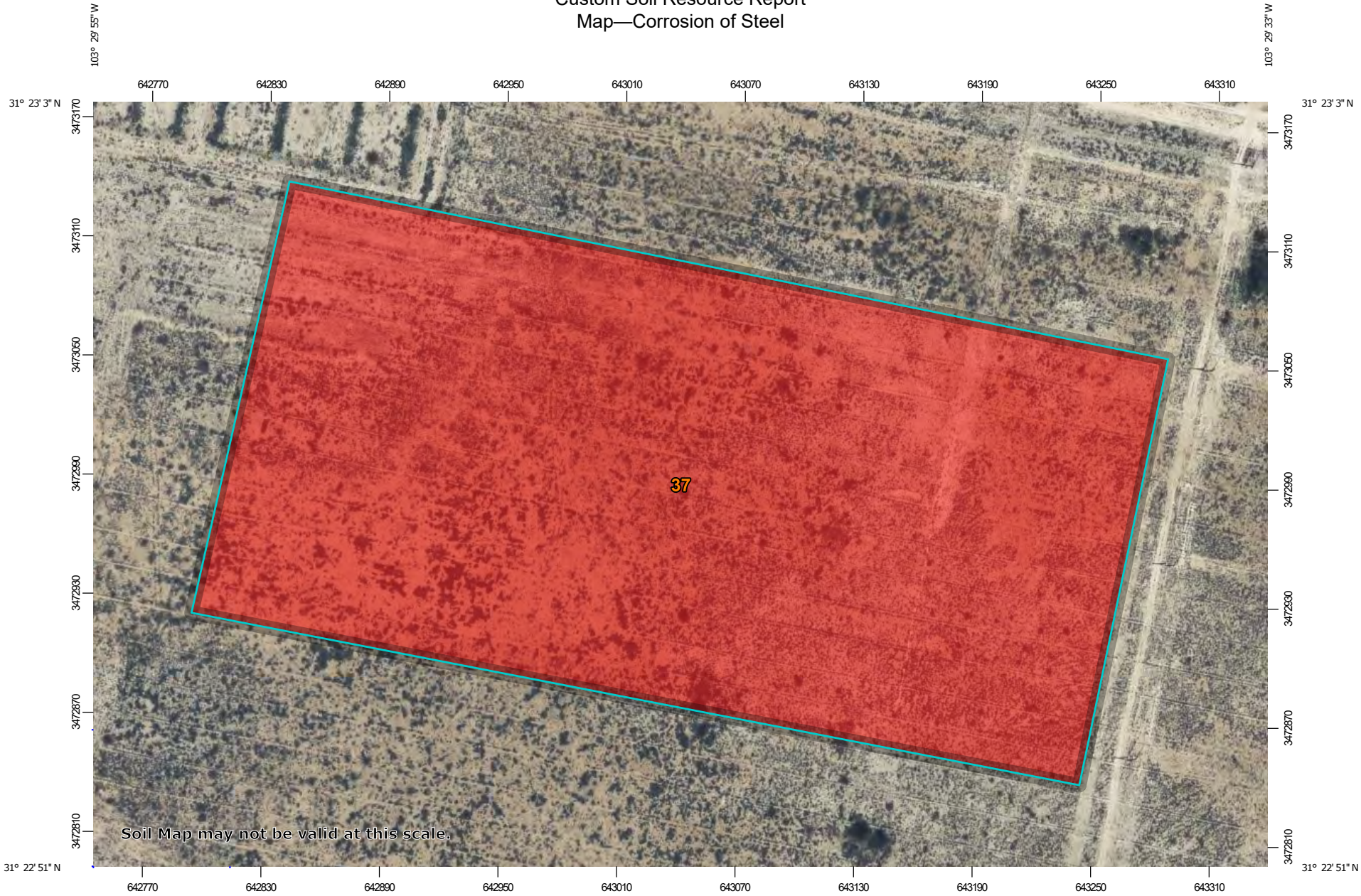
AGR

Agronomy

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel in installations that are entirely within one kind of soil or within one soil layer.

The risk of corrosion is expressed as "low," "moderate," or "high."

Custom Soil Resource Report
Map—Corrosion of Steel



Map Scale: 1:2,720 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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
- High
- Moderate
- Low
- Not rated or not available

Soil Rating Lines
- High
- Moderate
- Low
- Not rated or not available

Soil Rating Points
- High
- Moderate
- Low
- 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 1:24,000.

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: Reeves County, Texas
Survey Area Data: Version 24, 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: Mar 20, 2020—Mar 22, 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—Corrosion of Steel

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
37	Saragosa association, nearly level	High	25.0	100.0%
Totals for Area of Interest			**25.0**	**100.0%**

Rating Options—Corrosion of Steel

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

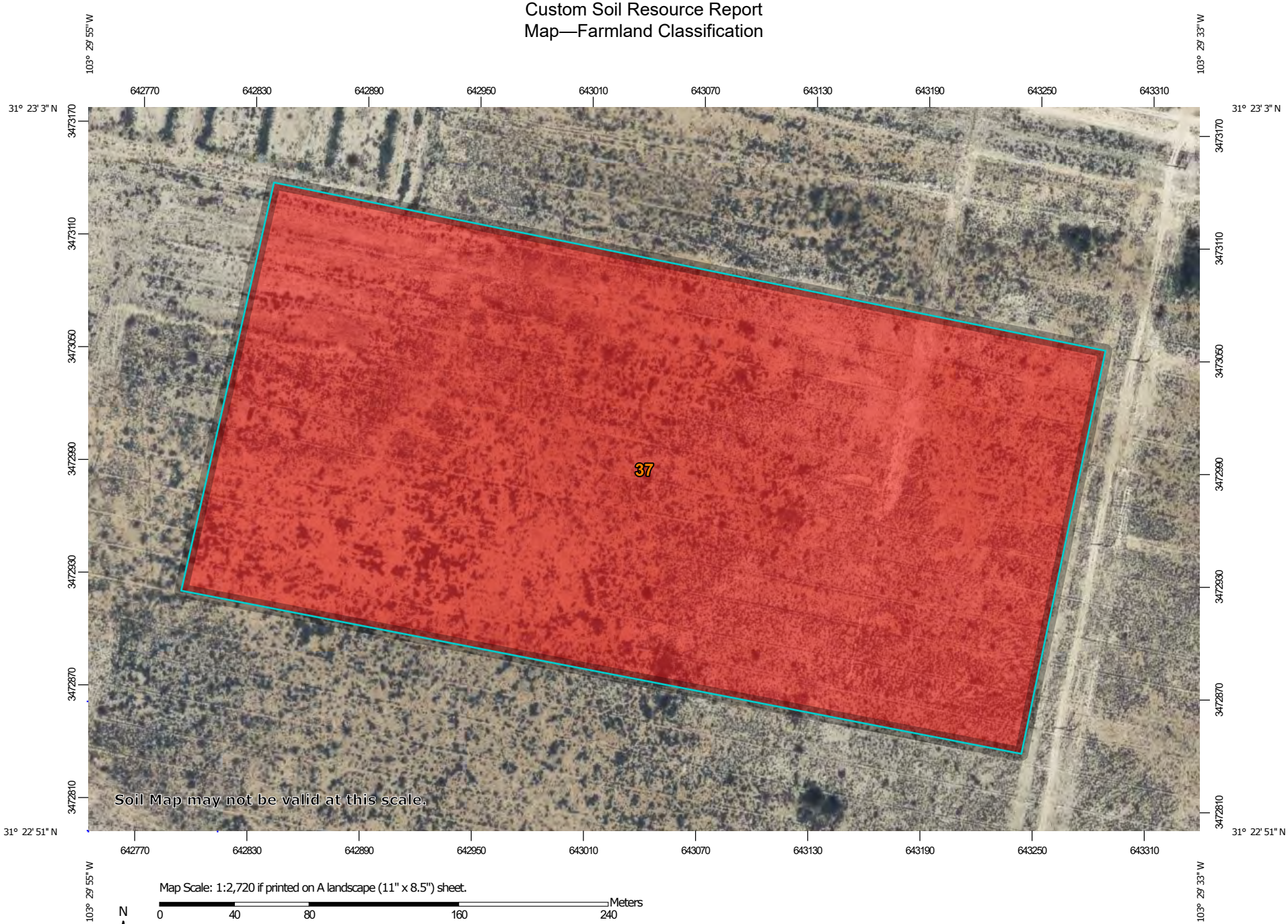
Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Custom Soil Resource Report
Map—Farmland Classification



Map Scale: 1:2,720 if printed on A landscape (11" x 8.5") sheet.

N

0 40 80 160 240 Meters

0 100 200 400 600 Feet

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

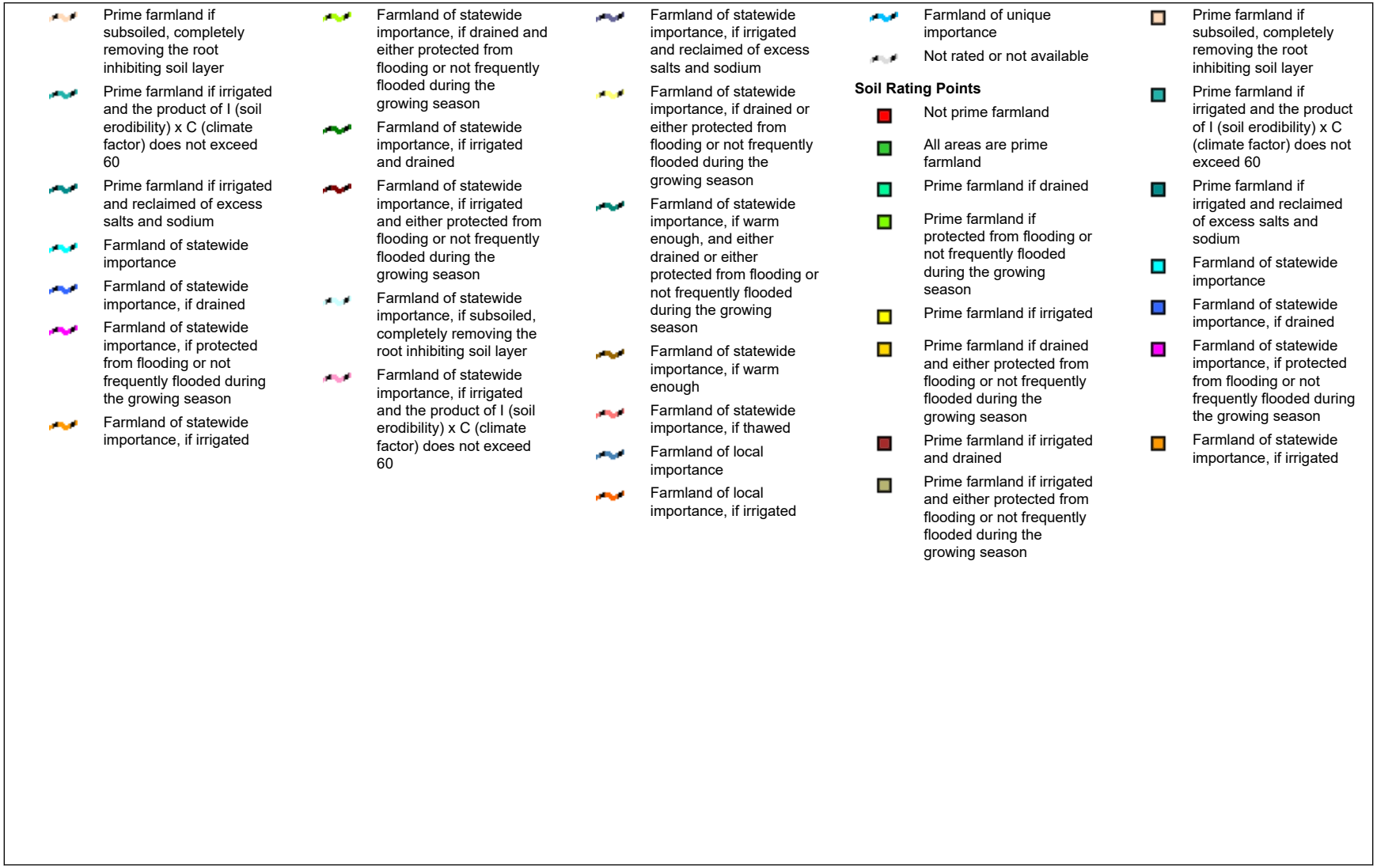
Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Reeves County, Texas
Survey Area Data: Version 24, 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: Mar 20, 2020—Mar 22, 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—Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
37	Saragosa association, nearly level	Not prime farmland	25.0	100.0%
Totals for Area of Interest			**25.0**	**100.0%**

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties

that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

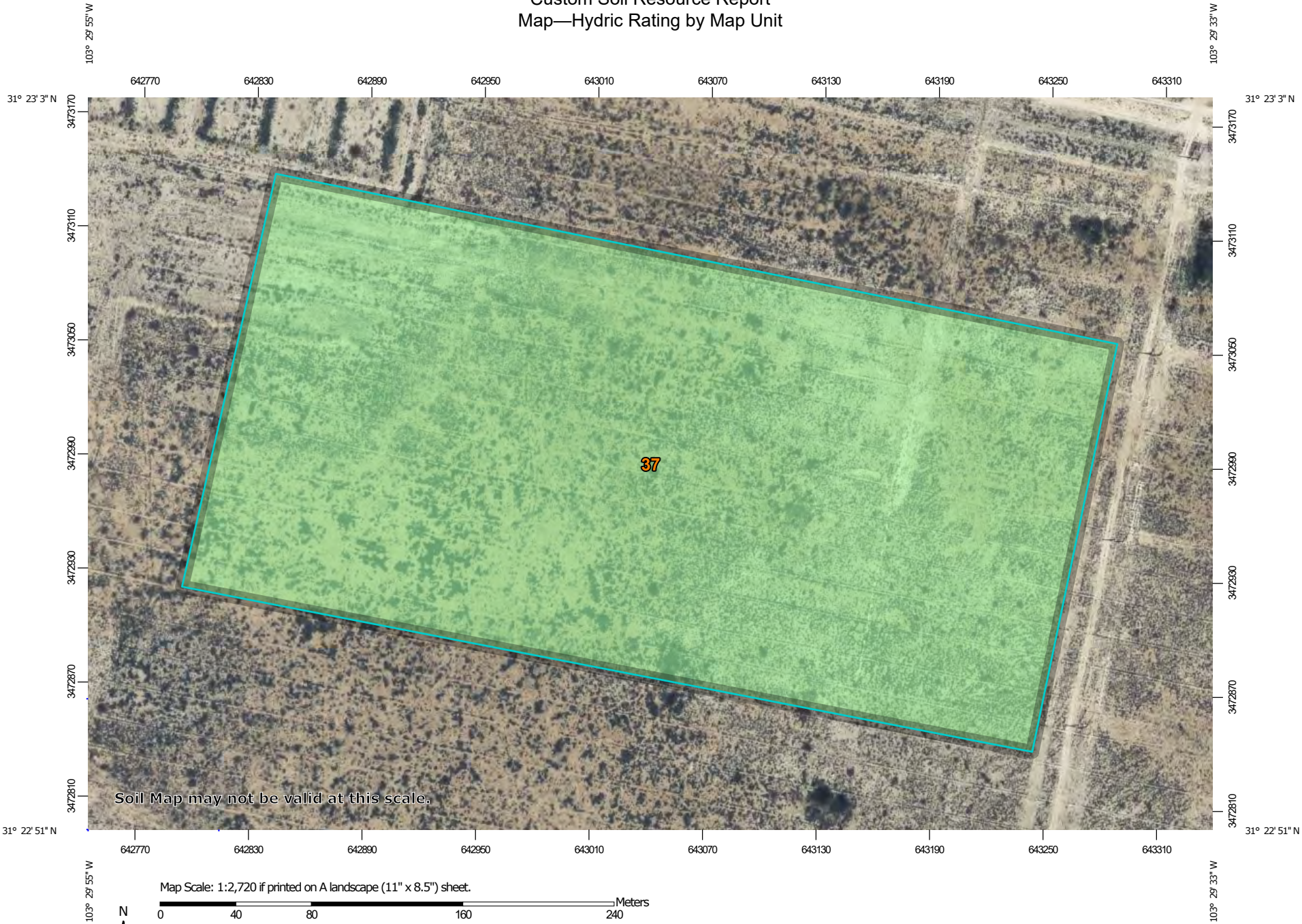
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit



Map Scale: 1:2,720 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (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

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Reeves County, Texas
Survey Area Data: Version 24, 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: Mar 20, 2020—Mar 22, 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—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
37	Saragosa association, nearly level	5	25.0	100.0%
Totals for Area of Interest			**25.0**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

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.

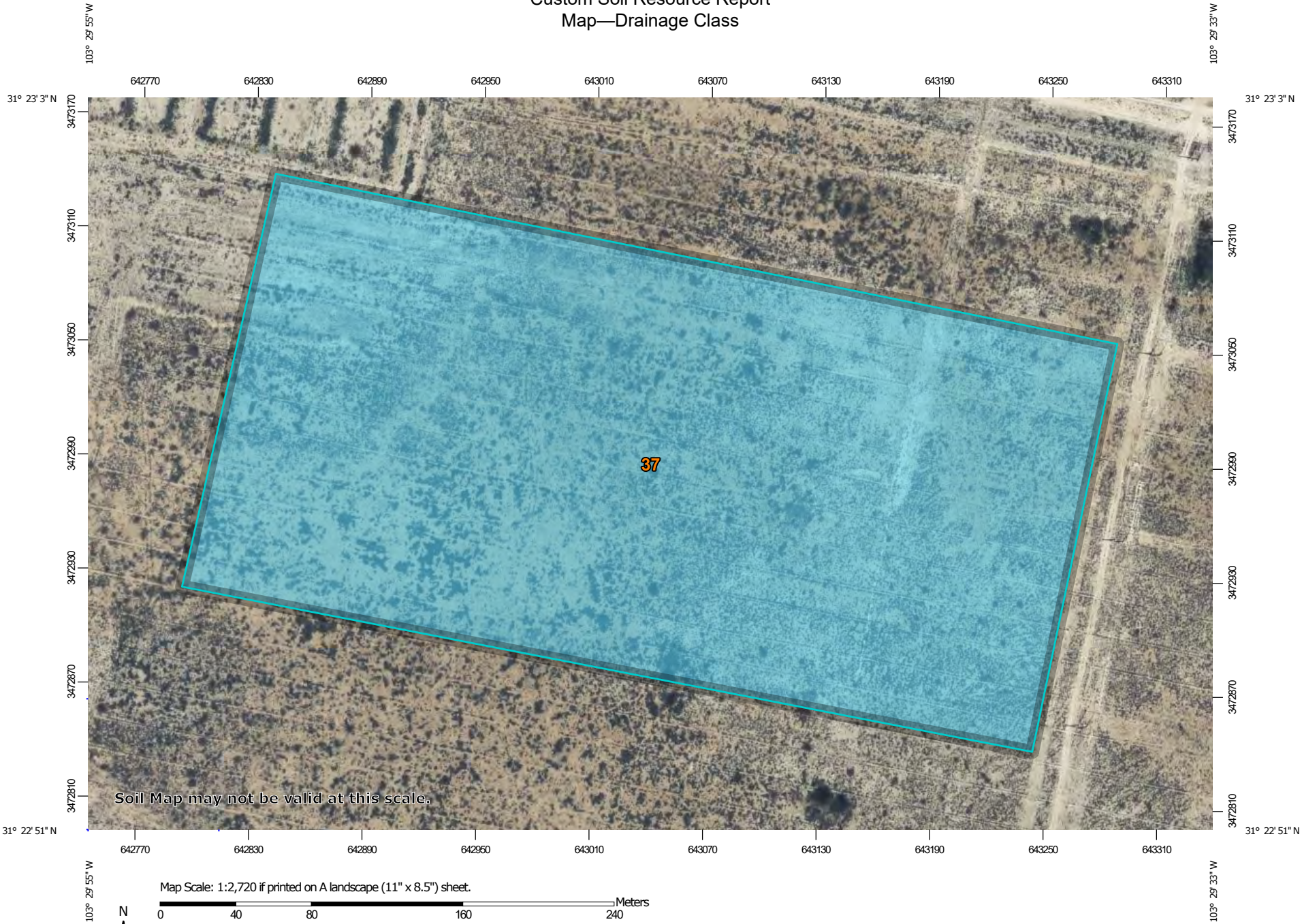
Soil Qualities and Features

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.

Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Custom Soil Resource Report
Map—Drainage Class



Map Scale: 1:2,720 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Lines

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- 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 1:24,000.

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: Reeves County, Texas
Survey Area Data: Version 24, 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: Mar 20, 2020—Mar 22, 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—Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
37	Saragosa association, nearly level	Poorly drained	25.0	100.0%
Totals for Area of Interest			**25.0**	**100.0%**

Rating Options—Drainage Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Water Features

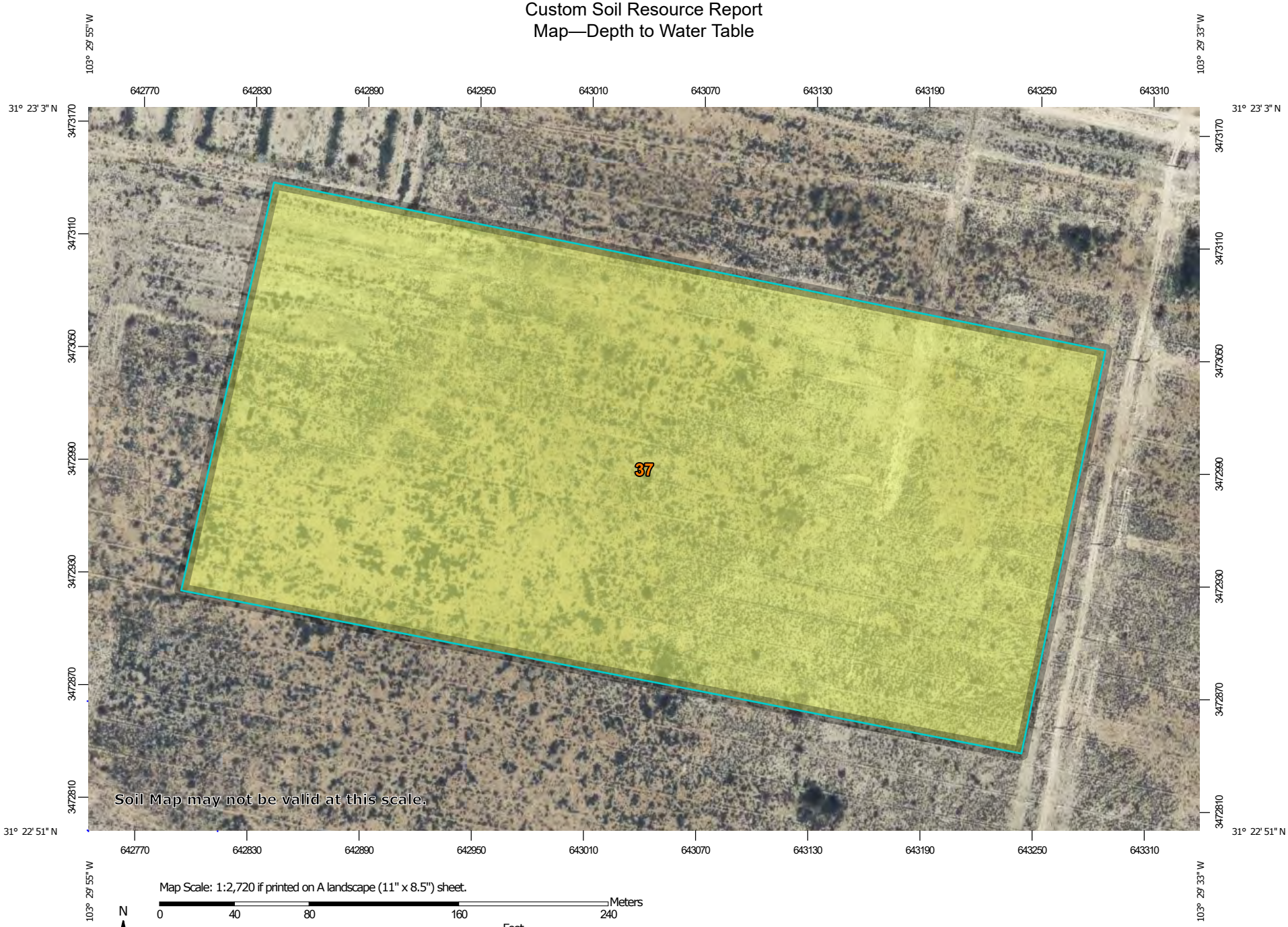
Water Features include ponding frequency, flooding frequency, and depth to water table.

Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

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 Water Table



Map Scale: 1:2,720 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Reeves County, Texas
Survey Area Data: Version 24, 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: Mar 20, 2020—Mar 22, 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—Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
37	Saragosa association, nearly level	92	25.0	100.0%
Totals for Area of Interest			**25.0**	**100.0%**

Rating Options—Depth to Water Table

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

Flooding Frequency Class

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

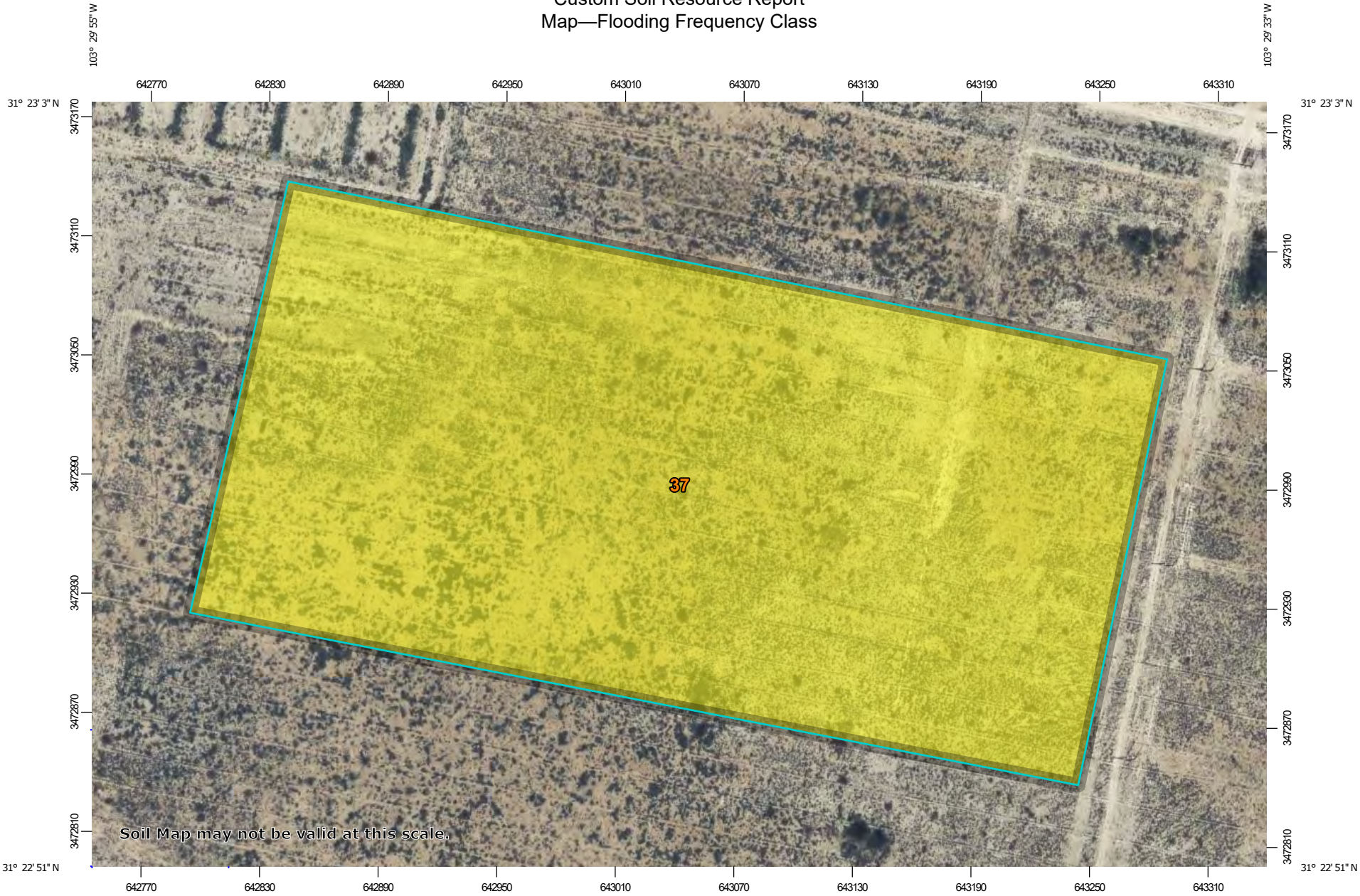
"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.

Custom Soil Resource Report
Map—Flooding Frequency Class



Map Scale: 1:2,720 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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
- None
- Very Rare
- Rare
- Occasional
- Common
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Lines
- None
- Very Rare
- Rare
- Occasional
- Common
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Points
- None
- Very Rare
- Rare
- Occasional
- Common
- Frequent
- Very Frequent
- 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 1:24,000.

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: Reeves County, Texas
Survey Area Data: Version 24, 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: Mar 20, 2020—Mar 22, 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—Flooding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
37	Saragosa association, nearly level	Rare	25.0	100.0%
Totals for Area of Interest			**25.0**	**100.0%**

Rating Options—Flooding Frequency Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January

Ending Month: December

Ponding Frequency Class

Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, or evaporation or by a combination of these processes. Ponding frequency classes are based on the number of times that ponding occurs over a given period. Frequency is expressed as none, rare, occasional, and frequent.

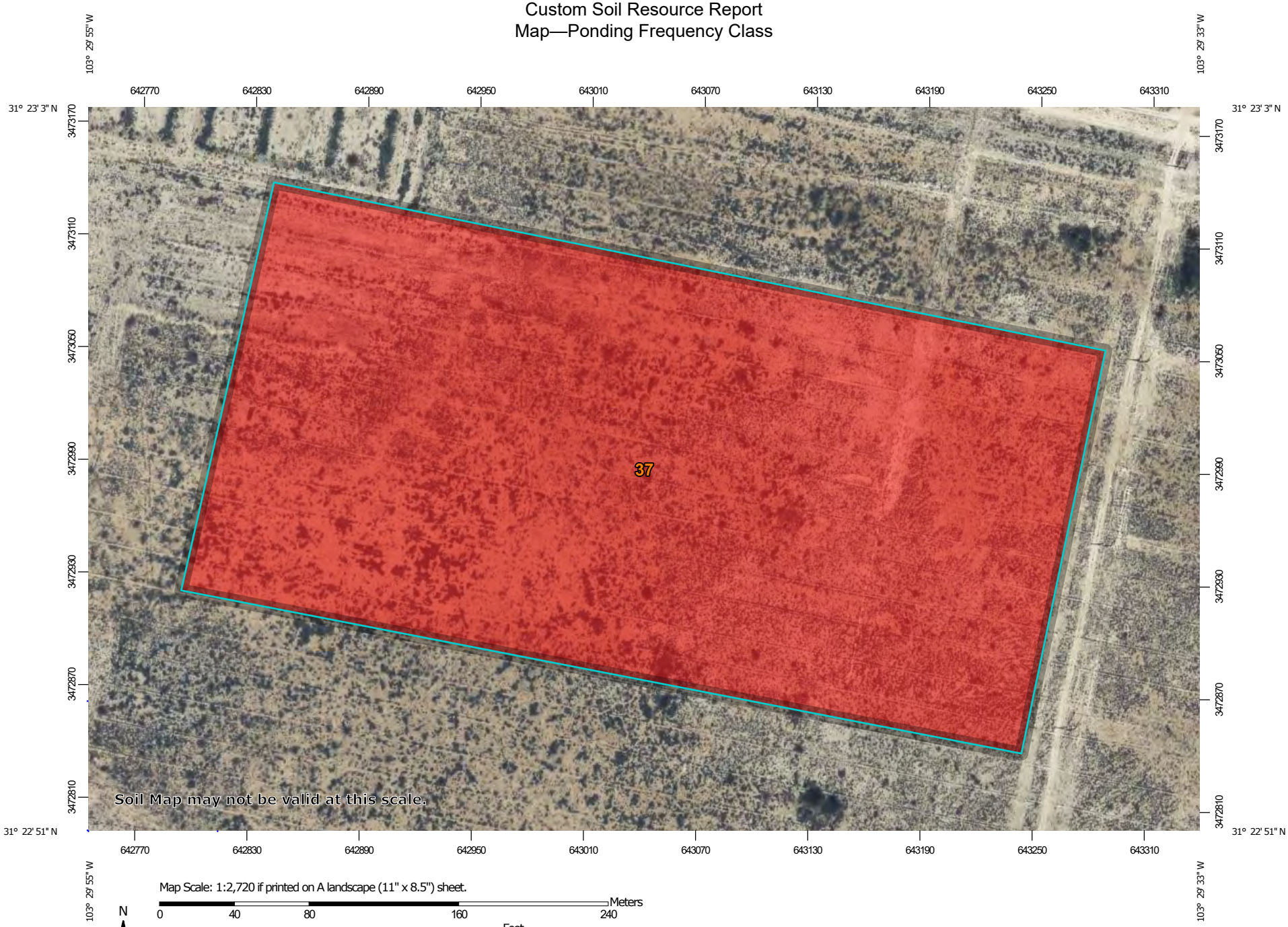
"None" means that ponding is not probable. The chance of ponding is nearly 0 percent in any year.

"Rare" means that ponding is unlikely but possible under unusual weather conditions. The chance of ponding is nearly 0 percent to 5 percent in any year.

"Occasional" means that ponding occurs, on the average, once or less in 2 years. The chance of ponding is 5 to 50 percent in any year.

"Frequent" means that ponding occurs, on the average, more than once in 2 years. The chance of ponding is more than 50 percent in any year.

Custom Soil Resource Report
Map—Ponding Frequency Class



Map Scale: 1:2,720 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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
- None
- Rare
- Occasional
- Frequent
- Not rated or not available

Soil Rating Lines
- None
- Rare
- Occasional
- Frequent
- Not rated or not available

Soil Rating Points
- None
- Rare
- Occasional
- Frequent
- 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 1:24,000.

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: Reeves County, Texas
Survey Area Data: Version 24, 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: Mar 20, 2020—Mar 22, 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—Ponding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
37	Saragosa association, nearly level	None	25.0	100.0%
Totals for Area of Interest			**25.0**	**100.0%**

Rating Options—Ponding Frequency Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January

Ending Month: December

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

APPENIDX C
USWFS DRAFT IPAC REPORT AND
TPWD REEVES COUNTY ENDANGERED SPECIES REPORT

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

Reeves County, Texas

Local office

Austin Ecological Services Field Office

(512) 937-7371

1505 Ferguson Lane

Austin, TX 78754-4501

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
Mexican Spotted Owl *Strix occidentalis lucida* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8196	Threatened
Northern Aplomado Falcon *Falco femoralis septentrionalis* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1923	Endangered
Piping Plover *Charadrius melodus* This species only needs to be considered if the following condition applies: • Wind Energy Projects There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened
Rufa Red Knot *Calidris canutus rufa* Wherever found This species only needs to be considered if the following condition applies: • Wind Energy Projects There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/1864	Threatened

Fishes

NAME	STATUS
Pecos Gambusia *Gambusia nobilis* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/460	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Pecos (=puzzle, =paradox) Sunflower Helianthus paradoxus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7211	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

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

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 conservation 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

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 a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle 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, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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 conservation 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

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Cactus Wren Campylorhynchus brunneicapillus guttatus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8834	Breeds Mar 5 to Sep 30

Cassin's Sparrow Peucaea cassinii — Breeds Aug 1 to Oct 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9512

Eastern Meadowlark Sturnella magna — Breeds Apr 25 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Ferruginous Hawk Buteo regalis — Breeds Mar 15 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/6038

Henry's Common Nighthawk Chordeiles minor henryi — Breeds May 21 to Aug 25
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

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 year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

1. 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.
2. 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.

3. 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.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

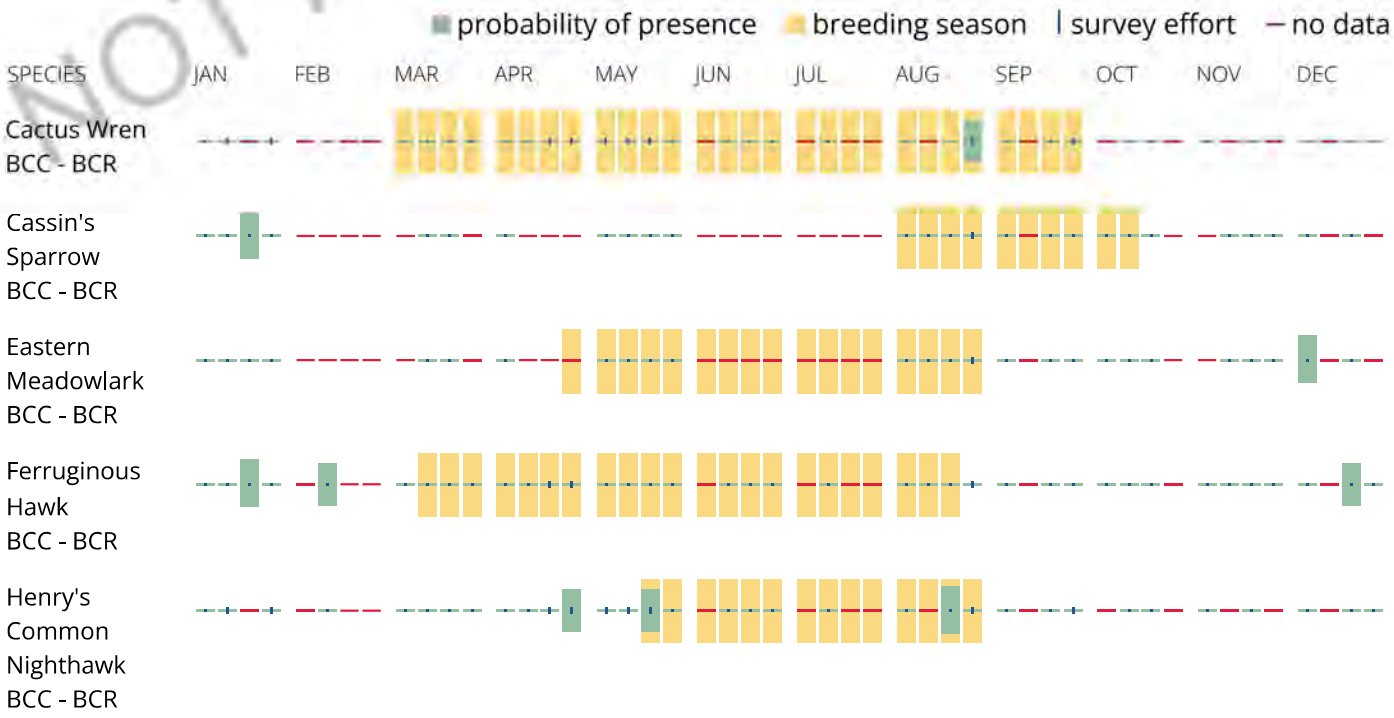
Breeding Season (▮)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding 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 USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle 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, please visit the Rapid Avian Information Locator (RAIL) Tool.

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 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 year-round), you may query your location using the RAIL Tool and look at 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 migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, 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 Eagle 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 try 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 eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

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.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

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 also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). 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 is not perfect; 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 helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or

minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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.

Last Update: 9/1/2023

REEVES COUNTY

AMPHIBIANS

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: SU

BIRDS

chestnut-collared longspur *Calcarius ornatus*

Occurs in open shortgrass settings especially in patches with some bare ground. Also occurs in grain sorghum fields and Conservation Reserve Program lands

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

Franklin's gull *Leucophaeus pipixcan*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2N

golden eagle *Aquila chrysaetos*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B

lark bunting *Calamospiza melanocorys*

Overall, it's a generalist in most short grassland settings including ones with some brushy component plus certain agricultural lands that include grain sorghum. Short grasses include sideoats and blue gramas, sand dropseed, prairie junegrass (Koeleria), buffalograss also with patches of bluestem and other mid-grass species. This bunting will frequent smaller patches of grasses or disturbed patches of grasses including rural yards. It also uses weedy fields surrounding playas. This species avoids urban areas and cotton fields.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

REEVES COUNTY

BIRDS

mountain plover *Charadrius montanus*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

western burrowing owl *Athene cunicularia hypugaea*

Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

white-faced ibis *Plegadis chihi*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

CRUSTACEANS

diminutive amphipod *Gammarus hyalelloides*

Known only from Phantom Lake Spring; omnivorous; amphipods are active mostly at night and spend daylight hours hiding under vegetation and other cover; vulnerable to reduction of springflow resulting from declining levels of groundwater

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

REEVES COUNTY

FISH

Comanche Springs pupfish *Cyprinodon elegans*

Restricted to small series of springs and their outflows, and man-made irrigation canals in the area of Balmorhea, Texas, including Phantom Springs (Jeff Davis County), San Solomon Springs, Giffin Springs and Toyah Creek (Reeves County). Native range: Comanche, Phantom Cave, San Solomon springs (Pecos and Reeves counties). Prefers fast-flowing water. Originally in Comanche Springs, San Solomon, and Phanton Cave, presently restricted to San Solomon and Phantom Cave and associated springs, and downstream irrigation canals; found in constantly discharging springs and in swift-flowing water of canals and earthen ditches

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

headwater catfish *Ictalurus lupus*

Originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S1S2

Pecos gambusia *Gambusia nobilis*

Endemic to the Pecos River basin in southeastern New Mexico and western Texas. Restricted to two locations in Texas (Balmorhea springs complex and Diamond Y Draw). Stenothermal springs, runs, ciénegas and irrigation canals carrying spring waters.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

Pecos pupfish *Cyprinodon pecosensis*

Originally Pecos River basin, presently restricted to upper basin only; shallow margins of clear, vegetated spring waters high in calcium carbonate, as well as in sinkhole habitats

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S1

roundnose minnow *Dionda episcopa*

Pecos River and Limpia Creek. Restricted to clear, spring-fed waters having little temperature variation.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1

speckled chub *Macrhybopsis aestivalis*

Found throughout the Rio Grande and lower Pecos River but occurs most frequently between the Río Conchos confluence and the Pecos River. Flowing water over coarse sand and fine gravel substrates in streams; typically found in raceways and runs.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S1S2

REEVES COUNTY

INSECTS

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

Balmorhea saddle-case caddisfly *Protoptila balmorhea*

Oviparous; larvae make turtle-shaped cases of small pebbles attached to the underside of stones in swift-flowing streams and rivers

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

No accepted common name *Epitragosoma arenaria*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

MAMMALS

big brown bat *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

black bear *Ursus americanus*

Generalist. Historically found throughout Texas. In Chisos, prefers higher elevations where pinyon-oaks predominate; also occasionally sighted in desert scrub of Trans-Pecos (Black Gap Wildlife Management Area) and Edwards Plateau in juniper-oak habitat. For ssp. luteolus, bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine; marsh. Bottomland hardwoods and large tracts of inaccessible forested areas.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

black-tailed prairie dog *Cynomys ludovicianus*

Dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

REEVES COUNTY

MAMMALS

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S2S3

Davis Mountains cottontail *Sylvilagus robustus*

Primarily limited to the Davis Mountains in the Trans Pecos . Brushy pastures, brushy edges of cultivated fields, and well-drained streamsides; active mostly at twilight and at night, where they may forage in a variety of habitats, including open pastures, meadows, or even lawns; rest during daytime in thickets or in underground burrows and small culverts; feed on grasses, forbs, twigs and bark; not sociable and seldom seen feeding together

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G1G2	State Rank: S3

eastern red bat *Lasiurus borealis*

Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). Also common along the coastline. These bats are highly mobile, seasonally migratory, and practice a type of "wandering migration". Associations with specific habitat is difficult unless specific migratory stopover sites or wintering grounds are found. Likely associated with any forested area in East, Central, and North Texas but can occur statewide.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

gray-footed chipmunk *Tamias canipes*

High elevation (1800-2500 meters) forest-dwelling chipmunk occurring in dense stands of mixed timber and on brushy hillsides with rock crevices or downed logs along forest edges. Occurs in Texas only in the Sierra Diablo and Guadalupe Mountains in the Trans-Pecos; favorite habitat is downed logs near edges of clearings; also occur in dense stands of mixed timber (oaks, pines, firs) and on brushy hillsides, especially with rock crevices.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S2S3

hoary bat *Lasiurus cinereus*

Hoary bats are highly migratory, high-flying bats that have been noted throughout the state. Females are known to migrate to Mexico in the winter, males tend to remain further north and may stay in Texas year-round. Commonly associated with forests (foliage roosting species) but are found in unforested parts of the state and lowland deserts. Tend to be captured over water and large, open flyways.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3

REEVES COUNTY

MAMMALS

hooded skunk *Mephitis macroura*

Rocky canyons & riparian corridors at low elevations, rarely to 6000 feet. Avoids man-made habitations. Only known from the Trans-Pecos regions along the Rio Grande.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1S2

kit fox *Vulpes macrotis*

Open desert grassland; avoids rugged, rocky terrain and wooded areas.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G4	State Rank: S1S2

long-legged myotis bat *Myotis volans*

Found in pine-oak woodland to grassland ecotone, higher elevations of Trans-Pecos.High, open woods and mountainous terrain; nursery colonies (which may contain several hundred individuals) form in summer in buildings, crevices, and hollow trees; apparently does not use caves as day roosts, but may use such sites at night; single offspring born June-July.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S1S2

long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

mountain lion *Puma concolor*

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2S3

muskrat *Ondatra zibethicus*

Found in fresh or brackish marshes, lakes, ponds, swamps, and other bodies of slow-moving water. Most abundant in areas with cattail. Dens in bank burrow or conical house of vegetation in shallow vegetated water. It is primarily found in the Rio Grande near El Paso and in SE Texas in the Houston area.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

pronghorn *Antilocapra americana*

Prefers hilly and plateau areas of open grassland, desert-grassland, and desert-scrub, where it frequents south-facing slopes and other sheltered areas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

REEVES COUNTY

MAMMALS

rock mouse *Peromyscus nasutus*

Rocky areas and talus slopes above 6000 feet. General vegetation associations include madrone, oak, maple, juniper, pinyon and ponderosa pine.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

Townsend's big-eared bat *Corynorhinus townsendii*

In Texas, habitat ranges from desert scrub to pinyon-juniper woodland, consistently in areas with canyons or cliffs (Schmidly 1991). Roosts in caves, crevases, trees, and buildings in the Panhandle and Trans-Pecos.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3?

western hog-nosed skunk *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

western small-footed myotis bat *Myotis ciliolabrum*

Mountainous regions of the Trans-Pecos, usually in wooded areas, also found in grassland and desert scrub habitats; roosts beneath slabs of rock, behind loose tree bark, and in buildings; maternity colonies often small and located in abandoned houses, barns, and other similar structures; apparently occurs in Texas only during spring and summer months; insectivorous

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

western spotted skunk *Spilogale gracilis*

Brushy canyons, rocky outcrops (rimrock) on hillsides and walls of canyons. In semi-arid brushlands in U.S., in wet tropical forests in Mexico. When inactive or bearing young, occupies den in rocks, burrow, hollow log, brush pile, or under building.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

MOLLUSKS

Brune's tryonia *Tryonia brunei*

Endemic freshwater snail; benthic; currently only found in modified waters Phantom Lake Spring; abundant on firm substratum and in soft mud before modification; vulnerable to declining groundwater resulting in reduction of springflow

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

REEVES COUNTY

MOLLUSKS

Pecos assiminea snail *Assiminea pecos*

A member of the marine snail family, but represents the most inland snail of the genus; semiaquatic, usually found on moist ground or beneath emergent plants within a few centimeters of flowing water; only known remaining Texas population at near Fort Stockton, Pecos County; historical to the Pecos River Valley of New Mexico and Texas

Federal Status: LE	State Status: E	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

Phantom springsnail *Pyrgulopsis texana*

Endemic aquatic snail; known only from three spring systems and associated outflows in Jeff Davis and Reeves counties; vulnerable to reduction of springflow resulting from declining levels of groundwater

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Phantom tryonia *Tryonia cheatumi*

Endemic aquatic snail; known only from three spring systems and associated outflows in Jeff Davis and Reeves counties; vulnerable to reduction of springflow resulting from declining levels of groundwater

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Texas hornshell *Popenaias popeii*

Occurs in small streams to large rivers in slow to moderate current, often residing in rock crevices, travertine shelves, and under large boulders, where small-grained material, such as clay, silt, or sand gathers. Can also occur in riffles that are clean swept of soft silt; not known from reservoirs (Carman 2007; Inoue et al. 2014; Randklev et al. 2017b; Randklev et al. forthcoming). [Mussels of Texas 2019]

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

REPTILES

gray-checkered whiptail *Aspidoscelis dixoni*

Terrestrial: The habitat comprises rocky plains, dry washes, canyon bottoms, and desert scrub (ocotillo, creosotebush, opuntia) (Bartlett and Bartlett 1999); generally on rocky soils of desert shrublands and degraded grasslands on alluvial benches, canyon bottoms, and lower southwestern mountain slopes (Scudday 1973, Degenhardt et al. 1996).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2

longnose leopard lizard *Gambelia wislizenii*

This species occurs in open gravelly or sandy habitats that are sparsely vegetated with scattered brush. When threatened, this lizard will retreat to brush piles and rodent burrows to escape.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

REEVES COUNTY

REPTILES

Mexican hog-nosed snake *Heterodon kennerlyi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: N
Endemic:	Global Rank: G4	State Rank: SNR

Rio Grande river cooter *Pseudemys gorzugi*

Aquatic: Habitat includes rivers and their more permanent spring-fed tributary streams, beaver ponds, and stock tanks (Garrett and Barker 1987). Occupied waters may have a muddy, sandy, or rocky bottom, and may or may not contain aquatic vegetation (Degenhardt et al. 1996).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S2

roundtail horned lizard *Phrynosoma modestum*

This species seems to prefer rocky or gravelly substrates in open areas that are sparsely vegetated.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

Texas horned lizard *Phrynosoma cornutum*

Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S3

western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

western hognose snake *Heterodon nasicus*

Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

REEVES COUNTY

REPTILES

western massasauga *Sistrurus tergeminus*

Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3

western rattlesnake *Crotalus viridis*

Terrestrial: Dry desert and prairie grasslands, shrub desert rocky hillsides; edges of arid and semi-arid river breaks.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

PLANTS

Bigelow's desert grass *Blepharidachne bigelovii*

Restricted to xeric limestone or various gypsum-influenced habitats; Perennial; Flowering March-Dec; Fruiting March-Dec

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

cienega false clappia-bush *Pseudoclappia arenaria*

Mostly in alkali sacaton (Sporobolus airoides) grasslands on alkaline, gypseous or saline soils of alluvial flats around cienegas, playa lakes and other desert wetlands; Perennial; Flowering spring-summer

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

desert night-blooming cereus *Peniocereus greggii var. greggii*

Chihuahuan Desert shrublands or shrub invaded grasslands in alluvial or gravelly soils at lower elevations, 1200-1500 m (3900-4900 ft), on slopes, benches, arroyos, flats, and washes; flowering synchronized over a few nights in early May to late June when almost all mature plants bloom, flowers last only one day and open just after dark, may flower as early as April

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4T3	State Rank: S2

grayleaf rock-daisy *Perityle cinerea*

Crevices in dry limestone caprock of mesas; flowering spring-fall

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

REEVES COUNTY

PLANTS

gyp locoweed *Astragalus gypsodes*

Gypsum or stiff gypseous clay soils on low rolling hills, mostly low elevations in the middle Pecos River valley; many of the known locations are on the Castile Formation (Permian); flowering March-June

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

Hinckley's spreadwing *Eurytaenia hinckleyi*

Loose sandy soils of the Monahans/Kermit Sandhills; Annual; Flowering/Fruiting May-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Jones' selenia *Selenia jonesii*

Wet clayey soils of stream margins, playa lakes, and roadsides, mostly in the western Edwards Plateau; Annual; Flowering Feb-April; Fruiting March-April

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

lyreleaf twistflower *Streptanthus carinatus ssp. carinatus*

Occurs on igneous and limestone slopes and alluvial fans (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T3T4	State Rank: S3

neglected sunflower *Helianthus neglectus*

Deep sands on rolling hills and dunes of Pleistocene sand sheets, often associated with Havards shin oak dwarf woodlands or mesquite-sand sage woodlands; flowering July-September

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2Q	State Rank: S2

Pecos sunflower *Helianthus paradoxus*

Restricted to saline, calcareous, heavy-textured soils around cienegas; usually most abundant on perennially wet soils of subirrigated terraces just above the wettest sites; flowering August-November

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S1

Texas claret-cup cactus *Echinocereus coccineus var. paucispinus*

Mountains, hills, and mesas, igneous and limestone, oak-juniper-pinyon woodland or juniper woodland on limestone mesas, mostly rocky habitats but also in alluvial basins, grasslands, or among mesquite or other shrubs. Flowering March - April (Powell and Weedin 2004).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5T3	State Rank: S3

REEVES COUNTY

PLANTS

Wright's beardtongue *Penstemon wrightii*

Occurs mostly in montane grasslands and woodlands; Perennial; Flowering April-Aug; Fruiting May-Aug

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3

Wright's trumpets *Acleisanthes wrightii*

Open semi-desert grasslands and shrublands on shallow stony soils over limestone on low hills and flats; Perennial; Flowering spring-fall, probably also in response to rains

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

APPENDIX D
ENVIRONMENTAL PERMIT MATRIX

ENVIRONMENTAL PERMIT MATRIX
Proposed Power Plant on 25 Acres at 200 South Frontage Road
Town of Pecos City, Reeves County, Texas

Permit / Approval	Applicability to Project	Regulatory Agency	Regulation Details	Thresholds	Permit Application Requirements	Public Participation	Estimated Agency Review Time	Related Fee (Estimates)	Stage Permit/Approval Required	Areas Affected	Recommendation	General Compliance Timeline
Water Resources												
Section 404 and 401 of the Clean Water Act (CWA)	**No Action Required.** Based on the existing Critical Issues Analysis (CIA), it is not likely that aquatic features with connectivity to waters of the U.S. (WOTUS) that would trigger Section 404 and 401 of the CWA are present within the Site (***CIA Figures 9 and 10***).	U.S. Army Corps of Engineers (USACE), Fort Worth District And Texas Commission on Environmental Quality (TCEQ) (for 401 WQC)	Regulates the discharge of dredged or filled materials into WOTUS under Section 404 of the CWA. Section 401 is the State Water Quality Certification (WQC) paired with Section 404 permits.	Any impact to WOTUS could be regulated. Impacts 0.5 acre and less are potentially eligible for a Nationwide Permit. Mitigation thresholds are generally 0.1 acre for wetlands and 0.03 acre for stream bed.	If WOTUS are impacted, determine if activity is regulated and the size and volume of impact. With that information, identify the applicable NWP, Regional General Permit, or Individual Permit. Once the applicable permit is identified, identify the general and regional conditions along with Section 401 WQC availability.	None for NWP or GP. Individual permit and Individual WQC generally have 30- day public comment period.	For NWP, 45 to 90 days is typical, but can be longer if endangered species issues are identified. Individual Permit (IP) timeline is generally 18 months or more when impacts to WOTUS exceed 0.5 acre.	None by agency for Section 404	Feasibility and Permitting	All areas where ground disturbance planned.	No action required. Some buyers and lenders may elect to request a No Permit Required (NPR) letter from the USACE.	3 to 6 months typical for NPR
Texas Pollutant Discharge Elimination System (TPDES) General Construction Permit	**General permit likely is required.** Stormwater Pollution Prevention Plan (SWPPP) and TPDES permit require for surface disturbances over 1 acre.	Texas Commission on Environmental Quality (TCEQ)	Regulates the discharge of stormwater associated with construction activities that disturb one (1) or more acres of soil. The disturbance typically includes direct grading and excavation, but also includes temporary access roads, laydown yards, and other temporary workspace.	Required for all construction sites >1 acre that discharge stormwater associated with construction activity located in the State of Texas. Large construction permits which would disturb 5 acres or more are required to prepare and implement a SWPPP, submit a Notice of Intent (NOI), and submit a copy of the NOI to the MS4 operator. Projects disturbing less than 5 acres do not need an NOI, but still must follow a SWPPP and post a Site Notice.	Prepare a SWPPP and post a Site Notice. For projects with footprint >5 acres, Notice of Intent (NOI) must be filed online through the State of Texas Environmental Electronic Reporting System (STEERS). The NOI must be provided to the MS4 operator if one exists within project area. Under the Construction General Permit, periodic stormwater inspections are required. The operator and owner may have separate notification requirements. If a NOI was required, Notice of Termination (NOT) will need to be submitted to STEERs 30 days after stabilization.	None required	NOI acknowledgement is usually received in the same day it is submitted.	$100 TPDES Construction Storm Water Runoff Fee	Prior to construction.	All	Determine whether project will disturb >1 acre of ground then determine if project is a small (1 to 5 acres) or large (<5 acres) construction project and follow appropriate course of action for permit coverage.	1 month
Protected Species												
Federal Endangered Species Act (ESA) Section 7	**Action recommended.** A biological resource inventory is recommended for the Site. All projects with potential species	U. S. Fish and Wildlife Service (USFWS)	Regulates any project or action that may affect a listed species or designated critical habitat. Project information can be submitted to the	Each project is required to determine potential impact to federally listed T&E species.	Map with Project Survey Area. Detail of species habitat requirements and habitat present at Site. Description of proposed project activities.	None required unless securing ESA permit with Habitat Conservation Plan (HCP).	120-180 days for consultation process. Some offices recommend 1 to 2 years for permit and HCP approval.	None by agency for Section 7	Prior to construction	All	Conduct Biological Resource Evaluation to further evaluate potential species effects and mitigation of effects.	Not applicable

Permit / Approval	Applicability to Project	Regulatory Agency	Regulation Details	Thresholds	Permit Application Requirements	Public Participation	Estimated Agency Review Time	Related Fee (Estimates)	Stage Permit/Approval Required	Areas Affected	Recommendation	General Compliance Timeline
	impacts are subject to ESA compliance and federally listed species have the potential to occur within the Site. Avoidance of "take" is required.		USFWS to obtain species or species habitat information. The USFWS will issue a letter of determination of whether species or their habitat would be impacted by the project.	Depending on information received from USFWS, subsequent field surveys may be required.								
Migratory Bird Treaty Act (MBTA) permit or general compliance.	**Required if active nests are found and cannot be avoided**. Clearing of undeveloped or naturalized areas during nesting season should be surveyed prior. Permits are not required if active nests can be avoided during clearing.	U.S. Fish and Wildlife Service (USFWS)	The MBTA of 1918 prohibits taking, attempting to take, capturing, killing, selling/purchasing, possessing, transporting, and importing of migratory birds (including ground-nesting species), their eggs, parts and nests, except when specifically authorized by the Department of the Interior. This would include prohibiting harassment of nesting birds and young during the breeding season. Construction activities and vegetation clearing should be conducted outside peak-nesting seasons (March-August) to avoid any adverse effects to the migratory birds and their habitat.	Take of protected migratory bird species	Survey data with map	None required	60 to 90 days or more if additional information requested during processing.	None identified.	Prior to construction	All	Conduct avian survey/active bird nest survey by a biologist if construction activity or vegetation clearing is to occur between March 15 and September 15. Surveys should be conducted early in project planning process and prior to construction.	2 weeks
State Threatened and Endangered Species "Take" Permit	**Action Recommended and Avoidance Required.** A biological resource inventory is recommended for the Site to further evaluate whether state-listed species are present at the Site.	Texas Parks and Wildlife Department (TPWD)	State listed threatened and endangered species are protected from certain activities as detailed in Chapters 67 and 68 of the Texas Parks and Wildlife Code and Sections 65.171-65.176 of Title 31 of the Texas	Take of state listed threatened or endangered fish or wildlife. Take of state listed threatened or endangered plants from public land or from private land for commercial use.	Habitat assessment and species data with detailed project information are required for permitting.	None required	90 days or more depending on species	None identified	Prior to construction	All	Complete a biological resource inventory prior to construction. Avoidance of "take" required.	3 months

ENVIRONMENTAL PERMIT MATRIX
Proposed Power Plant on 25 Acres at 200 South Frontage Road
Town of Pecos City, Reeves County, Texas

Permit / Approval	Applicability to Project	Regulatory Agency	Regulation Details	Thresholds	Permit Application Requirements	Public Participation	Estimated Agency Review Time	Related Fee (Estimates)	Stage Permit/Approval Required	Areas Affected	Recommendation	General Compliance Timeline
			Administrative Code. No person may capture, trap, or kill, or attempt to capture, trap, take, or kill state listed threatened or endangered fish or wildlife without the issuance of a permit. State listed plants are protected from take on public lands and protected from commercial use on private land without a permit.	Compliance is the responsibility of the property owner. TPWD oversight is triggered on state-owned land or for certain state permits.								
Air Compliance												
Air Permit Applicability Determination	**Before any actual works begins, any person who plans to construct any new facility or to engage in the modification of any existing facility which may emit air contaminants into the air of the state must satisfy the conditions of de minimus or other permit.**	Texas Commission on Environmental Quality (TCEQ) - Air Quality Division	30 Texas Administrative Code (TAC) § 116.119(a); 30 TAC Chapter 106; 30 TAC Chapter 116								Perform once the facility design is finalized. The facility design should include equipment details, throughputs, and chemical usage estimates; based on which, a site-wide potential to emit (PTE) emission estimation is calculated for the permit applicability determination purposes. From the air permit applicability determination and PTE estimation, a permitting strategy is determined.	30-45 days
Electric Generating Unit Standard Permit Registration	**This standard permit may be used to authorize electric generating units installed or modified after the effective date of this standard permit and that meet the requirements of this standard permit**	Texas Commission on Environmental Quality (TCEQ) - Air Quality Division	30 TAC Chapter 116, Subchapter F; see the standard permit regard NOx limitations based on region.	30 TAC Chapter 116, Subchapter F	Electric generating units shall be registered in accordance with 30 TAC § 116.611, Registration to Use a Standard Permit, using a current Form PI-1S. Units that meet the conditions of this standard permit do not have to meet 30 TAC § 116.610(a)(1), Applicability	Review is open to public comment before a final decision is made. The commission shall decide whether to hold a hearing.	45 days	$900 for for any single unit or multiple units at a site with a total generating capacity of 1 megawatt (MW) or greater	Prior to construction	Emissions points or processes which may emit air contaminants into the air of the state		60 days
Prevention of Significant Deterioration (PSD) Permit	**If the new facility is a major stationary source (or construction is a major modification) located in**	Texas Commission on Environmental Quality (TCEQ) - Air Quality Division	30 TAC § 116, Subchapter B.6	30 TAC § 116, Subchapter B	In addition to the requirements discussed above for NSR permits, the PSD review will require additional modeling.	Review is open to public comment before a final decision is made.	12 – 24 Months	$20,000	Prior to construction	Emissions points or processes which may emit air contaminants		12 – 24 Months

Permit / Approval	Applicability to Project	Regulatory Agency	Regulation Details	Thresholds	Permit Application Requirements	Public Participation	Estimated Agency Review Time	Related Fee (Estimates)	Stage Permit/Approval Required	Areas Affected	Recommendation	General Compliance Timeline
	attainment or unclassifiable area, a PSD permit will be required.									into the air of the state		
Title V Permit	**If the facility is major, per 30 TAC Chapter 122, a Title V Operating Permit is required**	Texas Commission on Environmental Quality (TCEQ) - Air Quality Division	30 TAC Chapter 122	30 TAC Chapter 122	The facility must submit an abbreviated Title V permit application including forms related to the Acid Rain Program before the start-up. The TCEQ shall inform the applicant in writing of the deadline for submitting the remaining information. Submittal of a Title V permit application will not affect the start-up of the facility.	Review is open to public comment before a final decision is made.	12 – 24 Months	$10,000	Prior to start-up of operations.	Emissions points or processes which may emit air contaminants into the air of the state		12 – 24 Months. Submittal of a Title V permit application will not affect the start-up of the facility.
Cultural Resources												
National Historic Preservation Act (NHPA) Section 106 Cultural Compliance	**No Action Required.** Based on the CIA there is no likely need for Section 404 permit and no federal nexus to trigger Section 106 NHPA requirement.	Texas Historical Commission (THC)	Section 106 requires federal agencies to consider the effects of federal projects they carry out, approve, or fund on historic properties. Section 106 review encourages, but does not mandate, preservation.	If there is a trigger for Section 106 compliance, any impact that diminishes the integrity of a historic property is considered an adverse effect and may be reviewed, if regulated.	If a historic property will be impacted, confirm with agency that Section 106 review is required for proposed undertaking, provide results of surveys and research, assess effects to the historic property, implement mitigation measures or modify site plans to avoid adverse effects.	Review is open to public comment before a final decision is made.	30-day agency review; typically, 90 days for Concurrence Letter issuance (depends on lead federal agency agreement with THC).	None by agency for Section 106	Prior to construction	All areas where ground disturbance planned.	No action required.	Not applicable
Antiquities Code of Texas (ACT)	**Action Required.** The Site is owned by the Town of Pecos City which is a political subdivision of the state and that makes development of the property subject to the ACT. A Cultural Resources study must be completed and THC concurrence completed.	Texas Historical Commission (THC)	Under the ACT, state agencies and political subdivision of the State of Texas are required to notify the THC of ground-disturbing activities on public land and work affecting state-owned historic buildings.	Project that is either: - Constructed on lands owned by the State of Texas. -Constructed on lands owned by political subdivisions of the State of Texas.	Coordination with the THC. Antiquities permit required for cultural resources survey conducted on lands owned by the state or political subdivision of the state.	None required	30 days	Typically, there is no review fee; however, background research may involve on- line database fees.	Construction	Portion of the project which intersect lands owned by the State of Texas, or political subdivisions of the State of Texas	Complete a Cultural Resources study and THC concurrence.	3 months
Other Compliance												
Spill Prevention Control and Countermeasure (SPCC) Plan	**Applicability to be determined once site plans are finalized.** Facilities are required to develop SPCC meeting specific quantity thresholds for regulated materials.	Environmental Protection Agency (EPA)	Pursuant to 40 CFR 112: An SPCC Plan is a document that outlines equipment and procedures to prevent and respond to an oil spill. This demonstrates to the EPA that the facility is prepared for such an incident. Each	Facilities that store more than 1,320 U.S. gallons total of all aboveground containers (only count containers with 55 gallons or greater storage capacity) or more than 42,000 gallons in	Developed SPCC plan. If the facility has over 10,000 gallons in total oil storage capacity, a professional engineer must certify the plan.	None required	SPCC plans are reviewed during facility inspections, or after a release of 1,000 gallons or more of regulated substances.	No Fees	Operation	Regulated material storage containers	Account for all oil stored on site to determine applicability and develop SPCC plan, if required.	1 month

Permit / Approval	Applicability to Project	Regulatory Agency	Regulation Details	Thresholds	Permit Application Requirements	Public Participation	Estimated Agency Review Time	Related Fee (Estimates)	Stage Permit/Approval Required	Areas Affected	Recommendation	General Compliance Timeline
			SPCC Plan is unique to its facility.	completely buried containers; and could reasonably be expected to discharge oil to navigable waters of the U.S. or adjoining shorelines. If the oil storage capacity is less than 10,000 gallons total, the facility does not have to file a plan with the EPA. The facility can self-certify a plan and do regular self-inspection to be in compliance.							
TPDES Stormwater General Permit NOI & SWPPP for Operational Activities	**Review applicability requirement for Stormwater Multi-Sector General Permit and compare to details of facility to make an applicability determination.**	Texas Commission on Environmental Quality (TCEQ)	This permit may be required for industrial related stormwater discharges associated with operating a power plant. The permit and SWPPP must be obtained and prepared respectively, prior to operation.	Operation of a regulated industrial facility	NOI can be filed online through the State of Texas Environmental Electronic Reporting System (STEERS).	None required	If submitted through STEERS, NOI is approved instantly, and provisional coverage begins. If submitted via mail, coverage begins 7 days after postmarked for delivery. TCEQ will review the application and issue: 1-an acknowledgement Certificate acknowledging coverage under the General Permit; 2-a Notice of Deficiency if there is insufficient information in the application, giving 30 days to respond; or 3-a Denial Letter, which is usually a result of a Notice of Deficiency information request not being provided.	-$225 if submitted electronically -$325 if submitted in paper form - $200 annual fee	Operation	Generation	Determine the Standard Industrial Classification (SIC) Code to determine whether permit coverage is required. If the facility is regulated, determine whether NOI or No Exposure Certification (NEC), is applicable.	2 months
Hazardous Materials												
Comprehensive Environmental Response,	**No action identified at this time; however, regulated**	U.S.	CERCLA provides funds and authority	Identification of a Recognized Environmental	Generally addressed via Phase I Environmental Site Assessment (ESA) at a minimum.	None required	Not applicable	N/A	Prior to purchase of real property	All	No action is recommended based on results of Phase I ESA.	1 month

Permit / Approval	Applicability to Project	Regulatory Agency	Regulation Details	Thresholds	Permit Application Requirements	Public Participation	Estimated Agency Review Time	Related Fee (Estimates)	Stage Permit/Approval Required	Areas Affected	Recommendation	General Compliance Timeline
Compensation, and Liability Act (CERCLA)	**contaminates are regulated at any property when present.** No such sites are known to exist at the property with the current limited inquiry.	Environmental Protection Agency (EPA)	for EPA to evaluate and cleanup uncontrolled or abandoned hazardous waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment.	Condition (REC) on or affecting the Site.							The Phase I ESA is valid for 180 days and may need updating past that time.	
Airport and Military Operations												
FAA Form 7460-1: Notice of Proposed Construction or Alteration	**Action Required.** Construction or alteration to structures in proximity to an airport must submit Form 7460-1 to the FAA as soon as possible.	Federal Aviation Administration (FAA)	Pursuant of CRF Title 14 Part 77.9, anyone proposing construction or alteration structures exceeding 200 feet, regardless of location or proximity to an airport, must file notice with the FAA at least 45 days prior to construction.	A notice must be filed with the FAA if the structure exceeds 200 feet above ground level, is in proximity to an airport, involves construction of a traverseway, emit frequencies and does not meet the conditions of the FAA Co-location Policy, will be in an instrument approach area, is in proximity to a navigation facility and may impact navigational signal reception, or the structure will be on an airport or heliport. For more details reference CFR Title 14 Part 77.9.	Electronically submit proposal to FAA via their Obstruction Evaluation/ Airport Airspace Analysis (OE/AAA) Portal and provide site and construction details such as location and site elevation.	30-day comment period.	90-120 Days	No Fees	Prior to construction	All	Submit Form 7460-1	180 days
DOD Siting Clearinghouse Informal Review	**Required for energy projects in Texas.** The state of Texas requires all energy proponents to seek informal reviews with the DOD as early as possible.	Department of Defense (DOD)	Developers of an energy project; a landowner; a State, Indian tribal, or local official; or other Federal agency should request a preliminary determination from the Clearinghouse in advance of filing an application with the Secretary of	Developers of an energy project and all energy proponents.	To request an informal review, send an email to the Clearinghouse at osd.dod-siting-clearinghouse@mail.mil with the information detailed in Notes below this table.	None required.	50 Days	No Fees	Prior to Construction	All	Send an email to the Clearinghouse at osd.dod- siting-clearinghouse@mail.mil with the information detailed in Notes below this table.	2 months

Permit / Approval	Applicability to Project	Regulatory Agency	Regulation Details	Thresholds	Permit Application Requirements	Public Participation	Estimated Agency Review Time	Related Fee (Estimates)	Stage Permit/Approval Required	Areas Affected	Recommendation	General Compliance Timeline
			Transportation under Title 49 U.S.C., Section 44718 or where a preliminary DOD determination is desired.									
DOD Siting Clearinghouse Formal Review	**Applicable if project meets FAA Form 7460-1 thresholds.** Required if project meets thresholds and the proposal is sent to the Clearinghouse by the FAA.	Department of Defense (DOD)	A formal DOD review begins when DOD has received notice of the proposed project from the FAA, normally through the database used by the Clearinghouse to track proposed projects. DOD will perform the review in accordance to Section 211.6 of Title 32, CFR, as modified by Section 183a of Title 10, U.S.C. The DOD Components conducting a preliminary formal review will assess whether the proposed project, if completed, would cause an adverse effect as a national security impact on military readiness, operations, or a hazard to air navigation in accordance with Part 77 of Title 14, CFR. If the Clearinghouse finds that an energy-related project will have an adverse impact on military operations and readiness, it will issue to the applicant a notice of presumed risk that describes the concerns and	Projects filed with the Secretary of Transportation under Title 49 U.S.C., Section 44718 and all energy projects greater than 199 feet above ground level, proposed for construction within military training routes or special use airspace, whether on private, state, or Federal property, such as the Bureau of Land Management lands.	The formal review process is initiated by the FAA and completed by DOD Clearinghouse. If the DOD requires mitigation efforts before approval of the project, the developer must engage in mitigation discussions and reach a draft agreement with all DOD Components.	None Required.	30 days are given to the Clearinghouse to evaluate all comments and recommendations received by the DOD. If it is determined that the proposed project may have an adverse impact and requires mitigation, the Clearinghouse will notify the developer and offer to discuss possible mitigation. The developer must provide agreement to discuss mitigation within five (5) days of receipt of the notification. Such discussions shall not extend more than 90 days beyond the initial notification to the applicant, unless both the designated DOD Components and the applicant agree, in writing, to an extension of a specific period of time.	No Fees	Prior to Construction	All	Proceed with DOD Siting Clearinghouse Informal Review as discussed above.	None anticipated

ENVIRONMENTAL PERMIT MATRIX
Proposed Power Plant on 25 Acres at 200 South Frontage Road
Town of Pecos City, Reeves County, Texas

Permit / Approval	Applicability to Project	Regulatory Agency	Regulation Details	Thresholds	Permit Application Requirements	Public Participation	Estimated Agency Review Time	Related Fee (Estimates)	Stage Permit/Approval Required	Areas Affected	Recommendation	General Compliance Timeline
			requests a discussion of possible mitigation actions.									
Public Water System												
Texas Well Report Submission and Retrieval System (TWRSRS)	**No action if not drilling a water well.** Required for registered water well drillers or landowners who drill their own wells.	Texas Water Development Board (TWDB)	While private well owners do not need to register their wells with the state, registered water well drillers, and landowners who drill their own wells, are required to submit a State of Texas Water Well Report when they drill a new well.	Required for registered water well drillers or landowners who drill their own wells.	Create an account through TWRSRS and submit your report through their online portal. Reference #23 is a quick reference guide provided by TWDB that provides information regarding account set up and report submission. For questions or concerns about TWRSRS contact the Groundwater Data Team at mailto:GroundwaterData@twdb.texas.gov or 512-936-0847	None Required	Not applicable.	No Fees	At drilling of water well	All	No action required at this time if not drilling water well.	Not applicable
Public Water System Approval Process	**No action anticipated.** Required if water system meets thresholds**.**	Texas Commission on Environmental Quality (TCEQ)	Supplying water to others such as on-site workers can require registration as a public water system (PWS). State and federal regulations define PWSs [30 TAC §290.38(71), Fed Ref].	A system that has at least 15 service connections or serves at least 25 individuals for at least 60 days out of the year. These individuals include employees, customers, or students.	Begin the approval process by emailing the TCEQ Plan Review Team at PTRS@tceq.texas.gov	None required	TBD	TBD	Construction	Sites providing water for public consumption	No action required at this time if not providing water.	Not applicable
Floodplain												
Reeves County Floodplain Development Permit Application	**Not required.** Based on the existing CIA, there are no floodplains present within the Site (***CIA Figure 12***).	Reeves County Development and 9-1-1 Addressing	A floodplain administrator is appointed to administer the community's flood damage prevention ordinance as it relates to their participation in the National Flood Insurance Program (NFIP).	Construction within a designated flood hazard zone.	Fill out and submit application to flood plain administrator.	None Required	TBD	TBD	Prior to Construction	Areas within a designated flood hazard zone	No action required.	1 to 3 months
Miscellaneous												
Permit to Construct Access Driveway Facilities on Highway Right of Way (ROW)	**This item should be addressed by the Civil Engineer.**	Texas Department of Transportation (TxDOT)	Driveway permit is required to create a new driveway to the State Highway or other State- owned ROW.	New driveway connection on a State-owned road	Plan drawings, construction dates, traffic plan. Consult civil engineer for details.	None required	30 Days	N/A	Construction	All	Seek input from a qualified Civil Engineer	TBD
Application for Permit to Introduce Fish, Shellfish, or Aquatic Plants	**No Action Required unless dewatering.** Based on the existing CIA, there	Texas Parks and Wildlife Department (TPWD)	Dewatering, maintenance, and construction related activities in rivers, creeks,	Any project that includes the dewatering, maintenance, and/or	-Applicant must develop a written Aquatic Resource Relocation Plan (ARRP) submitted no less than four (4) weeks prior to beginning the project. See Reference #21 pg. 3 for ARRP criteria	None Required	TBD	No Fees	Prior to Construction	Any water features such as rivers, creeks,	No action required at this time.	Not applicable

Permit / Approval	Applicability to Project	Regulatory Agency	Regulation Details	Thresholds	Permit Application Requirements	Public Participation	Estimated Agency Review Time	Related Fee (Estimates)	Stage Permit/Approval Required	Areas Affected	Recommendation	General Compliance Timeline
into Public Waters	are no aquatic features present at the Site (***CIA Figure 9 and 10***).		streams, lakes, sloughs, reservoirs, bays, estuaries, stilling basins, and other flood control structures may negatively impact fish, shellfish, and other aquatic resources. In order to mitigate any potential adverse effects, TWPD recommends entities coordinate with the department to develop a plan to avoid impacts to aquatic resources and, in some instances, relocate aquatic resources outside of the project area.	construction related activities in rivers, creeks, streams, lakes, sloughs, reservoirs, bays, estuaries, stilling basins, and other flood control structures that may negatively impact fish, shellfish, and other aquatic resources.	-Applicant must receive formal approval of the ARRP by the department prior to initiating dewatering, maintenance, or construction related activities - Applicant must complete an "Application for Permit to Introduce Fish, Shellfish, or Aquatic Plants into Public Waters." Which should be submitted along with he ARRP. See Reference #20 for link to the application - Notify TPWD at least 3 days prior to fish relocation and implement the ARRP on the day(s) of dewatering under the supervision of the designated biologist who will record required data					streams, lakes, sloughs, reservoirs, bays, estuaries, stilling basins, and other flood control structures found on the Site.		

This Environmental Permit Matrix has been prepared by ESE Partners, LLC on behalf of Reliability Design & Development. The purpose of the Environmental Permit Matrix is to identify primarily environmental regulations that may apply to the proposed project or activity, identify permits that may be required, and to identify next steps in the permit planning process which are generally captured in the Recommendations column. The items in this Environmental Permit Matrix are based on the current limited information about the proposed project and Site conditions. The Environmental Permit Matrix is designed to be updated as development plans are advanced and Site data is gathered.

ENVIRONMENTAL PERMIT MATRIX
Proposed Power Plant on 25 Acres at 200 South Frontage Road
Town of Pecos City, Reeves County, Texas

Notes:

DOD Siting Clearinghouse: Informal Review Process

Application: To request an informal review, send an email to the Clearinghouse at osd.dod-siting-clearinghouse@mail.mil with the following information-
Application Requirements:

- Informal Review Request Form (see Reference 4)
- Shapefile and/or KMZ of proposed location
- Any other relevant documentation

NPDES/Stormwater

NOI General Requirements:

- Name, address, and telephone number of the operator
- Name, address, county, and Lat/long. Of the construction project
- Number of acres that will be disturbed
- Name of the receiving waters
- Classified segment number for each classified segment that receives discharges from the construction activity
- Name of all surface waters receiving discharges from the construction activity that are on the latest CWA 303(d) list of impaired waters

ENVIRONMENTAL PERMIT MATRIX
Proposed Power Plant on 25 Acres at 200 South Frontage Road
Town of Pecos City, Reeves County, Texas

References:

1. Commission, T. H. (n.d.-a). *Antiquities Code of Texas*. Antiquities Code of Texas | THC.Texas.gov - Texas Historical Commission. https://www.thc.texas.gov/project-review/antiquities-code-texas
2. Commission, T. H. (n.d.-b). *The Section 106 review process*. The Section 106 Review Process | THC.Texas.gov - Texas Historical Commission. https://www.thc.texas.gov/project-review/national-historic-preservation-act/section-106-review-process
3. DOD 32 CFR Part 211 - *Mission Compatibility Evaluation Process*. Federal Register :: Request Access. (n.d.-a). https://www.ecfr.gov/current/title-32/subtitle-A/chapter-I/subchapter-M/part-211
4. DOD Request for Informal Review Form: https://www.dodclearinghouse.osd.mil/Portals/134/DOD_Siting_Clearinghouse_Informal_Request_Form_Fillable_FINAL.pdf
5. DOD Instruction 4180.02 – *DOD Military Aviation and Installation Assurance Siting Clearinghouse*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/418002p.pdf
6. Endangered Species Act of 1973 - U.S. Fish and Wildlife Service. (n.d.-b). https://www.fws.gov/sites/default/files/documents/endangered-species-act-accessible.pdf
7. EPA 40 CFR Part 112 - *Oil Pollution Prevention*. Federal Register :: Request Access. (n.d.-b). https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-112?toc=1
8. ERCOT Fee Schedule. (n.d.-c). https://www.ercot.com/files/docs/2023/03/31/ERCOT-Fee-Schedule-040123.docx
9. ERCOT Planning Guide Section 5. (n.d.-d). https://www.ercot.com/files/docs/2022/04/01/05-040123.doc
10. FAA 14 CFR Part 77 - Safe, Efficient Use, and Preservation of the Navigable Airspace. Federal Register :: Request Access. (n.d.-c). https://www.ecfr.gov/current/title-14/chapter-I/subchapter-E/part-77
11. Federal Emergency Management Agency (FEMA) National Flood Hazard Layer kmz. version 3.2. Accessed in September 2023
12. Lockwood, M. W., & Freeman, B. (n.d.). The TOS Handbook of Texas Birds, Second Edition. Google Books. https://books.google.com/books?id=QCK3AgAAQBAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false
13. The National Historic Preservation Act - NCSHPO. (n.d.-g). https://ncshpo.org/wp-content/uploads/2017/02/nhpaTitle54Dec2016.pdf
14. Texas Parks and Wildlife: Application for Permit to Introduce Fish, Shellfish or Aquatic Plants into Public Waters. https://tpwd.texas.gov/publications/pwdforms/media/pwd_1019_t3200_app_permit_stock_public_waters.pdf
15. Texas Parks and Wildlife: Guidelines for Aquatic Resource Relocation Plans for Fish and Shellfish, Including Freshwater Mussels. https://tpwd.texas.gov/publications/pwdpubs/media/pwd_lf_t3200_1958_arrp_guidelines_packet.pdf
16. Texas Water Code - Texas Constitution and Statutes. (n.d.-f). https://statutes.capitol.texas.gov/Docs/SDocs/WATERCODE.pdf
17. Texas Water Development Board TWRSRS Quick Reference Guide. https://www.twdb.texas.gov/groundwater/data/doc/QuickReferenceGuidePrintVersion.pdf?d=15638
18. USFWS 50 CFR Part 22 - Eagle Permits. Federal Register:: Request Access. (n.d.-d). https://www.ecfr.gov/current/title-50/chapter-I/subchapter-B/part-22?toc=1
19. USFWS Form 3-200-71: Eagle Take- Associated with, but not the Purpose of, and Activity (Incidental Take). https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:3d6e5aa2-2da6-412a-b598-6c780bc40b39
20. USFWS Form 3-200-71 FAQ's. https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:db046817-903c-4750-abbe-93825380ec80
21. §1223a Title 33—Navigation and Navigable Waters Page 326 - GovInfo. (n.d.-a). https://www.govinfo.gov/content/pkg/USCODE-2018-title33/pdf/USCODE-2018-title33-chap26.pdf