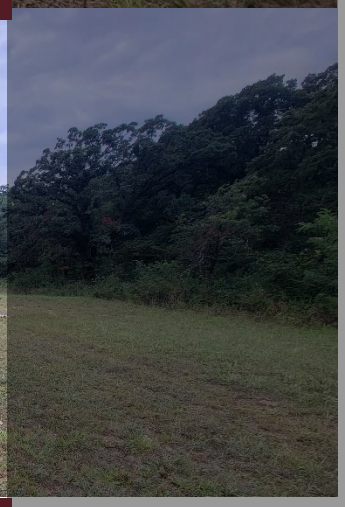
Environmental Assessment
Canton Wildlife Management Area
Gun Range



Prepared For:

Oklahoma Department of Wildlife Conservation

August 2024

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Environmental Assessment

Canton Wildlife Management Area
Gun Range

Blaine County, Oklahoma

US Army Corps of Engineers®

August 2024

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List of Acronyms

ADA	American with Disabilities Act
APE	Area of Potential Effect
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
BGS	Below Ground Surface
BMP	Best Management Practices
CAA	Clean Air Act
CAS	Cojeen Archeological Services
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DHHS	Department of Health and Human Services
DOT	Department of Transportation
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESP	Environmental Stewardship Plan
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FICON	Federal Interagency Committee on Noise
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GLO	General Land Office
HUD	Department of Housing and Urban Development
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act

NFHL	National Flood Hazard Layer
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OAC	Oklahoma Administrative Code
OAS	Oklahoma Archeological Survey
OASIS	OAS Information System
ODEQ	Oklahoma Department of Environmental Quality
ODWC	Oklahoma Department of Wildlife Conservation
OGS	Oklahoma Geological Survey
ONHI	Oklahoma Natural Heritage Inventory
OWRB	Oklahoma Water Resources Board
REC	Recognized Environmental Condition
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SWPPP	Stormwater Pollution Prevention Plan
T&E	Threatened and Endangered
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WMA	Wildlife Management Area

1.0 Introduction

1.1 Project Background

Hunting and shooting in Oklahoma is a traditional pastime and one of the top economic drivers in the tourism and recreation economy. Current regulation (Oklahoma Administrative Code (OAC) Section 800:30-1-16 – Shooting Ranges) restricts target practice to gun ranges provided by the Oklahoma Department of Wildlife Conservation (ODWC) within designated Wildlife Management Areas (WMAs). Currently, 15 shooting ranges are located within all WMAs in the state. The ODWC is addressing the need for increased public shooting access and opportunities in Oklahoma for new and existing hunters, and recreational and competitive shooters.

The ODWC manages and operates numerous WMAs across the state for hunting, fishing, and outdoor recreation activities. The Canton WMA covers approximately 15,000 acres and is located in Blaine, Dewey, and Major Counties in northwest Oklahoma, located around Canton Lake. The Canton WMA is a predominantly floodplain type habitat with some upland sites occurring toward the eastern end of the WMA, which is where the project area is located. The existing gun range within the Canton WMA is located near the eastern shore of Canton Lake in Section 15, Township 19N, Range 13W or at 36.123125, -98.569519. The nearest town is Longdale, located approximately 1.3 miles to the northeast. **Figure 1** shows the general location of the proposed project.

The current gun range is located on the east side of Thunder Road Scenic Drive and south of EW-615 Road. The current facility includes a parking lot, 100-yard and 200-yard rifle ranges, and two covered shooting benches. The proposed project includes the renovation and expansion of the rifle ranges, the addition of a pistol range to the west of the rifle ranges, the addition of an archery range located on the south side of EW-615 Road, and the addition of a trap range located on the north side of EW-615 Road. Covered shooting benches and two new parking lots are also included. All facilities would be American with Disabilities Act (ADA) compliant. **Figure 2** shows the project area and **Figure 3** depicts the facility layout.

1.2 Scope of Assessment

This Environmental Assessment (EA) is being conducted on behalf of the Oklahoma Department of Wildlife Conservation, pursuant to the National Environmental Policy Act (NEPA). This EA includes an assessment of the environmental effects of the development, expansion, and operation of a shooting range facility located within the Canton Wildlife WMA. The proposed project is located on U.S. Army Corps of Engineers (USACE) property. The USACE is the lead federal agency for the current environmental study.

This EA has been prepared in accordance with the regulations set forth by the Council on Environmental Quality (CEQ) implementing the provisions of the NEPA (CEQ Regulations, Title 40 CFR 1500-1508) as amended in 2020; Executive Order 12898; and the USACE implementing regulation, 33 CFR Part 230, “Procedures for Implementing NEPA.” The purpose of this EA is to provide an environmental analysis of the Proposed Action in sufficient detail to allow the USACE to determine whether a Finding of No Significant Impact (FONSI) is appropriate or whether an Environmental Impact Statement (EIS) must be prepared for the Proposed Action.

1.3 Purpose and Need

The purpose of the project is to provide public shooting access and opportunities in Oklahoma for new and existing hunters, and recreational and competitive shooters, while also encouraging hunters and shooters to enhance their skills by becoming more proficient with firearms, promoting safe and responsible hunting and shooting practices, and providing safe and environmentally responsible shooting areas.

The proposed project is needed due to its location within a geographically isolated area. Target shooting is not legal on public hunting land outside of designated areas. Opportunities for firearm training in a controlled environment are not currently available in the vicinity of the proposed project.

2.0 Project Alternatives

The ODWC is considering two alternatives for the proposed action. The No Action Alternative and the action alternative identified as the Preferred Alternative, which includes the renovation and expansion of the existing gun range facility at the Canton WMA. The following two sections below provide a summary of the alternatives that were evaluated. The Preferred Alternative is described in detail in Section 2.2.

2.1 No Action Alternative

The “No Action” alternative will not improve the current condition of the gun range or provide expanded facilities to meet local demand. While this option is not practical because it does not meet the needs of the project, it is mentioned to comply with considerations under NEPA.

2.2 Preferred Alternative

The Preferred Alternative entails the development of multiple gun ranges within the facility. The expansion would include an archery range, trap range, 100-yard rifle and 50-yard pistol ranges, safety berms and backstops, and ADA compliant parking lots and pathways. In addition, the existing 200-yard rifle range, shooting covers and benches, and the fencing and gates around the facility would be improved. The development of these facilities will include the clearing and removal of trees/vegetation, grading, and development of earthen backstops.

3.0 Proposed Action

The Proposed Action would renovate and expand the rifle range, add a pistol, archery, and trap range, and include ADA compliant parking lots. The shooting range reconfiguration would include 100-yard and 200-yard rifle ranges, and a 50-yard pistol range, each equipped with a shooting house and four benches, divided by minimum 10-feet high compacted earth berms and include minimum 20-feet high compacted earth backstops. The rifle and pistol range locations would generally be in the same orientation as the existing rifle range. The 30-yard archery range would be equipped with a 10-feet 6-inch-high platform. This would be located 50 yards west of the rifle range and south of EW-615 Road. The trap range would be located to the north of EW-615 Road, have a 700-foot shot-fall zone, and approximately 600 ft^2 concrete pad for trap shooting and a

temporary target thrower. The facility would be accessed by two 8,320 ft^2 gravel parking areas equipped with small concrete areas that are van accessible.

To construct the facility, fill will be used from borrow pits located within the project area. The majority of the fill was originally planned to be collected in the area southeast of the trap range and north of the rifle range. However, the EA footprint was expanded to during the scoping phase so that borrow could be pulled from anywhere throughout the EA footprint. **Figure 3** depicts the facility layout.

4.0 Affected Environment

4.1 Location

The project area is located in Blaine County, OK and encompasses approximately 41 acres. The closest town to the project area is Longdale, located approximately 1.3 miles to the northeast. The town of Watonga is the county seat of Blaine County, which is located 21 miles south-southeast. The eastern shore of Canton Lake is located 0.35 miles west. The project area is located entirely on USACE property.

4.2 Land Cover

The predominant land cover in the project area is upland forest, which accounts for 35 of the 41 acres. Smaller land cover areas include ODWC food plots (areas planted with vegetation designed to attract wildlife; 4.03 acres), maintained grass (1.3 acres), and roadway and parking areas (0.76 acre). Land use in the general vicinity is forested and part of the Canton WMA. Several rural residences are located approximately 0.2 mile to the east. The dominant vegetation in forested areas is post oak (*Quercus stellate*), blackjack oak (*Quercus marilandica*), and eastern red-cedar (*Juniperus virginiana*). Land cover types are depicted in **Figure 4**.

The project area Is located in the Central Great Plains Environmental Protection Agency (EPA) Level IV Ecoregion (27). The Central Great Plains, in Oklahoma, include scattered hills, breaks, salt plains, low mountains, gypsum karst, sandy flats, and sand dunes. Landform diversity is greater, and elevations are lower than in the High Plains. Mean annual rainfall increases eastward and varies from about 22 to 38 inches. The growing season increases towards the south. The upland natural vegetation in this dry-subhumid area is mostly mixed grass prairie, but mesquite–buffalograss (*Bouteloua dactylodes*) and shinnery oak (*Quercus havardii)* are native, respectively, to the south and to sandy areas; potential natural vegetation is distinct from the short grass prairie of the semiarid High Plains, the tall grass prairie ecoregions and the oak savanna of the Cross Timbers. Riparian corridors can be wooded. The eastern boundary of Ecoregion 27 coincides with the eastern limit of America's winter wheat belt. Cropland is extensive; main crops are wheat, alfalfa, and grain sorghum. In addition, soybeans are grown in the east, where rainfall is greatest, and cotton occurs, especially on irrigated, nearly flat land in the south. Rangeland and grassland are found in more rugged areas and are being invaded by eastern redcedar. Extensive oil and gas fields occur. Typically, after heavy rains, streams flow strongly and are laden with suspended sediment. Streams draining rangeland carry less sediment load than those that are downstream of cropland. Flow stops or nearly stops in the summer, but scattered pools endure and serve as summer refuges for aquatic fauna. Salt or gypsum deposits and leaching produce high mineral

concentrations in many streams and rivers. Numerous streams have been channelized and/or impounded resulting in the loss of riparian forest, unnatural flow regimes, entrenchment, bank erosion, substrate alteration, and fauna modification. Discussion of the more detailed EPA Level III Ecoregion can be found in Section 5.4.1.

4.3 Geology and Soils

Hydrogeologic Atlas maps produced by the Oklahoma Geological Survey (OGS) were reviewed and show the project area falls within alluvium and terrace deposits and their recharge areas. The alluvium and terrace deposits consist of lenticular and interfingering deposits of light-tan to gray gravel, sand, silt, clay, and volcanic ash. Sand dunes are common in many places. Thickness ranges up to 150 feet and averages about 60 feet. There are no known sole source aquifers within the project area.

According to the Natural Resources Conservation Service (NRCS) soil survey, three types of soil exist in the project area. The soils are Nobscot sand with 0-5% slopes, Tivoli fine sand with 5-30% slopes, and Waldeck fine sandy loam with 0-1% slopes, occasionally flooded. The soil types and their location in the project area are depicted in **Figure 5**.

4.4 Climate

The Watonga Mesonet Station, maintained by the Oklahoma Climatological Survey, is located approximately 19.5 miles south of the project area and 7 miles west of the town of Watonga. This location is the closest all-weather station to the project area. The station has collected data over a 29-year period and records the average annual statistics of air temperature, humidity, wind and rain amounts, as well as other standard parameters in the western Oklahoma area. The average annual temperature in the region is 59°F, with average annual rainfall of 31.8 inches. The average number of days per year with low temperatures below 32º F is 94.

4.5 Environmental Justice

Executive Order (EO) 12898 on Environmental Justice requires each Federal agency to make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Under this EO, groups defined as “minority” include Hispanic or Latino, Black or African-American, American Indian and Alaska Native, Asian, and Native Hawaiian and other Pacific Islander. “Low-income” populations include those people whose household income falls below the annual statistical poverty thresholds used by the Census Bureau, which are based on the 2024 poverty guidelines developed by the Department of Health and Human Services.

Table 1 provides minority population statistics and **Table 2** provides low-income population statistics for the State of Oklahoma (State), Blaine County (County), the immediate Census Tract (Census Tract 9587) and Block Group (Block Group 1) that the proposed project is located in. The data was collected from the U.S. Census Bureau, 2022 American Community Survey, 5-Year Estimate.

The minority population data in **Table 1** shows that Black and African American, American Indian and Alaskan Native, and Hispanics (of any race) are the only minority groups present within

Census Tract 9587 and Block Group 1. Of these groups within Census Tract 9587, the percentage of American Indian and Alaskan Natives is slightly higher than the County and State.

Table 1 – Minority Populations

	Oklahoma	Blaine County	Census Tract 9587	Block Group 1
Population				
Total	3,948,136	8,799	1353	1,266
Race Data (%)				
White	63.7	69.7	81.4	88.5
Black or African American	7.0	4.4	0.1	0.3
American Indian and Alaskan Native	7.0	5.9	7.2	4.8
Asian	2.3	0.0	0.0	0.0
Native Hawaiian and Other Pacific Islander	0.2	0.0	0.0	0.0
Hispanic (of any race)	11.6	13.6	5.6	3.5
Other Race	0.3	0.0	0.0	0.0
Two or More Races	8.0	6.4	5.6	3.0

The income data in **Table 2** shows that the household income within Census Tract 9587 and Block Group 1 is higher than the County and the State. The percentage of families with incomes below the poverty line is much lower in Census Tract 9587 and Block Group 1 when compared to the County and the State.

Table 2 – Household Income and Poverty

	Oklahoma	Blaine County	Census Tract 9587	Block Group 1
Income Data				
Median Household Income (Dollars)	61,364	56,843	65,625	64,306
Percent of Families with Income Below Poverty Line	11.0	11.3	2.1	2.1

4.6 Hydrology and Water Quality

No streams, ponds, wetlands, or other surface waters were identified within the project area while conducting the wetland delineation (see Section 4.5). The closest surface water body is Canton Lake, which is approximately 0.3-mile (1,584 feet) west of the project area. Canton Lake has a conservation pool of 7,910 acres. Canton Lake is on Oklahoma's 2022 303(d) list of impaired waters for turbidity. The Oklahoma Water Resource Board (OWRB) lists multiple groundwater wells within 0.3-mile of the proposed project. According to the OWRB, one well owned by the ODWC (No. 87614) is located 0.3 mile north of the proposed project and is listed as being 52 feet deep and first water encountered at 14 feet below ground surface (BGS). A second well, located 0.25 mile southeast of the proposed project, listed first water encountered at 26 feet BGS. No stream channels in the project area were identified, however, stormwater on the site generally drains to west and southwest and will ultimately enter Canton Lake.

4.7 Waters and Wetlands

Prior to conducting field studies, a review of pertinent background information was conducted to gain familiarity with the natural surroundings of the project area and includes:

- Current aerial photography (Google Earth 2024)
- U.S. Geological Survey (USGS) topographic quadrangle maps
- National Wetland Inventory (NWI) data
- NRCS soils data (see Section 4.1.3)
- USACEs National Wetland Plant List (USACE 2020 version 3.5)
- Federal Emergency Management Agency (FEMA) flood maps
- USACEs Antecedent Precipitation Tool (USACE 2023).

The entire project area was surveyed for wetlands and waters on September 13, 2023 in accordance with the routine approach set forth in the USACE Wetland Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0; USACE 2010). Wetlands are identified based on three criteria: 1) the presence of hydrology showing regular inundation, 2) a predominance of hydrophytic (water loving) vegetation, and 3) soils characteristic of frequent saturation (i.e., hydric soils) (USACE 1987 and 2010). Determination of wetland habitat (type) is based on the classification system developed by Cowardin et al. (1979).

Streams are classified using physical, hydrological, and biological characteristics and fall in three types: 1) ephemeral streams have flowing water only during and for a short duration after precipitation events in a typical year, 2) intermittent streams have flowing water during certain times of the year, when groundwater provides water for stream flow, and runoff precipitation is a supplemental source of water, and 3) perennial streams have flowing water year-round during a typical year (USACE 2022).

Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. The USACE administers the program, including individual and general permit decisions, and enforcement of Section 404 permit provisions. The USACE is also responsible for verifying jurisdictional determinations. The Oklahoma Department of Environmental Quality (ODEQ) conducts Section

401 certification reviews of projects requiring a CWA Section 404 permit from the USACE for the discharge of dredged or fill material into waters of the United States.

The project area primarily consisted of upland forests and food plot areas which contain upland grasses and other vegetation planted to attract wildlife. A total of six data points were collected within the project area and documented on USACE data forms. No wetlands, ponds, streams, or other aquatic features were identified within the project area during the field investigation. The study is detailed in the Wetland Delineation Report (**Appendix A**).

4.8 Wildlife and Habitat

The Endangered Species Act (ESA) of 1973 was designed to protect threatened and endangered (T&E) species and their habitats. The USFWS Information for Planning and Consultation (IPaC) tool was used to identify T&E species that potentially occur within the project area. In compliance with Section 7 of the ESA, an assessment of these federally listed T&E species and their suitable habitat was performed to determine potential impacts to these species. The study is detailed in the Habitat Assessment Memo (**Appendix B**).

The project area is located in the Pleistocene Sand Dune EPA Level III Ecoregion (27l). This ecoregion can be described as, “active, barren, or stabilized Pleistocene sand dunes found along, and usually to the north of, most major rivers in the Central Great Plains (EPA Level IV Ecoregion 27); they lack well developed drainage networks and are physiographically and lithologically unlike the rest of Ecoregion 27. Deep, loose, permeable to rapidly permeable, sandy soils are characteristic. They widely support sand sagebrush–bluestem prairie, but where moisture is sufficient, oak savanna stabilizes dunes. Small interdune wetlands occur where the water table is high; this is an important habitat for migrating shorebirds and waterfowl. Grazing is the most common land use, but irrigated cropland is found on soils that can retain sufficient moisture. Local overgrazing has occurred, promoting wind erosion. Springs are abundant, especially at the contact between sand and the underlying Permian redbeds. Ecoregion 27l consistently supports large populations of rodents, rabbits, and birds; it is one of the most important areas for game in Ecoregion 27. During prolonged cold and wet periods, the Pleistocene Sand Dunes (27l) ecoregion provides important shelter to wildlife.

No designated or proposed critical habitat occurs within the project area. The following five threatened, endangered or candidate species were on the IPaC list:

- Tricolored Bat (*Permyotis subflavors*) (Proposed Endangered)
- Piping Plover (*Charadrius melodus*) (Threatened)
- Red Knot (*Calidris canutus rufa*) (Threatened)
- Whooping Crane (*Grus americana)* (Endangered)
- Monarch Butterfly (*Danaus plexippus)* (Candidate)

In addition to the threatened and endangered list, the Bald Eagle (*Haliaeetus leucocephalus)* was included in relation to special protection as defined in the Bald and Golden Eagle Protection Act of 1962. No bald eagle habitat was present in the project area and no nests were observed within 660 feet of the project area boundaries. The Oklahoma Natural Heritage Inventory (ONHI) reported one occurrence of bald eagles approximately two miles northwest of the project area. It

is probable that there is bald eagle habitat in the form or large super canopy trees within the 1-mile action area for this project.

No structures suitable for migratory bird use were observed within the project area.

Suitable habitat for multiple non-listed species is present in the project area. The entire Canton WMA covers 14,877 acres across three counties and the gun range project area contributes less than 0.3 percent of that total. During the site visit, several wildlife species were observed using the project area. Various songbird species, a red-tailed hawk (*Buteo jamaicensis*), and signs of white-tailed deer (*Odocoileus virginianus*) were sighted; however, these species are not on the state or federal lists.

4.9 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) requires agencies to consider the effects of federal actions on historic properties. A cultural resources survey was completed in January 2024 that included shovel tests within the proposed project area. The report documenting the results of the survey was prepared for the USACE to submit to the State Historic Preservation Office (SHPO) for review in compliance with Section 106 requirements. In addition, the USACE is conducting ongoing consultation with the appropriate Native American tribes.

Records were checked to determine if previously documented cultural resources were known in the Area of Potential Effect (APE) and a one-mile buffer surrounding the APE. This included a record review of the Oklahoma Archeology Survey Information System (OASIS) database maintained by the Oklahoma Archeological Survey (OAS) for previously recorded archeological sites immediately proximal to the action alternatives. A review of General Land Office (GLO) plats, historical aerials, topographic maps, and resources was undertaken to determine how the project area has been utilized over time. Additionally, the Oklahoma SHPO National Register of Historic Place (NRHP) map, Determination of Eligibility List, and the Oklahoma Landmarks Inventory database were reviewed for resources within, or in the vicinity of the APE.

A previous archeological survey, performed by Cojeen Archeological Services (CAS) in 2019, was conducted on 11.25 acres within the initial project area. No cultural materials or evidence of features were observed on the surface or in shovel tests. The report concluded that the project would have no effect on cultural resources. Between the initial 2019 survey by Cojeen the APE was expanded to approximately 13 acres. A subsequent cultural resources survey was completed in January 2024 by Stantec that included shovel tests within the areas of the proposed gun range renovation and expansion project outside of the APE previously surveyed by Cojeen Archaeology in 2019. The expanded APE was subject to an intensive cultural resources survey consisting of pedestrian survey augmented with shovel testing. No artifacts or cultural materials were observed on the ground surface or within subsurface testing.

4.10 Hazardous Waste

A Hazardous, Toxic, and Radioactive Waste (HTRW) Phase I Environmental Site Assessment (ESA) was conducted to identify recognized environmental conditions and/or any problems associated with HTRWs which may be located within the project area or may affect or be affected by the project. Records research, a site visit on September 13, 2023, interviews, and photographic

documentation was performed in accordance with American Society of Testing Materials (ASTM) E1527-21 Standard Practice for Environmental Site Assessments, and USACE rules and guidance contained within ER 1154-2-132 HTRW Guidance for Civil Works Projects. The full report detailing the findings is located in **Appendix C**.

One Controlled Recognized Environmental Condition (CREC) was identified as a result of the HTRW Phase I ESA report. ASTM E1527-21 defines a CREC as a Recognized Environmental Condition (REC) resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by the regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, activity and use limitations, institutional controls, or engineering controls).

The CREC Is associated with the historic use of an area, located within the southeastern side of the project area, as a gun range. The gun range, and particularly the earthen backstop, contain lead from discharged ammunition. During the interview process, it was discovered that the gun range utilized an ESP which includes a lead management plan to address and mitigate impacts from shooting activities. The current level of lead contamination and distribution of impacted soils at the project area is unknown; however, the only area known to have previously been used for the gun range is well defined. Areas outside this gun range would likely have no elevated lead levels when compared to the general area.

4.11 Air Quality

The Clean Air Act (CAA) of 1977 as amended requires Federal facilities to comply with all Federal, state, interstate, and local requirements regarding the control and abatement of air pollution in the same manner as any non-governmental entity, including any requirement for permits. No Federal requirements are involved that are not already incorporated into Oklahoma State law. The “Conformity Rule” of the CAA, as amended the CAA states that all Federal actions must conform to any appropriate State Implementation Plan (SIP). This rule took effect on January 31, 1994, and at present applies only to Federal actions in non-attainment areas (those not meeting National Ambient Air Quality Standards (NAAQS) for the criteria pollutants in the CAA). The State of Oklahoma including Blaine County is considered an “attainment area” and is therefore exempt from the “Conformity Rule” of the CAA.

The proposed project area is located in an area in attainment for all NAAQS (**Appendix I**).

4.12 Noise

The Noise Control Act of 1972 (42 USC 4901-4918) was initially implemented through regulations issued by the U.S. EPA, however, primary responsibility for regulating noise has been delegated to state and local governments. The State of Oklahoma has multiple statutes addressing loud or unusual noise. The project area is not part of a municipal boundary and Blaine County has no noise ordinances.

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that interferes or disrupts normal activities and is generally considered to be unwanted sound. Although exposure

to high noise levels can cause hearing loss, the common human response to environmental noise is annoyance. Its annoyance has been studied and quantified by the U.S. EPA following community studies. Basic conclusions have been adopted by the Federal Interagency Committee on Noise (FICON), Housing and Urban Development (HUD), American National Standards Institute (ANSI), and the Federal Highway Administration (FHWA). Reaction of individuals to similar noise events is diverse and influenced by numerous factors, such as the type of noise, its perceived importance, the time of day which the noise occurs, its duration, frequency, level, and community attitudes towards the source of the noise.

The proposed project area is located in Blaine County within the Canton WMA. This is a rural area dominated by woodlands. No hospitals, schools, daycare facilities, elderly housing, or other sensitive receptors are located within one mile of the proposed project. Current ambient noise levels in the proposed project area were not measured. Sound levels include limited background noise and intrusive sounds. Characteristic sound sources in the area include noise associated with shooting activities and vehicular road noise. Receptors in the area include rural residences approximately 0.2 mile to the east and the Longdale Recreation Area approximately 0.6 mile to the northwest.

4.13 Farmland

The Farmland Protection Policy Act, 7 U.S.C. 4201 (FPPA) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use.

The proposed project is entirely within USACE property which is managed by the ODWC for use as a WMA. Within the 41-acre project area 20.4% or 8.4 acres of the land area is classified as “prime farmland”. All remaining areas are classified as “not prime farmland” (**Appendix H**). Currently, no lands within the project area are used for agriculture.

4.14 Floodplains

Executive Order 11988 entitled “Floodplain Management” dated May 24, 1977, requires federal agencies to avoid or minimize the adverse impacts of their activities on floodplains wherever possible and to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management. This includes the restoration and preservation of such land areas as natural undeveloped floodplains, and to prescribe procedures to implement the policies and procedures of this Executive Order. Guidance for implementation of the Executive Order has been provided by the U.S. Water Resources Council in its Floodplain Management Guidelines dated February 10, 1978 (see 40 FR 6030).

The location of the proposed project is considered Zone D, an area where the flood hazard is undetermined and usually very sparsely populated, thus unmapped by FEMA. The proposed project area is depicted in the FIRM located in **Appendix G**.

4.15 Recreation

The proposed project is located within the Canton WMA which provides opportunities for hunting, fishing, and outdoor recreation. Game species of interest at the Canton WMA include bobwhite

quail (*Colinus virginianus*), white-tailed deer, turkey (*Meleagris gallopavo*), cottontail rabbits (*Sylvilagus sp.*), furbearers (i.e., coyote (*Canis latrans*), bobcat (*Lynx rufus*), and raccoon (*Procyon lotor*)), dove species, and waterfowl. Primitive camping is available at designated areas along mostly access roads within the WMA with more developed campgrounds available around Canton Lake. Canton Lake is stocked with walleye and striped bass and well known as a crappie and sandbass fishery.

The current facility includes a 100-yard and 200-yard rifle range for recreational shooting. The proposed project will create additional opportunities for recreational shooting that include the addition of a 50-yard pistol range, trap range, and archery range. The rifle range will also be reconfigured and equipped with covered shooting benches. Two new gravel parking lots will be included in the project. The parking lots will be equipped with paved van accessible ADA compliant parking spaces. Paved sidewalks will connect parking lots to the various facility improvements. This will allow for an increase in recreational opportunities for all people. As a result of the proposed project, there will also be greater accessibility to hunter education programs, and in general an expanded community space for associated gatherings and other educational events.

5.0 Impacts of the Proposed Action

This section documents the existing conditions in the project area and the anticipated impacts of the proposed action.

5.1 Environmental Justice

5.1.1 Preferred Alternative

Because the proposed project does not require any property owners to relocate, suffer significant property damage, incur large permanent land or property acquisitions, or permanently impede or alter current transportation infrastructure (roads and bridges), the data suggests that no population group will be disproportionately affected. The project will provide an expansion of recreation opportunities to populations within the vicinity.

5.1.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed; thus, there would be no additional recreational benefit to any of the population in the area.

5.2 Hydrology and Water Quality

5.2.1 Preferred Alternative

The proposed action would not impact local hydrology or water quality. The construction phase of the project would be permitted as required in Section 402 of the CWA. The Preferred Alternative would obtain coverage under the National Pollutant Discharge Elimination System (NPDES) general permit for Construction Activities. The contractor will be required to obtain and comply with conditions set forth in the General Permit OKR10 for Stormwater Discharges from Construction Activities within the State of Oklahoma administered by the ODEQ. This permit contains a selection of Best Management Practices (BMPs) to be implemented to effectively

reduce or prevent the discharge of pollutants into receiving waters during construction activities. Post-construction, all disturbed areas would be revegetated.

Groundwater would not be affected due to implementation of the Environmental Stewardship Plan (ESP). This plan outlines alternatives to manage lead particulates, accumulated primarily at the gun range backstops, and mitigate any effects to surface and groundwater. A detailed analysis can be found in Section 5.3 Hazardous Waste. The ESP can be found in **Appendix F**.

5.2.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed; therefore, no impacts to local hydrology and water quality would be expected.

5.3 Waters and Wetlands

5.3.1 Preferred Alternative

The Wetland Delineation Report identified no aquatic features within the project area, therefore, no impacts to potentially jurisdictional aquatic features will take place.

5.3.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed, therefore, no impacts to potentially jurisdictional water features would occur.

5.4 Wildlife and Habitat

5.4.1 Preferred Alternative

Table 3 is a summary of the effects determination included in the Habitat Assessment Memo. Based on the official species list generated by the IPaC tool, and on habitat observed in the project area on September 13, 2023, the project will have *no effect* on the piping plover, red knot, and whooping crane, and will have *no jeopardy* to the tricolored bat and the monarch butterfly.

Table 3 – Threatened & Endangered Species Effects Determination

Species and/or Critical Habitat	Federal Status	Habitat Requirements	Habitat Present within Project Area	Preliminary Effects Determination
Tricolored Bat	Proposed Endangered	Live or dead trees and/or snags, limestone karsts features, barns or sheds, and linear treed features	Yes	No Jeopardy[1]
Piping Plover	Threatened	Sandbars of major rivers, salt flats, and mudflats of reservoirs	No	No Effect
Red Knot	Threatened	Mudflats associated with reservoirs.	No	No Effect

Species and/or Critical Habitat	Federal Status	Habitat Requirements	Habitat Present within Project Area	Preliminary Effects Determination
Whooping Crane	Endangered	Wetlands, marshes, and sandbars along major rivers	No	No Effect
Monarch Butterfly	Candidate	Milkweed (*Asclepias* spp.) and native habitat with the presence of flowering or potentially flowering nectar plants.	Yes	No Jeopardy[1]

[1]Effect determination for candidate and proposed listed species

Suitable habitat for multiple proposed and candidate species would be impacted during the expansion and renovation of the gun range. Significant tree-clearing, grading, and earth moving will take place during the construction phase. No aquatic resources were observed in the project area; therefore, no aquatic and riparian habitat would be affected.

5.4.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed; therefore, there would be no impacts to wildlife habitat or federally listed threatened and endangered species.

5.5 Cultural Resources

5.5.1 Preferred Alternative

Intensive survey within the APE did not identify any cultural resources. Because no historic properties were identified, there will be no effects to cultural resources in the project area.

5.5.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed; thus, there would be no effects to cultural resources.

5.6 Hazardous Waste

5.6.1 Preferred Alternative

5.6.1.1 Potential Effects During Construction Phase

The construction phase of the proposed project would have no more than minimal impacts related to the generation, transport, treatment, storage, or disposal of hazardous or toxic materials due to chemical constituents contained in vehicle and equipment fuels, coolants, and lubricants. ODWC would comply with all applicable federal and state regulations regarding notices to federal and local emergency response authorities and develop appropriate emergency response plans, if required.

Fill material from an unknown source could contain hazardous materials and introduce these materials to the site. All fill material used for construction will be acquired from borrow pits located within the project area. The majority of the fill is planned to be collected from areas southeast of

the proposed trap range and north of the rifle range. The contractor will verify that the fill material has been obtained and stored in a manner that would prevent hazardous material contamination.

Any fill material brought onsite will be tested to ensure the pH is within an acceptable range (6.5 to 8.5) to prevent dissolution of lead particles. If fill material with a pH outside this range is exposed to lead particulates present at the site, the dissolution of lead and increased mobility could lead to lead migration offsite or into groundwater.

5.6.1.2 Potential Effects During Operational Phase

The proposed action will increase an already present accumulation of lead from discharged ammunition, particularly in the earthen backstops at the firing ranges. This lead can become a much greater environmental concern if mobilized. The current level of lead contamination and distribution of impacted soils at the project area is unknown; however, the only area known to have previously been used for the gun range is well defined. The expansion of the gun range would include similar areas. Therefore, the proposed project would introduce hazardous materials in the form of lead contamination to areas that currently have none.

Lead contamination would likely be confined to the earthen backstops. However, when mobilized, impacts from lead contamination can spread. Four potential migration pathways that the proposed gun range expansion could contribute to are as follows:

- Airborne particulate matter,
- Waterborne particulates in suspension in stormwater,
- In solution in stormwater, and
- In solution in groundwater.

Best Management Practices and Management Alternatives set forth in the Environmental Stewardship Plan (**Appendix F**) aim to limit migration and exposure to lead throughout the project area. Management Alternatives listed in the plan that would limit migration and exposure are as follows:

- Regrade sites to limit stormwater runoff velocity,
- Vegetate areas of bare soil,
- Construct sediment basins to reduce mobility,
- Test soil pH and apply necessary soil amendments to achieve 6.5 – 8.6 pH, and
- Institute a lead reclamation project.

If the previously listed Management Alternatives and the Environmental Stewardship Plan is implemented as written, long-term effects and impacts associated with hazardous waste and solid waste would be extremely low. Lead that would accumulate at the gun range would have a low probability of migrating offsite. Scheduled lead reclamation projects would limit the amount of available solid lead within the earthen berms and backstops. This would decrease the chance of solid lead transforming to a more mobile form and would further reduce the likelihood of offsite migration.

5.6.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed. No new effects regarding hazardous materials would take place. The facility would continue to utilize the lead management plan to mitigate impacts from shooting activities.

5.7 Air Quality

5.7.1 Preferred Alternative

The proposed action would likely increase the discharge of firearms in the area. This would have a negligible impact on air quality in the general area. Construction activities during the development of the gun ranges would require the use of heavy machinery that could have a minor and temporary impact on local air quality. Construction vehicle emissions would be negligible and dust suppression will be implemented as part of the site-specific Stormwater Pollution Prevention Plan (SWPPP). No other sources of air emissions are anticipated. Additional information on the implementation of the construction SWPPP is provided in Section 6.1.

5.7.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed; thus, no impacts to air quality would occur.

5.8 Noise

5.8.1 Preferred Alternative

Under the proposed action, noise from the discharge of firearms may increase with the addition of the expanded facilities. However, this area has been utilized for hunting and recreational shooting since at least the development of the current gun range which was approximately 1970. The project area is heavily forested on all sides. The Center for Disease Control (CDC) and USDA National Agroforestry Center recommend vegetative buffers which limit noise pollution (USDA 2011). Furthermore, the rifle ranges with be equipped with a minimum of 10-feet high earthen berms and minimum 20-feet high earthen backstops, that will reflect and diffract noise as well (CDC 2012). Noise generated from shooting activities is already part of the existing environment for humans and wildlife. While there may be an increase in recreational shooting at the expanded facility, the noise should be consistent with what is already present. Noise abatement measures that include vegetative buffers, earthen berms and backstops, and facility opening/closing times will further mitigate unwanted noise.

5.8.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed; thus, there would be no impacts associated with increased noise level.

5.9 Farmland

5.9.1 Preferred Alternative

Under the proposed action, less than 0.5 of the 8.4 acres of prime farmland would be irreversibly converted to parking lots, sidewalks, and other concrete pads used for shooting activities. Due to

the impacts to prime farmland, USDA form AD-1006 was completed and submitted to the NRCS for a farmland conversion rating score to be established. The rating score for the preferred alternative did not equal or exceed the maximum total, therefore, no alternative actions to reduce farmland impact were considered. **Appendix H** contains correspondence with the local Blaine County USDA-NRCS office.

In a response to the initial correspondence sent by ODWC, the USDA-NRCS State Resource Conservationist stated that the project had been reviewed and that the proposed project will not impact any easements, watersheds, or prime farmland soils as defined by the FPPA. This correspondence is included in **Appendix E**.

5.9.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed; thus, there would be no conversion of farmlands.

5.10 Floodplains

5.10.1 Preferred Alternative

The proposed project is not located within a FEMA National Flood Hazard Layer (NFHL) mapped area. The proposed project will not affect the hydrologic or hydraulic characteristics of a flooding source or result in the modification of an existing regulatory floodway, effective base flood elevations, or a special flood hazard area. The Blaine County floodplain administrator was notified of the proposed project, and no response was received. A floodplain development permit is not required. There would be no impacts to floodplains.

5.10.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed; thus, there would be no impacts to floodplains.

5.11 Recreation

5.11.1 Preferred Alternative

The current facility includes a 100-yard and 200-yard rifle range for recreational shooting. The proposed project will create additional opportunities for recreational shooting that include the addition of a 50-yard pistol range, trap range, and archery range. The rifle range will also be reconfigured and equipped with covered shooting benches. Two new gravel parking lots will be included in the project. The parking lots will be equipped with paved van accessible ADA compliant parking spaces. Paved sidewalks will connect parking lots to the various facility improvements. This will allow for an increase in recreational opportunities for all people. As a result of the proposed project, there will also be greater accessibility to hunter education programs, and in general an expanded community space for associated gatherings and other educational events.

5.11.2 No Action Alternative

Under the No Action Alternative, the proposed gun range expansion would not be constructed. Beneficial effects associated with expanded access to recreational shooting and associated educational opportunities would not be achieved.

5.12 Indirect and Cumulative Impacts

Indirect impacts are caused by the project and occur later in time or farther removed in distance but are still reasonably foreseeable. Examples of indirect impacts include changes in future population or land use due to a new roadway, or changes to downstream waterways and/or habitat as a result of activities in the project area. These impacts could be positive or negative.

Cumulative impacts are impacts that result from adding the impacts of a project to the impacts of other past, present, or reasonably foreseeable future projects. While impacts of the project alone may not be significant, when considered together with other ongoing or planned projects these impacts together could be considered significant.

The renovation and expansion of the gun range is expected to lead to an increase in visitors. This increase would result in more vehicular traffic in a rural area. However, the increase in traffic is not expected to be significant. No other indirect impacts were identified.

Cumulative impacts from the accumulation of lead particles from past, present, and future shooting activities could potentially adversely impact water, soil, and wildlife. The project has been designed to minimize the migration of lead particulates from shooting areas through layout design and instituting the ESP. No other cumulative impacts were identified.

6.0 Mitigation Plan and Commitments

6.1 Hydrology and Water Quality

As required by Section 402 of the CWA, the Preferred Alternative would obtain coverage under the NPDES general permit for Construction Activities. The contractor will be required to obtain and comply with conditions set forth in the General Permit OKR10 for Stormwater Discharges from Construction Activities within the State of Oklahoma administered by the ODEQ by implementing a site-specific SWPPP during the construction phase of the project. This permit contains a selection of BMPs to be implemented to effectively reduce or prevent the discharge of pollutants into receiving waters during construction activities.

Effects to hydrology and water quality from the accumulation of lead particulates are addressed in Section 5.3 Hazardous Waste.

6.2 Hazardous Waste

Construction Phase

All fill material used for construction will be acquired from borrow pits located within the project area. The majority of the fill is planned to be collected from areas southeast of the trap range and north of the rifle range. The contractor will verify that the fill material has been obtained and stored in a manner that would prevent hazardous material contamination.

Any fill brought into USACE property, whether used for the construction of access roads, gun range grading, or the development of backstops, must be purchased/obtained from a commercial borrow area. If the construction contractor cannot obtain borrow from a commercial site, the borrow must be screened and cleared in accordance with USACE regulation ER-200-2-3, Sec. 8-1 d.

The project area will be revegetated at the earliest opportunity possible following construction according to the WMA manger's guidelines to prevent soil erosion and runoff.

Operational Phase

The following BMPs will be instituted in accordance with the ESP to prevent the migration of lead to off-range areas.

- Berms and backstops will be vegetated to prevent erosion and the introduction of lead particulates and dissolved lead into the off-range areas.
- The pH of soils in the shot fall zone will be evaluated yearly to determine if it meets the target goal, which is between pH 6.5 and 8.5, to prevent the dissolution of lead shot and particulate.
- If necessary, soil amendments (lime, phosphate) will be added to the soil to maintain adequate pH levels.
- Institute lead reclamation projects as needed.

Any problem areas with significant erosion or sparely vegetated ground will be documented and monitored, and a corrective action plan will be developed.

Records of maintenance actions, soil testing, and lead reclamation will be maintained by the Canton WMA manager.

6.3 Vegetation

Impacts to vegetation would be avoided or minimized by limiting disturbance to only that which is necessary to construct the proposed project. The following BMPs would be implemented for the proposed project:

- Minimize the amount of vegetation cleared. Removal of native vegetation, particularly mature native trees and shrubs should be avoided to the greatest extent practicable. Wherever practicable, impacted vegetation should be replaced with in-kind on-site replacement/restoration of native vegetation.
- The use of any non-native vegetation in landscaping and revegetation is discouraged. The use of seed mix that contains seeds from only locally adapted native species is recommended.

6.4 Cultural Resources

If any unanticipated cultural materials or deposits are found at any stage of the proposed action, the work should cease, and USACE and Oklahoma SHPO personnel should be notified immediately. Further work may be required if the following occurs:

- If human remains or burial goods are impacted by construction, post-discovery procedures should be initiated, which includes coordination with the SHPO and OAS, according to the Burial Desecration Law (Oklahoma Statute Title 21 Chapter 47 Section 1168.0-1168.6).
- If the project scope changes, reexamination of the project under Section 106 of the NHPA may be required, which could include an archeological survey and/or a historic resource survey.

6.5 Noise

Tree removal will only take place in areas that are necessary to complete the project. Trees act as a vegetative noise buffer and reduce noise pollution to the surrounding area. The project design also incorporates earthen berms and backstops that will further reflect and diffract noise.

7.0 Public Involvement

7.1 Public Notice

The ODWC established a project website to provide an opportunity for the public to submit general comments, identify specific issues, and/or inquire about environmental impacts that can be addressed in the draft EA. Comments were collected from January 17 through January 31, 2024. In addition, notice of the proposed project was also posted on ODWC social media accounts allowing the general public to comment **Appendix D.** Comments were collected from January 22 through January 31 on the platform. In total, 30 people commented. **Table 4** is a summary of all relevant comments. Note that some commenters addressed multiple issues in a single comment and not all comments were relevant to the proposed project. Comments not relevant to the proposed project or the WMA gun range in general were not addressed.

Table 4 – Public Comment Summary

Comment	Total
Supports the proposed project	13
Would like parking closer to the shooting range	2
Shotgun range is large and limits hunting ground	1
Concerns with ricochets	1
Would like WMAs planted and flooded	1
Need to limit non-resident hunters	1
Would like a shooting facility in Osage County	1
The new shooting range in Newkirk is nice	1
Would like Ft. Gibson shooting range monitored and cleaned	1

7.2 Draft Environmental Assessment Comments

<<comments summary entered here when available>>

8.0 Federal, State, and Local Agency Coordination

8.1 Agency Coordination

During the preparation of this EA, the USACE coordinated with SHPO and federally recognized tribes whose areas of interest encompass the proposed project. Garver, on behalf of the ODWC, coordinated with state and local agencies. Eight responses were received and summarized below. Agency responses are included in **Appendix E**.

The Northern Oklahoma Development Authority fully supports the project and had no further comments.

The ODEQ stated no adverse environmental impacts under DEQ jurisdiction are anticipated. The agency informed the ODWC that prior to beginning of any construction activity disturbing more than one acre, the ODWC must submit a Notice of Intent (NOI) and obtain authorization under OKR10, construction stormwater permit.

The OWRB permitting staff reviewed the project and found no issues for comment or concern.

The USACE Tulsa District reviewed the project and indicated that potentially jurisdictional waters may be present within the project areas. They asked to re-submit the request once more detailed site-specific information, including construction plans, is available and to address any planned impacts to possible jurisdictional areas. Project Identification Number SWT-2023-00463 was assigned. Following the re-submittal, the USACE issued a No Permit Required determination relative to Section 404 of the CWA.

The USDA reviewed the project information and determined that the proposed project would not impact any easements, watersheds, or prime farmland soils as defined by the FPPA.

The ONHI reviewed the project and provided information on four occurrences of federal and state threatened, endangered, or candidate species within the vicinity of the project.

The OAS reviewed the project and found no archaeological sites and recommends a finding of no effect on historic properties.

The SHPO reviewed the project and found there are no known historical properties affected within the project's area.

Table 5 is a list of all agencies that were contacted requesting comment on the proposed project. Multiple departments were contacted within some agencies.

Table 5 – Agencies Contacted

Agency List	
Blaine County Commissioners	Oklahoma Conservation Commission
Blaine County Floodplain Administrator	Oklahoma Department of Agriculture
Environmental Protection Agency	Oklahoma Department of Environmental Quality
Federal Emergency Management Agency, Region VI	Oklahoma Natural Heritage Inventory
National Park Service	Oklahoma Water Resources Board
Natural Resources Conservation Service	State Historic Preservation Offices
Northern Oklahoma Development Authority	United States Army Corps of Engineers
Oklahoma Archeological Survey	United States Fish and Wildlife Service

9.0 References

American Society for Testing and Materials, E1527-21, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, *https://www.astm.org/e1527-21.html*

Center for Disease Control, National Institute for Occupational Safety and Health, Reducing Exposure to Lead and Noise at Outdoor Firing Ranges, Afunah, S. and Kardous, C., November 2012, *https://www.cdc.gov/niosh/docs/wp-solutions/2013-104/pdfs/2013-104.pdf*

Cowardin, L.M., V. Carter V., F.C. Golet, E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31.Washington, D.C.

Natural Resources Conservation Service, United Department of Agriculture, Web Soil Survey, *https://websoilsurvey.nrcs.usda.gov/app/*

Oklahoma Administrative Code. OAC Section 800:30-1-16 – Shooting Ranges, *https://rules.ok.gov/home*

Oklahoma Climatological Survey Mesonet Long-term Averages and Extremes, *https://climate.ok.gov/index.php/climate*

United State Department of Agriculture, National Agroforestry Center, Using Agroforestry to Buffer Noise, Straight, Richard, May 2011, *https://www.fs.usda.gov/nac/assets/documents/agroforestrynotes/an42w05.pdf*

Oklahoma Department of Environmental Quality, GIS Maps & Data Viewer, *https://deq.maps.arcgis.com/home/index.html*

Oklahoma Geological Survey, Hydrologic Atlases, *https://www.ou.edu/ogs/maps/hydrologicatlases*

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United States Army Corps of Engineers. 2020. National Wetland Plant List, version 3.5, https://wetland-plants.sec.usace.army.mil/nwpl_static/v34/home/home.html

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United States Census Bureau, 2021 American Community Survey Data, *https://data.census.gov/advanced*

United States Department of Health and Human Services, 2024 Poverty Guidelines, *https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines*

United States Environmental Protection Agency, Level III and IV Ecoregions by State, *https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-state*

United States Environmental Protection Agency, National Ambient Air Quality Standards, *https://www3.epa.gov/airquality/greenbook/mapnpoll.html*

United States Environmental Protection Agency, Water Data and Tools, *https://www.epa.gov/waterdata/viewing-waters-data-using-google-earth*

United States Environmental Protection Agency, The Antecedent Precipitation Tool, *https://www.epa.gov/wotus/antecedent-precipitation-tool-apt*

United States Environmental Protection Agency, Sole Source Aquifers for Drinking Water, *https://www.epa.gov/dwssa/map-sole-source-aquifer-locations*

United States Environmental Protection Agency, Summary of the Noise Control Act, *https://www.epa.gov/laws-regulations/summary-noise-control-act*

10.0 Applicable Environmental Laws and Regulations

Clean Air Act, as amended, 42 U.S.C. 7609

Clean Water Act, 1977, as amended, Federal Water Pollution Control Act, 33 U.S.C. 1251

Endangered Species Act, 1973, as amended, 16 U.S.C. 1531

Executive Order 12898 (1994) Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

The Farmland Protection Policy Act, 1981, as amended, 7 U.S.C. 4201

Bald and Golden Eagle Protection Act, 1962, 16 U.S.C. 668-668d

Migratory Bird Treaty Act of 1918, 16 U.S.C., statute 703-712

National Historic Preservation Act, 1966, as amended, 16 U.S.C. 470a

National Environmental Policy Act, as amended, 42 U.S.C. 4321

Native American Graves Protection and Repatriation Act, 1990, 25 U.S.C. 3001-13

Noise Control Act of 1972, 42 U.S.C. 4901-4918

Rivers and Harbors Act, 33 U.S.C. 401

11.0 List of Preparers

Garver
Murray Verbonitz – Environmental Project Manager
Megan Philips-Schaap – Oklahoma Planning and Environmental Team Leader
Kirsten McCullough – Planning and Environmental Practice Leader
Lacee Stanley – Senior GIS Analyst
Michael Priest – GIS Analyst
Shane Manion – Environmental Scientist
John Allison – Environmental Scientist

Stantec
Mitchell Miranda – Principal Investigator
Haley Rush – Principal Investigator
Kim Wright – Archeology Project Manager
Rob Nold – Project Archeologist
Matt Compton – Project Archeologist

REPORT FIGURES

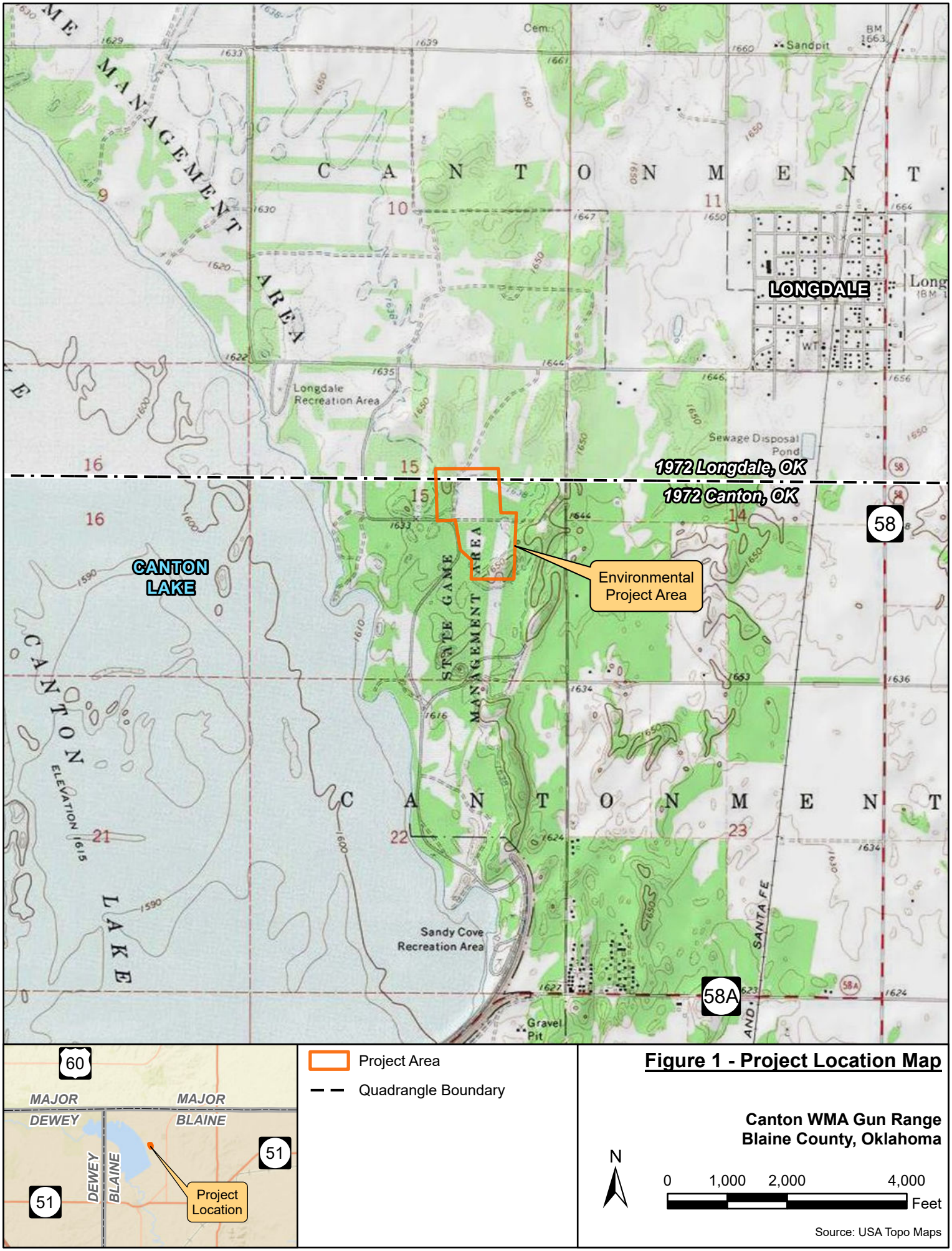

Figure 1 - Project Location Map

Canton WMA Gun Range
Blaine County, Oklahoma

Figure 2 - Project Area

Canton WMA Gun Range
Blaine County, Oklahoma

Sources: USDA NAIP 2021 Digital Orthophotography

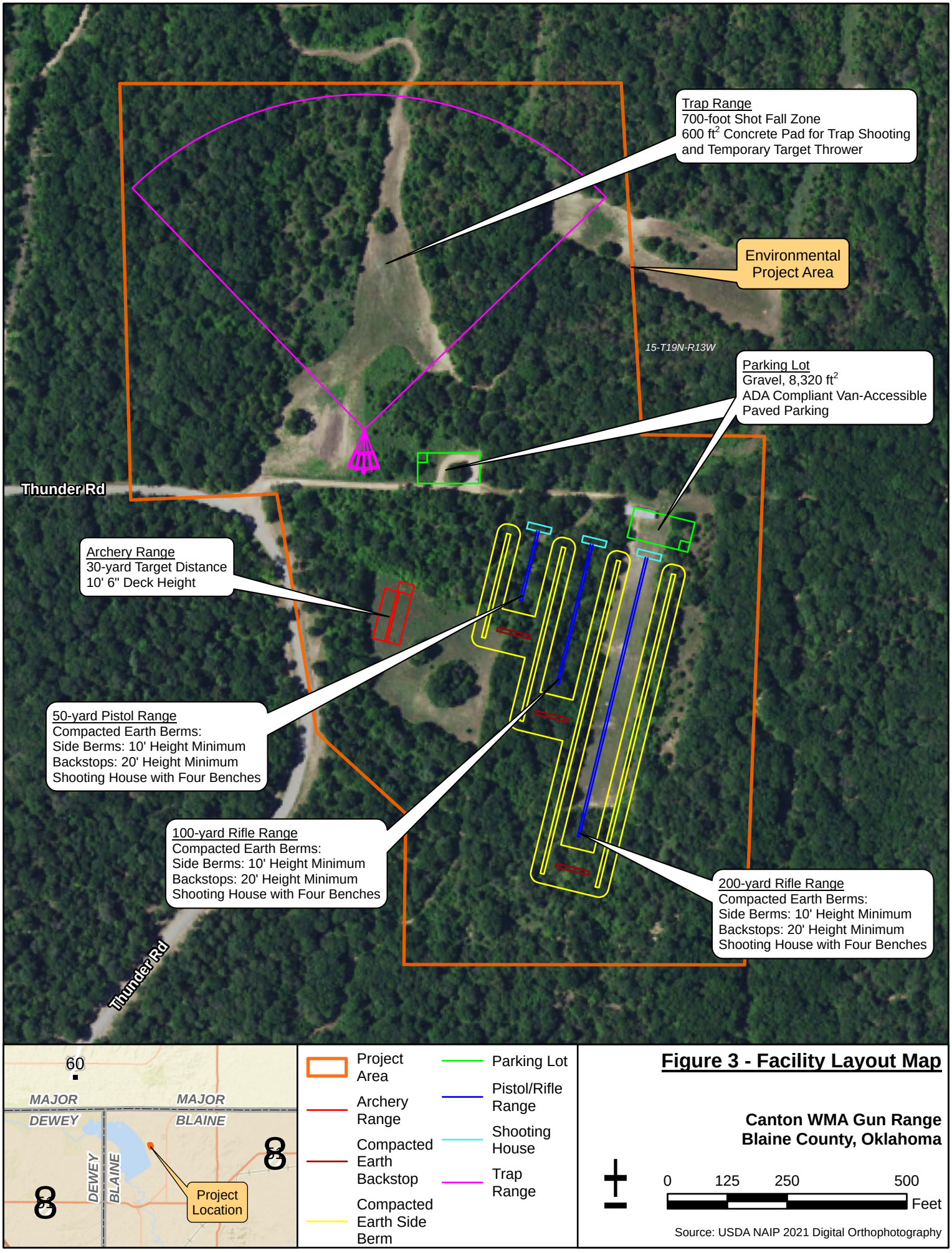

Figure 3 - Facility Layout Map

Canton WMA Gun Range
Blaine County, Oklahoma

Source: USDA NAIP 2021 Digital Orthophotography

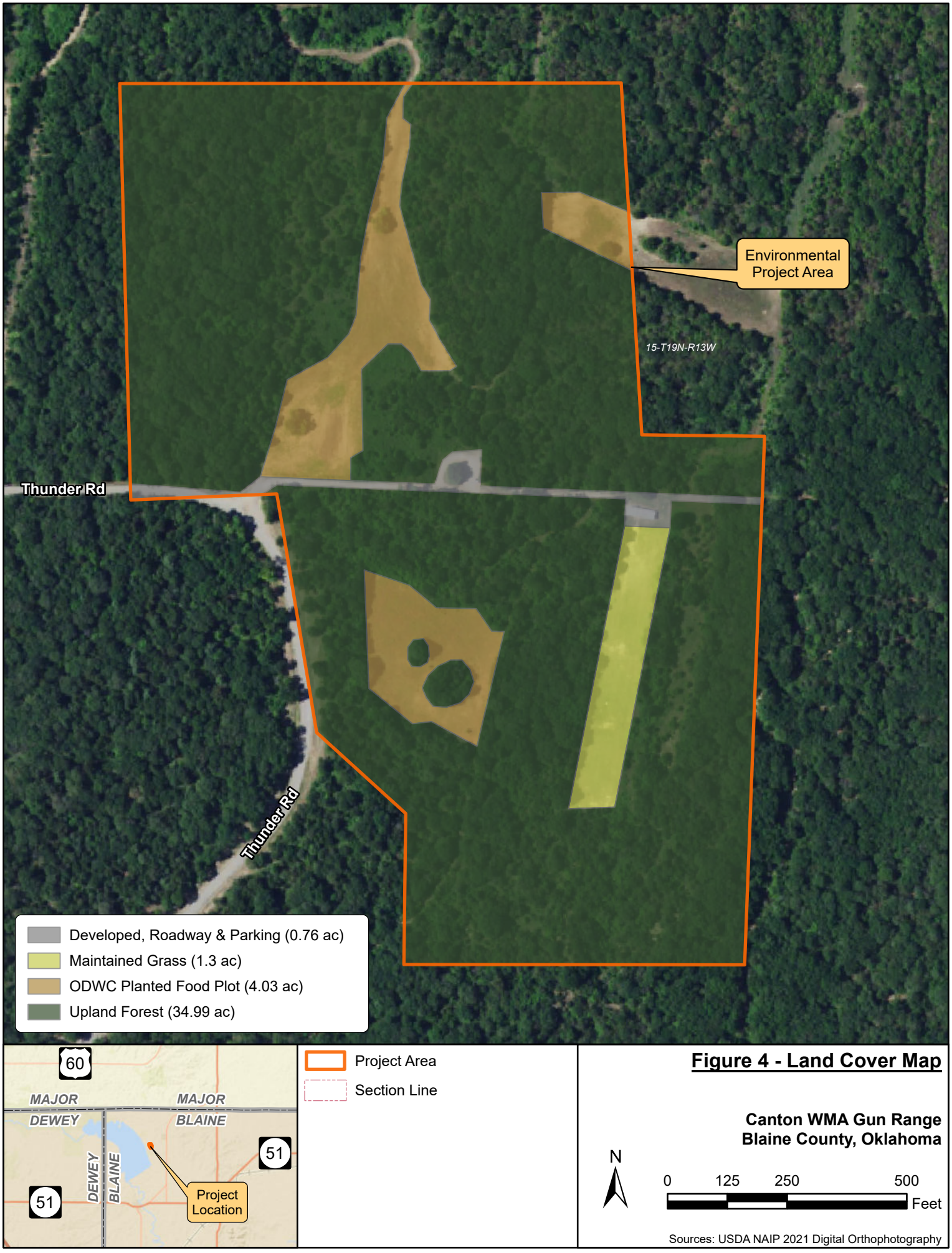

Figure 4 - Land Cover Map

Canton WMA Gun Range
Blaine County, Oklahoma

Sources: USDA NAIP 2021 Digital Orthophotography

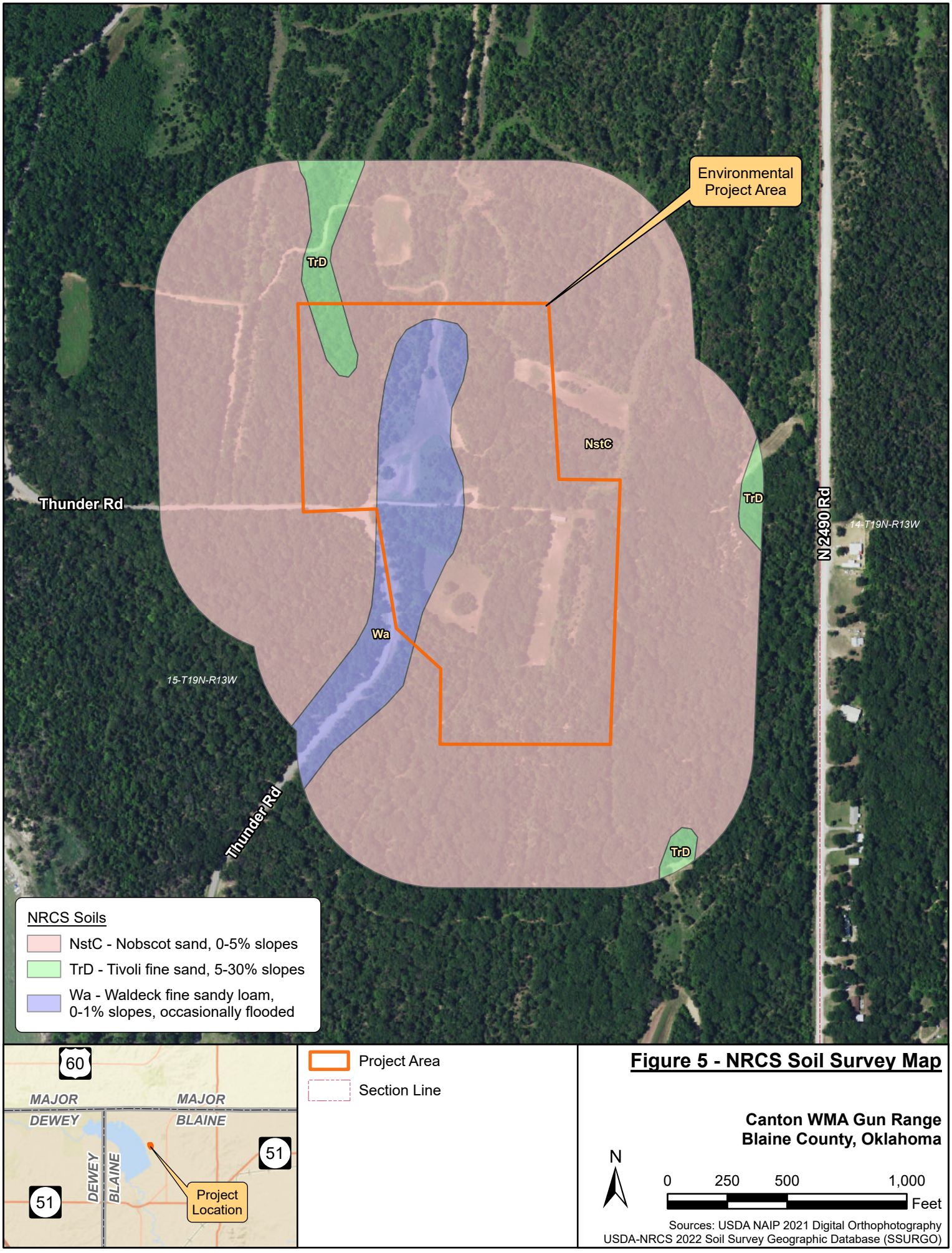

Figure 5 - NRCS Soil Survey Map

Canton WMA Gun Range
Blaine County, Oklahoma

Sources: USDA NAIP 2021 Digital Orthophotography
USDA-NRCS 2022 Soil Survey Geographic Database (SSURGO)

APPENDIX A

Wetland Delineation Report

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, TULSA DISTRICT
2488 EAST 81ST STREET
TULSA, OKLAHOMA 74137-4209

February 12, 2024

Regulatory Office

Ms. Amanda Thomas
Oklahoma Department of Wildlife Conservation
Post Office Box 53465
Oklahoma City, OK 73152

Dear Ms. Thomas:

Please refer to your request, dated September 28, 2023, regarding the proposed Canton Wildlife Management Area Shooting Range improvements located at latitude 36.12499, longitude -98.57076, in Blaine County, Oklahoma. We have reviewed the submitted data relative to Section 404 of the Clean Water Act (CWA).

Your proposal is not subject to regulation pursuant to Section 404 of the CWA, and a Department of the Army (DA) permit will not be required. Should your method of construction necessitate such a discharge into jurisdictional waters of the U.S., we suggest that you resubmit that portion of your project so that we may determine whether an individual DA permit will be required.

This No Permit Required determination does not address nor include any consideration for geographic jurisdiction on aquatic resources and shall not be interpreted as such.

Although Section 404 CWA authorization is not required, this does not preclude the possibility that a real estate interest or other Federal, State, or local permits may be required. If you desire to complete a "Customer Service Survey" on your experience with the Corps Regulatory Program, you are invited to visit https://regulatory.ops.usace.army.mil/customer-service-survey/ on the internet at your convenience and submit your comments.

Your project has been assigned Identification Number SWT-2023-00463. If you have any questions, please contact Mr. Christian Luper at (918) 669-7400.

Sincerely,

Christian Luper
Andrew R. Commer
Chief, Regulatory Office

Preliminary Wetland Delineation Report: Canton Wildlife Management Area Gun Range

Prepared For:

Oklahoma Department of Wildlife Conservation

December 2023

GarverUSA.com

Environmental Scientist's Certification

I hereby certify that this Preliminary Water and Wetland Delineation for the Canton Wildlife Management Area Gun Range project was prepared by Garver under my direct supervision for the Oklahoma Department of Wildlife Conservation.

Prepared by: _____

John Allison
Environmental Scientist

Reviewed by: _____

Megan Philips-Schaap, QAWB
Senior Environmental Scientist

Table of Contents

List of Appendices

1.0 Introduction

Garver has been contracted by the Oklahoma Department of Wildlife Conservation (ODWC) to provide environmental services for preparation of an Environmental Assessment (EA) and associated studies for proposed renovation and expansion improvements to the existing gun range at the Canton Wildlife Management Area (WMA). This project includes the addition of and archery range, trap range, 100-yard and 50-yard rifle ranges, safety berms, and ADA parking lots and pathways. Improvements will occur to the existing 200-yard rifle range, shooting covers and benches, and the fencing and gates around the facility. The project is located on lands owned by the U.S. Army Corps of Engineers (USACE) under license to the ODWC.

Garver has assessed the environmental features present in the study area for evaluation of stream and wetland impacts. This preliminary wetland delineation report discusses the methodology used and the results of a field investigation addressing any potential streams or wetlands present within the study area.

1.1 Study Area

The study area is approximately 0.35 mile east of Canton Lake, approximately one mile southwest of Longdale, Oklahoma, and located north and east of Thunder Road Scenic Drive, and north and south of EW-615 in Section 15, Township 19N, Range 13W in the Canton WMA (refer to **Figure 1** in **Appendix A**). The study area is located in the Pleistocene Sand Dunes of the Central Great Plains ecoregions (EPA Level IV) in northwest Blaine County, Oklahoma. This ecoregion is mostly rangeland; also, some cropland. The main crops are grain sorghum, wheat, and alfalfa, and sand dunes are important shelter for wildlife. Oil and gas fields are prevalent in this ecoregion. The study area is approximately 41 acres in size.

Topographically, the study area remains relatively flat throughout, with elevations ranging from 1,632 to 1,660 feet above sea level. The Canton WMA gun range is located within a rural area and consists of undeveloped upland forest, two food plots with upland grasses, a gravel road, and a gun range. Land use adjacent to the study area consists of undeveloped upland forest, Canton Lake, and scattered rural homesteads.

1.2 Regulatory Basis

Discharges of dredged or fill material into Waters of the United States (WOTUS) are regulated under Section 404 of the Clean Water Act (CWA). Any such action proposed in wetlands or other Waters of the U.S. are subject to review by the USACE and other federal and state agencies and require authorization by USACE. For jurisdictional purposes, USACE and the U.S. Environmental Protection Agency (EPA) jointly define wetlands as follows: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (USACE 1987). According to the revised definition of WOTUS amended in August 2023 to conform key aspects in the *Sackett vs. Environmental Protection Agency* case and effective in September 2023, tributaries of (a)(1)[1] waters must be relatively permanent, standing or continuously flowing bodies of water, and wetlands must have a continuous surface connection to (a)(1) waters or relatively permanent, standing or continuously flowing bodies of water (EPA 2023).

2.0 Methodology

Before conducting the field surveys, Garver reviewed pertinent background information to gain familiarity with the natural surroundings of the study area including, current aerial photography, U.S. Geological Survey (USGS) topographic quadrangle maps (**Figure 2** in **Appendix A**), Natural Resources Conservation Service (NRCS) soils data (**Figure 3** in **Appendix A**), and National Wetlands Inventory (NWI) data (2023; **Figure 4** in **Appendix A**). According to the FEMA flood maps the study area is located within an area where no digital data is available. Historic 1972 7.5-minute USGS topographic quadrangle maps for Canton, Okla. and Longdale, Okla. were reviewed to determine if potential aquatic features are present within the study area. The U.S. Fish and Wildlife Service (USFWS) in cooperation with Cowardin, et al. (1979), have identified a classification system that is widely accepted by the USACE in relation to classifying wetland

[1] https://www.epa.gov/wotus/waters-qualify-traditional-navigable-waters-under-section-a1-agencies-regulations

habitats (i.e., Classification of Wetlands and Deepwater Habitats of the United States). Using the Cowardin system, the USFWS provides preliminary wetland data for the U.S. through the NWI. Upland point determinations were made using observable vegetation, hydrology, and soils in accordance with the routine approach described in the USACE Wetland Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0). Data forms and soil descriptions can be found in **Appendix C** and **E**, respectively.

A field investigation of the proposed study area was performed by Shane Manion and John Allison of Garver on September 13, 2023. The closest weather station with recorded data is WS-7079 (KOKLONGD3; Wunderground 2023) which is located approximately 1 mile northeast of the study area. Precipitation data for the area indicates approximately 1.65 inches of rainfall was received two weeks prior to the field investigation. According to the Antecedent Precipitation Tool (APT; **Appendix D)**, the study area was under wetter than normal conditions during the site visit.

3.0 Results and Summary

The entire study area was visually inspected to locate areas of potentially jurisdictional wetlands and waterways. According to the USFWS NWI online database map (2023) and the USGS quadrangle maps, there are no aquatic features within the study area (**Figure 4** in **Appendix A**). All soil map units within the study area have a low hydric soil rating between 1 and 5 (**Appendix E**).

Detailed information was collected at six locations to document the upland characteristics observed on the site, and photographs were taken throughout (**Appendix C**). No wetlands or streams were identified.

4.0 References

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online.

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Appendix A – Study Area Figures

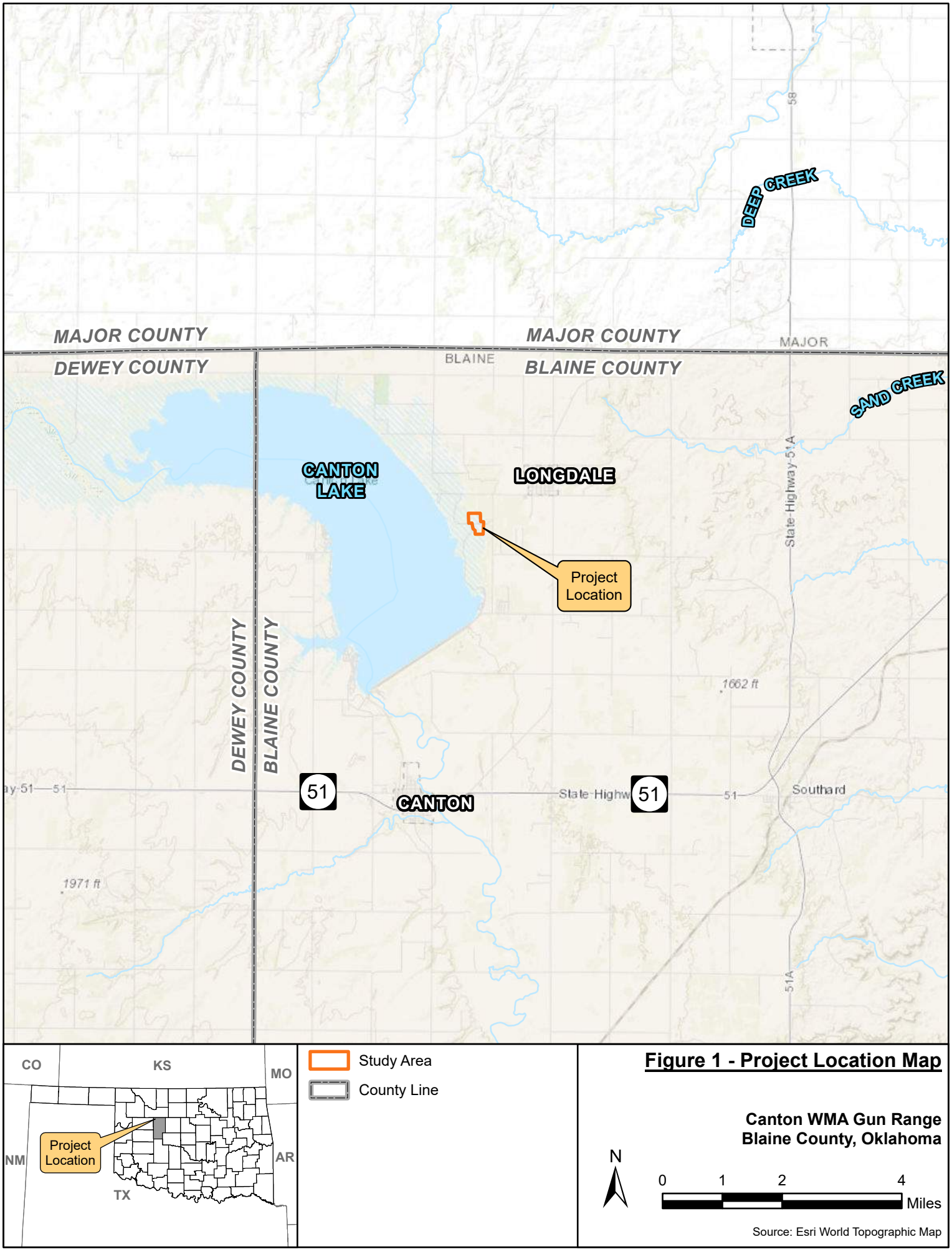


Figure 1 - Project Location Map

Canton WMA Gun Range
Blaine County, Oklahoma

Source: Esri World Topographic Map

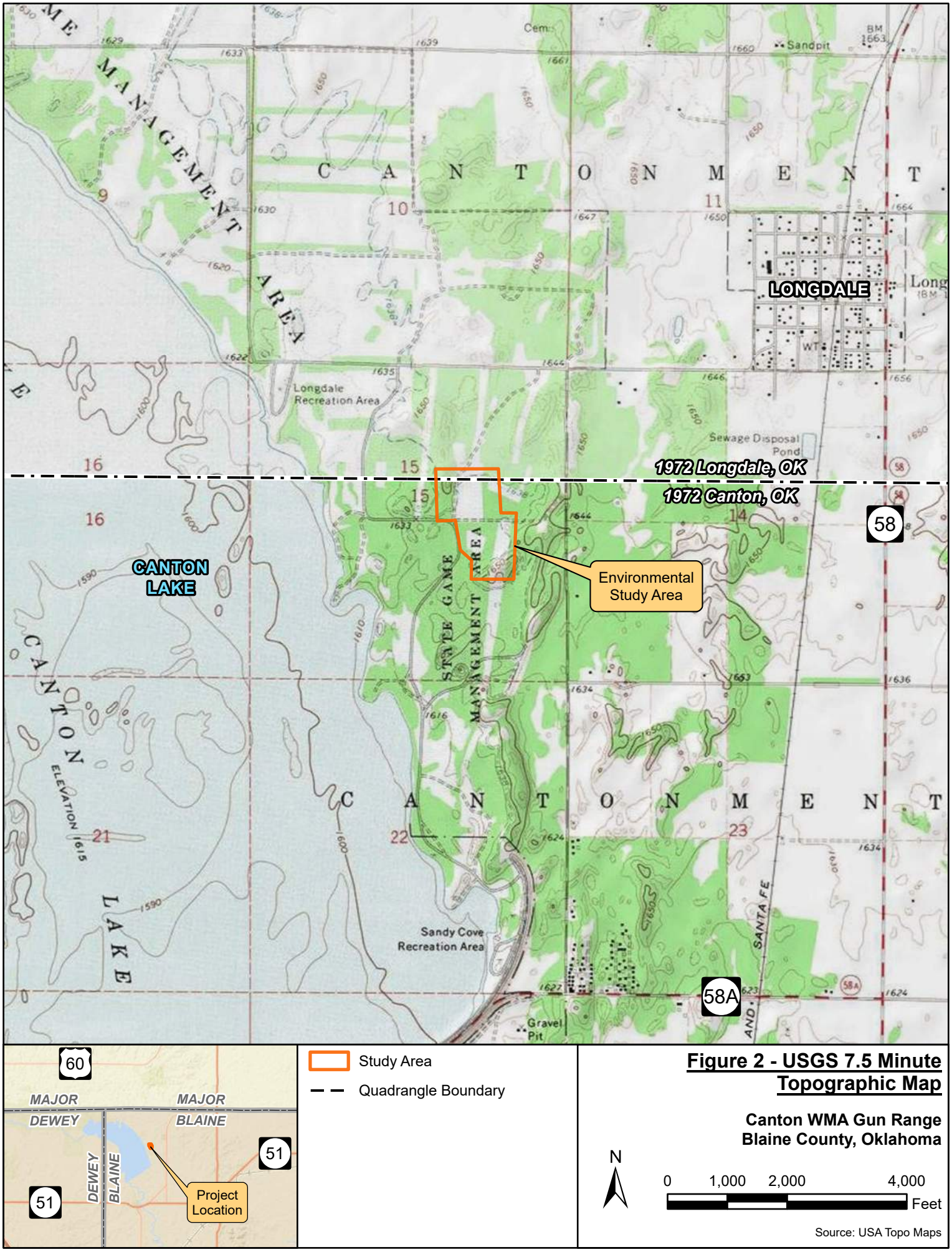


Figure 2 - USGS 7.5 Minute Topographic Map

Canton WMA Gun Range
Blaine County, Oklahoma

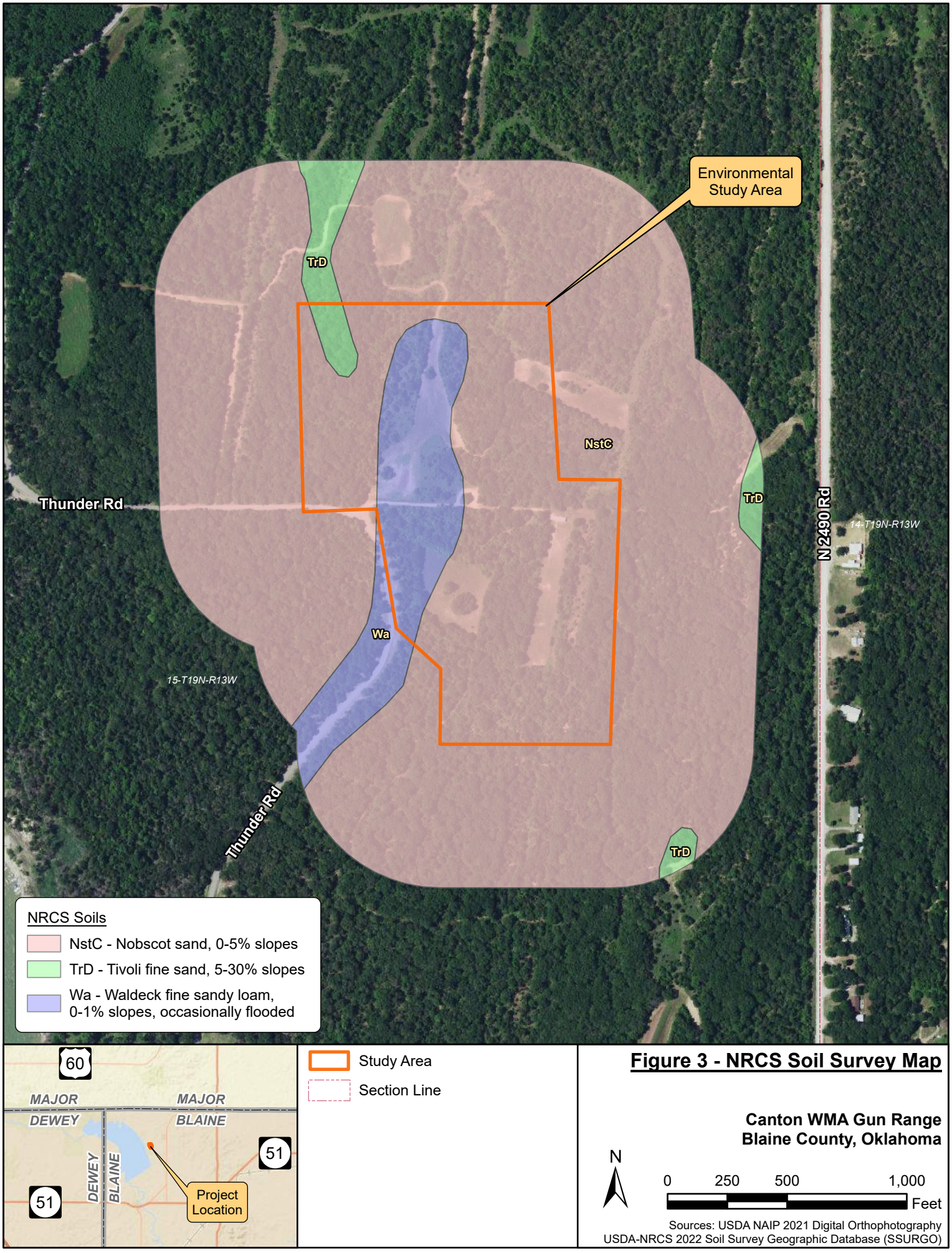
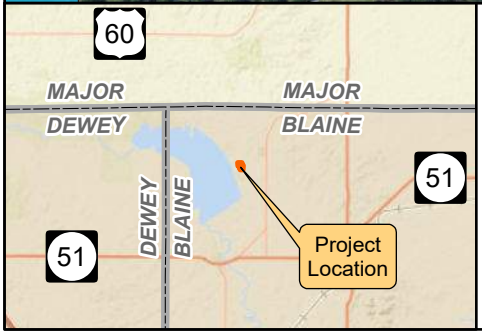


Figure 3 - NRCS Soil Survey Map

Canton WMA Gun Range
Blaine County, Oklahoma

Sources: USDA NAIP 2021 Digital Orthophotography
USDA-NRCS 2022 Soil Survey Geographic Database (SSURGO)



Study Area

Freshwater Forested/ Shrub Wetland

Freshwater Pond

Lake

Section Line

Figure 4 - USFWS National Wetland Inventory (NWI) Map

Canton WMA Gun Range
Blaine County, Oklahoma

N

0 250 500 1,000 Feet

Sources: USDA NAIP 2021 Digital Orthophotography
USFWS NWI 2023 Wetland Mapper Data

Figure 5 - Aquatic Resources Site Map

Canton WMA Gun Range
Blaine County, Oklahoma

Source: USDA NAIP 2021 Digital Orthophotography

Appendix B – Site Photographs

▲View of upland wooded habitat at UP1 in the northwest section of the study area. View is to the west.

▲View of non-hydric soil collected at UP1.

▲View of upland habitat at UP2 in the north central section of the study area. View is to the south.

▲View of non-hydric soil collected at UP2.

▲View of upland wooded habitat at UP3 in the middle section of the study area. View is to the east.

▲View of upland habitat at UP4 in the southwest section of the study area. View is to the east.

Blaine County, OK
Canton WMA Gun Range

On-site photographs taken September 15, 2023
Garver Project No. 22T14770

▲View of non-hydric soil collected at UP4.

▲View of upland wooded habitat at UP5 in the southeast section of the study area. View is to the north.

▲View of non-hydric soil collected at UP5.

▲View of upland herbaceous habitat at UP6 in the northeast section of the study area. View is to the south.

▲View of non-hydric soil collected at UP6.

Blaine County, OK
Canton WMA Gun Range

On-site photographs taken September 15, 2023
Garver Project No. 22T14770

Appendix C – Data Forms

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Canton WMA Gun Range | City/County: Blaine | Sampling Date: 9/13/2023

Applicant/Owner: Oklahoma Department of Wildlife Conservation (ODWC) | State: OK | Sampling Point: UP1

Investigator(s): John Allison & Shane Manion | Section, Township, Range: Sec. 15, T19N, R13W

Landform (hillside, terrace, etc.): hillside | Local relief (concave, convex, none): slope | Slope (%): 5

Subregion (LRR): LRR H, MLRA 80A | Lat: 36.1247038 | Long: -98.57230144 | Datum: NAD83

Soil Map Unit Name: NstC: Nobscot sand, 0 to 5 percent slopes | NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria. According to the APT results, the area was under wetter than normal conditions during the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus stellata*	85	Yes	FACU
2.			
3.			
4.			
	85	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Juniperus virginiana*	30	Yes	UPL
2.			
3.			
4.			
5.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Toxicodendron radicans*	35	Yes	FACU
2. *Ligustrum sinense*	15	Yes	UPL
3. *Quercus stellata*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Vitis rotundifolia*	15	Yes	FAC
2.			
	15	=Total Cover	

% Bare Ground in Herb Stratum 35

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	135	x 4 =	540
UPL species	45	x 5 =	225
Column Totals:	195 (A)		810 (B)
Prevalence Index = B/A =			4.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: UP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	5YR 3/3	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No positive indication of hydric soils was observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Canton WMA Gun Range | City/County: Blaine | Sampling Date: 9/13/2023
Applicant/Owner: Oklahoma Department of Wildlife Conservation (ODWC) | State: OK | Sampling Point: UP2
Investigator(s): John Allison & Shane Manion | Section, Township, Range: Sec. 15, T19N, R13W
Landform (hillside, terrace, etc.): flat | Local relief (concave, convex, none): none | Slope (%): 0
Subregion (LRR): LRR H, MLRA 80A | Lat: 36.12414122 | Long: -98.57114522 | Datum: NAD83
Soil Map Unit Name: Wa: Waldeck fine sandy loam, 0 to 1 percent slopes, occasionally flooded | NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria. According to the APT results, the area was under wetter than normal conditions during the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
		=Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. None observed			
2.			
3.			
4.			
5.			
		=Total Cover	

Herb Stratum (Plot size: 5')			
1. *Cenchrus echinatus*	40	Yes	UPL
2. *Hexasepalum teres*	80	Yes	FACU
3. *Solanum elaeagnifolium*	10	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	130	=Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	50	x 5 =	250
Column Totals:	130 (A)		570 (B)

Prevalence Index = B/A = 4.38

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: UP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5YR 4/3	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No positive indication of hydric soils was observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
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- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
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- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

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Applicant/Owner: Oklahoma Department of Wildlife Conservation (ODWC) | State: OK | Sampling Point: UP3
Investigator(s): John Allison & Shane Manion | Section, Township, Range: Sec. 15, T19N, R13W
Landform (hillside, terrace, etc.): flat | Local relief (concave, convex, none): none | Slope (%): 0
Subregion (LRR): LRR H, MLRA 80A | Lat: 36.12353241 | Long: -98.57092075 | Datum: NAD83
Soil Map Unit Name: Wa: Waldeck fine sandy loam, 0 to 1 percent slopes, occasionally flooded | NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No ____
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and wetland hydrology. According to the APT results, the area was under wetter than normal conditions during the site visit. Soils were not excavated at this observation point.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus marilandica*	75	Yes	UPL
2.			
3.			
4.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Quercus stellata*	40	Yes	FACU
2. *Cercis canadensis*	30	Yes	UPL
3.			
4.			
5.			
	70	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Toxicodendron radicans*	15	Yes	FACU
2. *Quercus stellata*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 70

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	70	x 4 =	280
UPL species	105	x 5 =	525
Column Totals:	175 (A)		805 (B)

Prevalence Index = B/A = 4.60

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: UP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ___

Remarks:

Soils were not excavated at this observation point.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Canton WMA Gun Range | City/County: Blaine | Sampling Date: 9/13/2023

Applicant/Owner: Oklahoma Department of Wildlife Conservation (ODWC) | State: OK | Sampling Point: UP4

Investigator(s): John Allison & Shane Manion | Section, Township, Range: Sec. 15, T19N, R13W

Landform (hillside, terrace, etc.): flat | Local relief (concave, convex, none): none | Slope (%): 0

Subregion (LRR): LRR H, MLRA 80A | Lat: 36.12234404 | Long: -98.57106529 | Datum: NAD83

Soil Map Unit Name: Wa: Waldeck fine sandy loam, 0 to 1 percent slopes, occasionally flooded | NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria. According to the APT results, the area was under wetter than normal conditions during the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. None observed			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Panicum capillare*	60	Yes	FAC
2. *Ambrosia artemisiifolia*	50	Yes	FACU
3. *Chamaecrista nictitans*	40	Yes	FACU
4. *Sorghum halepense*	15	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	165 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None observed			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	165 (A)		600 (B)
Prevalence Index = B/A =			3.64

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: UP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5YR 3/3	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No positive indication of hydric soils was observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Canton WMA Gun Range | City/County: Blaine | Sampling Date: 9/13/2023

Applicant/Owner: Oklahoma Department of Wildlife Conservation (ODWC) | State: OK | Sampling Point: UP5

Investigator(s): John Allison & Shane Manion | Section, Township, Range: Sec. 15, T19N, R13W

Landform (hillside, terrace, etc.): hillside | Local relief (concave, convex, none): slope | Slope (%): 15

Subregion (LRR): LRR H, MLRA 80A | Lat: 36.12120687 | Long: -98.56923027 | Datum: NAD83

Soil Map Unit Name: NtsC: Nobscot sand, 0 to 5 percent slopes | NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria. According to the APT results, the area was under drier than normal conditions during the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus marilandica*	50	Yes	UPL
2.			
3.			
4.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Quercus marilandica*	30	Yes	UPL
2.			
3.			
4.			
5.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Toxicodendron radicans*	30	Yes	FACU
2. *Tridens flavus*	15	Yes	UPL
3. *Erigeron canadensis*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. None observed			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	35	x 4 =	140
UPL species	95	x 5 =	475
Column Totals:	130 (A)		615 (B)

Prevalence Index = B/A = 4.73

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: UP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 5/3	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No positive indication of hydric soils was observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Great Plains Region
See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Canton WMA Gun Range | City/County: Blaine | Sampling Date: 9/13/2023

Applicant/Owner: Oklahoma Department of Wildlife Conservation (ODWC) | State: OK | Sampling Point: UP6

Investigator(s): John Allison & Shane Manion | Section, Township, Range: Sec. 15, T19N, R13W

Landform (hillside, terrace, etc.): depression | Local relief (concave, convex, none): concave | Slope (%): 3

Subregion (LRR): LRR H, MLRA 80A | Lat: 36.12460417 | Long: -98.56962504 | Datum: NAD83

Soil Map Unit Name: NtsC: Nobscot sand, 0 to 5 percent slopes | NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria. According to the APT results, the area was under wetter than normal conditions during the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None observed			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. None observed			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Ambrosia artemisiifolia*	50	Yes	FACU
2. *Cenchrus echinatus*	40	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None observed			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	40	x 5 =	200
Column Totals:	90 (A)		400 (B)

Prevalence Index = B/A = 4.44

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: UP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 5/3	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No positive indication of hydric soils was observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

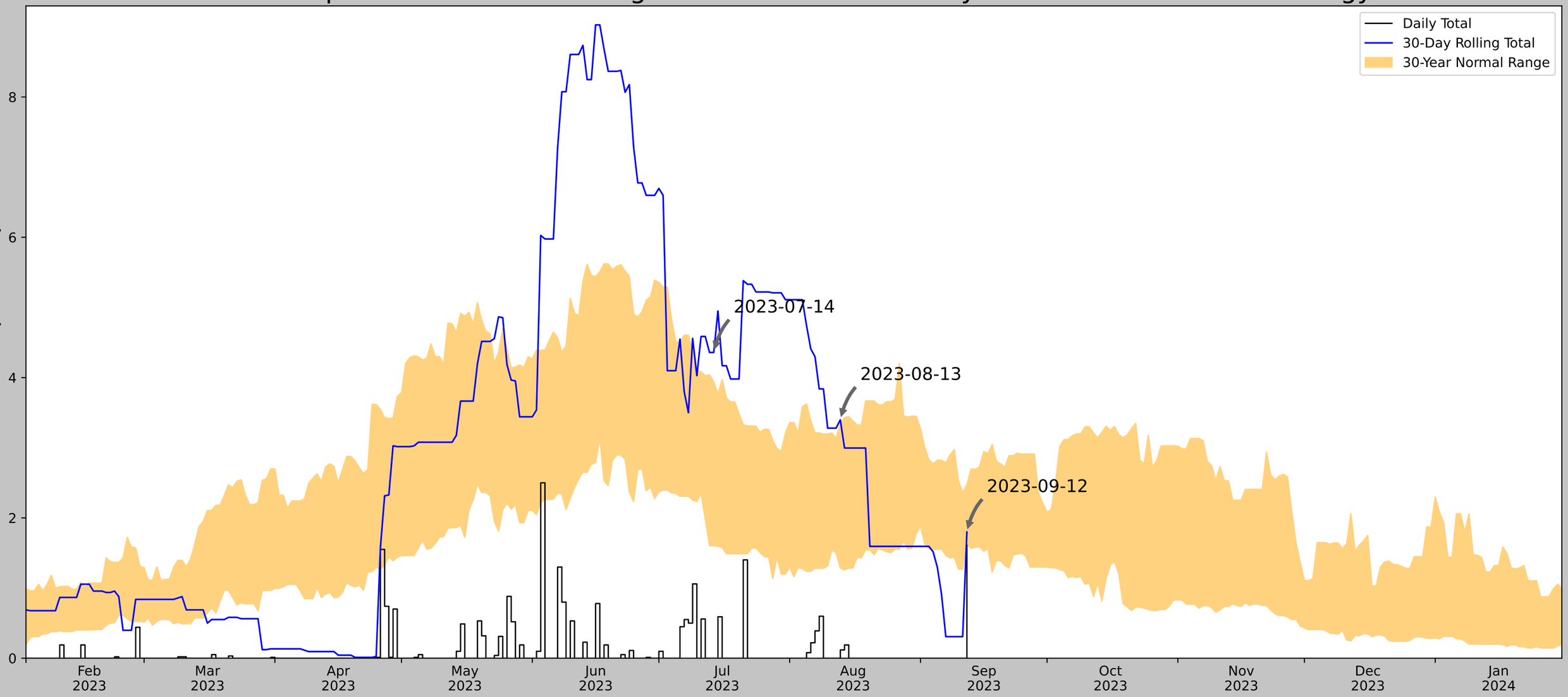
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

Appendix D – APT Results

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.123474, -98.570768
Observation Date	2023-09-12
Elevation (ft)	1635.98
Drought Index (PDSI)	Moderate wetness (2023-08)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-09-12	1.617323	2.47441	1.799213	Normal	2	3	6
2023-08-13	1.285039	3.339764	3.397638	Wet	3	2	6
2023-07-14	1.603543	3.938977	4.358268	Wet	3	1	3
Result							Wetter than Normal - 15

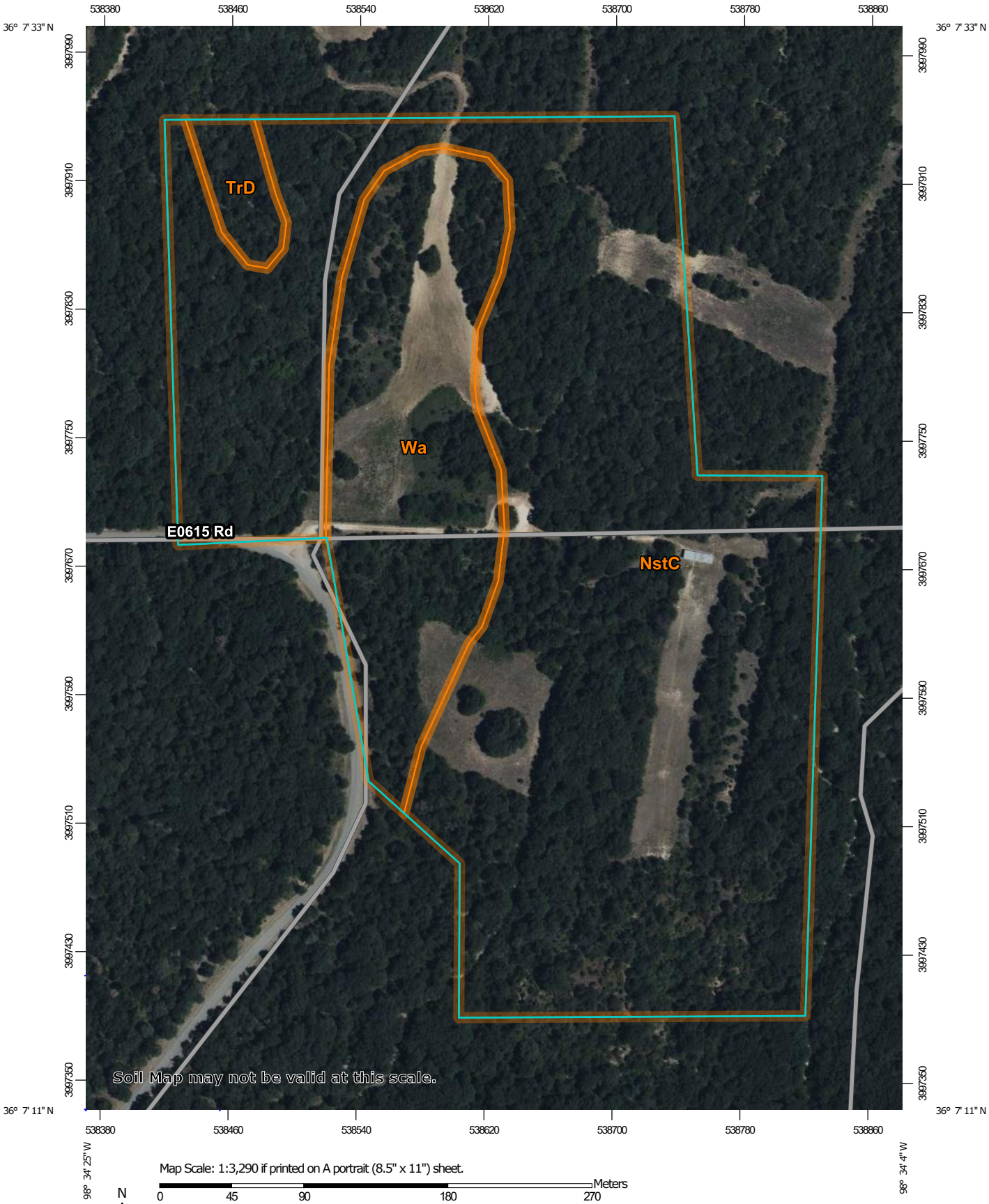
Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ORIENTA 1SSW	36.3486, -98.4808	1258.858	16.343	377.122	13.518	10762	88
FAIRVIEW 0.6 N	36.2778, -98.4774	1285.105	4.895	26.247	2.331	2	0
FAIRVIEW 0.3 S	36.2645, -98.4753	1294.948	5.819	36.09	2.829	28	0
FAIRVIEW 1W MESONET	36.2633, -98.4975	1328.084	5.967	69.226	3.098	286	0
OKEENE	36.1217, -98.315	1214.895	18.198	43.963	8.989	264	0
AMES	36.2483, -98.1883	1194.882	17.701	63.976	9.098	3	2
CANTON	36.0617, -98.59	1589.895	20.737	331.037	16.196	8	0

Appendix E – Soils

Soil Map—Blaine County, Oklahoma
(Canton WMA - Study Area 2023-08-29)



Map Scale: 1:3,290 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N 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: Blaine County, Oklahoma
Survey Area Data: Version 20, Sep 6, 2023

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

Date(s) aerial images were photographed: Jul 23, 2022—Aug 10, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NstC	Nobscot sand, 0 to 5 percent slopes	31.8	77.4%
TrD	Tivoli fine sand, 5 to 30 percent slopes	0.9	2.1%
Wa	Waldeck fine sandy loam, 0 to 1 percent slopes, occasionally flooded	8.4	20.5%
Totals for Area of Interest		**41.1**	**100.0%**

APPENDIX B

Habitat Assessment Report

Habitat Assessment Report & Preliminary Effects Determination Memo: Canton Wildlife Management Area Gun Range

Prepared For:

Oklahoma Department of Wildlife Conservation

December 2023

GARVER

GarverUSA.com

6100 South Yale
Suite 1300
Tulsa, OK 74136

TEL 918.250.5922
FAX 918.858.0107

www.GarverUSA.com

Federally Protected Threatened & Endangered Species
Habitat Assessment & Preliminary Effects Determination Memo

Canton Wildlife Management Area Gun Range Project
USFWS Project Code: 2023-0127054
Blaine County, Oklahoma
December 15, 2023

This memo serves to provide information on the occurrence of suitable habitat for the federally-protected threatened and endangered species listed by the U.S. Fish and Wildlife Service (USFWS), as documented by the Information for Planning and Consultation (IPaC) project planning tool (attached), for the Canton Wildlife Management Area (WMA) Gun Range expansion project in Blaine County, Oklahoma. Additionally, a bald eagle *(Haliaeetus leucocephalus)* assessment was performed and included in relation to their specific protection as defined by the Bald and Golden Eagle Protection Act. **Figure 1** shows the project location. The study area boundary is illustrated on **Figure 2** which also includes a 1-mile buffer action area for the tricolored bat.

Garver has been contracted by the Oklahoma Department of Wildlife Conservation (ODWC) to provide environmental services for preparation of an Environmental Assessment (EA) and associated studies for proposed renovation and expansion improvements to the existing gun range at the Canton WMA. This project includes the addition of and archery range, trap range, 100-yard and 50-yard rifle ranges, safety berms, and ADA parking lots and pathways. Improvements will occur to the existing 200-yard rifle range, shooting covers and benches, and the fencing and gates around the facility. The project is located on lands owned by the U.S. Army Corps of Engineers (USACE) under license to the ODWC.

Garver completed a site visit of the study area on September 13, 2023. The study area is approximately 0.35 mile east of Canton Lake, approximately one mile southwest of Longdale, Oklahoma, and located north and east of Thunder Road Scenic Drive, and north and south of EW-615 in Section 15, Township 19N, Range 13W in the Canton WMA (refer to **Figure 1**). The study area is approximately 41 acres in size. The Canton WMA gun range is located within a rural area and consists of undeveloped upland forest, two food plots with upland grasses, a gravel road, and a gun range. Land use adjacent to the study area consists of undeveloped upland forest, Canton Lake, and scattered rural homesteads. The closest town to the study area is Longdale, Oklahoma which is located approximately 1 mile northeast of the study area.

No suitable bald eagle habitat in the form of large super canopy trees such as pecan *(Carya illinoinensis)* and American sycamore (*Platanus occidentalis*) is present within the study area. No bald eagles or nests were observed during the site visit. The Oklahoma Natural Heritage Inventory (ONHI) reported one occurrence of bald eagles approximately two miles northwest of the study area, and three occurrences of whooping crane within 5 miles of the study area. It is probable that there is bald eagle habitat in the form of large super canopy trees within the 1-mile action area for this project. No structures suitable for migratory bird use were observed within the study area.

See **Table 1** for a list of species/habitats and preliminary effects determinations. Based on the official species list generated by IPaC on September 11, 2023, and on habitat observed in the study area, the project will have *no effect* on the piping plover, red knot, and whooping crane, and will have *no jeopardy* to the tricolored bat and the monarch butterfly. No critical habitat for any of the listed species occurs within the study area.

Table 1: Habitat and Preliminary Effects Determination

Species and/or Critical Habitat	Federal Status	Habitat Requirements	Habitat Present within Study Area	Preliminary Effects Determination
Tricolored Bat *Perimyotis subflavus*	Proposed Endangered	Tricolored bat habitat includes live or dead trees and/or snags with a DBH* of ≥ 3 inches. Limestone karsts features, barns or sheds, and linear treed features can also be used by this species.	Large, wooded areas with dead and live trees with large cavities were observed within the study area (Figure 3). These wooded areas contained trees with a DBH* of ≥ 3 inches (**Figure 3**). ONHI reported no occurrences of this species within 5 miles of the study area.	No Jeopardy[1]
Piping Plover *Charadrius melodus*	Threatened	Piping plover habitat includes sandbars of major rivers, salt flats, and mudflats of reservoirs.	No sandbars or major rivers, salt flats, or mudflats of reservoirs occur within the study area. ONHI reported no occurrences of this species within 5 miles of the study area.	No Effect
Red Knot *Calidris canutus rufa*	Threatened	Red knots habitat includes mudflats associated with reservoirs.	No mudflats or reservoirs occur within the study area. ONHI reported no occurrences of this species within 5 miles of the study area.	No Effect
Whooping Crane *Grus americana*	Endangered	Whooping crane habitat includes wetlands, marshes, and sandbars along major rivers.	No whooping crane habitat occurs within the study area. ONHI reported three occurrences of this species within 5 miles of the study area.	No Effect
Monarch Butterfly *Danaus plexippus*	Candidate	Milkweed (*Asclepias* spp.) and native habitat with the presence of flowering or potentially flowering nectar plants.	Nectar producing plants were observed during the field investigation within the study area. ONHI reported no occurrences of this species within 5 miles of the study area.	No Jeopardy[1]

* Diameter at breast height
[1] Effect determination for candidate and proposed species.

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Suite 1300
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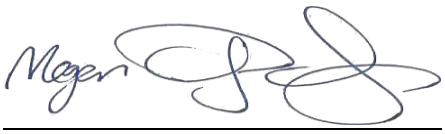
TEL 918.250.5922
FAX 918.858.0107

www.GarverUSA.com

Prepared By:

John Allison
Environmental Scientist

Reviewed By:



Megan Philips-Schaap, QAWB
Senior Environmental Scientist
#918-858-4164; MEPhilips-Schaap@GarverUSA.com

Attachments:
Project Figures 1-5
Photographic Log
USFWS Official Species List
ONHI Response

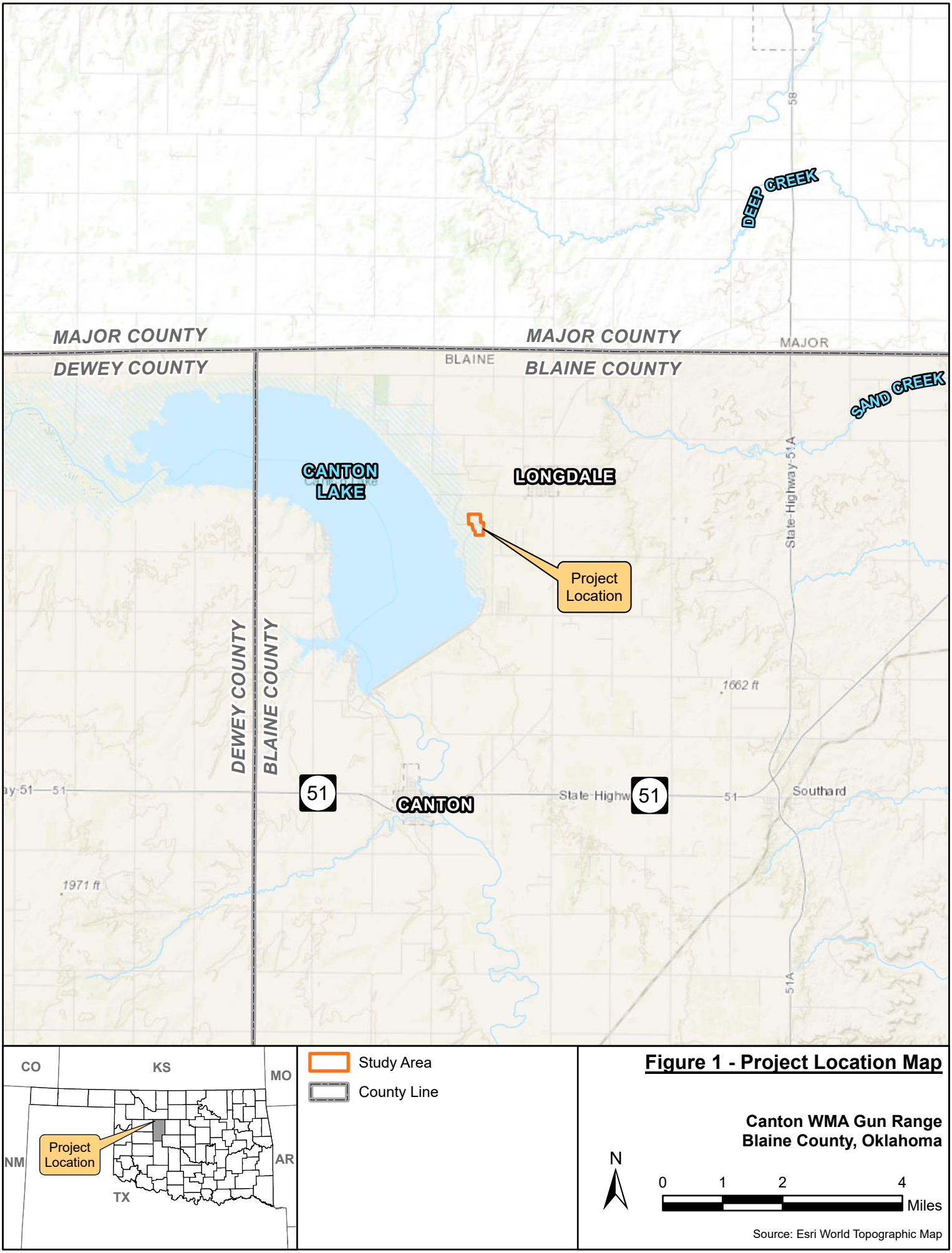


Figure 1 - Project Location Map

Canton WMA Gun Range
Blaine County, Oklahoma

Source: Esri World Topographic Map

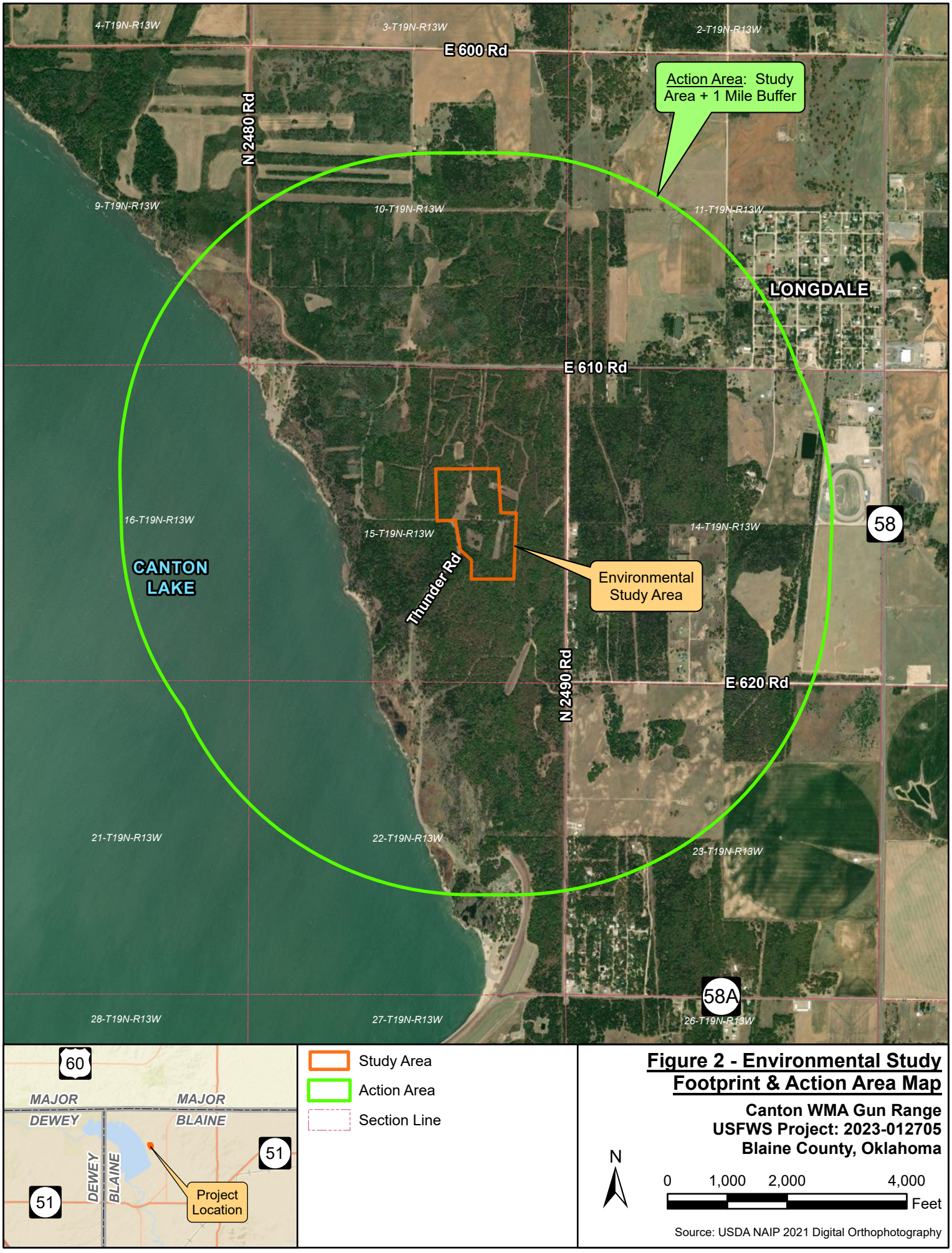


Figure 2 - Environmental Study Footprint & Action Area Map

Canton WMA Gun Range
USFWS Project: 2023-012705
Blaine County, Oklahoma

Source: USDA NAIP 2021 Digital Orthophotography

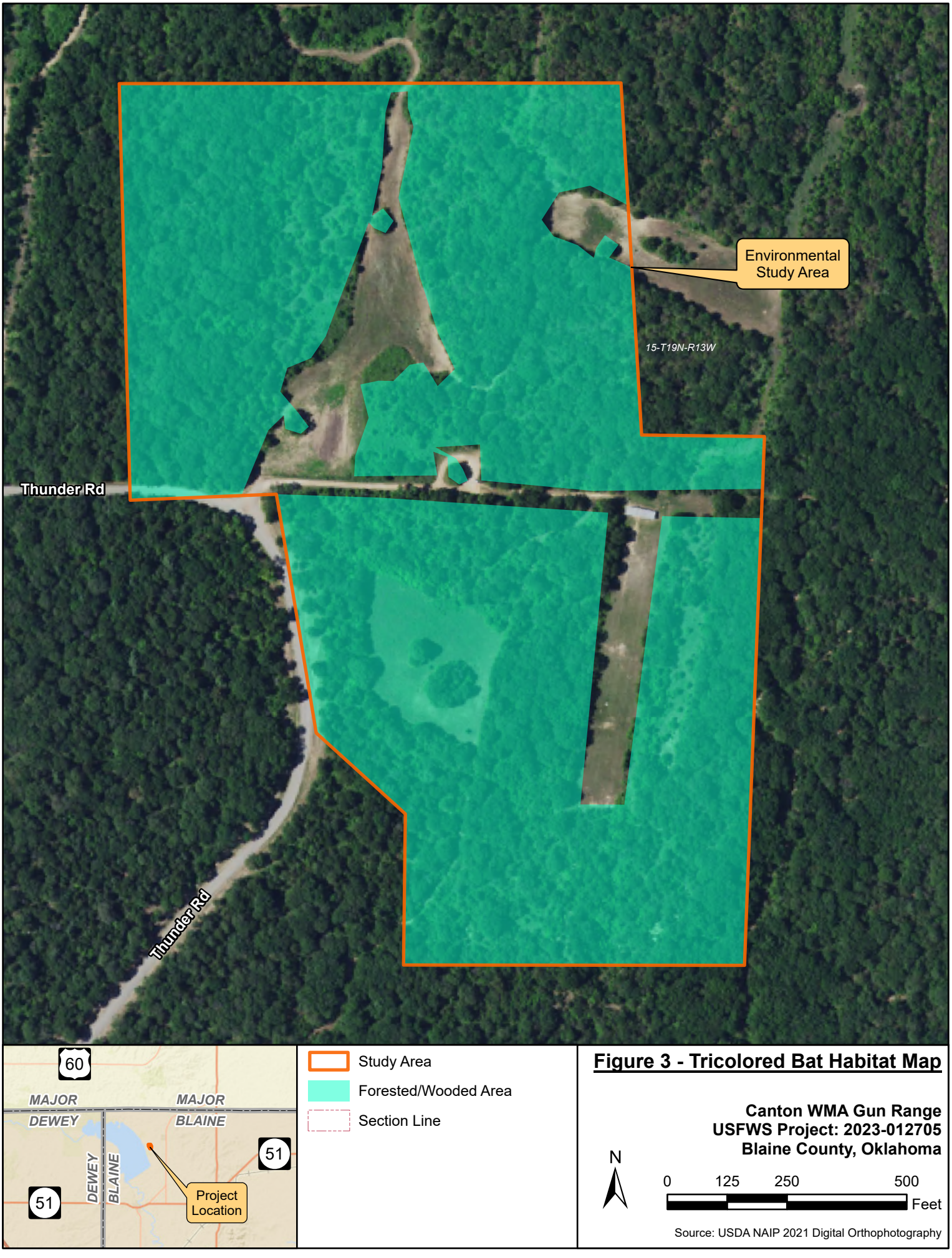
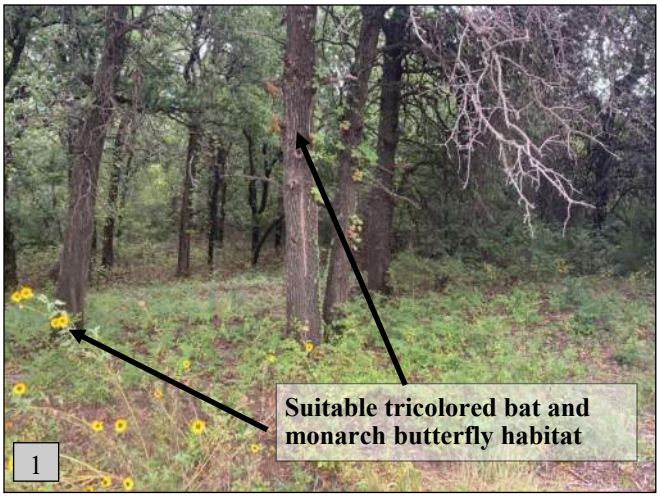


Figure 3 - Tricolored Bat Habitat Map

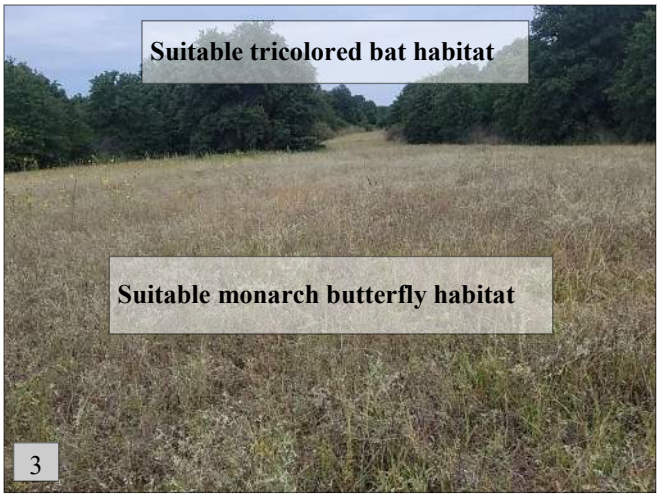
Canton WMA Gun Range
USFWS Project: 2023-012705
Blaine County, Oklahoma

Source: USDA NAIP 2021 Digital Orthophotography



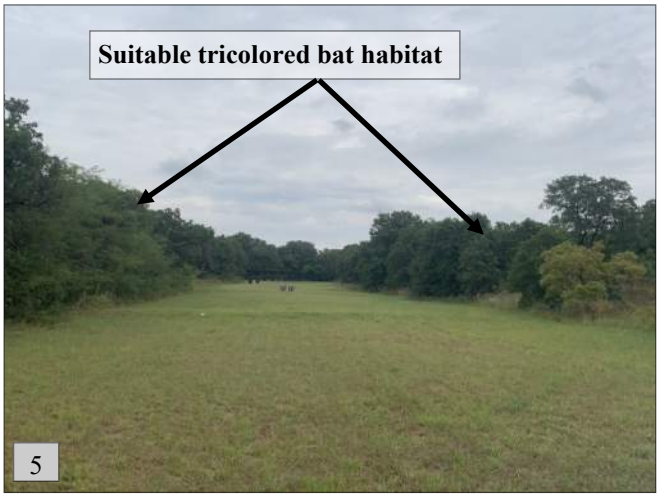
▲View of upland wooded habitat taken in the north-west section of the study area. View is to the north.

▲View of upland wooded habitat from the west edge of the study area. View is to the east.



▲View of upland herbaceous habitat in the north section of the study area. View is to the north.

▲View of EW-615 Road near the center of the study area. View is to the east.



▲View of existing gun range in the south section of the study area. View is to the north.

▲View of upland wooded habitat from the east edge of the study area. View is to the west.

Blaine County, OK
Canton WMA Gun Range

On-site photographs taken September 13, 2023
Garver Project No. 22T14770

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467

In Reply Refer To: December 06, 2023
Project Code: 2024-0023691
Project Name: Canton WMA Gun Range

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

PROJECT SUMMARY

Project Code: 2024-0023691
Project Name: Canton WMA Gun Range
Project Type: Mixed-Use Construction
Project Description: Renovation and expansion improvements to the existing gun range at the Canton WMA.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.122796449999996,-98.57073610142483,14z

Counties: Blaine County, Oklahoma

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. 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.

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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 OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are bald and/or golden eagles in your project area.

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

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Jul 31

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 the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

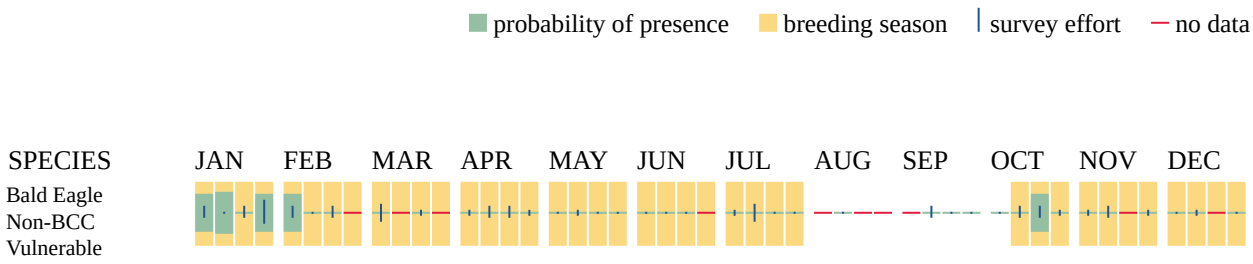
Probability of Presence (▪)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (▪)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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



Additional information can be found using the following links:

- Eagle Managment 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

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 below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Jul 31
Black Tern *Chlidonias niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9482	Breeds elsewhere

NAME	BREEDING SEASON
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5

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 the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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

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

WETLANDS

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.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPAC USER CONTACT INFORMATION

Agency:	Garver
Name:	Garver LLC
Address:	6100 S. Yale Avenue
Address Line 2:	Suite 1300
City:	Tulsa
State:	OK
Zip:	74136
Email	okbiologist@garverusa.com
Phone:	9182505922

OBS Ref. 2023-426-BUS-GAR

Dear John Allison, September 26, 2023

We have reviewed occurrence information on federal and state threatened, endangered, or candidate species currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 15-T19N-R13W, Blaine County

We found 4 occurrences of relevant species within the vicinity of the project location as described.

Species Name	Common Name	Federal Status
Grus americana	**Whooping Crane**	**Listed Endangered**
County	***TRS***	***Count***
Blaine	Sec. 11-T18N-R13W	1
Blaine	Sec. 17-T19N-R13W	1
Blaine	Sec. 24-T19N-R13W	1
Haliaeetus leucocephalus	**Bald Eagle**	**Protected**
County	***TRS***	***Count***
Blaine	Sec. 5-T19N-R13W	1

Additionally, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following link helpful.

ONHI, guide to ranking codes for endangered and threatened species:
http://www.oknaturalheritage.ou.edu/content/biodiversity-info/ranking-guide/

Kristin Comolli
Oklahoma Natural Heritage Inventory
(405) 325-4700
kcomolli@ou.edu

APPENDIX C

Hazardous, Toxic, and Radioactive Waste Phase I ESA

CESWT-ODR-N 8 Feb 2024

MEMORANDUM FOR RECORD

SUBJECT: Oklahoma Department of Wildlife Conservation Proposed Renovation of Rifle Range, Canton Lake, Oklahoma (CAN-FY22-004), Phase I Environmental Site Assessment per ER 200-2-3, Chapter 14.

1. A Phase I Environmental Site Assessment (ESA) was submitted for ODR-N review on 8 JAN 2024.

2. The Phase I ESA submitted reported one Controlled Recognized Environmental Conditions (RECs), as defined in 40 CRF Part 312 and ASTM 1527-21, on the subject lease.

3. The Phase I ESA submitted has been determined to comply with the requirements set forth in the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) and the ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM 1527-21).

PERSON.JASON.A.1241446324
Digitally signed by PERSON.JASON.A.1241446324
Date: 2024.02.08 12:00:05 -06'00'

JASON PERSON
Biologist
Natural Resource Management Section

Hazardous, Toxic, and Radioactive Waste - Phase I Environmental Site Assessment, Canton Wildlife Management Area Gun Range

Prepared For:

Oklahoma Department of Wildlife Conservation

December 2023

GARVER

GarverUSA.com

Hazardous, Toxic, and Radioactive Waste
Phase I Environmental Site Assessment

Assessment Site:
Canton Wildlife Management Area (WMA) Shooting Range

Located 0.35 miles east of Canton Lake and 1 mile southwest of Longdale, Oklahoma

Prepared For:
Oklahoma Department of Wildlife Conservation

C & E Division
PO Box 53465
OKC, OK 73152

Prepared by:

6100 S. Yale Avenue
Suite 1300
Tulsa, OK 74136

October 20, 2023

Garver Project No.: 22T14770

Environmental Professional Certification

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental Professional* as defined in SS312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting as the *subject property*. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Reviewed by: 

Murray Verbonitz
Environmental Project Manager / Environmental Professional

Table of Contents

List of Appendices

Abbreviations and Acronyms

AIRS	Aerometric Information Retrieval System
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
AUL	Activity Use Limitations
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
EC	Engineering Controls
EREIS	Environmental Risk Information Services
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
HTRW	Hazardous, Toxic, and Radioactive Waste
IC	Institutional Controls
LF	Land Fill
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
MSDS	Material Safety Data Sheet
NCDL	National Clandestine Drug Labs
NFRAP	No Further Remedial Action Planned
NPL	National Priorities List
ODEQ	Oklahoma Department of Environmental Quality
ODWC	Oklahoma Department of Wildlife Conservation
PCB	Polychlorinated biphenyls
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
SCAP	Site Clea-up Assistance Program
SEMS	Superfund Enterprise Management System
SHW	State Hazardous Waste
SQG	Small Quantity Generator
SWF	Solid Waste Facility
TSD	Treatment, Storage, and Disposal
USGS	United States Geological Survey
UST	Underground Storage Tank
VCP	Voluntary Cleanup Program

Executive Summary

The HTRW Phase I ESA was performed in accordance with USACE rules and guidance contained within ER 1165-2-132 HTRW Guidance for Civil Works Projects, and ASTM E1527-21: Standard Practice for Environmental Site Assessments: Phase I ESA Process. The purpose of this document is to identify issues and problems associated with HTRWs which may be located within project boundaries or may affect or be affected by USACE Civil Works Projects. The HTRW Phase I ESA was conducted under the supervision or responsible charge of Murray Verbonitz, Environmental Professional. John Allison performed the site reconnaissance on September 13, 2023.

A summary of findings is provided below. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein. To describe the property/site/tract/area that is being assessed, “site” and "assessment site" are used interchangeably.

Site Location, Description, and Use

Garver completed a site visit of the study area on September 13, 2023. The study area is approximately 0.35 mile east of Canton Lake, approximately one mile southwest of Longdale, Oklahoma, and located north and east of Thunder Road Scenic Drive, and north and south of EW-615 in Section 15, Township 19N, Range 13W in the Canton WMA. The study area is approximately 41 acres in size. The Canton WMA gun range is located within a rural area and consists of undeveloped upland forest, two food plots with upland grasses, a gravel road, and a gun range. Land use adjacent to the study area consists of undeveloped upland forest, Canton Lake, and scattered rural homesteads. The closest town to the study area is Longdale, Oklahoma which is located approximately 1 mile northeast of the study area.

Historic Use Information

Aerials imagery indicates the by 1951 the site was used as a cow pasture and/or hay/crop field. Between 1954 and 1964, EW-615 Road was constructed, running from west to east across the site. In the period from 1964 to 1971, the southeast side of the assessment site was developed into a gun range. Since 1971, there haven't been any substantial alterations in land use. Most of the land has remained undeveloped or used as wildlife food plots, except for the existing gun range. The ODWC has implemented a lead management plan for the existing gun range, indicating efforts to address environmental concerns related to lead contamination from the shooting range. Due to the historic use of the facility as a shooting range, and the associated lead management plan, the shooting range is considered a Controlled REC in conjunction with the assessment site.

The current and historic use of the assessment site as a gun range, and the associated lead management plan constitute a Controlled REC in connection with the assessment site.

Site Specific Regulatory Information

The ERIS report did not identify any regulated facilities within the assessment site.

Surrounding Area Regulatory Information

The ERIS report did not identify any regulated facilities within the ASTM-specified search distances from the assessment site.

Site Reconnaissance
The following items were observed during site reconnaissance:

- One (1) gun range

The existing gun range is considered a Controlled REC in conjunction with the assessment site. The gun range at this facility includes a lead management plan to mitigate any potential hazards associated with shooting activities. Refer to Section 7.3 – Site Observation Detail of this report for additional information pertaining to the above-mentioned items.

Conclusions
Garver has performed this HTRW Phase I ESA in accordance with USACE rules and guidance contained within ER 1165-2-132 HTRW Guidance for Civil Works Projects, and ASTM E1527-21: Standard Practice for Environmental Site Assessments: Phase I ESA Process for the assessment site located at near the junction of Thunder Road Scenic Drive and E 615 Road.

As of September 13, 2023, one Controlled REC was identified in connection with the assessment site.

1. The current and historic use of the site as a gun range and the associated lead management plan.

Based on the conclusions of this assessment, no further investigation is recommended at this time.

1.0 Introduction

Garver, LLC was retained by the ODWC to perform a HTRW Phase I ESA of the site located at the Canton WMA.

1.1 Site Description

Site Name	Garver Project No. 22T14770 Canton WMA Gun Range EA
Site Location / Address	36.123131, -98.570995 Near junction of Thunder Road Scenic Drive and EW-615 Road.
Land Area	Approximately 41 acres
Site Improvements	The site includes a gravel road and a gun range.

Reason for the HTRW Phase I ESA	Identify potential Hazardous, Toxic, and Radioactive Waste and associated Recognized Environmental Conditions that could impact the assessment site.

A topographic map depicting location of the site is depicted on **Exhibit 1** of **Appendix A**, which was reproduced from a portion of the 1956 (photorevised 1969 and 1975) Canton, OK. United States Geological Survey (USGS) 7.5-minute series topographic map. The site and adjoining properties are depicted on the Site Map, which is included as **Exhibit 2** of **Appendix A**. Acronyms and terms used in this report are described in the ERIS Database Report located in **Appendix E**.

1.2 Scope of Services

This report has been prepared in accordance with USACE rules and guidance contained within ER 1165-2-132 HTRW Guidance for Civil Works Projects, and ASTM E1527-21: Standard Practice for Environmental Site Assessments: Phase I ESA Process. The purpose of this HTRW Phase I ESA is to provide "all appropriate inquiry" regarding certain Landowner Liability Protections (LLPs) under CERCLA 1980. All observations are current as of September 13, 2023. Property modifications subsequent to this date are not addressed herein.

The scope-of-services incorporated in this HTRW Phase I ESA includes the following:

- A review of historical information
- A review of regulatory agency databases
- A visual on-site inspection
- Interviews with the client, current owner, and local government officials
- Inclusion of any RECs

RECs are defined as the presence, or likely presence, of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not *recognized environmental conditions*.

Historical RECs are defined as a past release of any hazardous substances or petroleum products that has occurred in connection with a property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). The final decision rests with the environmental professional and will be influenced by the current impact, if any, of the *Historical REC* on the property.

Controlled RECs are defined as a *recognized environmental conditions* resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by the regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for

example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

De minimis condition is defined as a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Certain conditions are beyond the scope of ASTM Phase I ESAs and are outside the scope of this assessment, unless the report specifies otherwise. Those conditions include but are not limited to:

- Compliance with AULs
- Asbestos-Containing building materials
- Biological Agents
- Cultural and Historical Resources
- Ecological Resources
- Endangered Species
- Health and safety
- Indoor Air Quality unrelated to releases of hazardous substances or petroleum products into the environment
- Industrial Hygiene
- Lead-Based Paint
- Lead in Drinking Water
- Mold
- Radon
- Regulatory Compliance
- Wetlands

1.3 Significant Assumptions

The investigation and report contained herein is an assessment of the physical property and improvements, if any. It is not intended to be a compliance evaluation or an audit of current or historic operations conducted upon the assessment site that may carry transfer liability.

As part of this assessment, one or more persons knowledgeable of the assessment site have been consulted for information about the history and past use of the property. Any person consulted for this HTRW Phase I ESA has an obligation to answer all questions in good faith to the extent of his or her actual knowledge.

1.4 Limitations and Expectations

This report was prepared under the recommended ER 1164-2-132 and ASTM E1527-21 scope and reflects the specified level of investigation and evaluation. Garver's investigation was performed using the degree of care and skill ordinarily exercised, under similar circumstances, by professional consultants practicing in this or similar localities. No other warranty, expressed or implied, is made. **Garver should not be held**

responsible for any incorrect information that may have been supplied by agencies, organizations, or individuals that may be included in the findings or recommendations of this report.

Garver claims no responsibility for any environmental issues, the detection of which would require examinations beyond the scope of this HTRW Phase I ESA. Although this study has attempted to identify *RECs* associated with the subject property, potential sources of environmental concern may have been undetected as a result of the limitations of this study, the inaccuracy of governmental records, or the presence of undetected or unreported environmental accidents. With specific reference to this assessment site, although Garver personnel made traverses across the assessment site on foot, structures, vegetation or paving could have concealed items or features of potential interest.

1.5 Special Terms and Conditions

Environmental site assessments cannot wholly eliminate uncertainty regarding the potential for RECs in connection with a property. This assessment is intended to reduce, **but not eliminate,** uncertainty regarding the environmental condition of the property. **This assessment is not exhaustive.** Additional investigation, including sampling and laboratory analyses, as typically included in Phase II ESAs, could provide additional insight into the present environmental condition of the property, and thereby reduce uncertainties inherent in a HTRW Phase I ESA.

1.6 User Reliance

This HTRW Phase I ESA was prepared by Garver specifically for use by the client. Use of or reliance upon this information by any other party without express written permission granted by Garver and the client is not authorized and is completely at the risk of the user.

1.7 Data Gaps and Data Failure

No significant data gaps exist for the assessment site.

2.0 Site Description

2.1 Location and Legal Description

The study area is approximately 0.35 mile east of Canton Lake, approximately one mile southwest of Longdale, Oklahoma, and located north and east of Thunder Road Scenic Drive, and north and south of EW-615 in Section 15, Township 19N, Range 13W in the Canton WMA. The closest town to the study area is Longdale, Oklahoma which is located approximately 1 mile northeast of the study area. Maps of the assessment site are located in **Appendix A** of this report.

2.2 Site and Vicinity General Characteristics

The subject property consisted of approximately 41 acres. A gun range occupied the assessment site. Land use adjacent to the assessment site was characterized by undeveloped upland forest, Canton Lake, and scattered rural homesteads. Thunder Road Scenic Drive and E 514 Rd are located within the assessment site.

2.3 Current Use of Assessment Site

At the time of the site reconnaissance, the assessment site was a 41 acre tract occupied by two roads and a gun range. The majority of the site is heavily wooded and includes food plots on the north side of the site.

2.4 Descriptions of Structures, Roads, and Other Improvements

Improvements within the assessment site consist of one paved and one gravel road, and the existing gun range.

2.5 Current Uses of Adjoining Properties

North	Undeveloped forested land
South	Undeveloped forested land
East	Undeveloped forested land, N 2490 Road
West	Undeveloped forested land, Thunder Road Scenic Drive

All adjacent properties are also ODWC WMA land.

3.0 Physical Setting

Topography	Based on review of the United State Geological Survey (USGS) 7.5-minute Canton, Oklahoma and Longdale, Oklahoma (2018) Quadrangle Topographic Map, the elevation of the assessment site is between 1,631 and 1,659 feet above sea level. Surface runoff for the site likely flows west-southwest across the site towards Canton Lake. The general topographical relief in the immediate area of the site is generally toward the west-southwest.
Soils	Based on information provided by USDA Web Soil Survey, accessed September 11, 2023, soils at the site are primarily mapped as Nobscot sand, 0 to 5 percent slopes, and Eda sand, 0 to 3 percent slopes. Soil maps can be found in the ERIS PSR located in **Appendix E**.

Geology	Based on review of the USGS National Geologic Map Database MapView the subject property is underlain by the Woodward Formation, which is predominantly lenticular and interfingering deposits of light-tan to gray gravel, sand, silt, clay, and volcanic ash.
Surface Waters	The assessment site does not contain any surface waters.
Hydrogeologic Gradient	The general topographical relief in the immediate area of the subject property indicates that surface runoff would be toward the west and southwest. The direction and hydraulic gradient of subsurface water flow in the immediate area is unknown but is often related to the surface gradient. Thus, the expected groundwater flow direction would be to the west-southwest.
Floodplains	The assessment site is not mapped by FEMA, therefore, it is unknown if the assessment site is within the 100-year or 500-year flood zones.

4.0 Records Review

Regulatory database information was provided by ERIS, a contract information services company, in a report dated September 11, 2023. The purpose of the records review was to identify RECs in connection with the site. Information in this section is subject to the accuracy of the data provided by the information services company and the date at which the information is updated.

In some of the following subsections, the words up-gradient, cross-gradient, and down-gradient refer to the topographic gradient in relation to the site. As stated previously, the groundwater flow direction and the depth to shallow groundwater, if present, would likely vary depending upon seasonal variations in rainfall and the depth to the soil/bedrock interface. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

4.1 Federal and State/Tribal Databases

ERIS provided a database report of both federal and state environmental records, using ASTM 1527-21 guidelines. The results of the appropriate database searches are discussed in the Subsections below. The ERIS database report is included as **Appendix E**.

Federal Databases

Database	Description	Radius Search (Miles)	No. of ERIS Listings
NPL	The NPL is the EPA's database of uncontrolled or abandoned hazardous waste facilities that have been listed for priority remedial actions under the Superfund Program.	1	0
NPL (Delisted)	The NPL (Delisted) refers to facilities that have been removed from the NPL.	0.5	0
SEMS	The EPA SEMS database is a compilation of facilities which the EPA has investigated or is currently investigating for a release or threatened release of hazardous substances pursuant to the CERCLA of 1980; former known as CERCLIS.	0.5	0
SEMS Archive	SEMS-archive refers to facilities that have been removed and archived from EPA's inventory of SEMS Sites; formerly known as CERCLIS-NFRAP.	0.5	0
RCRA CORRACTS/TDS	The EPA maintains a database of RCRA facilities associated with treatment, storage, and disposal of hazardous waste that are undergoing "corrective action." A "corrective action" order is issued when there has been a release of hazardous waste or constituents into the environment from a RCRA facility.	1	0
RCRA Non CORRACTS/TDS	The RCRA Non-CORRACTS/TSD Database is a compilation by the USEPA of facilities which report storage, transportation, treatment, or disposal of hazardous waste. Unlike the RCRA CORRACTS/TSD database, the RCRA Non-CORRACTS/TSD database does not include RCRA facilities where corrective action is required.	0.5	0

Database	Description	Radius Search (Miles)	No. of ERIS Listings
RCRA Generators	The RCRA Generators database, maintained by the EPA, lists facilities that generate hazardous waste as part of their normal business practices. Generators are listed as either large, small, or conditionally exempt. LQG produce at least 1000 kg/month of non-acutely hazardous waste or 1 kg/month of acutely hazardous waste. SQG produce 100-1000 kg/month of non-acutely hazardous waste. CESQG are those that generate less than 100 kg/month of non-acutely hazardous waste.	Site and adjoining properties	0
IC / EC	A listing of sites with institutional and/or engineering controls in place. IC include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls. EC include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.	Site	0
ERNS	The ERNS is a listing compiled by the EPA on reported releases of petroleum and hazardous substances to the air, soil and/or water.	Site	0
US Brownfields	EPA's database of Brownfield properties addressed by Cooperative Agreement Recipients or Targeted Brownfields Assessments.	0.5	0

State/Tribal Databases

Database	Description	Radius (Miles)	No. of ERIS Listings
SHW	State-equivalent and/or Tribal-equivalent database of NPL sites.	1	0

Database	Description	Radius (Miles)	No. of ERIS Listings
CERCLIS	State-equivalent and/or Tribal-equivalent database of CERCLIS sites. These facilities may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with facilities where cleanup will be paid for by potentially responsible parties.	0.5	0
SWF / LF	State and/or Tribal database of solid waste facilities located within Oklahoma. The database information may include the facility name, class, operation type, area, estimated operational life, and owner.	0.5	0
LUST	State and/or Tribal database of leaking underground storage tanks in state of Oklahoma.	0.5	0
UST/AST	State and/or Tribal database of registered storage tanks in the State of Oklahoma which may include the owner and location of the tanks.	Site and adjoining properties	0
IC/EC	State and/or Tribal equivalent to the Federal IC / EC database list.	Site	0
VCP	State and/or Tribal facilities included as Voluntary Cleanup Program sites.	0.5	0
Brownfields	State and/or tribal listing of Brownfield properties addressed by Cooperative Agreement Recipients or Targeted Brownfields Assessments.	0.5	0

4.1.1 Site Specific Environmental Records Search

The ERIS report identified no regulated facilities within the assessment site.

4.1.2 Surrounding Area Environmental Records Search

The ERIS report did not identify regulated facilities within the ASTM-specified search distances from the assessment site.

4.2 Additional Environmental Records

The OCC well data finder was reviewed. No wells were listed within the assessment site. The closest well identified was a gas well located 0.89 miles southeast of the assessment site.

4.3 Orphan/Non-geocoded/Unmapped Sites

Non-geocoded facilities are those that do not contain sufficient address or location information to evaluate the facility listing locations relative to the site. The ERIS database report stated no unplottable records were found that may be relevant for the search criteria.

5.0 Historical Use Information

Garver reviewed the following historical sources to develop a history of the previous uses of the site and surrounding area, in order to help identify RECs associated with past uses. Copies of selected historical documents are included in **Appendix C**.

5.1 Historic Aerial Photography of the Property

In order to determine former land uses of the property, Garver reviewed ERIS provided historic aerial photographs. Past usage of the assessment site, based on Garver's review of the referenced aerial photographs, are outlined in the following table:

Date	Description of Assessment Site Based on Historic Aerial Photographs
1951	The site is undeveloped on the south end, but the north end has been cleared of trees and appears to be pasture or crop land.
1954	Trees have been cleared across the middle of the site from west to east.
1964	A road runs across the middle of the site from west to east.
1971	Thunder Road Scenic Drive on the west side of the site becomes more distinct and was paved. Trees cleared on the southeast side of the site where existing gun range is now. Patch of trees cleared on southwest side of site as well.
1981	No change
1995	No change
2003	No change. North side of study area that was cleared gradually filling with trees.
2004	No change
2005	No change
2006	No change
2008	No change

Date	Description of Assessment Site Based on Historic Aerial Photographs
2010	No change
2013	No change
2015	No change
2017	No change
2019	No change
2021	No change
2022	No change

5.2 Historic Aerial Photography of Adjoining Properties

To determine former land uses of properties adjoining or surrounding the assessment site, Garver reviewed historic aerial photographs dated. Past usages of the adjacent properties, as revealed by Garver's review of referenced photographs are discussed in the following table:

Direction	Description of Adjoining Properties Based on Historic Aerial Photographs
North	The land is undeveloped (1951). Extensive field roads and tree clearing are present (1971). Over the following decades the land is reforested. No noteworthy changes in land use or appearance have taken place since (2022).
South	The land is undeveloped (1951). Extensive field roads and tree clearing are present (1971). Over the following decades the land is reforested. No noteworthy changes in land use or appearance have taken place since (2022).
East	The land is undeveloped (1951). An improved road is present that cuts across the site east to west, and also branches southwest. (1964). Extensive field roads and tree clearing are present (1971). Over the following decades the land is reforested. No noteworthy changes in land use or appearance have taken place since (2022).
West	The land is undeveloped (1951). An improved road is present that cuts across the site east to west (1964). Extensive field roads and tree clearing are present (1971). Over the following decades the land is reforested. No noteworthy changes in land use or appearance have taken place since (2022).

5.3 Historic Sanborn Maps

Historical fire insurance maps produced by the Sanborn Map Company were not requested from ERIS to evaluate past uses and relevant characteristics of the site and surrounding properties.

5.4 Client Provided Information

5.4.1 User Questionnaire

Prior to the site visit, the Oklahoma Department of Wildlife (ODWC), the client's representative, was asked to provide the following user questionnaire information as described in ASTM E1527-21.

Client Questionnaire Item	Client Did Not Respond	Client's Response (Yes/No)
Aware of Environmental Cleanup Liens against the site?		No
Actual knowledge of Environmental Liens or Activity Use Limitations (AULs) that may encumber the site?		No
Aware of Specialized Knowledge or Experience that is related to the site of nearby properties?		No
Actual Knowledge of a Lower Purchase Price because contamination is known or believed to be present at the site?		No
Commonly known of Reasonably Ascertainable Information that is material to a release in connection with the site?		No
Obvious indicators of Contamination at the site?		No

A copy of the completed questionnaire is included in **Appendix D**.

5.4.2 Title Records and Environmental Lien/AULs Search

Title records and environmental liens/AUL records filed for the subject property were not provided by the client for review. Performance of a review of these records was not included as part of the scope of services of this HTRW Phase I ESA and Garver assumes that the client is evaluating this information outside the context of this report.

5.4.3 Prior Report Review

Garver requested the client provide any previous environmental reports they are aware of for the site. No previous reports were provided by the client to Garver for review.

5.5 Interviews

5.5.1 Owner Interviews

A standard Phase I ESA Interview Questionnaire was completed by a property representative, Thad Potts. Refer to **Appendix D**.

Amanda Thomas, Shooting Range Coordinator with the OWDC, stated that the facility includes a lead management plan to address any impacts from shooting activities. The lead management plan was provided to Garver. Refer to **Appendix D**.

5.5.2 Local Government Officials

To obtain further information regarding RECs in connection to the assessment site, the following databases were consulted (per ASTM E 1527-21) to determine if there had been any documented environmental events that could have adversely impacted the assessment site:

Department	Name/Title	Date	Records
Oklahoma Corporation Commission	Online GIS Portal	09/18/2023	Well locations and records
Oklahoma Department of Environmental Quality	Online GIS Portal	09/18/2023	Locations of any regulated facilities

Copies of email correspondences and records of communications will be included in **Appendix** D. Any additional documentation received will be included in **Appendix** C.

5.6 Historical Use Summary

Aerials imagery indicates the by 1951 the site was used as a cow pasture and/or hay/crop field. Between 1954 and 1964, EW-615 Road was constructed, running from west to east across the site. In the period from 1964 to 1971, additional changes occurred, such as the paving of Thunder Road Scenic Drive to the west of the site and the clearance of trees on the southwest side, and the southeast side for the gun range. Since 1971, there haven't been any substantial alterations in land use. Most of the land has remained undeveloped or used as wildlife food plots, except for the existing gun range situated on the south side of EW-615. The ODWC has implemented a lead management plan for the existing gun range, indicating efforts to address environmental concerns related to lead contamination from the shooting range. Due to the historic use of the facility as a shooting range, and the associated lead management plan, the shooting range is considered a Controlled REC in conjunction with the assessment site.

6.0 Site Reconnaissance

6.1 Methodology and Limiting Conditions

Site reconnaissance consisted of a visual and physical inspection of the assessment site to the extent that access was not blocked or impeded by heavy undergrowth or other obstacles. The inspection included a visual tour of the property perimeter (including a visual inspection of the adjoining properties), and multiple traverses across the interior of the assessment site as required. The structures that were observed on the assessment site were also visually inspected for indications of RECs. Photographs showing representative views of the assessment site as well as specific features are included in **Appendix B**.

6.2 General Site Observation Summary

The following table summarizes observations made during the on-site reconnaissance. Features observed in the field will be designated by an "X" and are discussed in more detail in Section 7.3.

Category	Item or Feature	Item or Feature Observed
Site Operations, Processes, and Equipment	Emergency generators	
	Elevators	
	Air compressors	
	Hydraulic Equipment	
Aboveground Chemical or Waste Storage	Evidence of aboveground storage tanks	
	Drums, barrels, and/or containers ≥ 5 gallons	
	Cleaning and/or similar supplies	
	MSDS	
Underground Chemical or Waste Storage, Drainage, or Collection Systems	Evidence of underground storage tanks or ancillary UST equipment	
	Sumps, cisterns, catch basins and/or dry wells	
	Grease traps	
	Septic tanks and/or leach fields	
	Oil/water separators	
	Pipeline markers	
	Interior floor drains	
Electrical Transformers/PCBs	Pad or pole mounted transformers and/or capacitors	
	Generators	
	Other PCB containing item	
Evidence of Releases or Potential Releases	Stressed vegetation	
	Stained soil	
	Stained pavement or similar surface	
	Trash, debris and/or other waste materials	
	Dumping or disposal areas	
	Construction/demolition debris and/or dumped fill dirt	
	Surface water discoloration, odor, sheen, and/or free-floating product	
	Strong, pungent or noxious odors	
	Exterior pipe discharges and/or other effluent discharges	
	Paint Booths/Laboratory hoods/Incinerators	
	Waste treatment systems and/or water treatment systems	
	Surface water bodies and/or wetlands	

Category	Item or Feature	Item or Feature Observed
Other Notable Site Features	Quarries or pits	
	Wells	
	Miscellaneous/Other	X

6.3 Site Observation Detail

6.3.1 Other Notable Site Features

A gun range exists on the southeast side of the site. It was discovered during the interview process that the shooting ranges utilized a lead management plan to mitigate any hazards associated with lead contamination. Due to the use of the facility as a shooting range, and the associated lead management plan, the shooting range is considered a Controlled REC in conjunction with the assessment site.

7.0 Conclusions

Garver has performed this HTRW Phase I ESA in accordance with USACE rules and guidance contained within ER 1165-2-132 HTRW Guidance for Civil Works Projects, and ASTM E1527-21: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

As of September 13, 2023, one Controlled REC was identified in connection with the assessment site.

1. The current and historic use of the site as a gun range and the associated lead management plan.

No further investigation is recommended at this time.

8.0 Additional Services

Per the agreed scope of services specified in the proposal, additional services (asbestos sampling, lead-based paint sampling, wetlands evaluation, lead in drinking water testing, radon testing, vapor encroachment screening, etc.) were not conducted.

9.0 References

American Society for Testing of Materials. Publication E 1527-13. Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process.

Department of Environmental Quality (DEQ) GIS mapper. Available online at *https://gis.deq.ok.gov/maps/?page=page_0*. Accessed September 2023.

Department of the Army, U.S. Army Corps of Engineers. ER 1165-132. Hazardous, Toxic, and Radioactive Waste Guidance for Civil Works Projects. June 1992.

Environmental Risk Information Services (ERIS). Available online at *Environmental Risk Information ESA | Phase I Assessment (erisinfo.com)*. Accessed September 2023.

Oklahoma Corporation Commission Well Data Viewer. Available online at *https://gis.occ.ok.gov/portal/apps/webappviewer/index.html?id=ba9b8612132f4106be6e3553dc0b827b*. Accessed September 2023.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/.

United States Geological Survey (USGS). National Geologic Map Database. Available online at https://ngmdb.usgs.gov/ngmdb/ngmdb_home.html

United States Geological Survey (USGS). 1972. 7.5 minute, 1:24,000 scale Canton, Okla., and Longdale, Okla. Topographic Quadrangle Map.

APPENDIX A

Topographic Map & Site Map

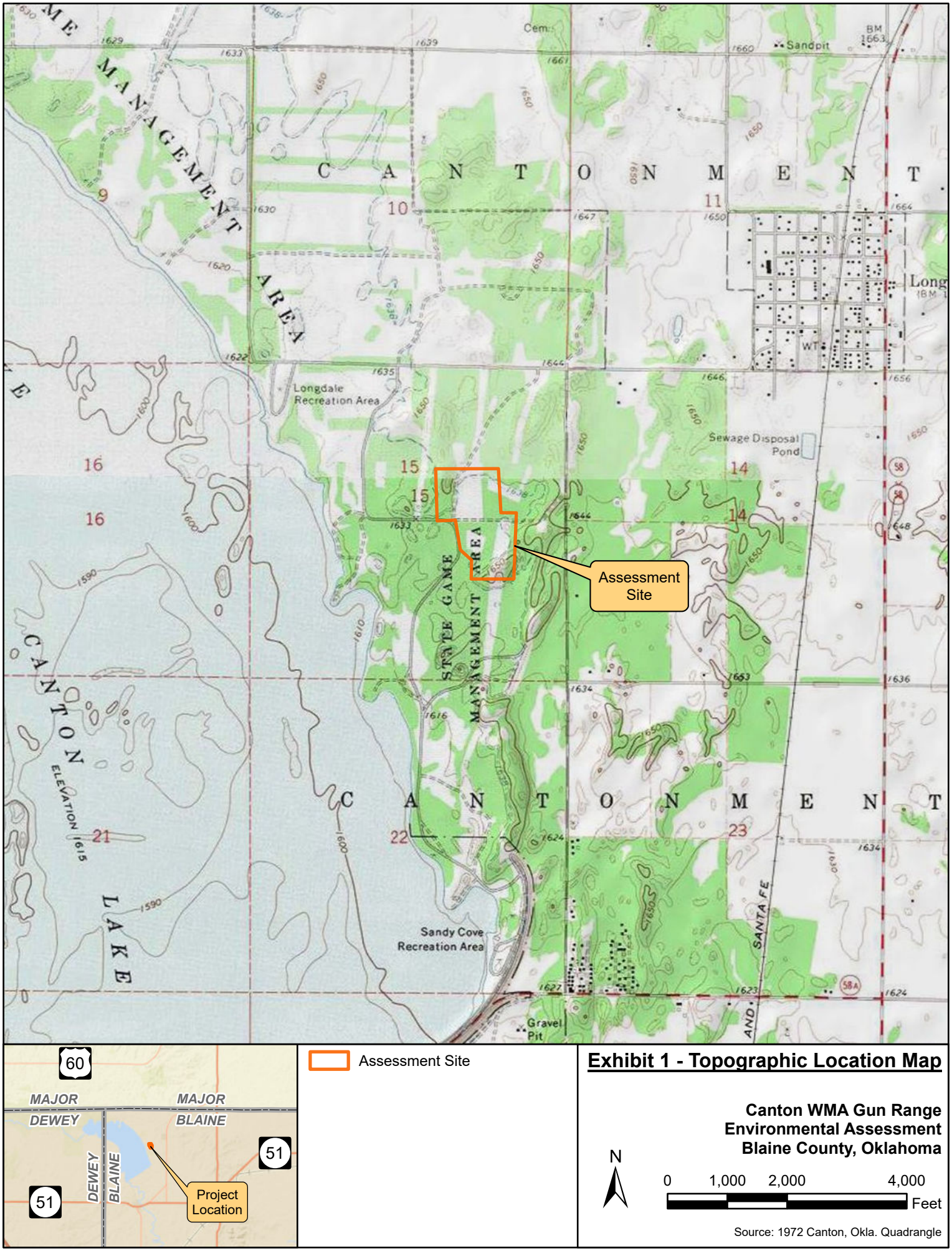


Exhibit 1 - Topographic Location Map

Canton WMA Gun Range
Environmental Assessment
Blaine County, Oklahoma

N

0 1,000 2,000 4,000 Feet

Source: 1972 Canton, Okla. Quadrangle

Exhibit 2 - Aerial Map

Canton WMA Gun Range
Environmental Assessment
Blaine County, Oklahoma

Source: USDA NAIP 2021 Digital Orthophotography

APPENDIX B

Site Photographs

▲View of forested area in the northwest section of the site. View is to the north.

▲View of open field in the north half of the site. View is to the north.

▲View of Thunder Road Scenic Drive. View is to the south.

▲View of EW-615 Road. View is to the east.

▲View of natural backstop at the south end of the existing gun range. View is to the south.

▲View of the north end of the existing gun range. View is to the north.

Blaine County, OK
Canton WMA Gun Range

On-site photographs taken September 13, 2023
Garver Project No. 22T14770

▲View of open field in the south half of the site. View is to the south.

▲View of forested area in the southeast section of the site. View is to the south.

▲View of adjacent property from north boundary of site. View is to the north.

▲View of adjacent property from east boundary of site. View is to the east.

▲View of adjacent property from south boundary of site. View is to the south.

▲View of adjacent property from west boundary of site. View is to the west.

Blaine County, OK
Canton WMA Gun Range

On-site photographs taken September 13, 2023
Garver Project No. 22T14770

APPENDIX C

Historical Research Documentation

ERIS

HISTORICAL AERIALS

Project Property: Canton Shooting Range
Canton Shooting Range
Longdale OK

Project No:

Requested By: Garver

Order No: 23090700512

Date Completed: September 11,2023

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

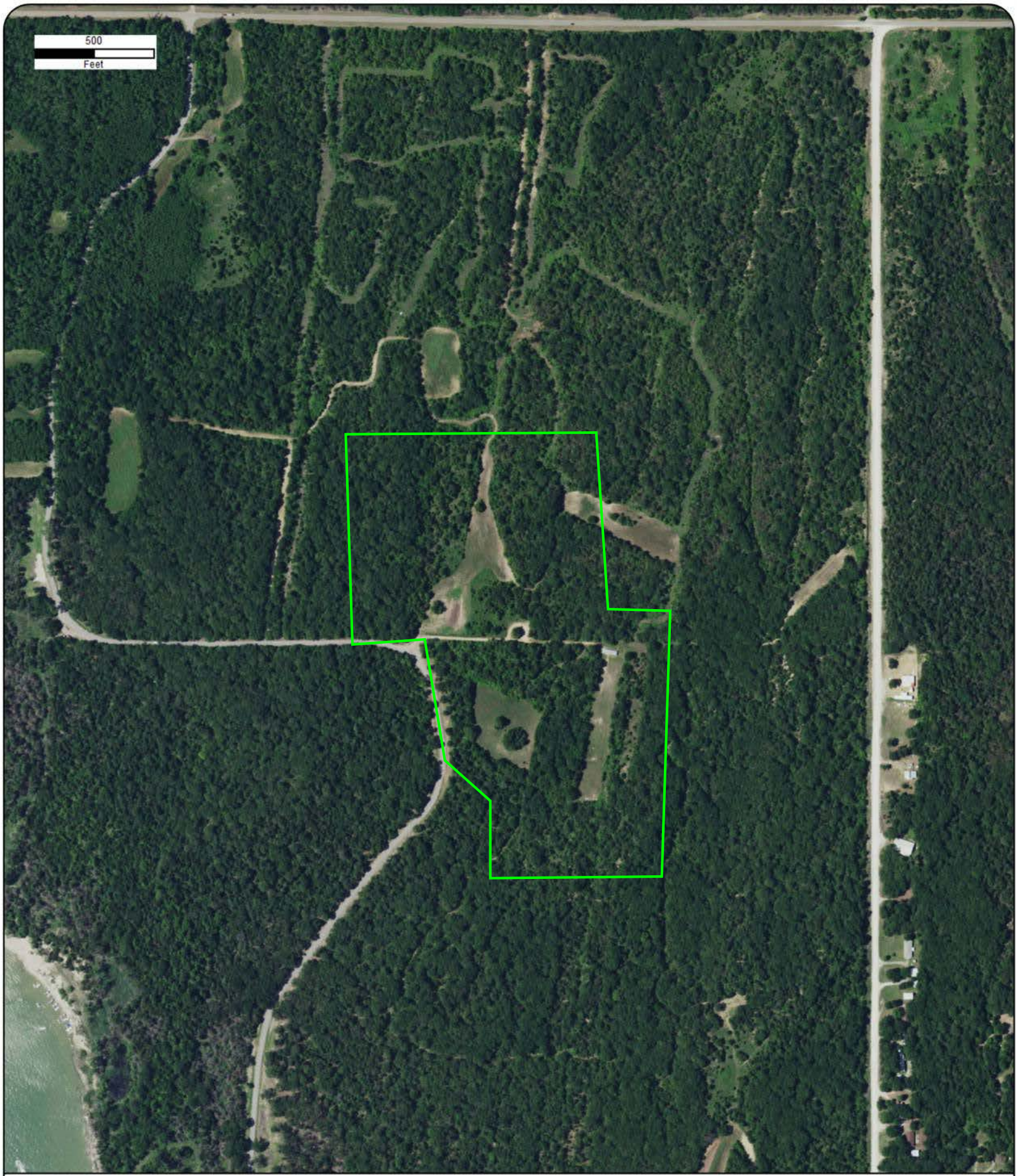
Date	Source	Scale	Comments
2022	MAXAR TECHNOLOGIES	1" = 500'	
2021	United States Department of Agriculture	1" = 500'	
2019	United States Department of Agriculture	1" = 500'	
2017	United States Department of Agriculture	1" = 500'	
2015	United States Department of Agriculture	1" = 500'	
2013	United States Department of Agriculture	1" = 500'	
2010	United States Department of Agriculture	1" = 500'	
2008	United States Department of Agriculture	1" = 500'	
2006	United States Department of Agriculture	1" = 500'	
2005	United States Department of Agriculture	1" = 500'	
2004	United States Department of Agriculture	1" = 500'	
2003	United States Department of Agriculture	1" = 500'	
1995	United States Geological Survey	1" = 500'	
1981	United States Geological Survey	1" = 500'	
1971	United States Geological Survey	1" = 500'	
1964	Agricultural Stabilization & Conserv. Service	1" = 500'	
1954	Army Mapping Service	1" = 500'	
1951	Agricultural Stabilization & Conserv. Service	1" = 500'	

Year: 2022
Source: MAXAR
Scale: 1" = 500'
Comment:

Address: Canton Shooting Range, Longdale, OK
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS



Year: 2021
Source: USDA
Scale: 1" = 500'
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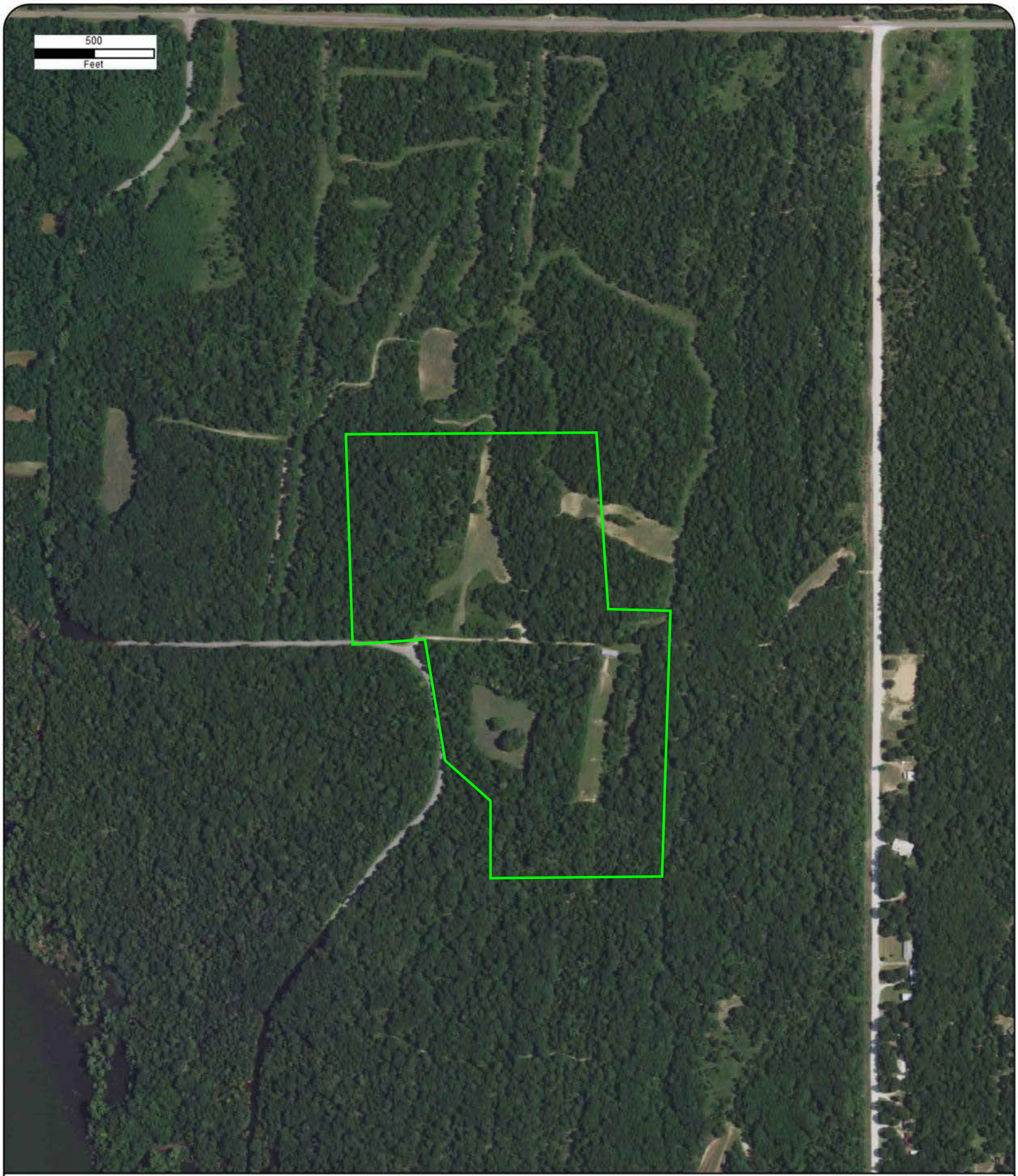
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS



Year: 2019
Source: USDA
Scale: 1" = 500'
Comment:

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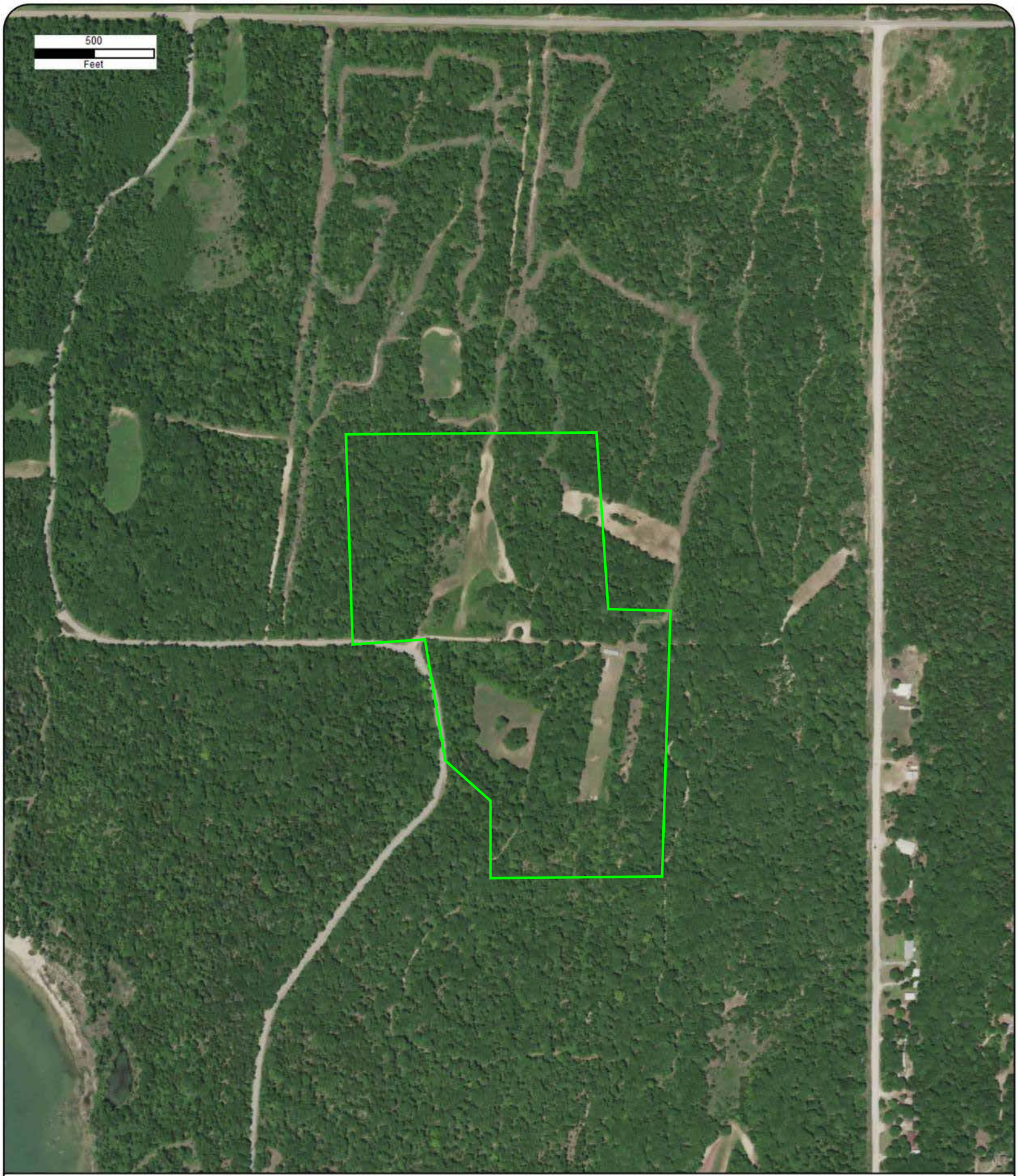
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS



Year: 2017
Source: USDA
Scale: 1" = 500'
Comment:

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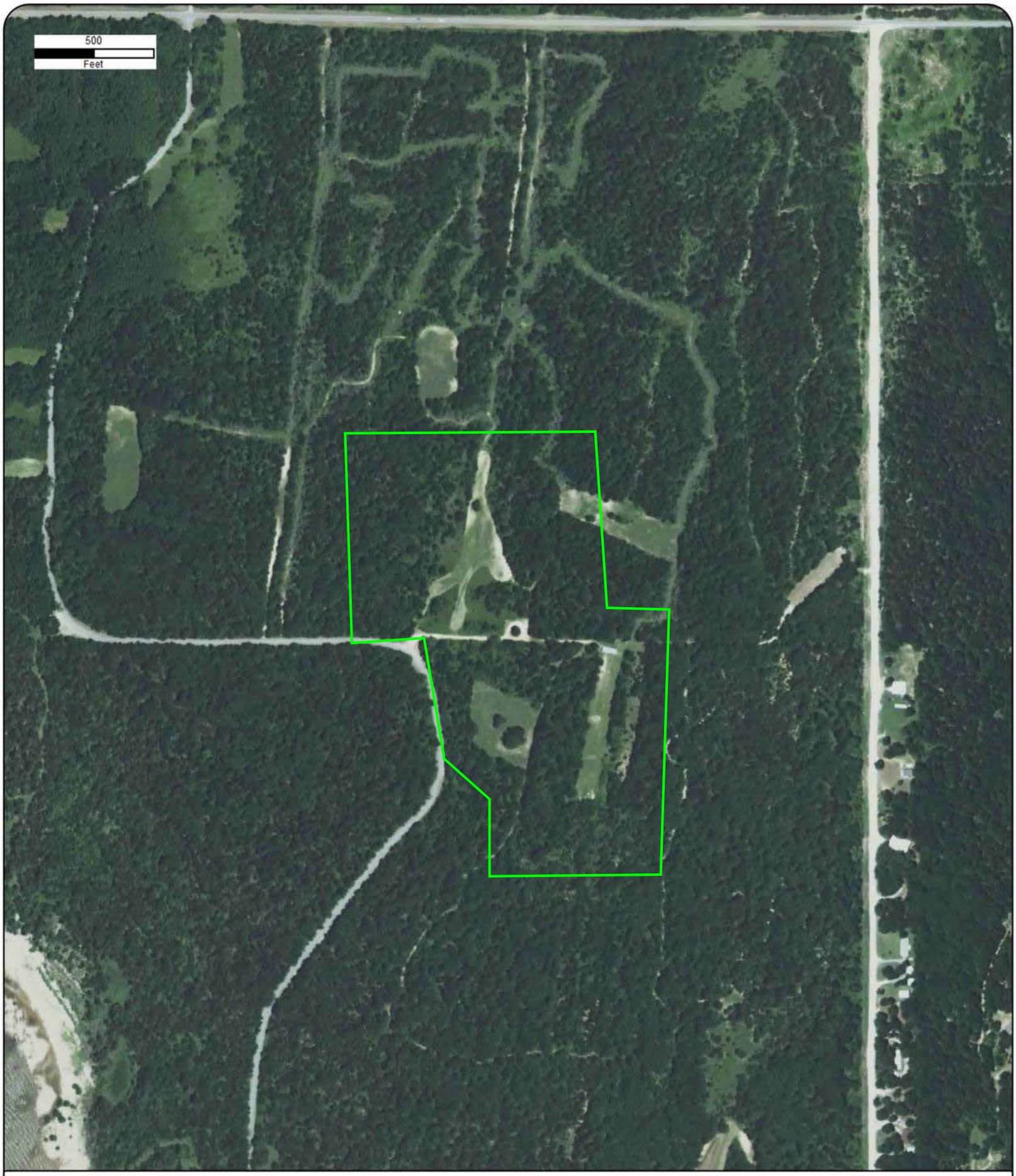
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS



Year: 2015
Source: USDA
Scale: 1" = 500'
Comment:

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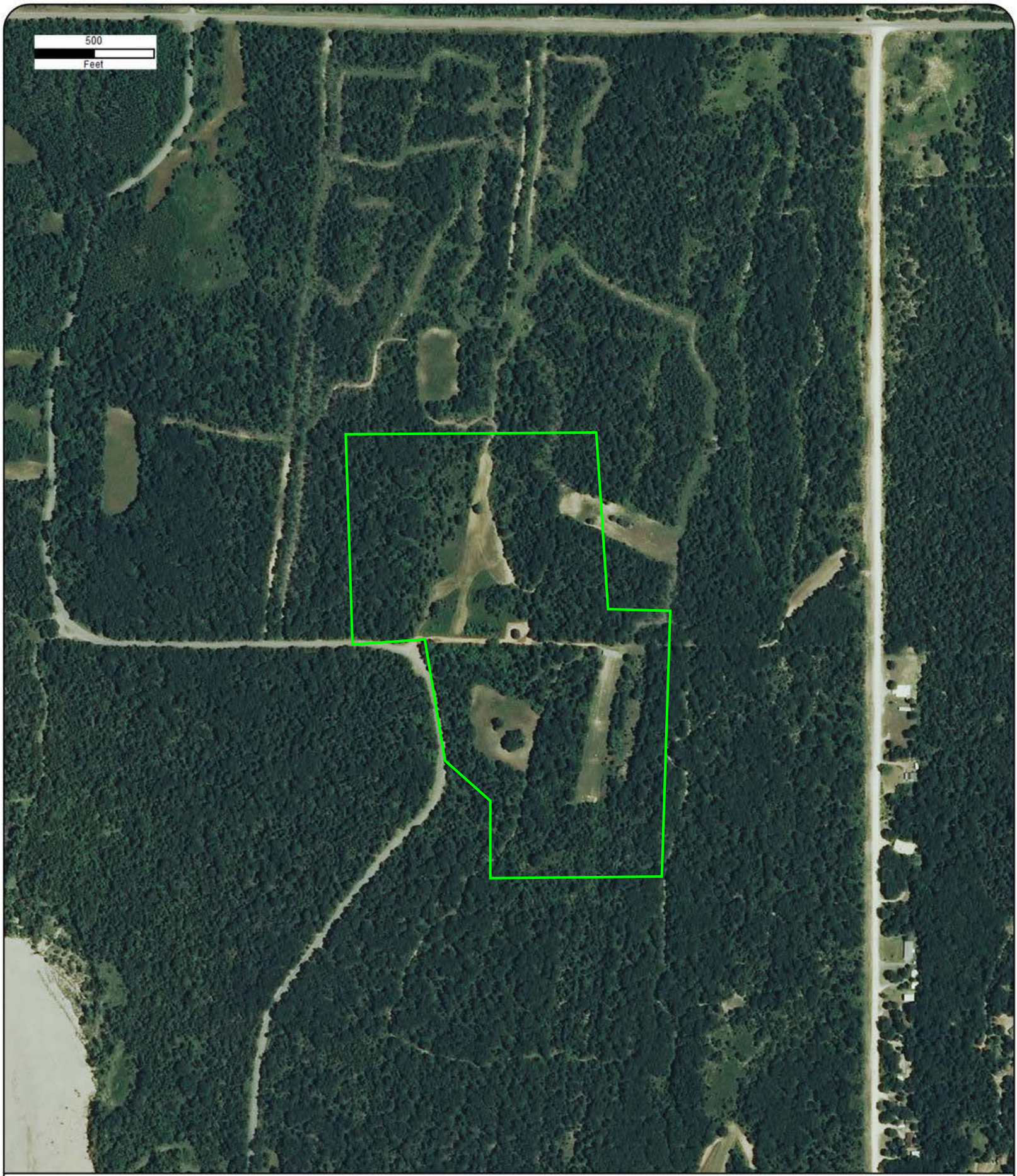
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS



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Approx Center: -98.57062792,36.12313015

Order No: 23090700512

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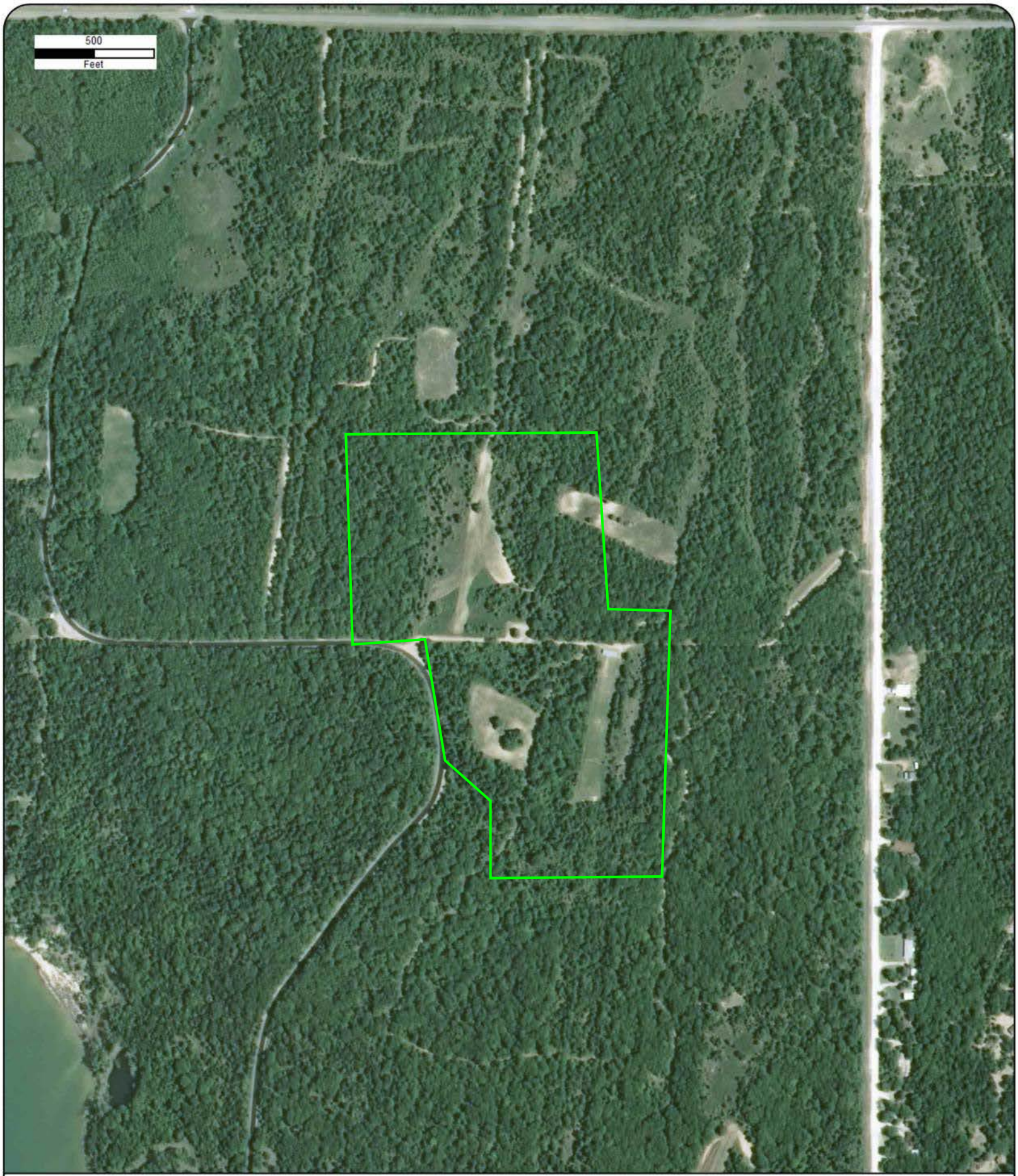

Year: 2010
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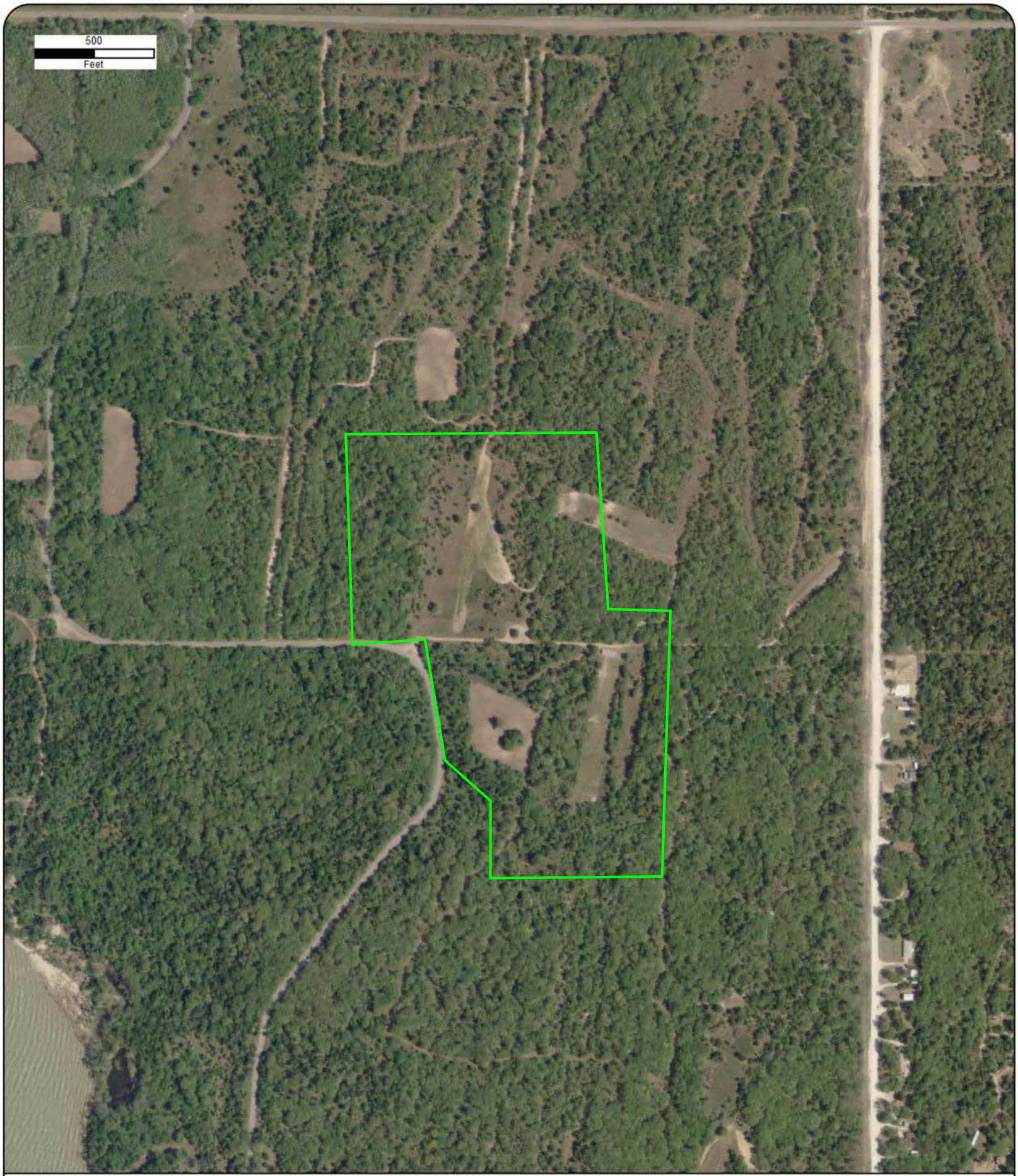
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS



Year: 2008
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Comment:

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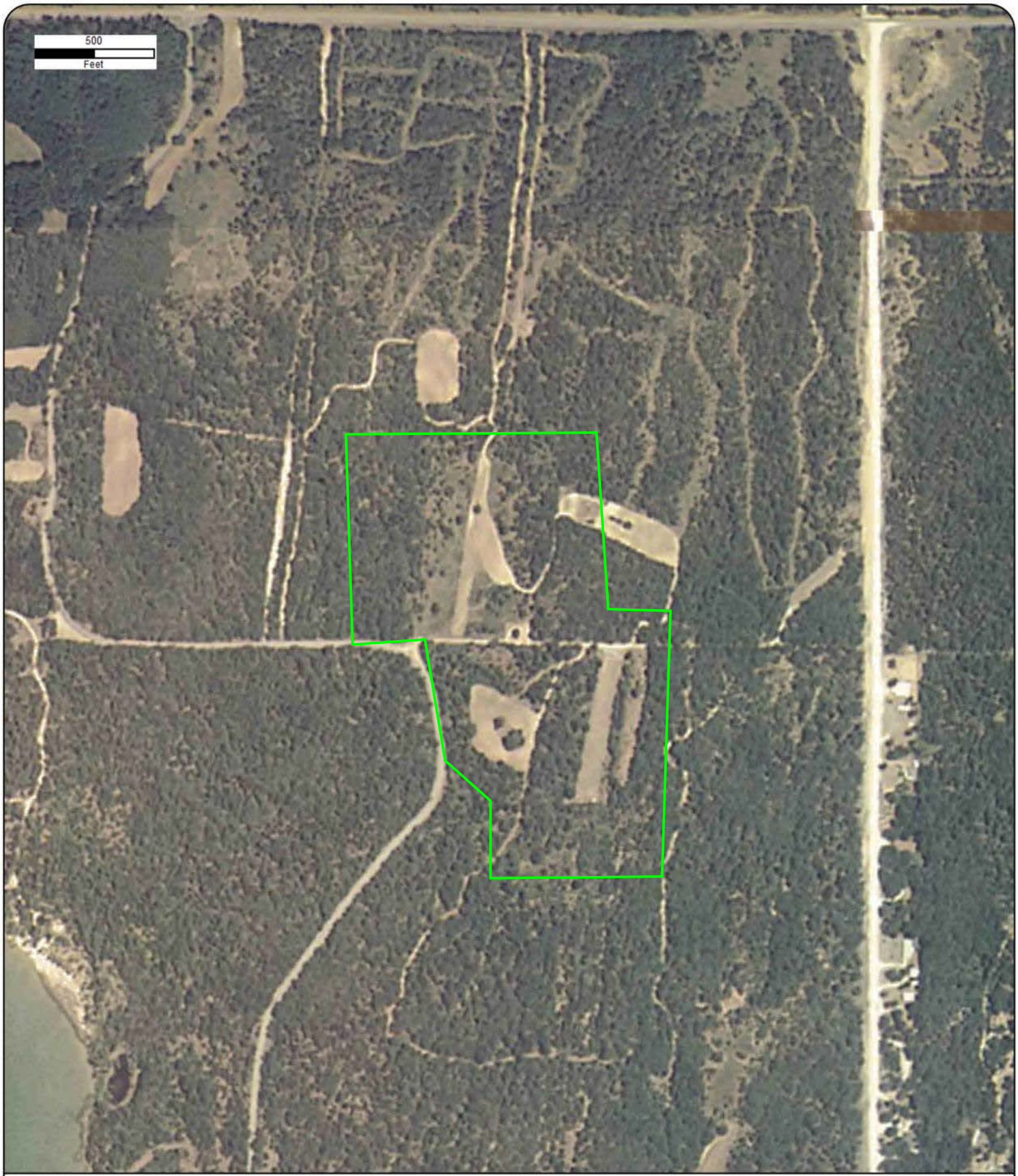
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS



Year: 2006
Source: USDA
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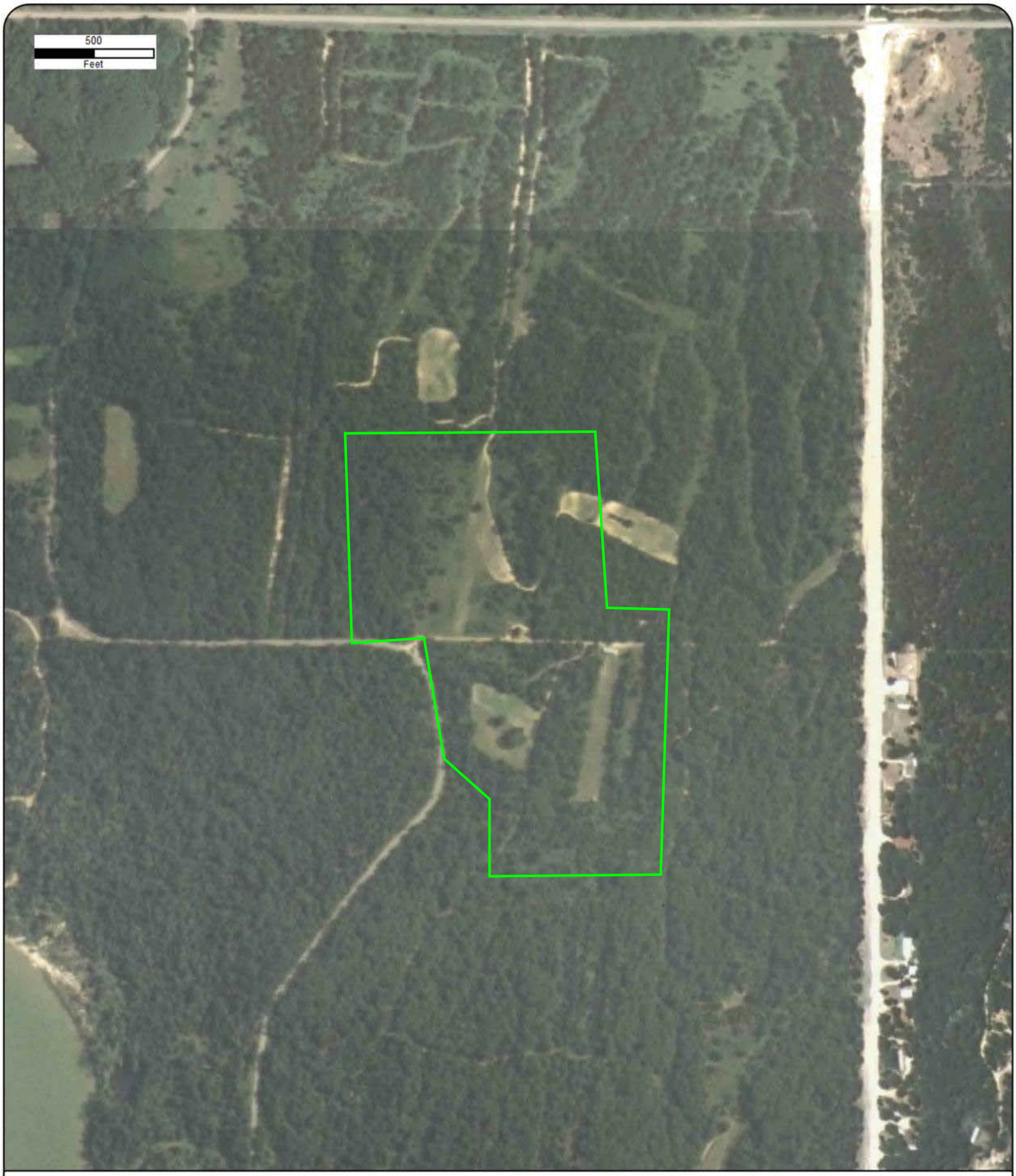
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS



Year: 2005
Source: USDA
Scale: 1" = 500'
Comment:

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Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS

Year: 2004
Source: USDA
Scale: 1" = 500'
Comment:

Address: Canton Shooting Range, Longdale, OK
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

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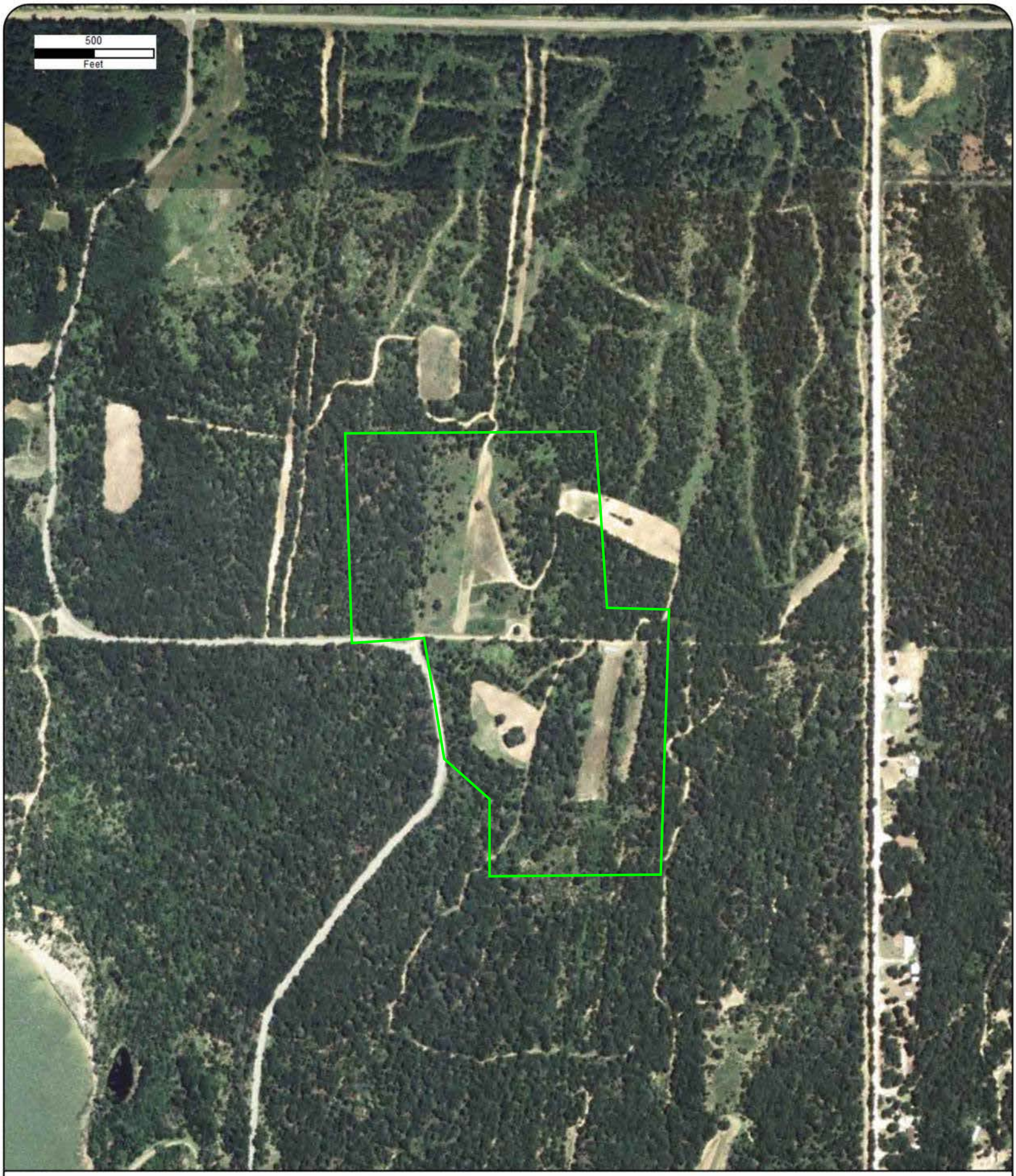

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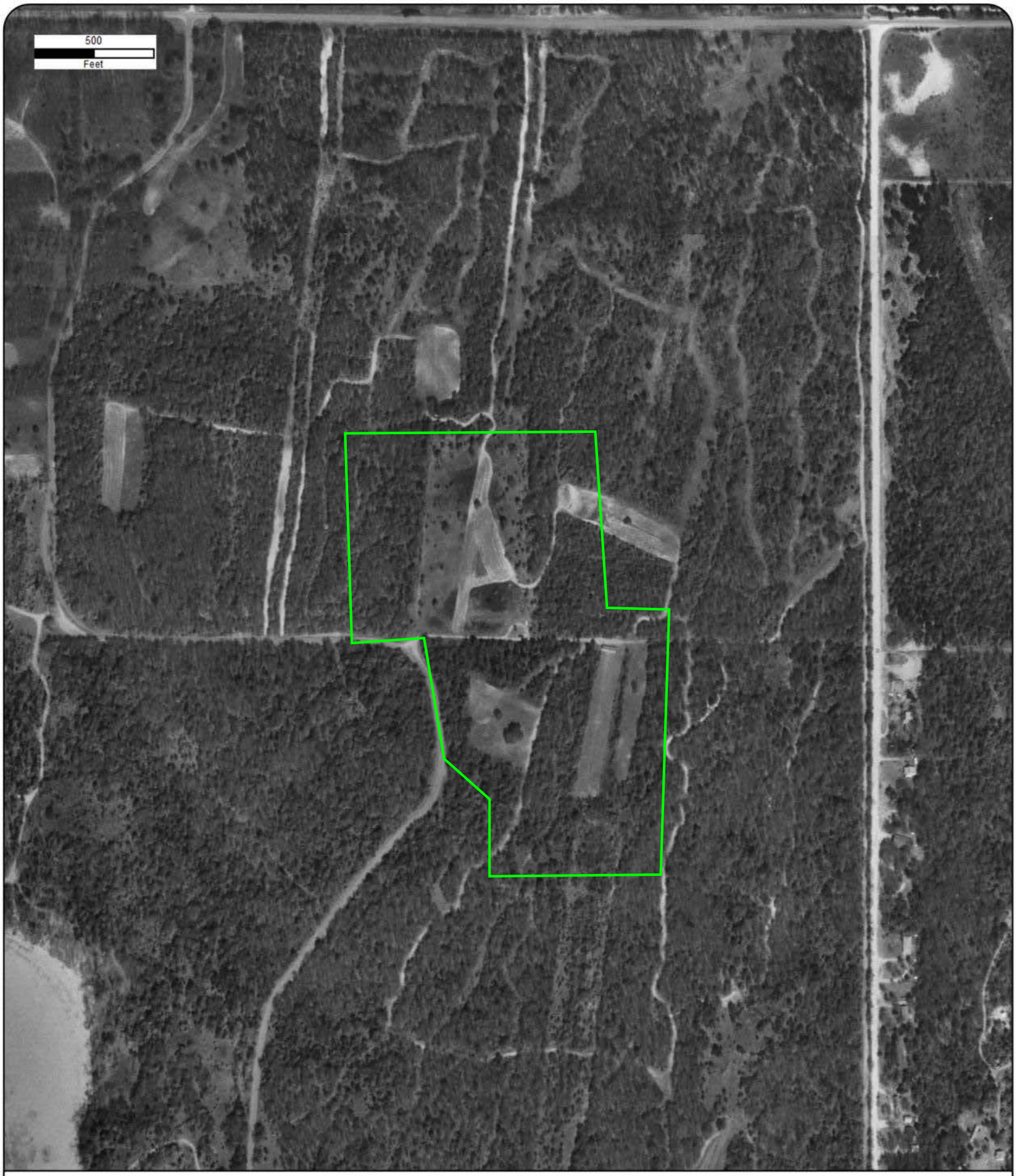

Year: 1995
Source: USGS
Scale: 1" = 500'
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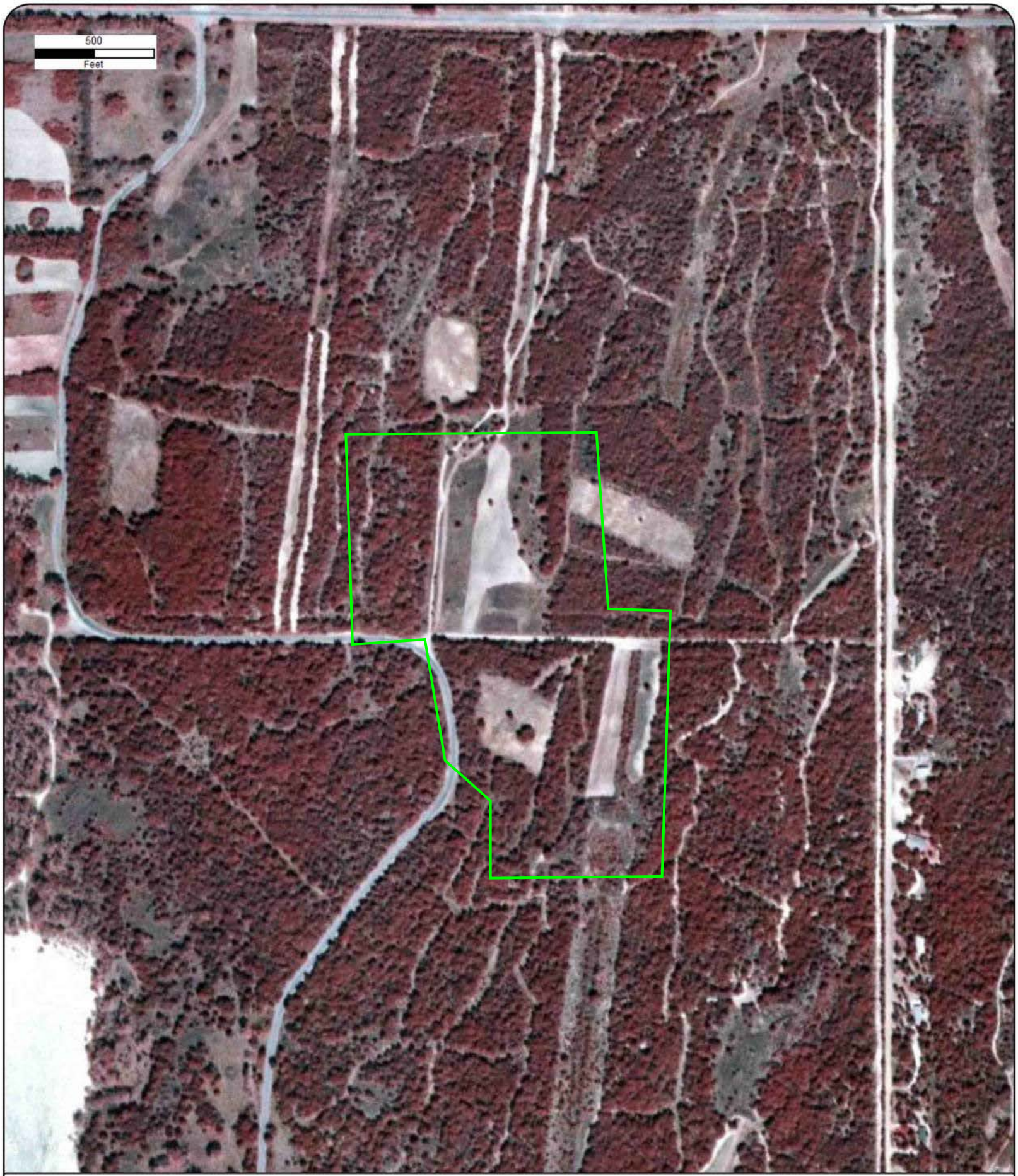
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS



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Approx Center: -98.57062792,36.12313015

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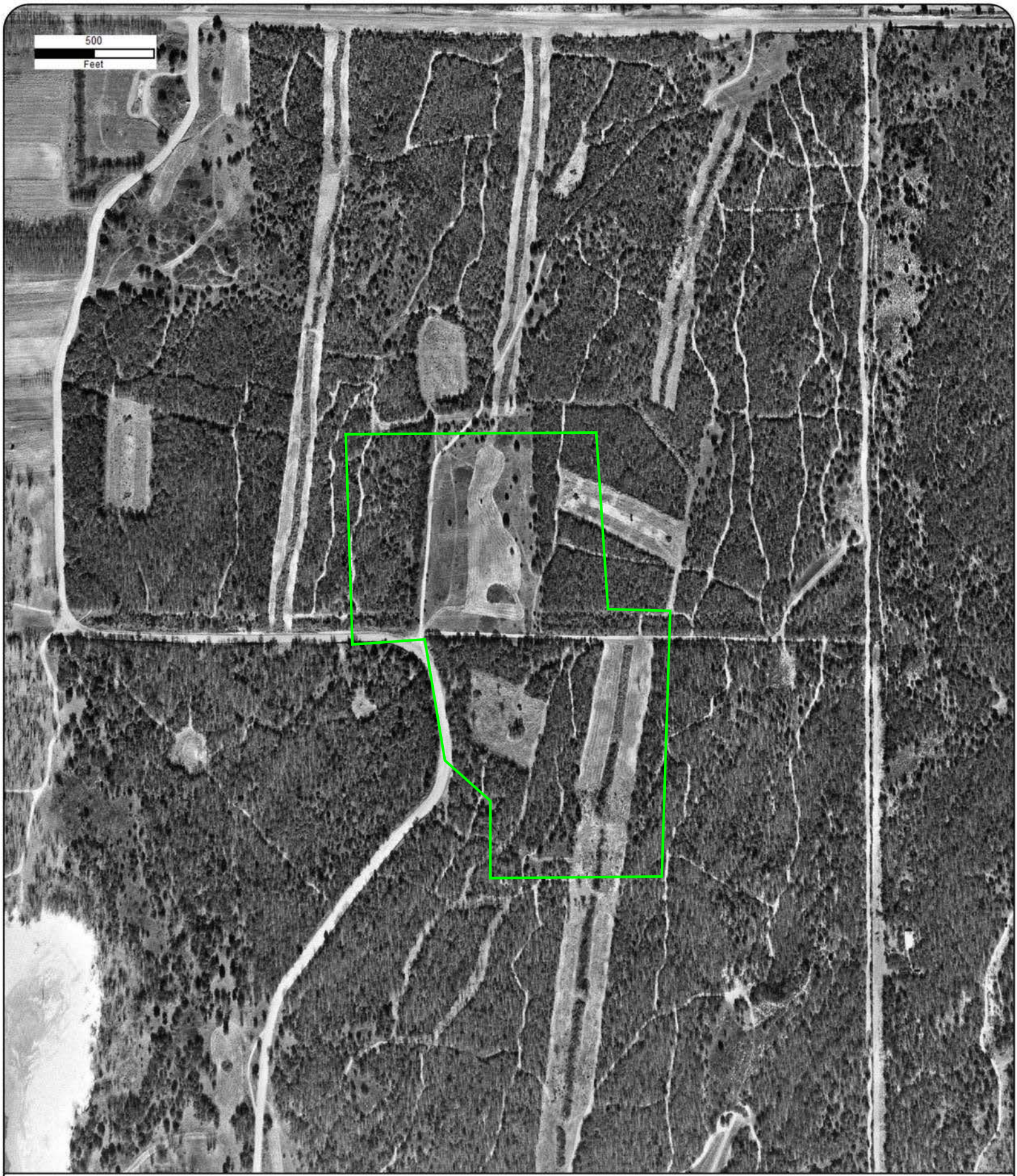

Year: 1971
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Scale: 1" = 500'
Comment:

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Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS

Year: 1964
Source: ASCS
Scale: 1" = 500'
Comment:

Address: Canton Shooting Range, Longdale, OK
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS

Year: 1954
Source: AMS
Scale: 1" = 500'
Comment:

Address: Canton Shooting Range, Longdale, OK
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS

Year: 1951
Source: ASCS
Scale: 1" = 500'
Comment:

Address: Canton Shooting Range, Longdale, OK
Approx Center: -98.57062792,36.12313015

Order No: 23090700512

ERIS

APPENDIX D

Interview Documentation

Owner Questionnaire

Description of Site: Canton Wildlife Management Area (WMA) Shooting Range

Address: The Canton WMA Shooting Range site is east of Canton Lake, approximately one mile southwest of Longdale, Oklahoma and located north and south of Thunder Road Scenic Drive (EW 615) in Section 15, Township 19N, Range 13W.

Interview with:	Thad Potts
Role:	ODWC - Canton WMA Manager
Signature:	
Date:	9/20/23

1. Do you know if any of the documents listed below exist and, if so, whether copies can and will be provided to the environmental professional within reasonable time and cost constraints? Even partial information provided may be useful.

   - Environmental site assessment reports,
   - Environmental compliance audit reports,
   - Environmental permits (for example, solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES permits, underground injection permits),
   - Registrations for underground and/or aboveground storage tanks,
   - Registrations for underground injection systems,
   - Material safety data sheets,
   - Community right-to-know plan,
   - Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; facility response plans, etc.,
   - Reports regarding hydrogeologic conditions on the property or surrounding area,
   - Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens encumbering the property,
   - Hazardous waste generator notices or reports,
   - Geotechnical studies,
   - Risk assessments, and
   - Recorded AULs.

   I am not aware of any of these

2. What is the current use of the property?

   Shooting range

3. What were the past uses of the property? I think the covered pavilion built 1980's
Not sure if it was a shooting range prior to 1980's
Open areas to west & northwest are food plots
No knowledge prior to COE acquisition in 1940?

4. Are you aware of the presence or likely presence of any hazardous substances or petroleum products in, on, or at the assessment site currently or in the past?

Yes ☐ No ☒ Just lead from shooting activities

5. Are you aware of the presence or likely presence of any hazardous substances or petroleum products in, on, or at the assessment site under conditions that pose a material threat of a future release to the environment?

Yes ☐ No ☒

6. Is there any evidence that past operations located on the property used hazardous substances that may have been released into the environment, or that the property may have been used for dumping, landfilling, or disposing of hazardous or radiological materials in the past?

Yes ☐ No ☒

7. Are there now or have there been previously, any registered or unregistered storage tanks (above or underground) located on the property?

Yes ☐ No ☒

8. Are there now or have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property

Yes ☐ No ☒

9. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records or any other items/materials indicating the presence of PCB's?

Yes ☐ No ☒

10. Has fill dirt been brought onto the property that originated from an unknown source or a source known to be contaminated?

Yes ☐ No ☒

11. Are there now or have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

Yes ☐ No ☒

12. Are there now or have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?

Yes ☐ No ☒

13. Have there ever been any chemical spills on the property?

Yes ☐ No ☒

14. Is there any evidence that a landfill, dump, waste pile, wastewater lagoon, or other land disposal activity is currently present on the property?

Yes ☐ No ☒

15. Are any natural ponds/lagoons present onsite?

Yes ☐ No ☒

16. Are any man-made surface impoundments present? This includes lagoons, ponds, basins, and impoundments with raised sides.

Yes ☐ No ☒

17. Are any landfills/dumps (i.e., piles of discarded or abandoned materials) visible or is there reason to believe that a landfill/dump may be present that is not readily visible?

Yes ☐ No ☒

18. Are any mounds or depressions present?

Yes ☐ No ☒

19. Are there any suspected asbestos containing materials present to your knowledge?

Yes ☐ No ☒

20. Is there any evidence of insulation or fire-retardant materials such as pipe wrap and ceiling spray within the buildings on the property?

Yes ☐ No ☒

21. Any additional information can be entered here:

User Questionnaire

Description of Site: Canton Wildlife Management Area (WMA) Shooting Range

Address: The Canton WMA Shooting Range site is east of Canton Lake, approximately one mile southwest of Longdale, Oklahoma and located north and south of Thunder Road Scenic Drive (EW 615) in Section 15, Township 19N, Range 13W.

Interview with: Thad Potts

Role: ODWC - Canton WMA Manager

Signature: _____

Date: 9/20/23

1. Are you aware of Environmental Cleanup Liens against the site?

   Yes ☐ *No* ☒

   If yes, please explain:

2. Do you have actual knowledge of Environmental Liens or Activity Use Limitations (AULs) that may encumber the site?

   Yes ☐ *No* ☒

   If yes, please explain:

3. Are you aware of Specialized Knowledge or Experience that is related to the site or nearby properties?

   Yes ☐ *No* ☒

   If yes, please explain:

4. Do you have actual knowledge of a lower purchase price because contamination is known or believed to be present at the site?

   Yes ☐ *No* ☒

   If yes, please explain:

5. Are you aware of any commonly known or reasonably ascertainable information that is material to a release in connection with the site?

   Yes ☐ *No* ☒

   If yes, please explain:

6. Are you aware of any obvious indicators of contamination at the site?

   Yes ☐ *No* ☒

   If yes, please explain:

From: Philips-Schaap, Megan E.
Sent: Tuesday, October 24, 2023 10:29 AM
To: Verbonitz, Murray J.
Cc: Allison, John P.
Subject: FW: Canton Lead Management Plan
Attachments: Stewardship Plan.doc

Megan Philips-Schaap, QAWB
Garver
918-858-4164

From: Amanda Thomas <amanda.thomas@odwc.ok.gov>
Sent: Tuesday, October 24, 2023 10:23 AM
To: Philips-Schaap, Megan E. <MEPhilips-Schaap@GarverUSA.com>
Subject: Canton Lead Management Plan

Please see attached lead management plan for Canton Shooting Range.

Amanda Thomas
Shooting Range Coordinator, C & E Division

Headquarters

1801 N. Lincoln Blvd.

Oklahoma City, Oklahoma 73105

O: (405) 521-2085

C: (405) 570-1605

wildlifedepartment.com

OKLAHOMA
DEPARTMENT OF
WILDLIFE CONSERVATION

ENVIRONMENTAL STEWARDSHIP PLAN

CANTON WILDLIFE MANAGEMENT AREA
BLAINE CO., OK

MAY 2016

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Section

1.0 INTRODUCTION

The Canton Wildlife Management Area shooting range is located on Thunder Road on the east side of Canton Lake in Blaine County Oklahoma.

1.1 Mission Statement

The Oklahoma Department of Wildlife Conservation's Wildlife Division's Mission Statement is: To manage the state's wildlife resources and their habitats, and provide hunting and other outdoor recreational opportunities, through public lands acquisition and management, cooperative and technical assistance, research and surveys, and education.

Offering shooting ranges to allow hunters opportunity to hone their skills and test equipment for legal wildlife harvest is a benefit of shooting ranges along with recreational shooting for hunters and other target shooters. The tax on sporting arms and ammunition through the Pittman-Robertson Act also is an important funding source for wildlife conservation and shooting ranges allow more opportunity for increasing this important monetary source.

1.2 Purpose

The Purpose of this Environmental Stewardship Plan (i.e., the Plan) is to:

- Identify issues of potential environmental concern that may exist;
- Identify, evaluate, and prioritize appropriate actions to manage these issues;
- List short- and long-term action items and the steps needed for implementation;
- Develop and implementation schedule;
- Identify ways to measure the Plan's success;
- Annually evaluate the progress made towards achieving our environmental stewardship goals;
- etc.

1.3 Goals

- Avoid shooting over and into water and wetlands.
- Prevent off-site migration of lead through groundwater and surface water runoff.
- Conduct lead recovery.
- Discourage ingestion of lead by wildlife.
- Maintain soil pH between 6.5 and 8.5 in the shotfall zone.

2.0 Site Assessment

2.1 Description of Ranges

The Canton WMA shooting range is approximately 200 yds. long and 30 yds. wide. The site consists of a covered shooting area with 3 shooting benches on the north end. There is an earthen backstop/sandhill located 200 yds. to the south. There are generally target frames available at 35 yds, 100 yds, 150 yds, and 200 yds. Visitors usually bring their own targets to attach to frames. The range is moderately used and visitors must park approximately 100 yds. from shooting area at a designated parking area to reduce amount and size of targets and trash. The site is located between Thunder Road and Louies Lane in a post oak – blackjack oak habitat type. The soils are Nobscot fine sand.

2.2 Existing Environmental Conditions

Potential environmental issues or areas of concern have been identified for the shooting range site. The issues, resources which they potentially affect, and possible solutions are summarized in Table 1 below.

Table 1. Potential Environmental Issues, Effects, and Solutions

Environmental Issue	Resources Potentially Effected	Possible Solutions
Lead Mobility Site contains soil classified as moderately rapid permeability. pH may need to be adjusted for maximum effectiveness.	Soil, Water, Humans	Soil testing and maintenance should occur regularly: Test soil pH and add lime and/or phosphate as needed to achieve a pH of 6.5 – 8.5.
Sound	Wildlife Populations, Aesthetics	Wildlife generally acclimate to the sounds.
Operating characteristics of the range such as the number of shooters and amount of lead used need to be studied, so lead reclamation can be scheduled	Soil, Water, Wildlife	Assess range use on an annual basis to determine when lead reclamation should occur.

3.0 Shooting Range Sites

3.1 Action Plan

3.1.1 Potential Management Alternatives

Alternative 1: Achieve all of the environmental goals identified simultaneously.
Alternative 2: Work on one goal this year and address all others later.
Alternative 3: Choose a few Goals that can be implemented immediately and begin planning longer-term alternatives.
Alternative 4: Reshape the sites to reduce water runoff velocity.
Alternative 5: Construct sedimentation basins to reduce lead mobility.
Alternative 6: Test soil pH and apply necessary soil amendments to achieve 6.5 – 8.5 pH.
Alternative 7: Begin planning a lead reclamation project.
Alternative 8: Attempt to vegetate areas of bare soil to reduce lead mobility.

3.1.2 Selection of Management Alternatives

The most logical sequence of site manipulation actions is to determine lead reclamation possibilities and then manage water runoff. Soil tests could be conducted to determine pH and then a plan could be formulated to achieve the preferred pH in conjunction with other planned water management alternatives on the sites. Attempts to vegetate bare soil would be addressed after other soil disturbances were completed.

3.1.3 Alternatives Selected

Based on the stewardship goals of the Plan, the benefits provided, and the current availability of funds, the following priorities were chosen for the current calendar year.

1. Removal of lead
2. Renovation of range to control runoff

These choices were made to address the most pressing concerns, the most easily resolved issues, and to initiate management practices that would create longer-term environmental benefits.

In order to achieve the goals of the Plan, the following actions are necessary.

A) Management Actions: Assign personnel responsible for initiating, conducting, and completing the alternatives selected above.
B) Operational Actions: Collect soil samples for pH analysis and determine best suited vegetative management recommendations.
C) Construction Actions: Do site preparation work; get bids, institute mowing and vegetative management recommendations, etc.

3.2 Plan Implementation

3.2.1 Schedule for Implementation

Winter/Spring: pH survey, obtain vegetation management recommendations.

Summer/Fall: Prepare site for reclamation project, apply lime/fertilizer/seed, etc. (As a rule of thumb, 50 lbs. of lime per 1,000 sq. ft. should raise soil pH by 1 once residual soil acidity is overcome.)

Figures

Figure 1: Site Location Map

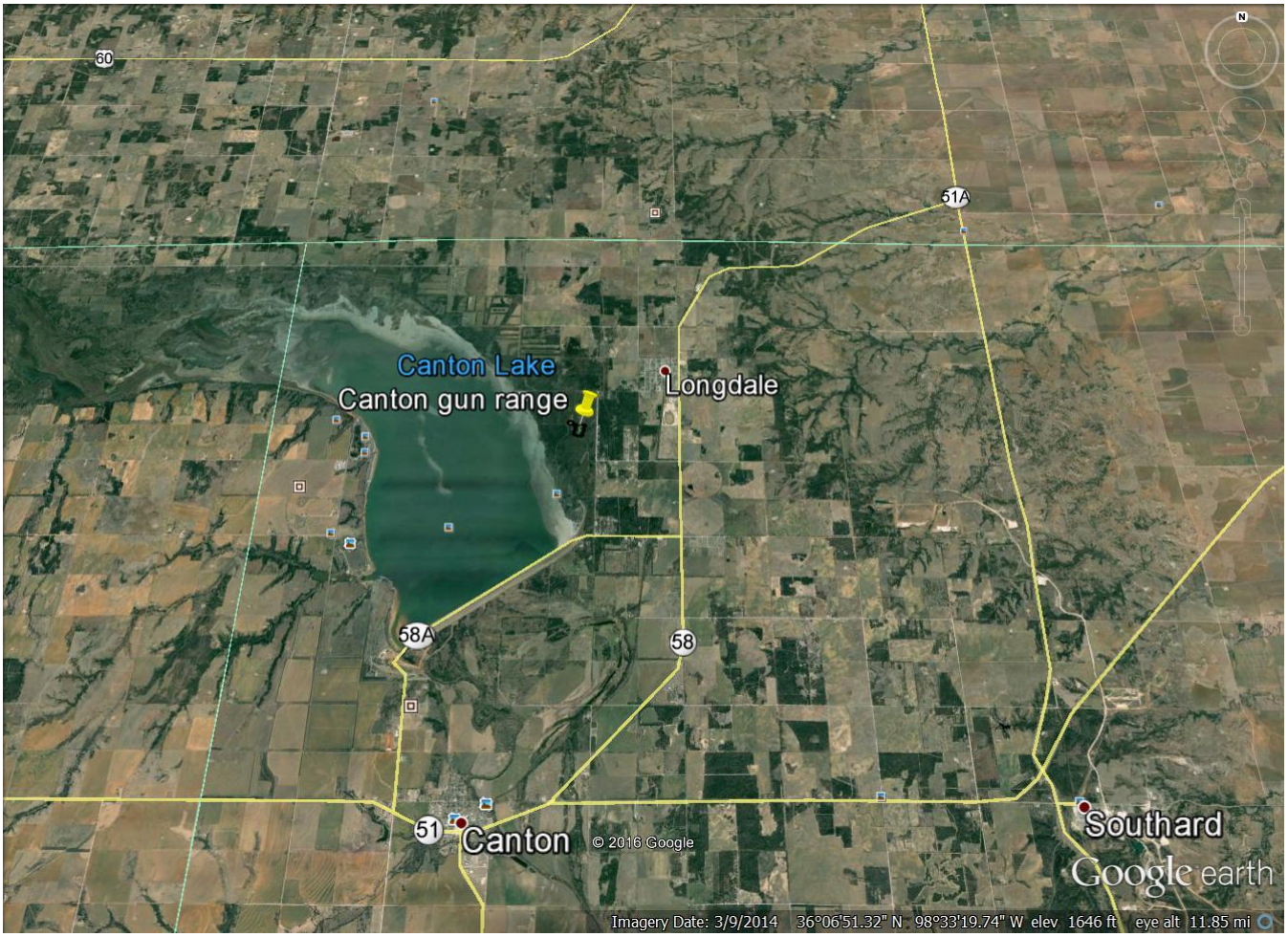

Figure 2: Facilities Diagram

APPENDIX E

Regulatory Database Report

DATABASE REPORT

Project Property:	*Canton Shooting Range* *Canton Shooting Range* *Longdale OK*
Project No:	
Report Type:	*Database Report*
Order No:	*23090700512*
Requested by:	*Garver*
Date Completed:	*September 11, 2023*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

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Executive Summary

Property Information:

Project Property:		*Canton Shooting Range* *Canton Shooting Range Longdale OK*
Project No:		
Coordinates:		
	Latitude:	*36.12313015*
	Longitude:	*-98.57062792*
	UTM Northing:	*3,997,690.88*
	UTM Easting:	*538,638.15*
	UTM Zone:	*UTM Zone 14S*
Elevation:		*1,637 FT*

Order Information:

Order No:	*23090700512*
Date Requested:	*September 7, 2023*
Requested by:	*Garver*
Report Type:	*Database Report*

Historicals/Products:

Aerial Photographs	*Historical Aerials (with Project Boundaries)*
ERIS Xplorer	*ERIS Xplorer*
Excel Add-On	*Excel Add-On*
Physical Setting Report (PSR)	*Physical Setting Report (PSR)*

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard Environmental Records								
Federal								
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	0.5	0	0	0	0	-	0
SEMS	Y	0.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	0.5	0	0	0	0	-	0
ODI	Y	0.5	0	0	0	0	-	0
IODI	Y	0.5	0	0	0	0	-	0
CERCLIS	Y	0.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	0.5	0	0	0	0	-	0
RCRA LQG	Y	0.25	0	0	0	-	-	0
RCRA SQG	Y	0.25	0	0	0	-	-	0
RCRA VSQG	Y	0.25	0	0	0	-	-	0
RCRA NON GEN	Y	0.25	0	0	0	-	-	0
RCRA CONTROLS	Y	0.5	0	0	0	0	-	0
FED ENG	Y	0.5	0	0	0	0	-	0
FED INST	Y	0.5	0	0	0	0	-	0
LUCIS	Y	0.5	0	0	0	0	-	0
NPL IC	Y	0.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.5	0	0	0	0	-	0
FEMA UST	Y	0.25	0	0	0	-	-	0
FRP	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DELISTED FRP	Y	0.25	0	0	0	-	-	0
HIST GAS STATIONS	Y	0.25	0	0	0	-	-	0
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
DOE FUSRAP	Y	1	0	0	0	0	0	0
State								
RECYCLERS	Y	0.5	0	0	0	0	-	0
SHWS	Y	1	0	0	0	0	0	0
SUPERFUND	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	0	0	0	-	0
SWF/LF	Y	0.5	0	0	0	0	-	0
HAZ WASTE	Y	0.5	0	0	0	0	-	0
LUST	Y	0.5	0	0	0	0	-	0
LAST	Y	0.5	0	0	0	0	-	0
LST	Y	0.5	0	0	0	0	-	0
DELISTED LST	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	0	0	-	-	0
TANK OTHER	Y	0.25	0	0	0	-	-	0
AST	Y	0.25	0	0	0	-	-	0
DTNK	Y	0.25	0	0	0	-	-	0
INST	Y	0.5	0	0	0	0	-	0
VCP	Y	0.5	0	0	0	0	-	0
SCAP	Y	0.5	0	0	0	0	-	0
BROWNFIELDS	Y	0.5	0	0	0	0	-	0
BFLD INVSTGN	Y	0.5	0	0	0	0	-	0
BFLD OCC	Y	0.5	0	0	0	0	-	0
Tribal								
INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED INDIAN LST	Y	0.5	0	0	0	0	-	0
DELISTED INDIAN UST	Y	0.25	0	0	0	-	-	0

County ***No County standard environmental record sources available for this State.***

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Additional Environmental Records								
Federal								
FINDS/FRS	Y	PO	0	-	-	-	-	0
TRIS	Y	PO	0	-	-	-	-	0
PFAS NPL	Y	0.5	0	0	0	0	-	0
PFAS FED SITES	Y	0.5	0	0	0	0	-	0
PFAS SSEHRI	Y	0.5	0	0	0	0	-	0
ERNS PFAS	Y	0.5	0	0	0	0	-	0
PFAS NPDES	Y	0.5	0	0	0	0	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0
PFAS WATER	Y	0.5	0	0	0	0	-	0
PFAS TSCA	Y	0.5	0	0	0	0	-	0
PFAS E-MANIFEST	Y	0.5	0	0	0	0	-	0
PFAS IND	Y	0.5	0	0	0	0	-	0
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0
TSCA	Y	0.125	0	0	-	-	-	0
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0
FUDS MRS	Y	1	0	0	0	0	0	0
FORMER NIKE	Y	1	0	0	0	0	0	0
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	0.25	0	0	0	-	-	0
SMCRA	Y	1	0	0	0	0	0	0
MRDS	Y	1	0	0	0	0	0	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
LM SITES	Y	1	0	0	0	0	0	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
CONSENT DECREES	Y	0.25	0	0	0	-	-	0
AFS	Y	PO	0	-	-	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCBT	Y	0.5	0	0	0	0	-	0
PCB	Y	0.5	0	0	0	0	-	0
State								
DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
AIRS FACILITIES	Y	0.25	0	0	0	-	-	0
OK COMPLAINT	Y	0.125	0	0	-	-	-	0
ECLS	Y	0.125	0	0	-	-	-	0
TIER 2	Y	0.125	0	0	-	-	-	0
UIC	Y	1	0	0	0	0	0	0
Tribal	***No Tribal additional environmental record sources available for this State.***							
County	***No County additional environmental record sources available for this State.***							
Total:			0	0	0	0	0	0

**** PO – Property Only***
**** 'Property and adjoining properties' database search radii are set at 0.25 miles.***

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number

No records found in the selected databases for the project property.

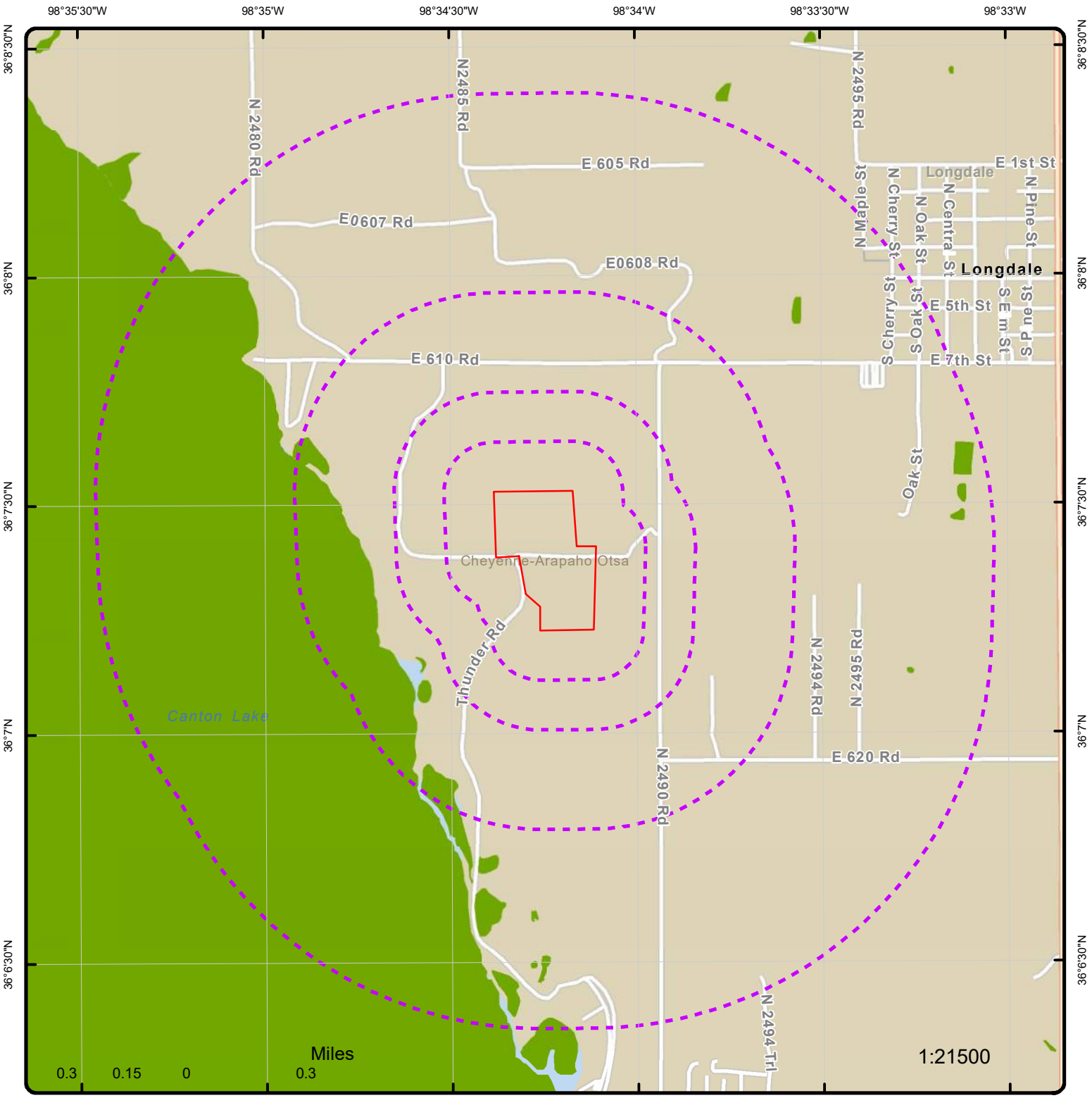
Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number

No records found in the selected databases for the surrounding properties.

Executive Summary: Summary by Data Source

No records found in the selected databases for the project property or surrounding properties.

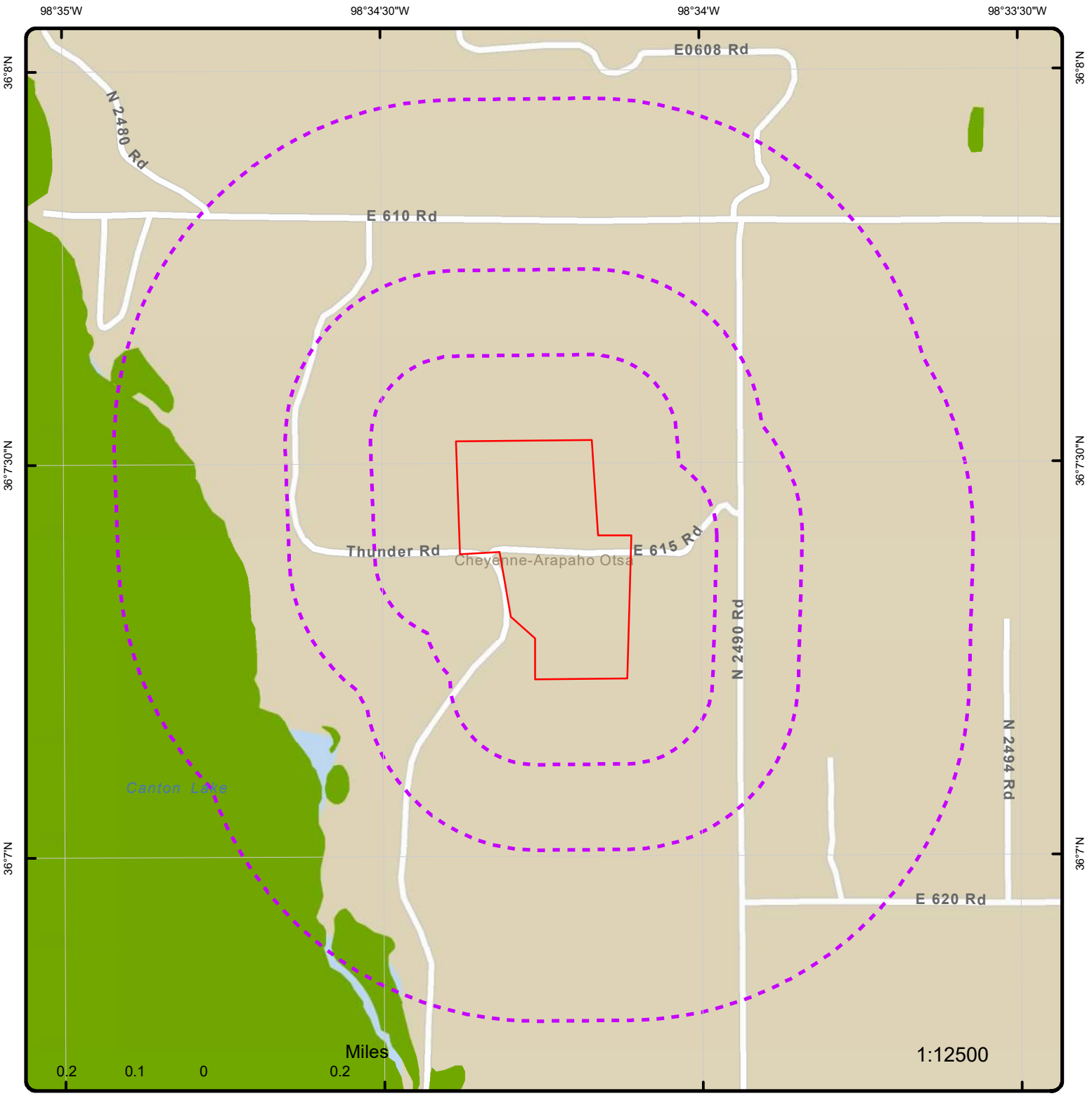


Map: 1.0 Mile Radius

Order Number: 23090700512

Address: Canton Shooting Range, Longdale, OK

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

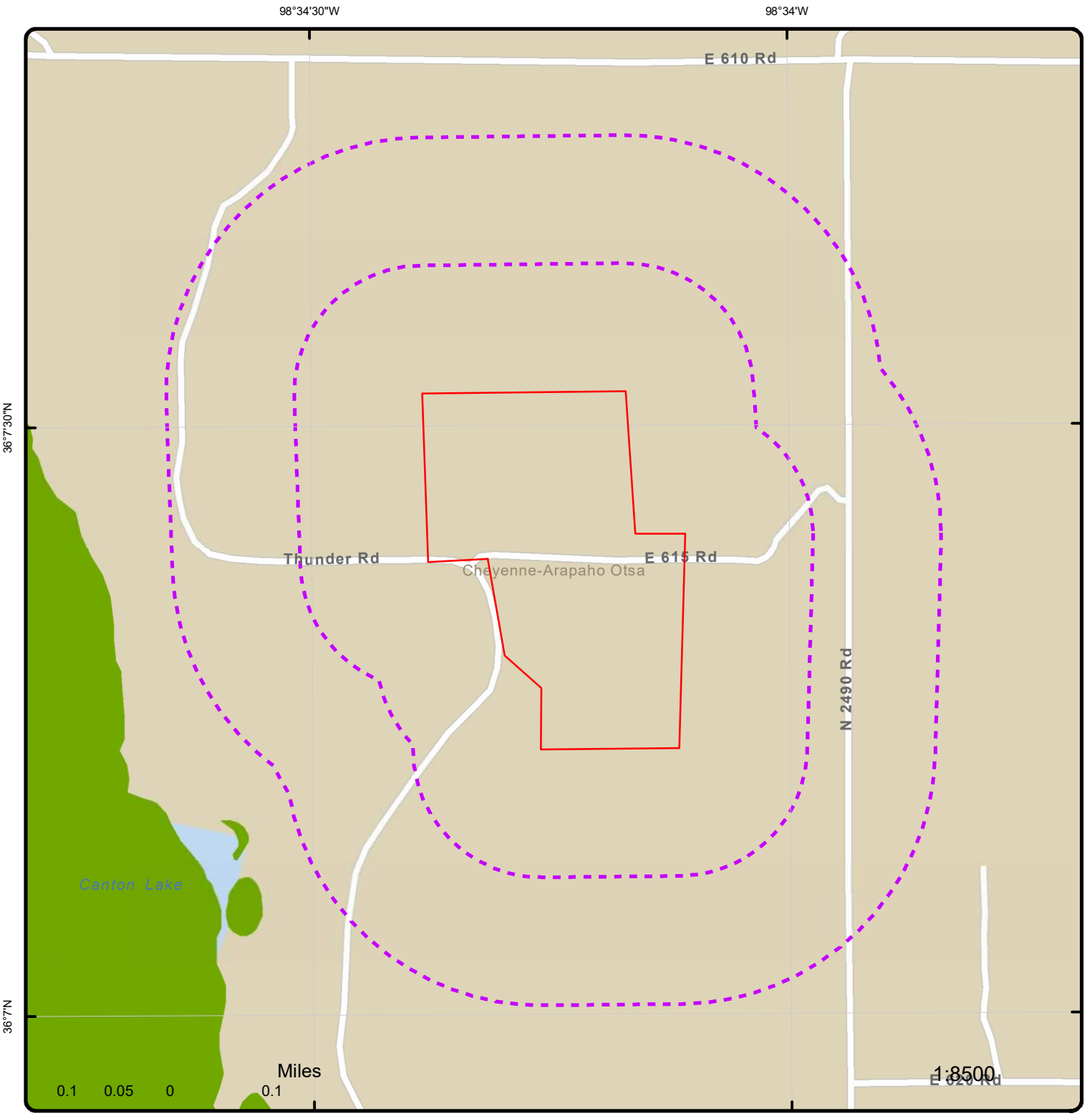


Map: 0.5 Mile Radius

Order Number: 23090700512

Address: Canton Shooting Range, Longdale, OK

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)



Map: 0.25 Mile Radius

Order Number: 23090700512

Address: Canton Shooting Range, Longdale, OK

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

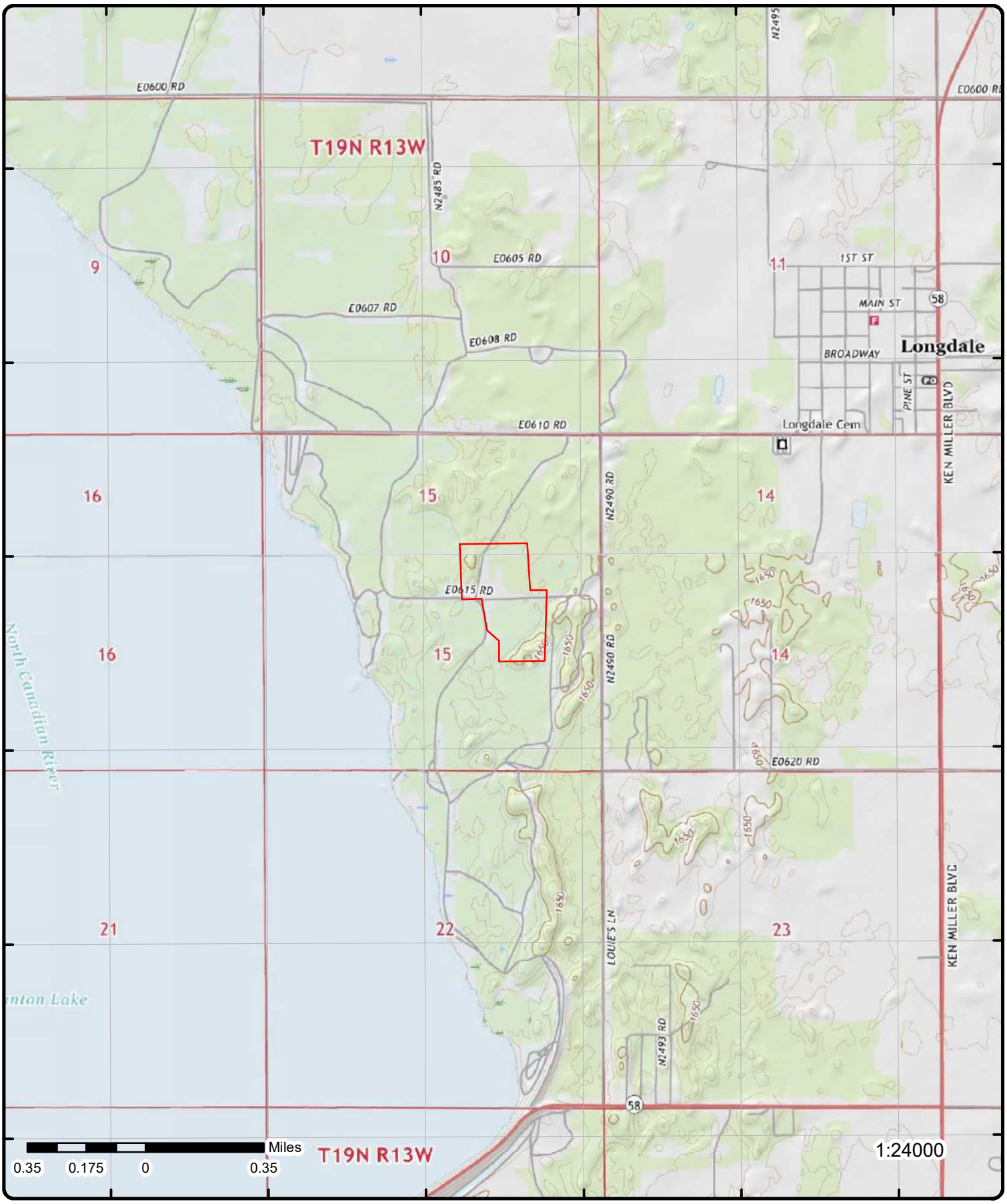
Source: © 2021 ESRI StreetMap Premium

Aerial **Year: 2022**

Order Number: 23090700512

Address: Canton Shooting Range, Longdale, OK

Source: ESRI World Imagery



Topographic Map

Year: 2018

Order Number: 23090700512

Address: Canton Shooting Range, OK

Quadrangle(s): Longdale OK, Canton OK

Source: USGS Topographic Map

Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

No records found in the selected databases for the project property or surrounding properties.

Unplottable Summary

Total: 0 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID

No unplottable records were found that may be relevant for the search criteria.

Unplottable Report

No unplottable records were found that may be relevant for the search criteria.

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13 and E1527-21, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

National Priority List: NPL

Sites on the United States Environmental Protection Agency (EPA)'s National Priorities List of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: May 25, 2023

National Priority List - Proposed: PROPOSED NPL

Sites proposed by the United States Environmental Protection Agency (EPA), the state agency, or concerned citizens for addition to the National Priorities List (NPL) due to contamination by hazardous waste and identified by the EPA as a candidate for cleanup because it poses a risk to human health and/or the environment. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: May 25, 2023

Deleted NPL: DELETED NPL

Sites deleted from the United States Environmental Protection Agency (EPA)'s National Priorities List. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: May 25, 2023

SEMS List 8R Active Site Inventory: SEMS

The U.S. Environmental Protection Agency's (EPA) Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted. This data includes SEMS sites from the List 8R Active file as well as applicable sites from the SEMS GIS/REST file layer obtained from EPA's Facility Registry Service.

Government Publication Date: Jul 26, 2023

SEMS List 8R Archive Sites: SEMS ARCHIVE

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. This data includes sites from the List 8R Archived site file.

Government Publication Date: Jul 26, 2023

Inventory of Open Dumps, June 1985: ODI

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

EPA Report on the Status of Open Dumps on Indian Lands: IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS: CERCLIS

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA). This database was provided by the United States Environmental Protection Agency (EPA). Refer to SEMS LIEN as the current data source for Superfund Liens.

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action: RCRA CORRACTS

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Jul 10, 2023

RCRA non-CORRACTS TSD Facilities: RCRA TSD

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by RCRA.

Government Publication Date: Jul 10, 2023

RCRA Generator List: RCRA LQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Jul 10, 2023

RCRA Small Quantity Generators List: RCRA SQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Jul 10, 2023

RCRA Very Small Quantity Generators List: RCRA VSQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

Government Publication Date: Jul 10, 2023

RCRA Non-Generators: RCRA NON GEN

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Jul 10, 2023

RCRA Sites with Controls: RCRA CONTROLS

List of Resource Conservation and Recovery Act (RCRA) facilities with institutional controls in place. RCRA gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Government Publication Date: Jul 10, 2023

Federal Engineering Controls-ECs: FED ENG

This list of Engineering controls (ECs) is provided by the United States Environmental Protection Agency (EPA). ECs encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. The EC listing includes remedy component data from Superfund decision documents issued in fiscal years 1982-2021 for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Jun 22, 2023

Federal Institutional Controls- ICs: FED INST

This list of Institutional controls (ICs) is provided by the United States Environmental Protection Agency (EPA). ICs are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site. The IC listing includes remedy component data from Superfund decision documents issued in fiscal years 1982-2021 for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Jun 22, 2023

Land Use Control Information System: LUCIS

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

Government Publication Date: Sep 1, 2006

Institutional Control Boundaries at NPL sites: NPL IC

Boundaries of Institutional Control areas at sites on the United States Environmental Protection Agency (EPA)'s National Priorities List, or Proposed or Deleted, made available by the EPA's Shared Enterprise Geodata and Services (SEGS). United States Environmental Protection Agency (EPA)'s National Priorities List of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. Institutional controls are non-engineered instruments such as administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.

Government Publication Date: May 25, 2023

Emergency Response Notification System: ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS

Database of oil and hazardous substances spill reports made available by the United States Coast Guard National Response Center (NRC). The NRC fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. These data contain initial incident data that has not been validated or investigated by a federal/state response agency.

Government Publication Date: Apr 3, 2023

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database: FED BROWNFIELDS

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This data is provided by the United States Environmental Protection Agency (EPA) and includes Brownfield sites from the Cleanups in My Community (CIMC) web application.

Government Publication Date: Sep 13, 2022

FEMA Underground Storage Tank Listing: FEMA UST

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

Government Publication Date: Dec 31, 2017

Facility Response Plan: FRP

This listing contains facilities that have submitted Facility Response Plans (FRPs) to the U.S. Environmental Protection Agency (EPA). Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit FRPs. Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments. This listing includes FRP facilities from an applicable EPA FOIA file and Homeland Infrastructure Foundation-Level Data (HIFLD) data file.

Government Publication Date: May 2, 2023

Delisted Facility Response Plans: DELISTED FRP

Facilities that once appeared in - and have since been removed from - the list of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

Government Publication Date: May 2, 2023

Historical Gas Stations: HIST GAS STATIONS

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

Government Publication Date: Jul 1, 1930

Petroleum Refineries: REFN

List of petroleum refineries from the U.S. Energy Information Administration (EIA) Refinery Capacity Report. Includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and other U.S. possessions. Survey locations adjusted using public data.

Government Publication Date: Aug 30, 2022

Petroleum Product and Crude Oil Rail Terminals: BULK TERMINAL

List of petroleum product and crude oil rail terminals made available by the U.S. Energy Information Administration (EIA). Includes operable bulk petroleum product terminals located in the 50 States and the District of Columbia with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil that were active between 2017 and 2018. Petroleum product terminals comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings. Survey locations adjusted using public data.

Government Publication Date: Jun 29, 2022

LIEN on Property: SEMS LIEN

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) provides Lien details on applicable properties, such as the Superfund lien on property activity, the lien property information, and the parties associated with the lien.

Government Publication Date: Jul 26, 2023

Superfund Decision Documents: SUPERFUND ROD

This database contains a list of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include completed Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD) for active and archived sites stored in the Superfund Enterprise Management System (SEMS), along with other associated memos and files. This information is maintained and made available by the U.S. Environmental Protection Agency.

Government Publication Date: Mar 23, 2023

Formerly Utilized Sites Remedial Action Program: DOE FUSRAP

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

Government Publication Date: Mar 4, 2017

State

Recyclers: RECYCLERS

The Oklahoma Department of Environmental Quality provides this listing of Statewide Oklahoma Recyclers.

Government Publication Date: Jul 10, 2019

Land Protection Division Remediation Sites: SHWS

A list of remediation sites published in Oklahoma Department of Environmental Quality's (DEQ) Land Reports from 2001 to 2010. These Land Reports have been made available by Oklahoma DEQ. This database is state equivalent CERCLIS.

Government Publication Date: Dec 31, 2010

Land Protection Division Super Fund Program: SUPERFUND

A list of Superfund sites in the state of Oklahoma. Oklahoma Department of Environmental Quality (DEQ) works with EPA to address these uncontrolled hazardous waste sites in Oklahoma. This list has been made available by Oklahoma DEQ. This database is state equivalent CERCLIS.

Government Publication Date: Apr 12, 2023

Solid Waste Facilities: SWF/LF

This list contains active, permitted solid waste sites for the state of Oklahoma.These are the permitted solid waste sites located in Oklahoma as monitored by the Department of Environmental Quality (DEQ). These include current transfer stations, non-hazardous industrial waste landfills, sanitary landfills, construction/demolition landfills, municipal solid waste landfills, municipal solid waste incinerators, regulated medical waste processing facilities, compost facilities, and waste tire processing facilities.
Government Publication Date: Oct 27, 2022

Permitted Solid Waste Disposal & Processing Facilities: SWF/LF

List of solid waste disposal sites including storage units, transfer facilities, recycling units and treatment units permitted by the Oklahoma Department of Environmental Quality (DEQ). Public Land Survey System (PLSS) locations provided by the source are subject to accuracy limitations inherent to the PLSS system. This list is no longer maintained by the DEQ.
Government Publication Date: Mar 18, 2013

Hazardous Waste Permit sites: HAZ WASTE

A list of facilities in Oklahoma with hazardous waste permits. These sites include hazardous waste landfill disposal sites, facilities that store hazardous wastes, hazardous waste transfer facilities, and certain types of recycling or treatment facilities. This list has been made available by Oklahoma Department of Environmental Quality.
Government Publication Date: Mar 20, 2020

Leaking Underground Storage Tanks: LUST

Locations of Leaking Underground Storage Tanks as identified in the Oklahoma Corporation Commission's (OCC) Underground Storage Tanks database. This list includes all tanks which currently or historically had a reported leaking problem. This list has been made available by OCC.
Government Publication Date: Mar 22, 2023

Leaking Aboveground Storage Tanks: LAST

Locations of Leaking Aboveground Storage Tanks as identified in the Oklahoma Corporation Commission's (OCC) Aboveground Storage Tanks database. This list includes all tanks which currently or historically had a reported leaking problem. This list has been made available by OCC.
Government Publication Date: Mar 22, 2023

Leaking Storage Tank: LST

Locations of Leaking Storage Tanks as identified and maintained in the Oklahoma Corporation Commission's (OCC) Storage Tanks database. These incidents do not indicate whether the tanks are AST or UST from the 'TankType'.
Government Publication Date: Mar 22, 2023

Delisted Leaking Storage Tanks: DELISTED LST

This database contains a list of closed leaking storage tank sites that were removed from the Oklahoma Corporation Commission's (OCC) Storage Tanks database.
Government Publication Date: Mar 22, 2023

Underground Storage Tank Listing: UST

List of Underground Storage Tank facilities registered with and/or inspected by the Oklahoma Corporation Commission (OCC) Petroleum Storage Tank Division. This list has been made available by OCC Petroleum Storage Tank Division.
Government Publication Date: Mar 22, 2023

OCC Other Petroleum Storage Tank Sites: TANK OTHER

This is a list of Oklahoma facilities that are not associated with any registered tanks (i.e., historical facilities, brand new facilities awaiting tank installation, etc). Made available by the Oklahoma Corporation Commission (OCC).
Government Publication Date: Mar 22, 2023

Aboveground Storage Tanks: AST

List of Aboveground Storage Tank facilities registered with and/or inspected by the Oklahoma Corporation Commission (OCC) Petroleum Storage Tank Division. This list has been made available by OCC Petroleum Storage Tank Division.
Government Publication Date: Mar 22, 2023

Delisted Storage Tanks: DTNK

A list of sites that once appeared on - and have since been removed from - the list of storage tanks made available by the Oklahoma Corporation Commission (OCC) Petroleum Storage Tank Division.
Government Publication Date: Mar 22, 2023

Institutional Control Sites: INST

Remediation sites in Oklahoma with Institutional Control tracked by the Remediation Unit of the Land Protection Division of the Oklahoma Department of Environmental Quality (DEQ). Oklahoma state statute 27A O.S. § 2-7-123(C) requires the Department of Environmental Quality place notices of remediation on properties where risk based cleanup has occurred. This list has been made available by Oklahoma DEQ.

Government Publication Date: Sep 6, 2023

Voluntary Cleanup Site Inventory: VCP

List of sites that are currently participating in or have participated in the Oklahoma Department of Environmental Quality's (DEQ) Voluntary Cleanup Program (VCP). VCP includes sites range from old oil refineries with multiple sources of contamination that affect hundreds of acres to sites less than an acre with a single source of contamination. This list has been made available by Oklahoma DEQ.

Government Publication Date: Oct 27, 2022

Site Cleanup Assistance Program: SCAP

List of sites that have participated in the Oklahoma Department of Environmental Quality's (DEQ) Site Cleanup Assistance Program. This program remediates abandoned hazardous waste sites and closed armories around the state. This list has been made available by OCC.

Government Publication Date: Aug 25, 2023

Brownfield Sites: BROWNFIELDS

List of sites which are currently participating in or have participated in the Oklahoma Department of Environmental Quality (Oklahoma DEQ) Brownfields Program. This list has been made available by Oklahoma DEQ.

Government Publication Date: May 30, 2023

Historical and Potential Brownfields Listing: BFLD INVSTGN

This list contains sites that were either once managed under or have potential of joining Oklahoma Department of Environmental Quality (DEQ) Brownfields Program. The list is made available by Oklahoma DEQ Land Protection Division. The list contains Armory Sites, Certification List, Grantees List and TBA List.

Government Publication Date: Jun 30, 2021

Oklahoma Corporation Commission Brownfields Sites: BFLD OCC

List of current and historical sites associated with the Oklahoma Corporation Commission (OCC) Brownfields program and Oklahoma Energy Resources Board (OERB) well-site cleanup program, made available by the OCC. Contains sites that are qualified for the Brownfields program, enrolled in the program, withdrawn from the program, and closed after completing all necessary action. Closed and Withdrawn sites list is current as of August 2013.

Government Publication Date: Dec 23, 2020

Tribal

Leaking Underground Storage Tanks on Tribal/Indian Lands: INDIAN LUST

This list of leaking underground storage tanks (LUSTs) on Tribal/Indian Lands in Region 6, which includes Oklahoma, is provided by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 26, 2023

Underground Storage Tanks on Tribal/Indian Lands: INDIAN UST

This list of underground storage tanks (USTs) on Tribal/Indian Lands in Region 6, which includes Oklahoma, is provided by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 26, 2023

Delisted Tribal Leaking Storage Tanks: DELISTED INDIAN LST

Leaking Underground Storage Tank (LUST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian LUST lists made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 26, 2023

Delisted Tribal Underground Storage Tanks: DELISTED INDIAN UST

Underground Storage Tank (UST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian UST lists made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 26, 2023

County

No County standard environmental record sources available for this State.

Additional Environmental Record Sources

Federal

Facility Registry Service/Facility Index: FINDS/FRS

The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the Environmental Protection Agency (US EPA).

Government Publication Date: Aug 18, 2022

Toxics Release Inventory (TRI) Program: TRIS

The U.S. Environmental Protection Agency's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of toxic chemicals from U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. There are currently 770 individually listed chemicals and 33 chemical categories covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual reporting forms for each chemical. Note that the TRI chemical list does not include all toxic chemicals used in the U.S. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Oct 19, 2022

PFOA/PFOS Contaminated Sites: PFAS NPL

This list of National Priorities List (NPL) and related Superfund Alternative Agreement (SAA) sites where PFOA or PFOS contaminants have been detected in water and/or soil is provided by the U.S. Environmental Protection Agency (EPA). EPA Disclaimer with FOIA file: Inclusion on the list does not necessarily mean that drinking water has been affected, nor does inclusion mean that anyone at the site has been exposed or is at risk for detrimental health effects.

Government Publication Date: Jun 15, 2023

Federal Agency Locations with Known or Suspected PFAS Detections: PFAS FED SITES

List of Federal agency locations with known or suspected detections of Per- and Polyfluoroalkyl Substances (PFAS), made available by the U.S. Environmental Protection Agency (EPA) in their PFAS Analytic Tools data. EPA outlines that these data are gathered from several federal entities, such as the Federal Superfund program, Department of Defense (DOD), National Aeronautics and Space Administration, Department of Transportation, and Department of Energy. The dates this data was extracted for the PFAS Analytic Tools range from March 2022 to April 2023. Sites on this list do not necessarily reflect the source/s of PFAS contamination and detections do not indicate level of risk or human exposure at the site. Agricultural notifications in this data are limited to DOD sites only. At this time, the EPA is aware that this list is not comprehensive of all Federal agencies.

Government Publication Date: Apr 24, 2023

SSEHRI PFAS Contamination Sites: PFAS SSEHRI

This PFAS Contamination Site Tracker database is compiled by the Social Science Environmental Health Research Institute (SSEHRI) at Northeastern University. According to the SSEHRI, the database records qualitative and quantitative data from each known site of PFAS contamination, including timeline of discovery, sources, levels, health impacts, community response, and government response. The goal of this database is to compile information and support public understanding of the rapidly unfolding issue of PFAS contamination. All data presented was extracted from government websites, news articles, or publicly available documents, and this is cited in the tracker. Locations for the Known PFAS Contamination Sites are sourced from the PFAS Sites and Community Resources Map, credited to the Northeastern University's PFAS Project Lab, Silent Spring Institute, and the PFAS-REACH team. Disclaimer: The source conveys the data undergoes regular updates as new information becomes available, some sites may be missing and/or contain information that is incorrect or outdated, as well as their information represents all contamination sites SSEHRI is aware of, not all possible contamination sites. This data is not intended to be used for legal purposes. Access the following source link for the most current information: https://pfasproject.com/pfas-sites-and-community-resources/

Government Publication Date: Oct 9, 2022

National Response Center PFAS Spills: ERNS PFAS

This Per- and Poly-Fluoroalkyl Substances (PFAS) Spills dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The National Response Center (NRC), operated by the U.S. Coast Guard, serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the "Material Involved" or "Incident Description" fields. Limitations: The data from the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Keyword searches may misidentify some incident reports that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS spills/release incidents.

Government Publication Date: Apr 15, 2023

PFAS NPDES Discharge Monitoring: PFAS NPDES

This list of National Pollutant Discharge Elimination System (NPDES) permitted facilities with required monitoring for Per- and Polyfluoroalkyl (PFAS) Substances is made available via the U.S. Environmental Protection Agency (EPA)'s PFAS Analytic Tools. Any point-source wastewater discharger to waters of the United States must have a NPDES permit, which defines a set of parameters for pollutants and monitoring to ensure that the discharge does not degrade water quality or impair human health. This list includes NPDES permitted facilities associated with permits that monitor for Per- and Polyfluoroalkyl Substances (PFAS), limited to the years 2007 - present. EPA further advises the following regarding these data: currently, fewer than half of states have required PFAS monitoring for at least one of their permittees, and fewer states have established PFAS effluent limits for permittees. For states that may have required monitoring, some reporting and data transfer issues may exist on a state-by-state basis.

Government Publication Date: May 1, 2023

Perfluorinated Alkyl Substances (PFAS) from Toxic Release Inventory: PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a per- or polyfluoroalkyl (PFAS) substance included in the U.S. Environmental Protection Agency's (EPA) consolidated PFAS Master List of PFAS Substances. Encompasses Toxics Release Inventory records included in the EPA PFAS Analytic Tools. The EPA's TRI database currently tracks information on disposal or releases of 770 individually listed toxic chemicals and 33 chemical categories from thousands of U.S. facilities and details about how facilities manage those chemicals through recycling, energy recovery, and treatment.

Government Publication Date: Oct 19, 2022

Perfluorinated Alkyl Substances (PFAS) Water Quality: PFAS WATER

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). This listing includes records from the Water Quality Portal where the characteristic (environmental measurement) is in the Environmental Protection Agency (EPA)'s consolidated Master List of PFAS Substances.

Government Publication Date: Jul 20, 2020

PFAS TSCA Manufacture and Import Facilities: PFAS TSCA

The U.S. Environmental Protection Agency (EPA) issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. This list is specific only to TSCA Manufacture and Import Facilities with reported per- and poly-fluoroalkyl (PFAS) substances. Data file is sourced from EPA's PFAS Analytic Tools TSCA dataset which includes CDR/Inventory Update Reporting data from 1998 up to 2020. Disclaimer: This data file includes production and importation data for chemicals identified in EPA's CompTox Chemicals Dashboard list of PFAS without explicit structures and list of PFAS structures in DSSTox. Note that some regulations have specific chemical structure requirements that define PFAS differently than the lists in EPA's CompTox Chemicals Dashboard. Reporting information on manufactured or imported chemical substance amounts should not be compared between facilities, as some companies claim Chemical Data Reporting Rule data fields for PFAS information as Confidential Business Information.

Government Publication Date: Jan 5, 2023

PFAS Waste Transfers from RCRA e-Manifest : PFAS E-MANIFEST

This Per- and Poly-Fluoroalkyl Substances (PFAS) Waste Transfers dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. Every shipment of hazardous waste in the U.S. must be accompanied by a shipment manifest, which is a critical component of the cradle-to-grave tracking of wastes mandated by the Resource Conservation and Recovery Act (RCRA). According to the EPA, currently no Federal Waste Code exists for any PFAS compounds. To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: • PFAS • PFOA • PFOS • PERFL • AFFF • GENX • GEN-X (plus the Vermont state-specific waste codes). Limitations: Amount or concentration of PFAS being transferred cannot be determined from the manifest information. Keyword searches may misidentify some manifest records that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS waste transfers.

Government Publication Date: Apr 9, 2023

PFAS Industry Sectors: PFAS IND

This Per- and Poly-Fluoroalkyl Substances (PFAS) Industry Sectors dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The EPA developed the dataset from various sources that show which industries may be handling PFAS including: EPA's Enforcement and Compliance History Online (ECHO) records restricted to potential PFAS-handling industry sectors; ECHO records for Fire Training Sites identified where fire-fighting foam may have been used in training exercises; and 14 CFR Part 139 Airports compiled from historic and current records from the FAA Airport Data and Information Portal. Since July 2006, all certificated Part 139 Airports are required to have fire-fighting foam onsite that meet certain military specifications, which to date have been fluorinated (Aqueous Film Forming Foam). Limitations: Inclusion in this dataset does not indicate that PFAS are being manufactured, processed, used, or released by the facility. Listed facilities potentially handle PFAS based on their industrial profile, but are unconfirmed by the EPA. Keyword searches in ECHO for Fire Training sites may misidentify some facilities and should not be considered to be an exhaustive list of fire training facilities in the U.S.

Government Publication Date: Apr 16, 2023

Hazardous Materials Information Reporting System: HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

Government Publication Date: Sep 1, 2020

National Clandestine Drug Labs: NCDL

The U.S. Department of Justice ("the Department"), Drug Enforcement Administration (DEA), provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Feb 8, 2023

Toxic Substances Control Act: TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Apr 11, 2019

Hist TSCA: HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing: FTTS ADMIN

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing: FTTS INSP

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List: PRP

Early in the site cleanup process, the U.S. Environmental Protection Agency (EPA) conducts a search to find the Potentially Responsible Parties (PRPs). The EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site. This listing contains PRPs, Noticed Parties, at sites in the EPA's Superfund Enterprise Management System (SEMS).

Government Publication Date: Jan 25, 2023

State Coalition for Remediation of Drycleaners Listing: SCRD DRYCLEANER

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin. Since 2017, the SCRD no longer maintains this data, refer to applicable state source data where available.

Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS): ICIS

The Integrated Compliance Information System (ICIS) database contains integrated enforcement and compliance information across most of U.S. Environmental Protection Agency's (EPA) programs. The vision for ICIS is to replace EPA's independent databases that contain enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions and a subset of the Permit Compliance System (PCS), which supports the National Pollutant Discharge Elimination System (NPDES). This information is maintained by the EPA Headquarters and at the Regional offices. A future release of ICIS will completely replace PCS and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities that support compliance and enforcement programs, including incident tracking, compliance assistance, and compliance monitoring.

Government Publication Date: Jan 21, 2023

Drycleaner Facilities: FED DRYCLEANERS

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) data as made available by the U.S. Environmental Protection Agency (EPA), sourced from the ECHO Exporter file. The EPA tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

Government Publication Date: Apr 15, 2023

Delisted Drycleaner Facilities: DELISTED FED DRY

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

Government Publication Date: Apr 15, 2023

Formerly Used Defense Sites: FUDS

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DOD) is responsible for an environmental restoration. The FUDS Annual Report to Congress (ARC) is published by the U.S. Army Corps of Engineers (USACE). This data is compiled from the USACE's Geospatial FUDS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) FUDS dataset.

Government Publication Date: Jul 12, 2022

FUDS Munitions Response Sites: FUDS MRS

Boundaries of Munitions Response Sites (MRS), published with the Formerly Used Defense Sites (FUDS) Annual Report to Congress (ARC) by the U.S. Army Corps of Engineers (USACE). An MRS is a discrete location within a Munitions response area (MRA) that is known to require a munitions response. An MRA means any area on a defense site that is known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC). This data is compiled from the USACE's Geospatial MRS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) MRS dataset.

Government Publication Date: Jul 12, 2022

Former Military Nike Missile Sites: FORMER NIKE

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

Government Publication Date: Dec 2, 1984

PHMSA Pipeline Safety Flagged Incidents: PIPELINE INCIDENT

A list of flagged pipeline incidents made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types.

Government Publication Date: Dec 30, 2022

Material Licensing Tracking System (MLTS): MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Government Publication Date: May 11, 2021

Historic Material Licensing Tracking System (MLTS) sites: HIST MLTS

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File: MINES

The Master Index File (MIF) is provided by the United States Department of Labor, Mine Safety and Health Administration (MSHA). This file, which was originally created in the 1970's, contained many Mine-IDs that were invalid. MSHA removes invalid IDs from the MIF upon discovery. MSHA applicable data includes the following: all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970; mine addresses for all mines in the database except for Abandoned mines prior to 1998 from MSHA's legacy system (addresses may or may not correspond with the physical location of the mine itself); violations that have been assessed penalties as a result of MSHA inspections beginning on 1/1/2000; and violations issued as a result of MSHA inspections conducted beginning on 1/1/2000.

Government Publication Date: May 1, 2023

Surface Mining Control and Reclamation Act Sites: SMCRA

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). This inventory contains information on the type and extent of Abandoned Mine Land (AML) impacts, as well as information on the cost associated with the reclamation of those problems. The data is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed. Disclaimer: Per the OSMRE, States and tribes who enter their data into eAMLIS (AML Inventory System) may truncate their latitude and longitude so the precise location of usually dangerous AMLs is not revealed in an effort to protect the public from searching for these AMLs, most of which are on private property. If more precise location information is needed, please contact the applicable state/tribe of interest.

Government Publication Date: Jun 13, 2023

Mineral Resource Data System: MRDS

The Mineral Resource Data System (MRDS) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps.

Government Publication Date: Mar 15, 2016

DOE Legacy Management Sites: LM SITES

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) currently manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The LM manages sites with diverse regulatory drivers (statutes or programs that direct cleanup and management requirements at DOE sites) or as part of internal DOE or congressionally-recognized programs, such as but not limited to: Formerly Utilized Sites Remedial Action Program (FUSRAP), Uranium Mill Tailings Radiation Control Act (UMTRCA Title I, Tile II), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), Decontamination and Decommissioning (D&D), Nuclear Waste Policy Act (NWPA). This site listing includes data exported from the DOE Office of LM's Geospatial Environmental Mapping System (GEMS). GEMS Data disclaimer: The DOE Office of LM makes no representation or warranty, expressed or implied, regarding the use, accuracy, availability, or completeness of the data presented herein.

Government Publication Date: May 25, 2023

Alternative Fueling Stations: ALT FUELS

This list of alternative fueling stations is sourced from the Alternative Fuels Data Center (AFDC). The U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy launched the AFDC in 1991 as a repository for alternative fuel vehicle performance data, which provides a wealth of information and data on alternative and renewable fuels, advanced vehicles, fuel-saving strategies, and emerging transportation technologies. The data includes Biodiesel (B20 and above), Compressed Natural Gas (CNG), Electric, Ethanol (E85), Hydrogen, Liquefied Natural Gas (LNG), Propane (LPG), and Renewable Diesel (R20 and above) fuel type locations.

Government Publication Date: Jun 5, 2023

Superfunds Consent Decrees: CONSENT DECREES

This list of Superfund consent decrees is provided by the Department of Justice, Environment & Natural Resources Division (ENRD) through a Freedom of Information Act (FOIA) applicable file. This listing includes Consent Decrees for CERCLA or Superfund Sites filed and/or as proposed within the ENRD's Case Management System (CMS) since 2010. CMS may not reflect the latest developments in a case nor can the agency guarantee the accuracy of the data. ENRD Disclaimer: Congress excluded three discrete categories of law enforcement and national security records from the requirements of the FOIA; response is limited to those records that are subject to the requirements of the FOIA; however, this should not be taken as an indication that excluded records do, or do not, exist.

Government Publication Date: Apr 19, 2023

Air Facility System: AFS

This EPA retired Air Facility System (AFS) dataset contains emissions, compliance, and enforcement data on stationary sources of air pollution. Regulated sources cover a wide spectrum; from large industrial facilities to relatively small operations such as dry cleaners. AFS does not contain data on facilities that are solely asbestos demolition and/or renovation contractors, or landfills. ECHO Clean Air Act data from AFS are frozen and reflect data as of October 17, 2014; the EPA retired this system for Clean Air Act stationary sources and transitioned to ICIS-Air.

Government Publication Date: Oct 17, 2014

Registered Pesticide Establishments: SSTS

This national list of active EPA-registered foreign and domestic pesticide and/or device-producing establishments is based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that each producing establishment must place its EPA establishment number on the label or immediate container of each pesticide, active ingredient or device produced. An EPA establishment number on a pesticide product label identifies the EPA registered location where the product was produced. The list of establishments is made available by the U.S. Environmental Protection Agency (EPA).

Government Publication Date: Mar 1, 2023

Polychlorinated Biphenyl (PCB) Transformers: PCBT

Locations of Transformers Containing Polychlorinated Biphenyls (PCBs) registered with the United States Environmental Protection Agency. PCB transformer owners must register their transformer(s) with EPA. Although not required, PCB transformer owners who have removed and properly disposed of a registered PCB transformer may notify EPA to have their PCB transformer de-registered. Data made available by EPA.

Government Publication Date: Oct 15, 2019

Polychlorinated Biphenyl (PCB) Notifiers: PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Mar 20, 2023

State

Dry Cleaning Facilities: DRYCLEANERS

The Department of Environmental Quality maintains a list of dry cleaner facilities in Oklahoma.

Government Publication Date: Aug 11, 2023

Delisted Drycleaners Facility List: DELISTED DRYCLEANERS

List of sites removed from the drycleaners facilities database made available by the Oklahoma Department of Environmental Quaility.

Government Publication Date: Aug 11, 2023

Listing of Permitted AIRS Facilities: AIRS FACILITIES

The Air Quality Division of the Oklahoma Department of Environmental Quality maintains this listing of operating AIRS permitted facilities.

Government Publication Date: Mar 20, 2023

Oklahoma Conservation Commission Pollution Complaint System database: OK COMPLAINT

Records of pollution complaints reported to various state agencies, compiled by the Oklahoma Conservation Commission. This list has been made available by Oklahoma Conservation Commission.

Government Publication Date: Jun 30, 2022

Environmental Complaints: ECLS

List of locations of environmental complaints, made available by the Environmental Complaints & Local Services (ECLS) Division of the Oklahoma Department of Environmental Quality (DEQ). The Environmental Complaints Program is designed to address citizens' environmental complaints. This listing includes complaints in the following categories: Hazardous Waste, Landfill, Open Dumping, Self-reported Spills/Releases, and Unpermitted Discharges.

Government Publication Date: Nov 15, 2019

Tier 2 Report: TIER 2

A list of Tier 2 Facilities that store hazardous materials and chemicals and are required to report them to the Oklahoma Department of Environmental Quality (DEQ). Tier 2 reports are distributed by DEQ to LEPCs and Fire Departments. This list is made available by the Oklahoma Department of Environmental Quality (DEQ).

Government Publication Date: Jun 17, 2021

Underground Injection Control Wells: UIC

The Underground Injection Control (UIC) Program is a federal program established under the provision of the Safe Drinking Water Act of 1974. Since groundwater is a major source of drinking water in the United States, the UIC Program requirements were designed to prevent contamination of groundwater resulting from the operation of injection wells. The Underground Injection Well Inventory is provided by the Oklahoma Environmental Protection Agency. This inventory includes Class V Injections Wells which are utilized to inject non-hazardous waste into or above the Underground Source of Drinking Water.

Government Publication Date: Apr 17, 2023

Tribal

No Tribal additional environmental record sources available for this State.

County

No County additional environmental record sources available for this State.

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

APPENDIX F

Physical Setting Report

PSR
PHYSICAL SETTING REPORT

Property Information

Order Number:		23090700512p
Date Completed:		September 8, 2023
Project Number:		
Project Property:		Canton Shooting Range Canton Shooting Range Longdale OK
Coordinates:		
	Latitude:	36.12313015
	Longitude:	-98.57062792
	UTM Northing:	3997690.87695 Meters
	UTM Easting:	538638.149937 Meters
	UTM Zone:	UTM Zone 14S
	Elevation:	1,636.87 ft
	Slope Direction:	NNW

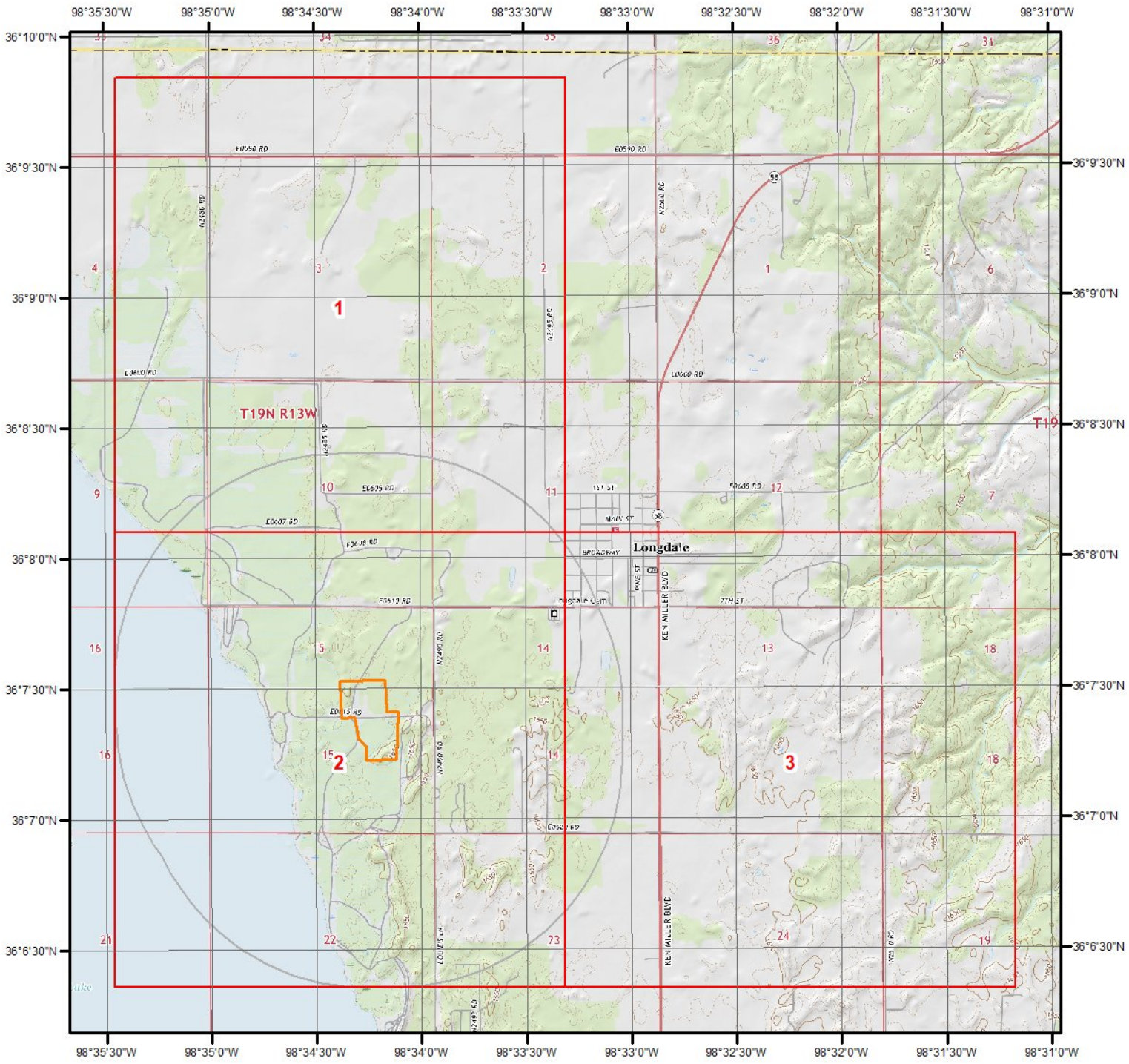
The ERIS ***Physical Setting Report - PSR*** provides comprehensive information about the physical setting around a site and includes a complete overview of topography and surface topology, in addition to hydrologic, geologic and soil characteristics. The location and detailed attributes of oil and gas wells, water wells, public water systems and radon are also included for review.

The compilation of both physical characteristics of a site and additional attribute data is useful in assessing the impact of migration of contaminants and subsequent impact on soils and groundwater.

Disclaimer

This Report does not provide a full environmental evaluation for the site or adjacent properties. Please see the terms and disclaimer at the end of the Report for greater detail.

Topographic Information



Current USGS Topo (2018)

0 0.2 0.4 0.8 1.2 1.6 Miles

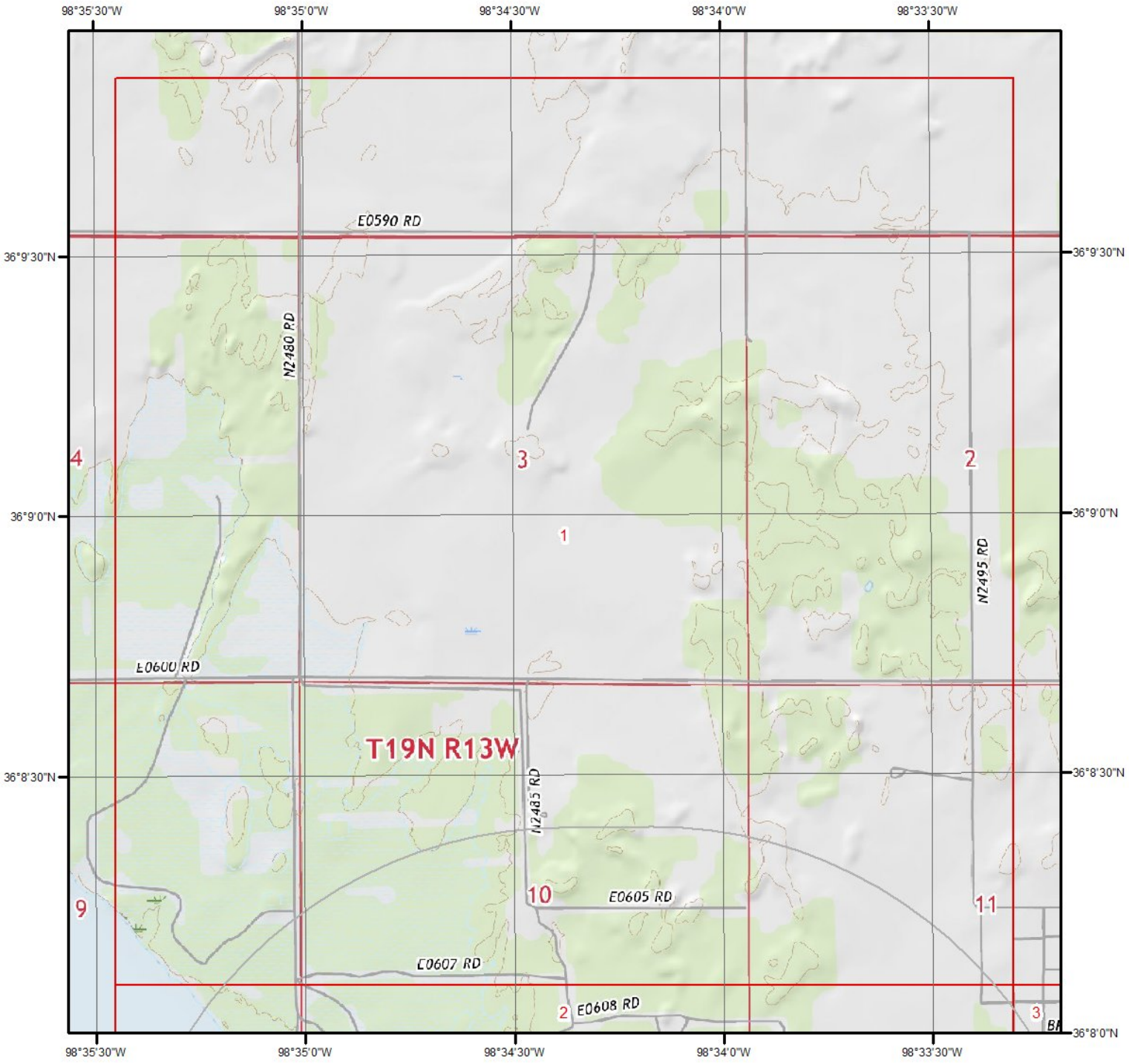
N

Quadrangle(s): Homestead,OK; Canton SW,OK; Canton,OK; Canton NW,OK; Southard,OK; Longdale,OK

ERIS

Source: USGS 7.5 Minute Topographic Map

Topographic Information



Current USGS Topo - Page 1

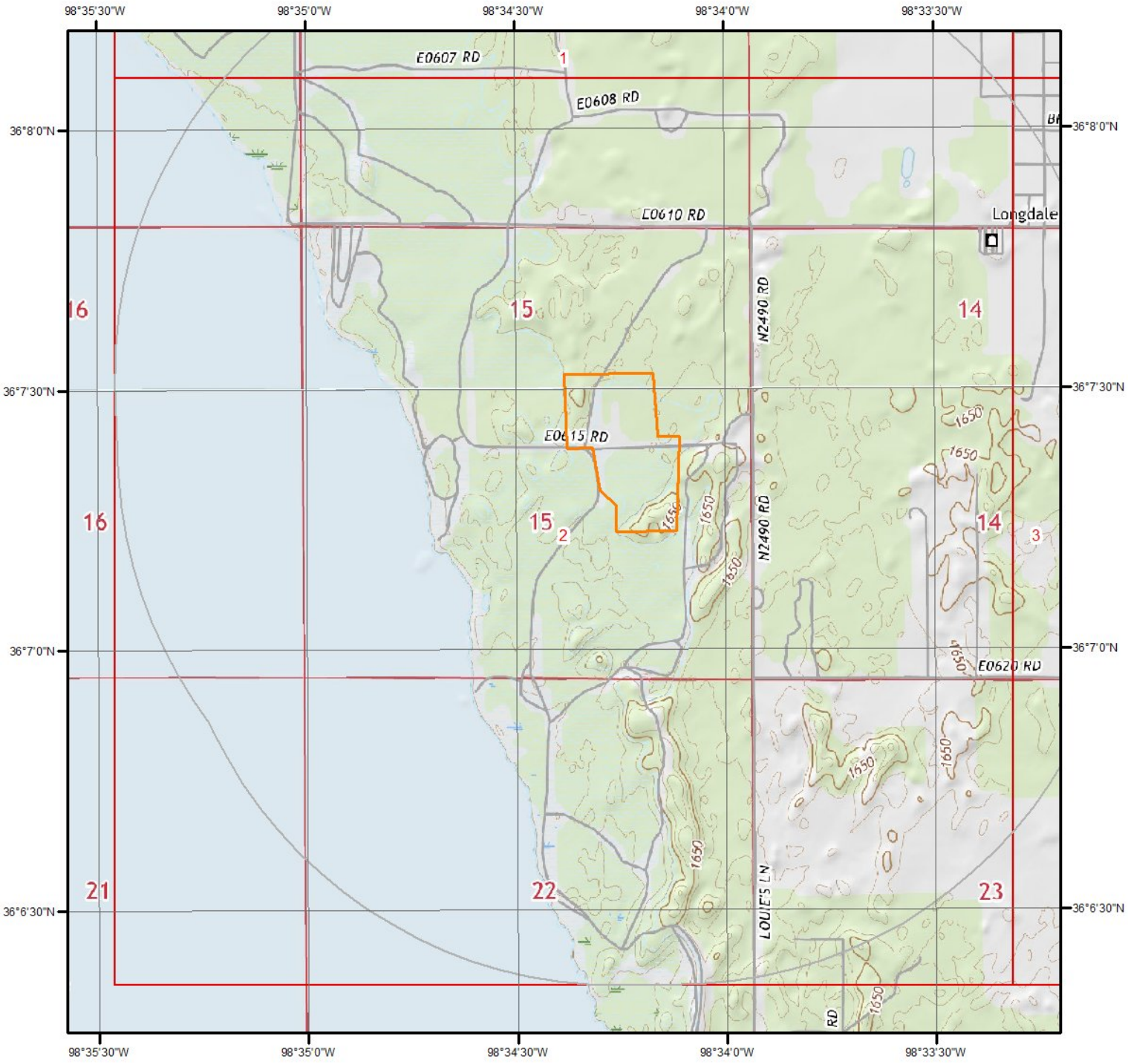
0 0.2 0.4 0.8 Miles

N

Quadrangle(s): Longdale,OK

Source: USGS 7.5 Minute Topographic Map

Topographic Information



Current USGS Topo - Page 2

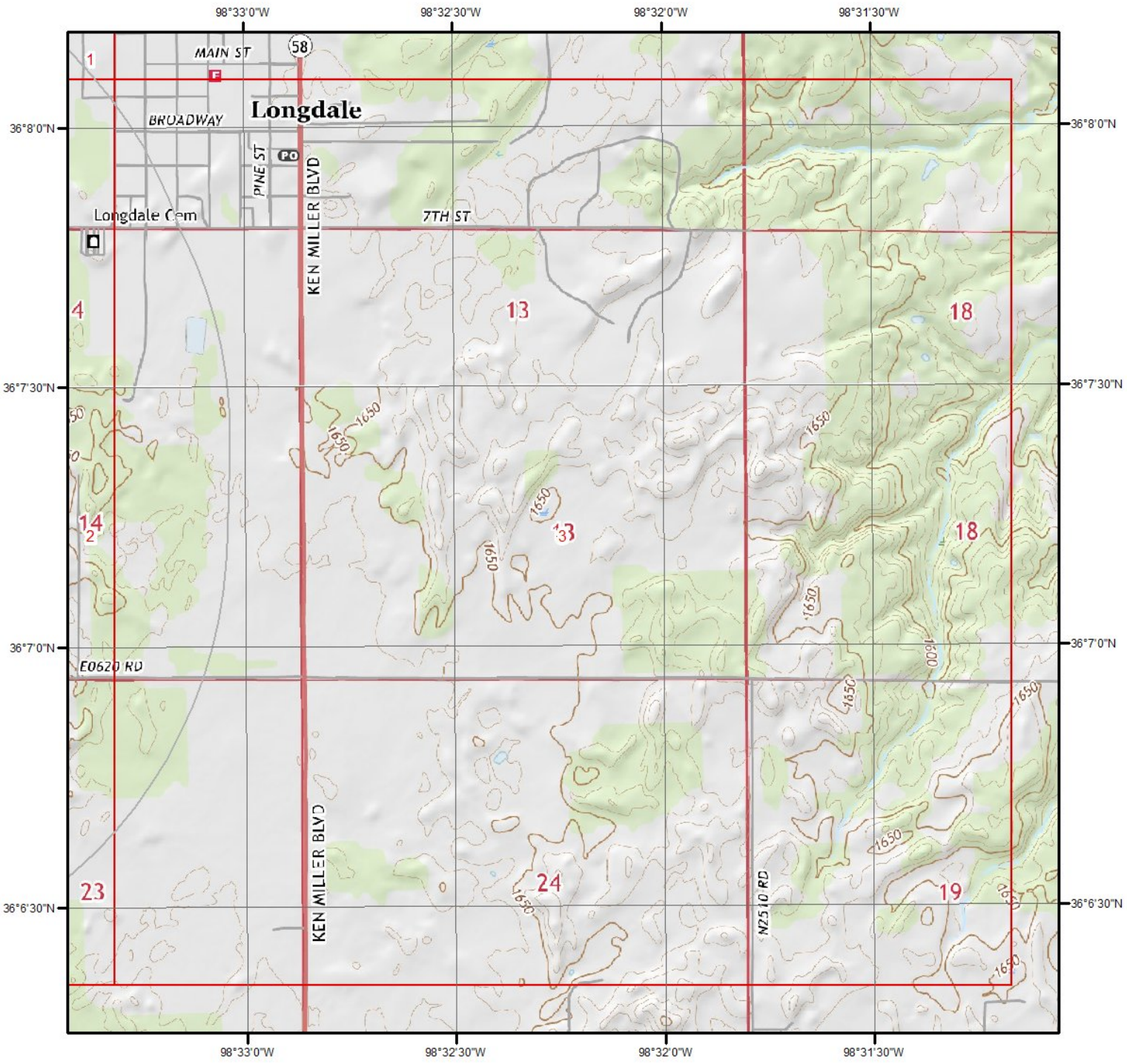
0 0.2 0.4 0.8 Miles

N

Quadrangle(s): Canton,OK; Longdale,OK

Source: USGS 7.5 Minute Topographic Map

Topographic Information



Current USGS Topo - Page 3

0 0.2 0.4 0.8 Miles

N

Quadrangle(s): Canton,OK; Longdale,OK

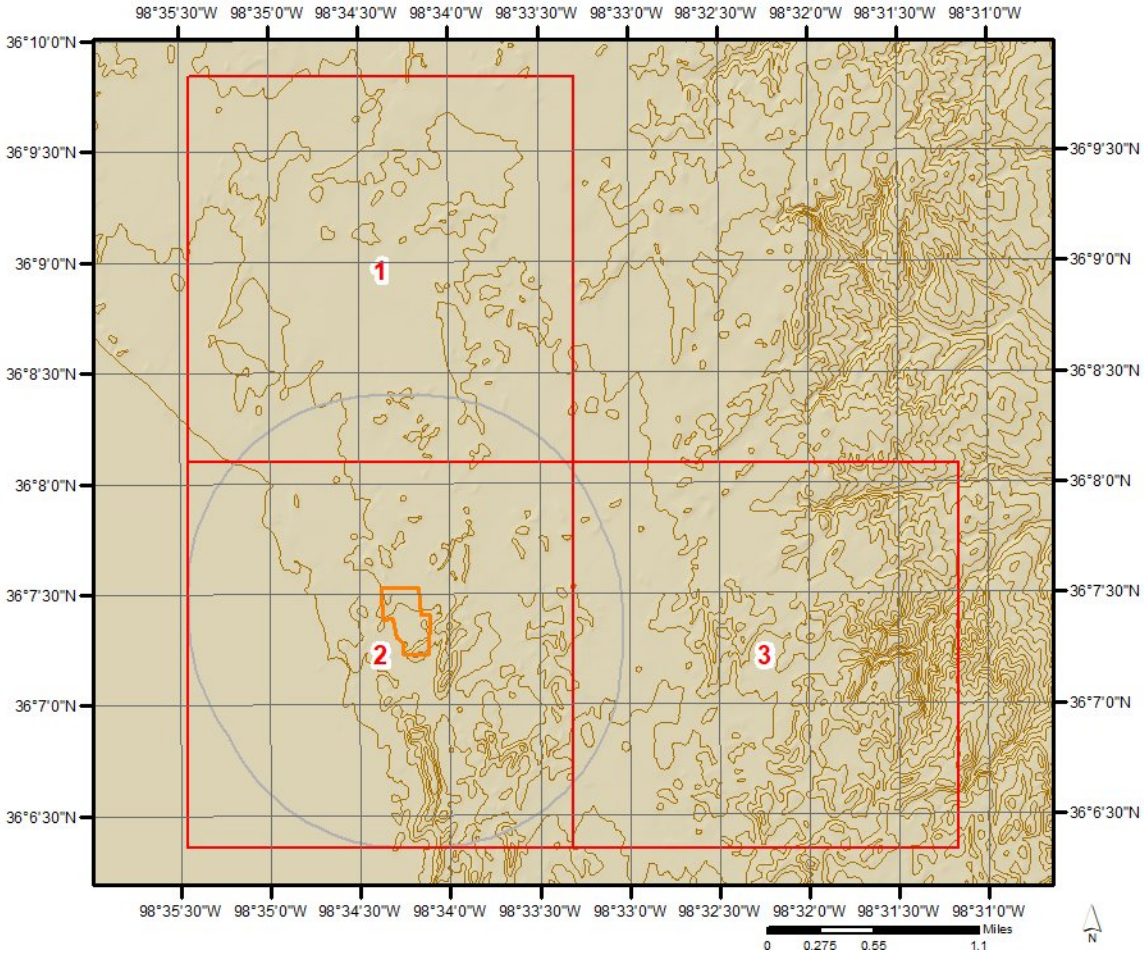
Source: USGS 7.5 Minute Topographic Map

Topographic Information

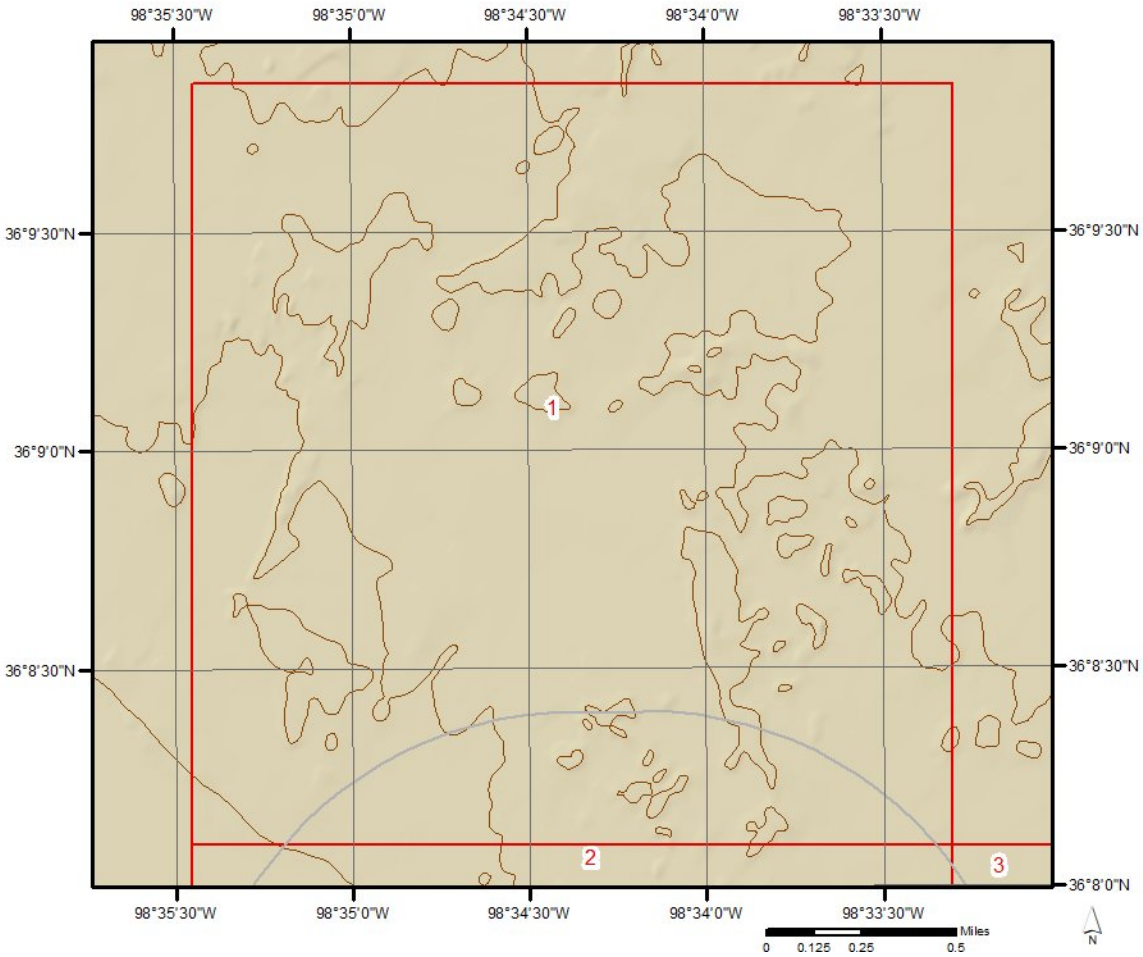
The previous topographic map(s) are created by seamlessly merging and cutting current USGS topographic data. Below are shaded relief map(s), derived from USGS elevation data to show surrounding topography in further detail.

Topographic information at project property:

Elevation:	1,636.87 ft
Slope Direction:	NNW



Topographic Information



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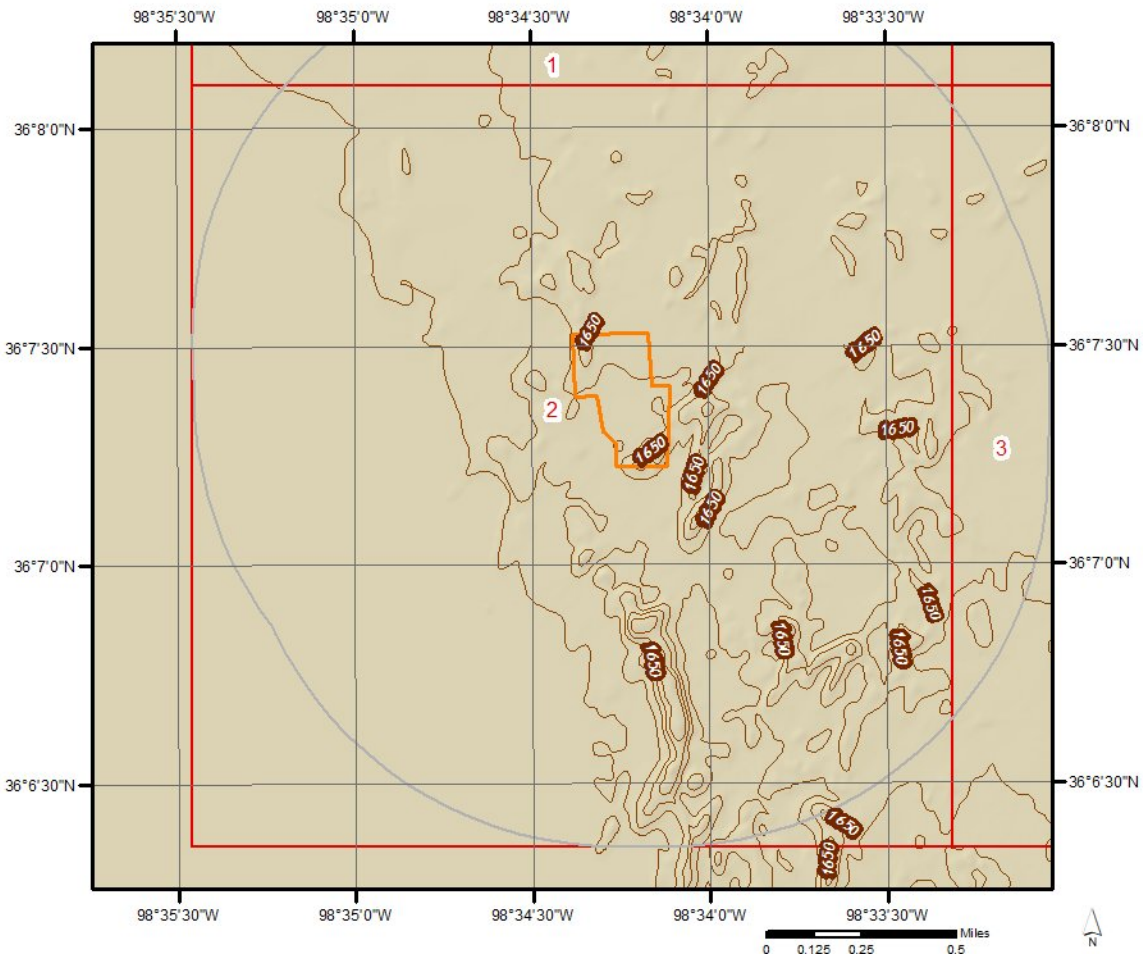
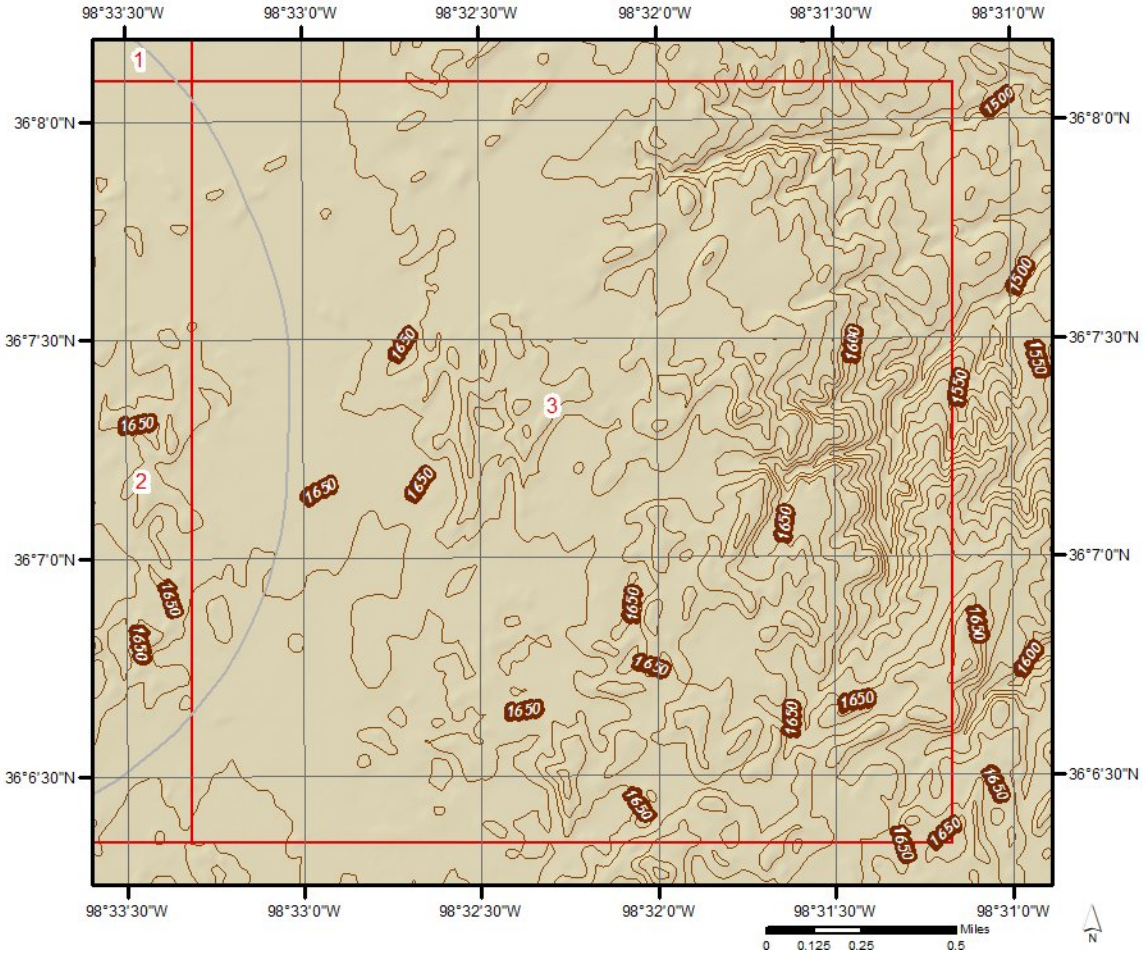
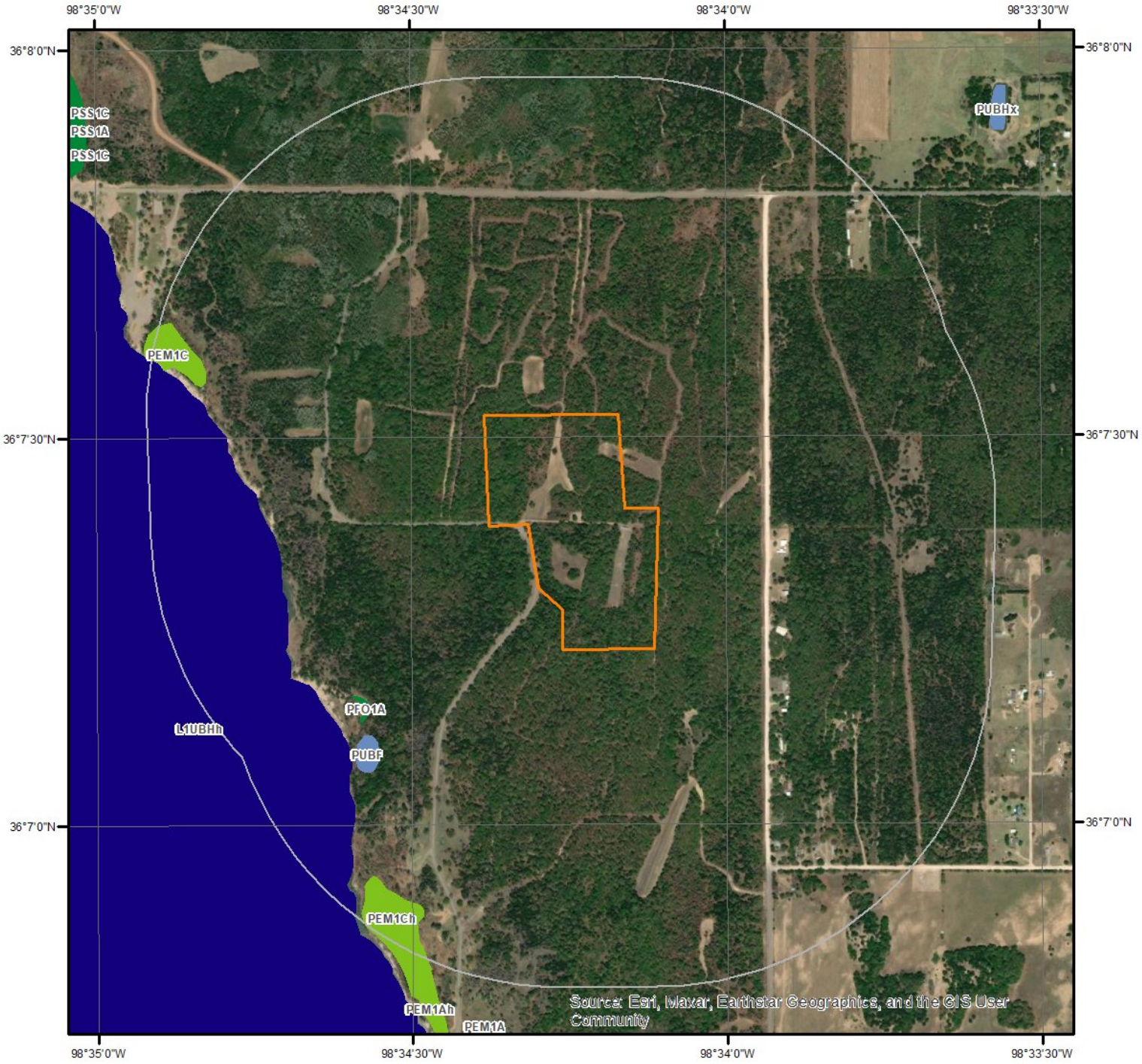


Topographic Information



Hydrologic Information



Wetland

0 0.075 0.15 0.3 Miles

N

This map shows wetland existence using data from US Fish & Wildlife.
Data coverage is shown to the right. Gray indicates no data available in the area.

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

ERIS

Hydrologic Information

Flood Hazard Zones

This map shows FEMA flood hazard zones based on FEMA's National Flood Hazard Layer. FIRM Panels are overlayed. An absent FIRM panel represents no data available.

Miles
0 0.2 0.4

N

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Area with Risk Due to Levee
- Open Water

Quadrangle(s): Homestead,OK; Canton SW,OK; Canton,OK; Canton NW,OK;

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Hydrologic Information

The Wetland Type map shows wetland existence overlaid on an aerial imagery. The Flood Hazard Zones map shows FEMA flood hazard zones overlaid on an aerial imagery. Relevant FIRM panels and detailed zone information is provided below.
For detailed Zone descriptions please click the link: https://floodadvocate.com/fema-zone-definitions

No records found for the project property or surrounding properties.

Hydrologic Information

FEMA Flood Zone Definitions

Special Flood Hazard Areas – High Risk

Special Flood Hazard Areas represent the area subject to inundation by 1-percent-annual chance flood. Structures located within the SFHA have a 26-percent chance of flooding during the life of a standard 30-year mortgage. Federal floodplain management regulations and mandatory flood insurance purchase requirements apply in these zones.

ZONE	DESCRIPTION
A	Areas subject to inundation by the 1-percent-annual-chance flood event. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown.
AE, A1-A30	Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. BFEs are shown within these zones. (Zone AE is used on new and revised maps in place of Zones A1–A30.)
AH	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are 1–3 feet. BFEs derived from detailed hydraulic analyses are shown in this zone.
AO	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are 1–3 feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone.
AR	Areas that result from the decertification of a previously accredited flood protection system that is determined to be in the process of being restored to provide base flood protection.
A99	Areas subject to inundation by the 1-percent-annual-chance flood event, but which will ultimately be protected upon completion of an under-construction Federal flood protection system. These are areas of special flood hazard where enough progress has been made on the construction of a protection system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes. Zone A99 may be used only when the flood protection system has reached specified statutory progress toward completion. No BFEs or flood depths are shown.

Coastal High Hazard Areas – High Risk

Coastal High Hazard Areas (CHHA) represent the area subject to inundation by 1-percent-annual chance flood, extending from offshore to the inland limit of a primary front al dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. Structures located within the CHHA have a 26-percent chance of flooding during the life of a standard 30-year mortgage. Federal floodplain management regulations and mandatory purchase requirements apply in these zones.

ZONE	DESCRIPTION
V	Areas along coasts subject to inundation by the 1-percent-annual-chance flood event with additional hazards associated with storm-induced waves. Because detailed coastal analyses have not been performed, no BFEs or flood depths are shown.
VE, V1-V30	Areas along coasts subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action. BFEs derived from detailed hydraulic coastal analyses are shown within these zones. (Zone VE is used on new and revised maps in place of Zones V1–V30.)

Hydrologic Information

Moderate and Minimal Risk Areas

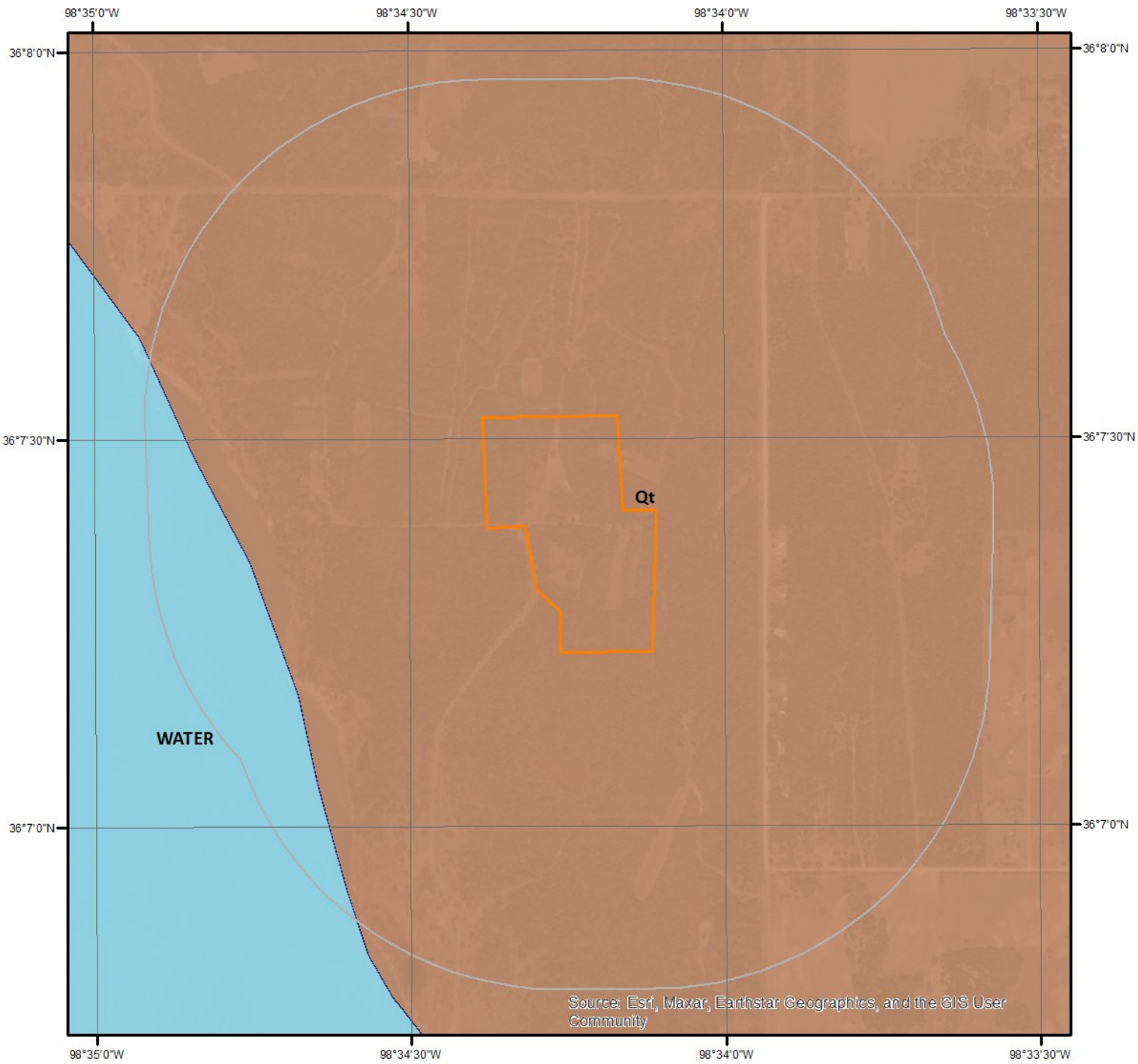
Areas of moderate or minimal hazard are studied based upon the principal source of flood in the area. However, buildings in these zones could be flooded by severe, concentrated rainfall coupled with inadequate local drainage systems. Local stormwater drainage systems are not normally considered in a community's flood insurance study. The failure of a local drainage system can create areas of high flood risk within these zones. Flood insurance is available in participating communities, but is not required by regulation in these zones. Nearly 25-percent of all flood claims filed are for structures located within these zones.

ZONE	DESCRIPTION
B, X (shaded)	Moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee. No BFEs or base flood depths are shown within these zones. (Zone X (shaded) is used on new and revised maps in place of Zone B.)
C, X (unshaded)	Minimal risk areas outside the 1-percent and .2-percent-annual-chance floodplains. No BFEs or base flood depths are shown within these zones. (Zone X (unshaded) is used on new and revised maps in place of Zone C.)

Undetermined Risk Areas

ZONE	DESCRIPTION
D	Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

Geologic Information



0 0.2 0.4 Miles

N

Geologic Units

This maps shows geologic units in the area. Please refer to the report for detailed descriptions.

Geologic Information

The previous page shows USGS geology information. Detailed information about each unit is provided below.

Geologic Unit Qt

Unit Name:	Terrace Deposits
Unit Age:	Phanerozoic | Cenozoic | Quaternary | Pleistocene
Primary Rock Type:	sand
Secondary Rock Type:	gravel
Unit Description:	WOODWARD- Lenticular and interfingering deposits of light-tan to gray gravel, sand, silt, clay, and volcanic ash. Sand dunes are common in many places. Thickness ranges up to 150 feet and averages about 60 feet. ENID- Sand, silt, clay, and gravel. Max

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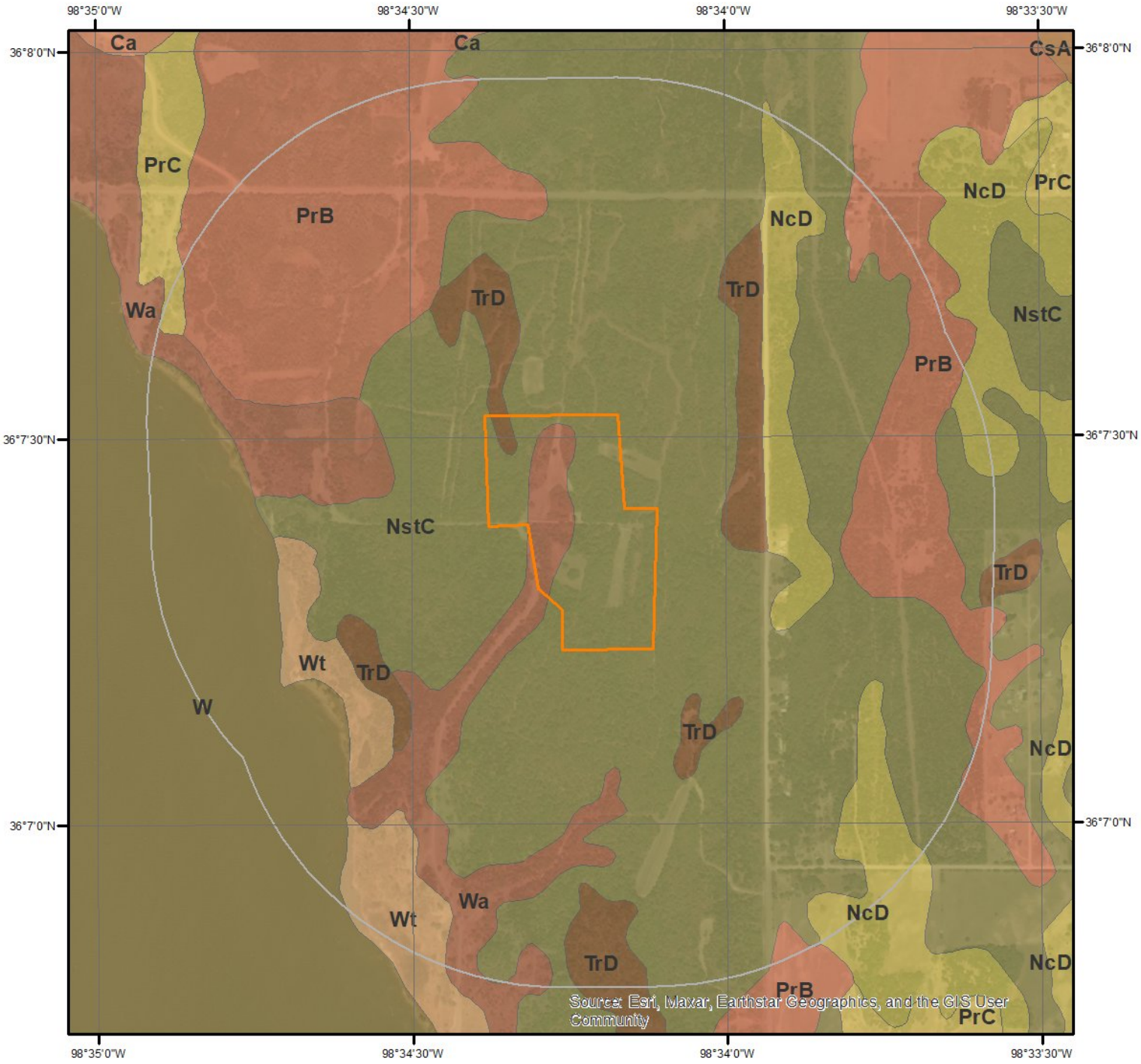
Geologic Unit WATER

Unit Name:	Water
Unit Age:	None
Primary Rock Type:	water
Secondary Rock Type:	
Unit Description:	No description available.

Soil Information



SSURGO Soils

0 0.2 0.4 Miles

N

This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.

ERIS

Soil Information

The previous page shows a soil map using SSURGO data from USDA Natural Resources Conservation Service. Detailed information about each unit is provided below.

Map Unit NcD (2.74%)

Map Unit Name:	Nobscot sand, 5 to 20 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Nobscot(80%)

horizon A(0cm to 30cm)	Sand
horizon E(30cm to 61cm)	Sand
horizon Bt1(61cm to 104cm)	Sandy loam
horizon Bt2(104cm to 175cm)	Loamy sand
horizon BC(175cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: NcD - Nobscot sand, 5 to 20 percent slopes

Component: Nobscot (80%)
The Nobscot component makes up 80 percent of the map unit. Slopes are 5 to 20 percent. This component is on sand sheets on stream terraces on alluvial plains. The parent material consists of sandy and loamy alluvium and/or eolian deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R078CY017OK Deep Sand Shrubland ecological site. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria. The soil has a maximum sodium adsorption ratio of 3 within 30 inches of the soil surface.

Component: Grandfield (5%)
Generated brief soil descriptions are created for major soil components. The Grandfield soil is a minor component.

Component: Devol (5%)
Generated brief soil descriptions are created for major soil components. The Devol soil is a minor component.

Component: Tivoli (5%)
Generated brief soil descriptions are created for major soil components. The Tivoli soil is a minor component.

Component: Delwin (4%)
Generated brief soil descriptions are created for major soil components. The Delwin, moist soil is a minor component.

Component: Carwile (1%)
Generated brief soil descriptions are created for major soil components. The Carwile soil is a minor component.

Map Unit NstC (13.78%)

Map Unit Name:	Nobscot sand, 0 to 5 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is

	transmitted freely through the soil.

Major components are printed below

Nobscot(85%)

horizon A(0cm to 13cm)	Sand
horizon E(13cm to 58cm)	Sand
horizon Bt1(58cm to 91cm)	Sandy loam
horizon Bt2(91cm to 180cm)	Loamy sand
horizon BC(180cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: NstC - Nobscot sand, 0 to 5 percent slopes

Component: Nobscot (85%)
The Nobscot component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on sand sheets on stream terraces on alluvial plains. The parent material consists of sandy and loamy alluvium and/or eolian deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R078CY017OK Deep Sand Shrubland ecological site. Nonirrigated land capability classification is 4e. Irrigated land capability classification is 4e. This soil does not meet hydric criteria. The soil has a maximum sodium adsorption ratio of 3 within 30 inches of the soil surface.

Component: Eda (5%)
Generated brief soil descriptions are created for major soil components. The Eda soil is a minor component.

Component: Delwin (5%)
Generated brief soil descriptions are created for major soil components. The Delwin, moist soil is a minor component.

Component: Grandfield (4%)
Generated brief soil descriptions are created for major soil components. The Grandfield soil is a minor component.

Component: Carwile (1%)
Generated brief soil descriptions are created for major soil components. The Carwile soil is a minor component.

Map Unit PrB (10.98%)

Map Unit Name:	Eda sand, 0 to 3 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Somewhat excessively drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Eda(90%)

horizon Ap(0cm to 28cm)	Sand
horizon E and Bt(28cm to 89cm)	Loamy sand
horizon C(89cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: PrB - Eda sand, 0 to 3 percent slopes

Component: Eda (90%)
The Eda component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on low dunes on sand sheets on terraces on alluvial plains. The parent material consists of eolian sands. Depth to a root restrictive layer is greater than 60 inches.

Soil Information

The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R078CY014OK Rolling Sands ecological site. Nonirrigated land capability classification is 3e. Irrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Devol (4%)
Generated brief soil descriptions are created for major soil components. The Devol soil is a minor component.

Component: Carwile (3%)
Generated brief soil descriptions are created for major soil components. The Carwile soil is a minor component.

Component: Heatly (1%)
Generated brief soil descriptions are created for major soil components. The Heatly soil is a minor component.

Component: Delwin (1%)
Generated brief soil descriptions are created for major soil components. The Delwin soil is a minor component.

Component: Nobscot (1%)
Generated brief soil descriptions are created for major soil components. The Nobscot soil is a minor component.

Map Unit PrC (0.22%)

Map Unit Name:	Eda sand, 3 to 8 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Somewhat excessively drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Eda(90%)

horizon Ap(0cm to 33cm)	Sand
horizon E and Bt(33cm to 127cm)	Loamy sand
horizon C(127cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: PrC - Eda sand, 3 to 8 percent slopes

Component: Eda (90%)
The Eda component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on dunes on sand sheets on terraces on alluvial plains. The parent material consists of eolian sands. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R078CY014OK Rolling Sands ecological site. Nonirrigated land capability classification is 4e. Irrigated land capability classification is 4e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Devol (4%)
Generated brief soil descriptions are created for major soil components. The Devol soil is a minor component.

Component: Carwile (3%)
Generated brief soil descriptions are created for major soil components. The Carwile soil is a minor component.

Component: Grandfield (1%)
Generated brief soil descriptions are created for major soil components. The Grandfield soil is a minor component.

Component: Nobscot (1%)
Generated brief soil descriptions are created for major soil components. The Nobscot soil is a minor component.

Soil Information

Component: Tivoli (1%)
Generated brief soil descriptions are created for major soil components. The Tivoli soil is a minor component.

Map Unit TrD (0.62%)

Map Unit Name:	Tivoli fine sand, 5 to 30 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Excessively drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Tivoli(94%)

horizon A(0cm to 18cm)	Fine sand
horizon C(18cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: TrD - Tivoli fine sand, 5 to 30 percent slopes

Component: Tivoli (94%)
The Tivoli component makes up 94 percent of the map unit. Slopes are 5 to 30 percent. This component is on dunes on uplands. The parent material consists of eolian sands. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R078CY107TX Sand Hills 23-31" Pz ecological site. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria.

Component: Eda (3%)
Generated brief soil descriptions are created for major soil components. The Eda soil is a minor component.

Component: Carwile (1%)
Generated brief soil descriptions are created for major soil components. The Carwile soil is a minor component.

Component: Nobscot (1%)
Generated brief soil descriptions are created for major soil components. The Nobscot soil is a minor component.

Component: Devol (1%)
Generated brief soil descriptions are created for major soil components. The Devol soil is a minor component.

Map Unit W (69.04%)

Map Unit Name:	Water
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	null
Hydrologic Group - Dominant:	D - Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.

Major components are printed below

Water(100%)

horizon W(0cm to 203cm)	Water

Component Description:

Minor map unit components are excluded from this report.

Soil Information

Map Unit: W - Water

Component: Water (100%)
Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Map Unit Wa (1.55%)

Map Unit Name:	Waldeck fine sandy loam, 0 to 1 percent slopes, occasionally flooded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	92cm
Drainage Class - Dominant:	Somewhat poorly drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Waldeck(95%)

horizon A(0cm to 25cm)	Fine sandy loam
horizon AC(25cm to 81cm)	Fine sandy loam
horizon C(81cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: Wa - Waldeck fine sandy loam, 0 to 1 percent slopes, occasionally flooded

Component: Waldeck (95%)
The Waldeck, occasionally flooded component makes up 95 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on valleys. The parent material consists of calcareous loamy and sandy alluvium derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 36 inches during January, February, March, April, May, October, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the R078CY095OK Subirrigated Bottomland ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Ezell (5%)
Generated brief soil descriptions are created for major soil components. The Ezell, occasionally flooded soil is a minor component.

Map Unit Wt (1.08%)

Map Unit Name:	Gracemont and Gracemore soils, 0 to 1 percent slopes, frequently flooded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	31cm
Drainage Class - Dominant:	Somewhat poorly drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Gracemont(50%)

horizon A(0cm to 25cm)	Loamy fine sand
horizon C1(25cm to 117cm)	Fine sandy loam
horizon C2(117cm to 203cm)	Loam

Gracemore(40%)

horizon A(0cm to 30cm)	Fine sandy loam
horizon C(30cm to 203cm)	Fine sand

Component Description:

Soil Information

Minor map unit components are excluded from this report.

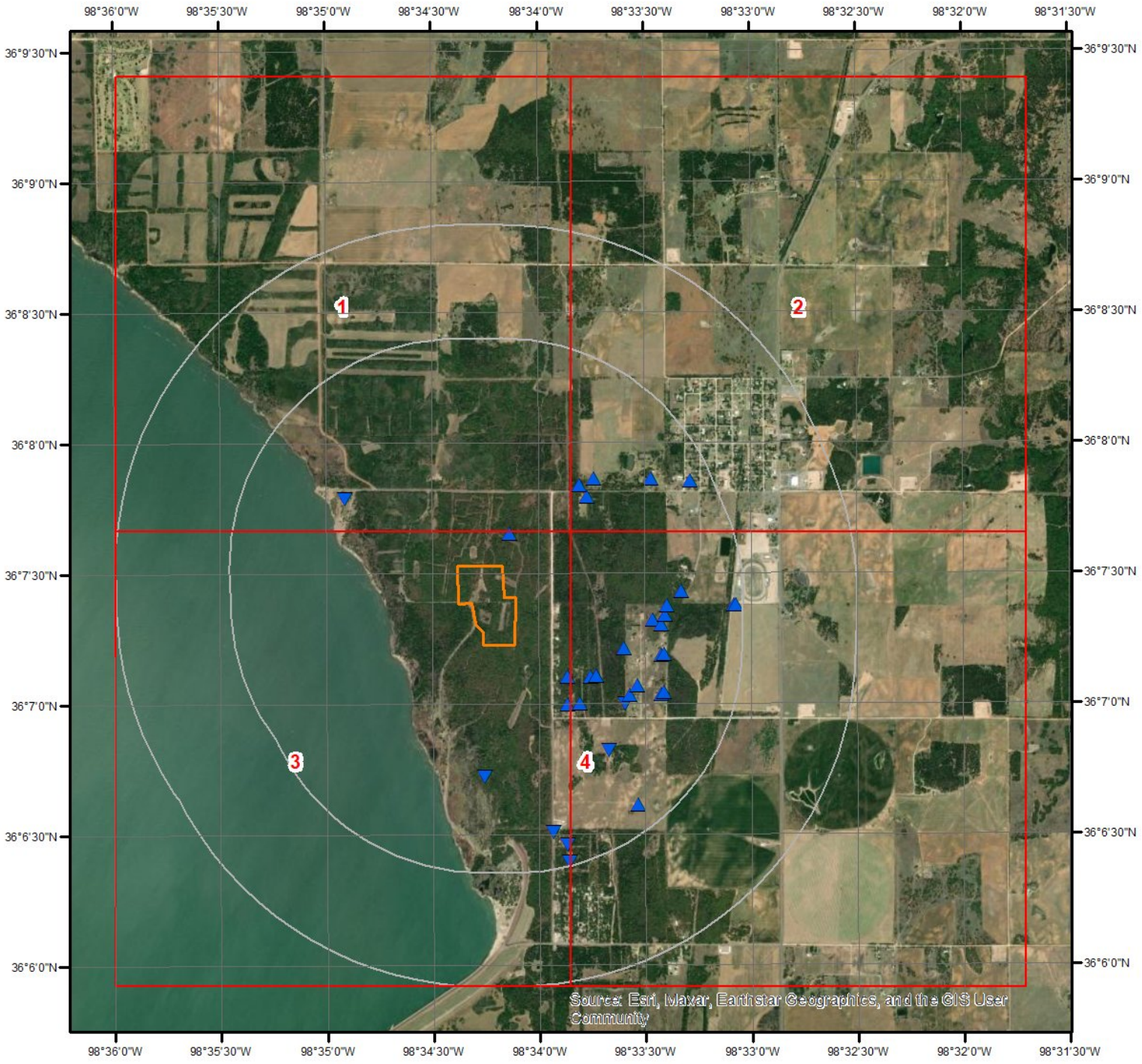
Map Unit: Wt - Gracemont and Gracemore soils, 0 to 1 percent slopes, frequently flooded

Component: Gracemont (50%)
The Gracemont, frequently flooded component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on valleys. The parent material consists of calcareous sandy sedimentary rock and/or loamy alluvium derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the R080AY095OK Subirrigated Bottomland ecological site. Nonirrigated land capability classification is 5w. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 6 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Gracemore (40%)
The Gracemore, frequently flooded component makes up 40 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on valleys. The parent material consists of calcareous sandy alluvium derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the R080AY095OK Subirrigated Bottomland ecological site. Nonirrigated land capability classification is 5w. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ezell (10%)
Generated brief soil descriptions are created for major soil components. The Ezell, frequently flooded soil is a minor component.

Wells and Additional Sources



Wells & Additional Sources

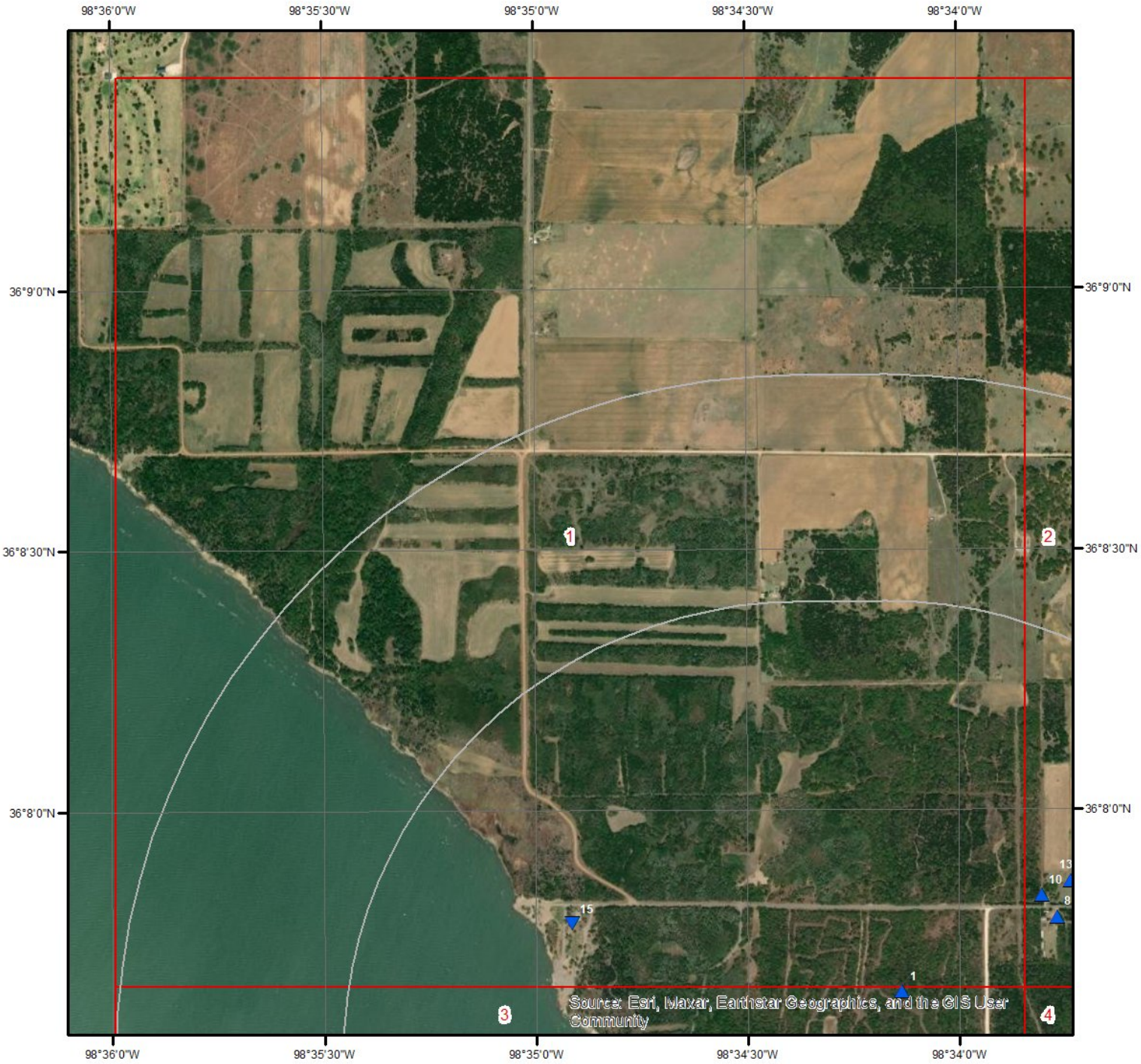
N

0 0.3 0.6 1.2 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources



Wells & Additional Sources - Page 1

N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources

Wells & Additional Sources - Page 2

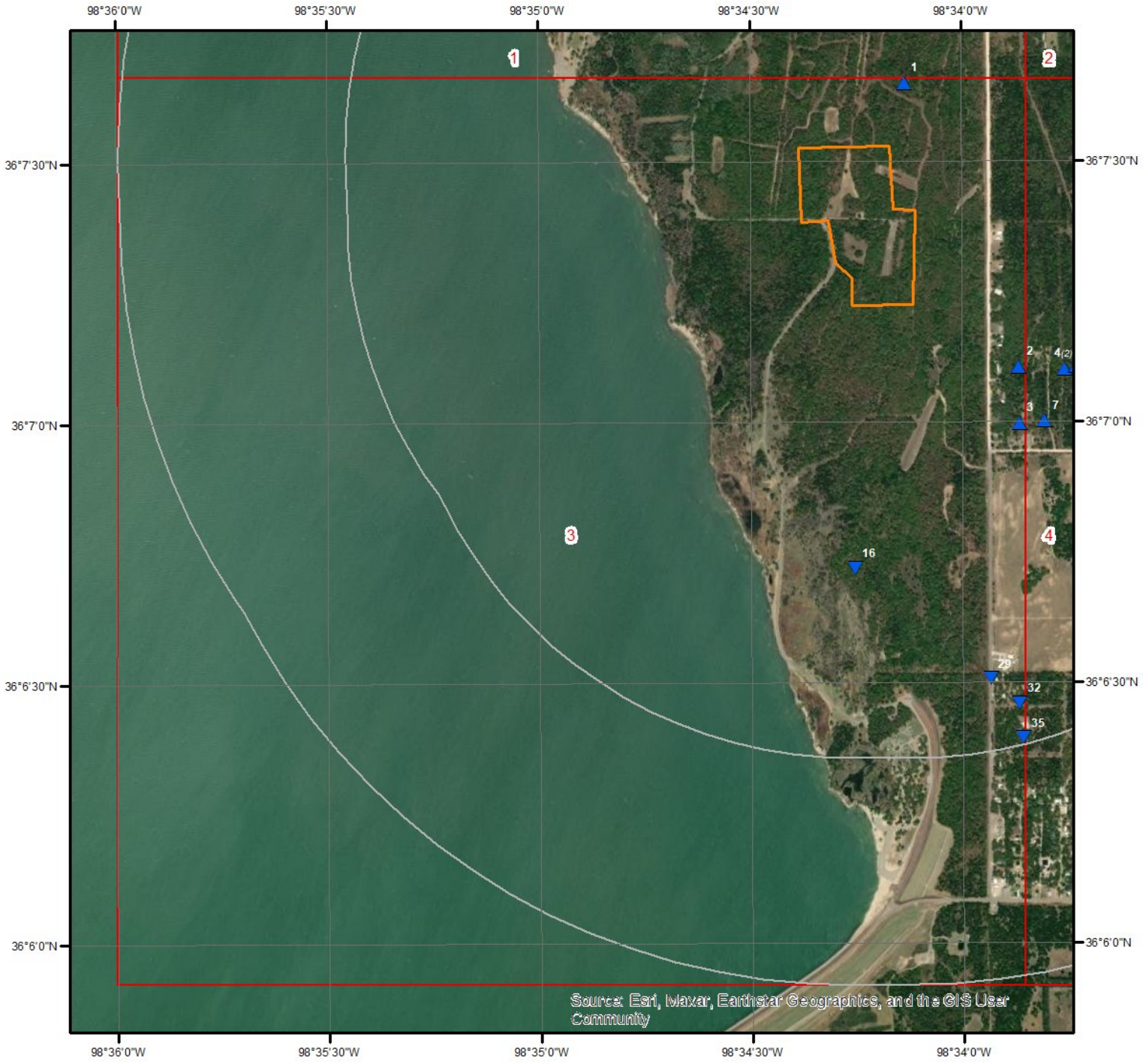
N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources



Wells & Additional Sources - Page 3

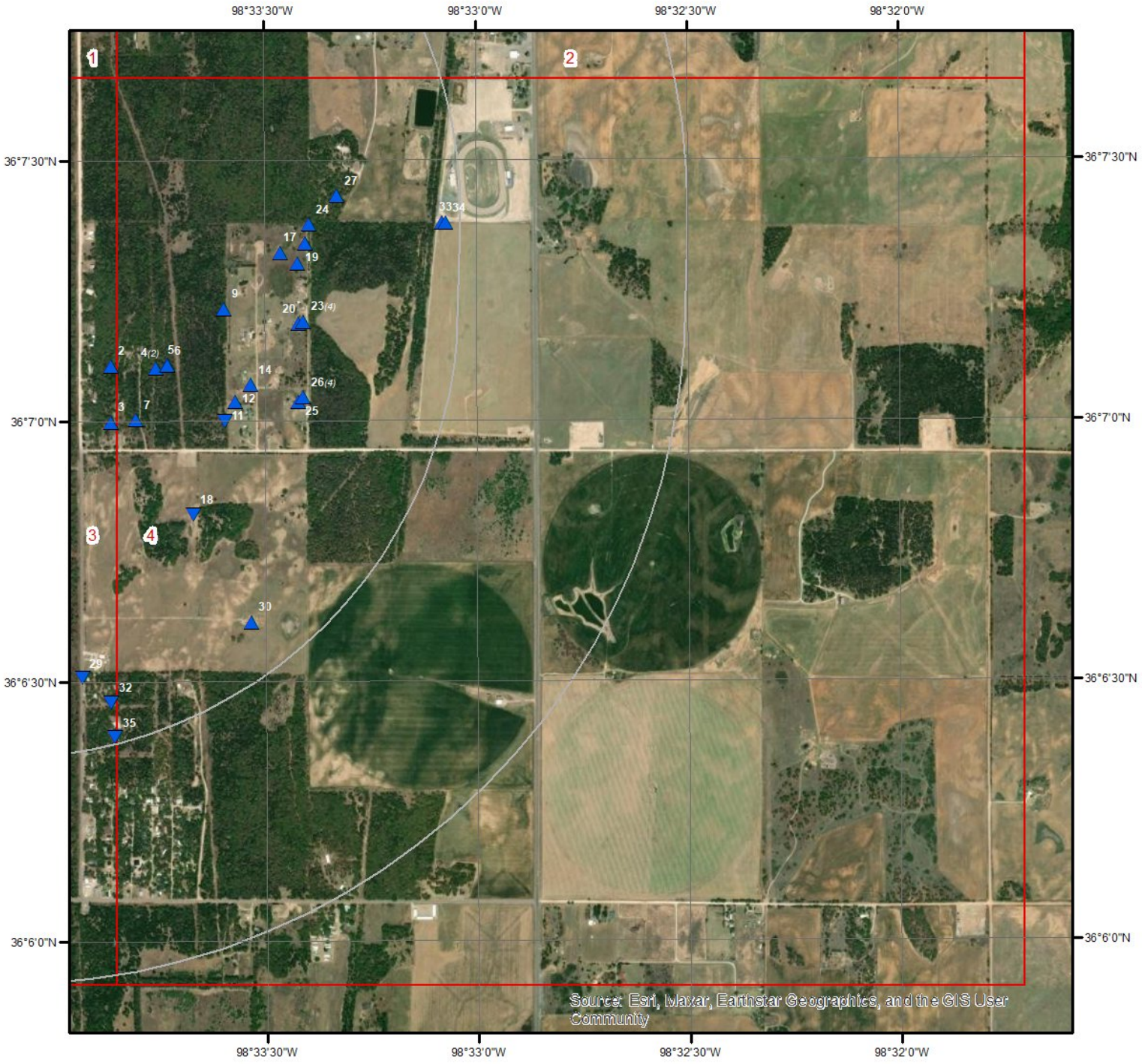
N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources



Wells & Additional Sources - Page 4

N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources Summary

Federal Sources

Public Water Systems Violations and Enforcement Data

Map Key	ID	Distance (ft)	Direction
	No records found		

Safe Drinking Water Information System (SDWIS)

Map Key	ID	Distance (ft)	Direction
	No records found		

USGS National Water Information System

Map Key	Site Number	Distance (ft)	Direction
7	USGS-360700098334701	2046.93	SE
10	USGS-360750098334701	2590.36	NE
12	USGS-360702098333301	2920.11	ESE
15	USGS-360747098345501	3027.66	NW
16	USGS-360643098341401	3068.94	S
18	USGS-360649098333901	3298.93	SE
19	USGS-360718098332401	3404.84	E
20	USGS-360711098332401	3429.96	ESE
25	USGS-360702098332401	3610.18	ESE

Wells from NWIS

Map Key	ID	Distance (ft)	Direction
	No records found		

State Sources

Oil and Gas Wells

Map Key	API	Distance (ft)	Direction
30	3501121721	4690.62	SE

Public Water Supply

Map Key	Water System No	Distance (ft)	Direction
21	OK2000606	3481.94	E
21	OK2000606	3481.94	E
22	OK2000606	3486.79	E
22	OK2000606	3486.79	E
23	OK2000606	3489.83	ESE
23	OK2000611	3489.83	ESE
23	OK2000606	3489.83	ESE
23	OK2000611	3489.83	ESE
26	OK2000606	3647.62	ESE

26	OK2000606	3647.62	ESE
26	OK2000611	3647.62	ESE
26	OK2000611	3647.62	ESE

Underground Injection Control Wells

Map Key	ID	Distance (ft)	Direction
	No records found		

Water Wells

Map Key	Well ID	Distance (ft)	Direction
1	87614	760.28	NNE
2	28698	1436.66	SE
3	21499	1857.68	SE
4	149203	1924.05	SE
4	149505	1924.05	SE
5	150495	2030.68	SE
6	28697	2034.22	SE
8	117692	2550.19	NE
9	30416	2561.96	ESE
11	4989	2910.87	SE
13	90460	2946.05	NE
14	176025	3021.33	ESE
17	4992	3201.16	E
24	40785	3520.62	E
27	4990	3849.48	E
28	90459	4009.61	NE
29	154845	4455.19	SSE
31	152132	4791.71	ENE
32	195608	4813.32	SSE
33	157625	5069.76	E
34	115208	5109.29	E
35	169571	5213.82	SSE

USGS National Water Information System

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
7	SE	0.39	2,046.93	1,640.77	FED USGS

Reporting Agency:	USGS Oklahoma Water Science Center
Site Number:	USGS-360700098334701
Station Name:	19N-13W-14 CCC 1
Site Type:	Well
Latitude:	36.11670530000000
Longitude:	-98.5634154000000
Date Drilled:	
Well Depth:	70.0
Well Depth Unit:	ft
Well Hole Depth:	
W Hole Depth Unit:	
Formation Type:	Terrace, High, Deposits

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
10	NE	0.49	2,590.36	1,648.04	FED USGS

Reporting Agency:	USGS Oklahoma Water Science Center
Site Number:	USGS-360750098334701
Station Name:	19N-13W-11 CCD 1
Site Type:	Well
Latitude:	36.13059399000000
Longitude:	-98.5634154000000
Date Drilled:	19760301
Well Depth:	65.0
Well Depth Unit:	ft
Well Hole Depth:	
W Hole Depth Unit:	
Formation Type:	Terrace, High, Deposits

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
12	ESE	0.55	2,920.11	1,637.36	FED USGS

Reporting Agency:	USGS Oklahoma Water Science Center
Site Number:	USGS-360702098333301
Station Name:	19N-13W-14 CDC 1
Site Type:	Well
Latitude:	36.11726084000000
Longitude:	-98.5595263000000
Date Drilled:	

Well Depth: 80.0
Well Depth Unit: ft
Well Hole Depth:
W Hole Depth Unit:
Formation Type: Terrace, High, Deposits

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
15	NW	0.57	3,027.66	1,625.20	FED USGS

Reporting Agency: USGS Oklahoma Water Science Center
Site Number: USGS-360747098345501
Station Name: 19N-13W-15 BBA 1
Site Type: Well
Latitude: 36.12970000000000
Longitude: -98.5819000000000
Date Drilled:
Well Depth:
Well Depth Unit:
Well Hole Depth:
W Hole Depth Unit:
Formation Type:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
16	S	0.58	3,068.94	1,627.73	FED USGS

Reporting Agency: USGS Oklahoma Water Science Center
Site Number: USGS-360643098341401
Station Name: 19N-13W-23 ACD 1
Site Type: Well
Latitude: 36.11198325000000
Longitude: -98.5709157000000
Date Drilled: 1967
Well Depth: 74.0
Well Depth Unit: ft
Well Hole Depth:
W Hole Depth Unit:
Formation Type: Terrace, Low, Deposits

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
18	SE	0.62	3,298.93	1,635.29	FED USGS

Reporting Agency: USGS Oklahoma Water Science Center
Site Number: USGS-360649098333901
Station Name: 19N-13W-23 BBA 1
Site Type: Well

Latitude: 36.11364980000000
Longitude: -98.5611930000000
Date Drilled:
Well Depth:
Well Depth Unit:
Well Hole Depth:
W Hole Depth Unit:
Formation Type: Terrace, High, Deposits

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
19	E	0.64	3,404.84	1,649.19	FED USGS

Reporting Agency: USGS Oklahoma Water Science Center
Site Number: USGS-360718098332401
Station Name: 19N-13W-14 CAA 1
Site Type: Well
Latitude: 36.12170519000000
Longitude: -98.5570262000000
Date Drilled:
Well Depth: 80.0
Well Depth Unit: ft
Well Hole Depth:
W Hole Depth Unit:
Formation Type: Terrace, High, Deposits

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
20	ESE	0.65	3,429.96	1,653.49	FED USGS

Reporting Agency: USGS Oklahoma Water Science Center
Site Number: USGS-360711098332401
Station Name: 19N-13W-14 CAD 1
Site Type: Well
Latitude: 36.11976078000000
Longitude: -98.5570262000000
Date Drilled:
Well Depth: 80.0
Well Depth Unit: ft
Well Hole Depth:
W Hole Depth Unit:
Formation Type: Terrace, High, Deposits

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
25	ESE	0.68	3,610.18	1,640.42	FED USGS

Reporting Agency: USGS Oklahoma Water Science Center

Wells and Additional Sources Detail Report

Site Number:	USGS-360702098332401
Station Name:	19N-13W-14 CDD 1
Site Type:	Well
Latitude:	36.11726080000000
Longitude:	-98.5570262000000
Date Drilled:	
Well Depth:	80.0
Well Depth Unit:	ft
Well Hole Depth:	
W Hole Depth Unit:	
Formation Type:	Terrace, High, Deposits

Oil and Gas Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
30	SE	0.89	4,690.62	1,637.75	OGW

API:	3501121721	Meridian:	Indian
Status:	AC	Range:	13W
Well No:	1	Township:	19N
Well Type:	GAS	Section:	23
Surface/Bottom:	Surface Hole	Quarters1:	
Well Name:	MCEACHERN	Quarters2:	C
Operator No:	24056	Quarters3:	SE
County:	BLAINE	Quarters4:	NW

Public Water Supply

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
21	E	0.66	3,481.94	1,660.86	PWS

Water System No:	OK2000606	System (Wells):	North Blaine Water Corp
System:	NORTH BLAINE WATER	Sys Status (Wells):	
Facility:	WELL 6	Facility (Wells):	Well 6
Activity Status:	Active	Facility Type (Wells):	
Type Code:	Well	County (Wells):	Blaine
Location:		Longitude (Wells):	-98.561944
Longitude:	-98.5567402031699	Latitude (Wells):	36.1159429991014
Latitude:	36.1223352547469		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
21	E	0.66	3,481.94	1,660.86	PWS

Water System No:	OK2000606	System (Wells):	NORTH BLAINE WATER CORP
System:	NORTH BLAINE WATER	Sys Status (Wells):	Active

Facility:	WELL 6	Facility (Wells):	WELL 6
Activity Status:	Active	Facility Type (Wells):	WL
Type Code:	Well	County (Wells):	BLAINE
Location:		Longitude (Wells):	-98.561944
Longitude:	-98.5567402031699	Latitude (Wells):	36.1159429991014
Latitude:	36.1223352547469		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
22	E	0.66	3,486.79	1,660.86	PWS

Water System No:	OK2000606	System (Wells):	NORTH BLAINE WATER CORP
System:	NORTH BLAINE WATER	Sys Status (Wells):	Active
Facility:	WELL 3	Facility (Wells):	WELL 3
Activity Status:	Active	Facility Type (Wells):	WL
Type Code:	Well	County (Wells):	BLAINE
Location:		Longitude (Wells):	-98.556716
Longitude:	-98.5567242027848	Latitude (Wells):	36.1223179991012
Latitude:	36.1223242544289		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
22	E	0.66	3,486.79	1,660.86	PWS

Water System No:	OK2000606	System (Wells):	North Blaine Water Corp
System:	NORTH BLAINE WATER	Sys Status (Wells):	
Facility:	WELL 3	Facility (Wells):	Well 3
Activity Status:	Active	Facility Type (Wells):	
Type Code:	Well	County (Wells):	Blaine
Location:		Longitude (Wells):	-98.556716
Longitude:	-98.5567242027848	Latitude (Wells):	36.1223179991012
Latitude:	36.1223242544289		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
23	ESE	0.66	3,489.83	1,649.27	PWS

Water System No:	OK2000606	System (Wells):	NORTH BLAINE WATER CORP
System:	NORTH BLAINE WATER	Sys Status (Wells):	Active
Facility:	WELL 2	Facility (Wells):	WELL 2
Activity Status:	Active	Facility Type (Wells):	WL
Type Code:	Well	County (Wells):	BLAINE
Location:		Longitude (Wells):	-98.556808
Longitude:	-98.5568162032332	Latitude (Wells):	36.1198379991013

Latitude:	36.1198442543757
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
23	ESE	0.66	3,489.83	1,649.27	PWS

Water System No:	OK2000611	System (Wells):	Longdale
System:	LONGDALE	Sys Status (Wells):	
Facility:	WELL 2	Facility (Wells):	Well 2
Activity Status:	Active	Facility Type (Wells):	
Type Code:	Well	County (Wells):	Blaine
Location:		Longitude (Wells):	-98.563202
Longitude:	-98.5568162032332	Latitude (Wells):	36.1304099991011
Latitude:	36.1198442543757		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
23	ESE	0.66	3,489.83	1,649.27	PWS

Water System No:	OK2000606	System (Wells):	North Blaine Water Corp
System:	NORTH BLAINE WATER	Sys Status (Wells):	
Facility:	WELL 2	Facility (Wells):	Well 2
Activity Status:	Active	Facility Type (Wells):	
Type Code:	Well	County (Wells):	Blaine
Location:		Longitude (Wells):	-98.556808
Longitude:	-98.5568162032332	Latitude (Wells):	36.1198379991013
Latitude:	36.1198442543757		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
23	ESE	0.66	3,489.83	1,649.27	PWS

Water System No:	OK2000611	System (Wells):	LONGDALE
System:	LONGDALE	Sys Status (Wells):	Active
Facility:	WELL 2	Facility (Wells):	WELL 2
Activity Status:	Active	Facility Type (Wells):	WL
Type Code:	Well	County (Wells):	BLAINE
Location:		Longitude (Wells):	-98.563202
Longitude:	-98.5568162032332	Latitude (Wells):	36.1304099991011
Latitude:	36.1198442543757		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
26	ESE	0.69	3,647.62	1,640.72	PWS

Water System No:	OK2000606	System (Wells):	NORTH BLAINE WATER CORP
System:	NORTH BLAINE WATER	Sys Status (Wells):	Active
Facility:	WELL 1	Facility (Wells):	WELL 1
Activity Status:	Active	Facility Type (Wells):	WL
Type Code:	Well	County (Wells):	BLAINE
Location:		Longitude (Wells):	-98.556823
Longitude:	-98.5568312025531	Latitude (Wells):	36.1174079991013
Latitude:	36.117414253307		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
26	ESE	0.69	3,647.62	1,640.72	PWS

Water System No:	OK2000606	System (Wells):	North Blaine Water Corp
System:	NORTH BLAINE WATER	Sys Status (Wells):	
Facility:	WELL 1	Facility (Wells):	Well 1
Activity Status:	Active	Facility Type (Wells):	
Type Code:	Well	County (Wells):	Blaine
Location:		Longitude (Wells):	-98.556823
Longitude:	-98.5568312025531	Latitude (Wells):	36.1174079991013
Latitude:	36.117414253307		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
26	ESE	0.69	3,647.62	1,640.72	PWS

Water System No:	OK2000611	System (Wells):	Longdale
System:	LONGDALE	Sys Status (Wells):	
Facility:	WELL 1	Facility (Wells):	Well 1
Activity Status:	Active	Facility Type (Wells):	
Type Code:	Well	County (Wells):	Blaine
Location:		Longitude (Wells):	-98.563256
Longitude:	-98.5568312025531	Latitude (Wells):	36.1304119991012
Latitude:	36.117414253307		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
26	ESE	0.69	3,647.62	1,640.72	PWS

Water System No:	OK2000611	System (Wells):	LONGDALE
System:	LONGDALE	Sys Status (Wells):	Active

Wells and Additional Sources Detail Report

Facility:	WELL 1	Facility (Wells):	WELL 1
Activity Status:	Active	Facility Type (Wells):	WL
Type Code:	Well	County (Wells):	BLAINE
Location:		Longitude (Wells):	-98.563256
Longitude:	-98.5568312025531	Latitude (Wells):	36.1304119991012
Latitude:	36.117414253307		
Report Source:	GIS Water System Facilities (available for download on 19/07/2022); PWS Wells (available for download on 19/07/2022)		

Water Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
1	NNE	0.14	760.28	1,650.12	WATER WELLS

Well ID (Geo):		Well ID:	87614
Latitude (Geo):		Latitude:	36.127515
Longitude (Geo):		Longitude:	-98.568917
Well Owner (Geo):		Well Owner:	Oklahoma Wildlife Department
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SWNENE
Section (Geo):		Sec Twp Rge:	15-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
2	SE	0.27	1,436.66	1,640.72	WATER WELLS

Well ID (Geo):		Well ID:	28698
Latitude (Geo):		Latitude:	36.118432
Longitude (Geo):		Longitude:	-98.564415
Well Owner (Geo):		Well Owner:	Ron & Pat Thompson
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	NWSWSW
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
3	SE	0.35	1,857.68	1,638.13	WATER WELLS

Well ID (Geo):		Well ID:	21499
Latitude (Geo):		Latitude:	36.116625
Longitude (Geo):		Longitude:	-98.564415
Well Owner (Geo):		Well Owner:	Edward Redhat
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SWSWSW
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
4	SE	0.36	1,924.05	1,640.24	WATER WELLS

Well ID (Geo):		Well ID:	149203
Latitude (Geo):		Latitude:	36.1183694
Longitude (Geo):		Longitude:	-98.5626111
Well Owner (Geo):		Well Owner:	REDHAT INDIAN HEALTH SERV.
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	NESWSW
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
4	SE	0.36	1,924.05	1,640.24	WATER WELLS

Well ID (Geo):		Well ID:	149505
Latitude (Geo):		Latitude:	36.1183694
Longitude (Geo):		Longitude:	-98.5626111
Well Owner (Geo):		Well Owner:	REDHAT IHS CLINTON
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	NESWSW
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			

URL WL:
URL WLD:
Data Source: Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
5	SE	0.38	2,030.68	1,640.38	WATER WELLS

Well ID (Geo):
Latitude (Geo):
Longitude (Geo):
Well Owner (Geo):
County (Geo):
Quarter (Geo):
Section (Geo):
Township (Geo):
Range (Geo):
Url:
URL WL:
URL WLD:
Well ID: 150495
Latitude: 36.1184605
Longitude: -98.5621775
Well Owner: REDHAT IHS CLINTON
County: Blaine
Quarters: NESWSW
Sec Twp Rge: 14-19N-13WI
Data Source: Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
6	SE	0.39	2,034.22	1,640.38	WATER WELLS

Well ID (Geo):
Latitude (Geo):
Longitude (Geo):
Well Owner (Geo):
County (Geo):
Quarter (Geo):
Section (Geo):
Township (Geo):
Range (Geo):
Url:
URL WL:
URL WLD:
Well ID: 28697
Latitude: 36.118432
Longitude: -98.562178
Well Owner: Minnie Redhat
County: Blaine
Quarters: NESWSW
Sec Twp Rge: 14-19N-13WI
Data Source: Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
8	NE	0.48	2,550.19	1,645.35	WATER WELLS

Well ID (Geo):
Latitude (Geo):
Longitude (Geo):
Well Owner (Geo):
Well ID: 117692
Latitude: 36.1299
Longitude: -98.5628167
Well Owner: Agnes OldBear

County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	NENWNW
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
9	ESE	0.49	2,561.96	1,640.71	WATER WELLS

Well ID (Geo):		Well ID:	30416
Latitude (Geo):		Latitude:	36.120239
Longitude (Geo):		Longitude:	-98.55994
Well Owner (Geo):		Well Owner:	Jim Stratton
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SWNESW
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
11	SE	0.55	2,910.87	1,634.39	WATER WELLS

Well ID (Geo):		Well ID:	4989
Latitude (Geo):		Latitude:	36.116625
Longitude (Geo):		Longitude:	-98.55994
Well Owner (Geo):		Well Owner:	Era Big Medicine
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SWSESW
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
13	NE	0.56	2,946.05	1,644.14	WATER WELLS

Well ID (Geo):		Well ID:	90460
Latitude (Geo):		Latitude:	36.131053
Longitude (Geo):		Longitude:	-98.562281
Well Owner (Geo):		Well Owner:	Bill Geiger
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SESWSW
Section (Geo):		Sec Twp Rge:	11-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
14	ESE	0.57	3,021.33	1,641.87	WATER WELLS

Well ID (Geo):		Well ID:	176025
Latitude (Geo):		Latitude:	36.1178167
Longitude (Geo):		Longitude:	-98.5589
Well Owner (Geo):		Well Owner:	David Beebe
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	NWSESW
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
17	E	0.61	3,201.16	1,652.18	WATER WELLS

Well ID (Geo):		Well ID:	4992
Latitude (Geo):		Latitude:	36.122047
Longitude (Geo):		Longitude:	-98.557703
Well Owner (Geo):		Well Owner:	Zola Redhat
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	NENESW
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			

URL WL:
URL WLD:
Data Source: Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
24	E	0.67	3,520.62	1,642.28	WATER WELLS

Well ID (Geo):
Latitude (Geo):
Longitude (Geo):
Well Owner (Geo):
County (Geo):
Quarter (Geo):
Section (Geo):
Township (Geo):
Range (Geo):
Url:
URL WL:
URL WLD:
Well ID: 40785
Latitude: 36.12295
Longitude: -98.556585
Well Owner: Lloyd Mollett
County: Blaine
Quarters:
Sec Twp Rge: 14-19N-13WI
Data Source: Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
27	E	0.73	3,849.48	1,658.11	WATER WELLS

Well ID (Geo):
Latitude (Geo):
Longitude (Geo):
Well Owner (Geo):
County (Geo):
Quarter (Geo):
Section (Geo):
Township (Geo):
Range (Geo):
Url:
URL WL:
URL WLD:
Well ID: 4990
Latitude: 36.123854
Longitude: -98.555466
Well Owner: Robert & Joane Campbell
County: Blaine
Quarters: SWSWNE
Sec Twp Rge: 14-19N-13WI
Data Source: Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
28	NE	0.76	4,009.61	1,648.63	WATER WELLS

Well ID (Geo):
Latitude (Geo):
Longitude (Geo):
Well Owner (Geo):
Well ID: 90459
Latitude: 36.131053
Longitude: -98.557805
Well Owner: Bill Geiger

County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SESESW
Section (Geo):		Sec Twp Rge:	11-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
29	SSE	0.84	4,455.19	1,624.13	WATER WELLS

Well ID (Geo):		Well ID:	154845
Latitude (Geo):		Latitude:	36.1084333
Longitude (Geo):		Longitude:	-98.5655833
Well Owner (Geo):		Well Owner:	David Beats
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	NENESE
Section (Geo):		Sec Twp Rge:	22-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
31	ENE	0.91	4,791.71	1,650.10	WATER WELLS

Well ID (Geo):		Well ID:	152132
Latitude (Geo):		Latitude:	36.1309
Longitude (Geo):		Longitude:	-98.55473
Well Owner (Geo):		Well Owner:	Paul Doman
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SWSWSE
Section (Geo):		Sec Twp Rge:	11-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
32	SSE	0.91	4,813.32	1,629.35	WATER WELLS

Well ID (Geo):		Well ID:	195608
Latitude (Geo):		Latitude:	36.107641003
Longitude (Geo):		Longitude:	-98.564438202
Well Owner (Geo):		Well Owner:	Hill, Dean & Cindy
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	NWNWSW
Section (Geo):		Sec Twp Rge:	23-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
33	E	0.96	5,069.76	1,641.64	WATER WELLS

Well ID (Geo):		Well ID:	157625
Latitude (Geo):		Latitude:	36.123
Longitude (Geo):		Longitude:	-98.5513333
Well Owner (Geo):		Well Owner:	Hoskins, Jessie
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SWSENE
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
34	E	0.97	5,109.29	1,641.37	WATER WELLS

Well ID (Geo):		Well ID:	115208
Latitude (Geo):		Latitude:	36.1229833
Longitude (Geo):		Longitude:	-98.5512
Well Owner (Geo):		Well Owner:	Jesie Hoskins
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SWSENE
Section (Geo):		Sec Twp Rge:	14-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			

Wells and Additional Sources Detail Report

URL WL:
URL WLD:
Data Source: Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
35	SSE	0.99	5,213.82	1,617.38	WATER WELLS

Well ID (Geo):		Well ID:	169571
Latitude (Geo):		Latitude:	36.1065333
Longitude (Geo):		Longitude:	-98.5643
Well Owner (Geo):		Well Owner:	Bruce Ward
County (Geo):		County:	Blaine
Quarter (Geo):		Quarters:	SWNWSW
Section (Geo):		Sec Twp Rge:	23-19N-13WI
Township (Geo):			
Range (Geo):			
Url:			
URL WL:			
URL WLD:			
Data Source:	Water Well Record from OWRB Web (Oct 8, 2020),OWRB Groundwater Wells		

Radon Information

This section lists any relevant radon information found for the target property.

Federal EPA Radon Zone for *BLAINE* County: **3**

Zone 1: Counties with predicted average indoor radon screening levels greater than 4 pCi/L
Zone 2: Counties with predicted average indoor radon screening levels from 2 to 4 pCi/L
Zone 3: Counties with predicted average indoor radon screening levels less than 2 pCi/L

Federal Area Radon Information for *BLAINE* County

No Measures/Homes:	13
Geometric Mean:	0.9
Arithmetic Mean:	1.5
Median:	1.1
Standard Deviation:	1.3
Maximum:	3.7
% >4 pCi/L:	0
% >20 pCi/L:	0
Notes on Data Table:	TABLE 1. Screening indoor radon data from the EP A/State Residential Radon Survey of Oklahoma conducted during 1989-90. Data represent 2-7 day charcoal canister measurements from the lowest level of each home tested.

Appendix

Federal Sources

Indoor Radon Data — **INDOOR RADON**

Indoor radon measurements tracked by the Environmental Protection Agency(EPA) and the State Residential Radon Survey.

Public Water Systems Violations and Enforcement Data — **PWSV**

List of drinking water violations and enforcement actions from the Safe Drinking Water Information System (SDWIS) made available by the Drinking Water Protection Division of the US EPA's Office of Groundwater and Drinking Water. Enforcement sensitive actions are not included in the data released by the EPA. Address information provided in SWDIS may correspond either with the physical location of the water system, or with a contact address.

Radon Zone Level — **RADON ZONE**

Areas showing the level of Radon Zones (level 1, 2 or 3) by county. This data is maintained by the Environmental Protection Agency (EPA).

Safe Drinking Water Information System (SDWIS) — **SDWIS**

The Safe Drinking Water Information System (SDWIS) contains information about public water systems as reported to US Environmental Protection Agency (EPA) by the states. Addresses may correspond with the location of the water system, or with a contact address.

Soil Survey Geographic database — **SSURGO**

The Soil Survey Geographic database (SSURGO) contains information about soil as collected by the National Cooperative Soil Survey at the Natural Resources Conservation Service (NRCS). Soil maps outline areas called map units. The map units are linked to soil properties in a database. Each map unit may contain one to three major components and some minor components.

USGS Current Topo — **US TOPO**

US Topo topographic maps are produced by the National Geospatial Program of the U.S. Geological Survey (USGS). The project was launched in late 2009, and the term "US Topo" refers specifically to quadrangle topographic maps published in 2009 and later.

USGS Geology — **US GEOLOGY**

Seamless maps depicting geological information provided by the United States Geological Survey (USGS).

USGS National Water Information System — **FED USGS**

The U.S. Geological Survey (USGS)'s National Water Information System (NWIS) is the nation's principal repository of water resources data. This database includes comprehensive information of well-construction details, time-series data for gage height, streamflow, groundwater level, and precipitation and water use data.

Wells from NWIS — **FED USGS**

The U.S. Geological Survey's National Water Information System (NWIS) is the nation's principal repository of water resources data. The NWIS includes comprehensive information of well-construction details, time-series data for gage height, streamflow, groundwater level, and precipitation and water use data. This NWIW dataset contains select Site Types from the overall NWIS Sites data, limited to the following Group Site Types only: Groundwater Group Site Types: Well, Collector or Ranney type well, Hyporheic-zone well, Interconnected Wells, Multiple wells; Spring Group Site Type: Spring; and Other Group Site Types: Aggregate groundwater use, Cistern.

State Sources

Oil and Gas Wells — **OGW**

List of well records found in the Oklahoma Corporation Commission's Well Data System.

Public Water Supply — **PWS**

Public Water Supply Systems data provided by the Water Quality Division, Oklahoma Department of Environmental Quality. This data inlcudes locations of permitted public water supply wells and systems

across the state.

Underground Injection Control Wells **UIC**

The Underground Injection Control (UIC) Program is a federal program established under the provision of the Safe Drinking Water Act of 1974. Since groundwater is a major source of drinking water in the United States, the UIC Program requirements were designed to prevent contamination of groundwater resulting from the operation of injection wells. The Underground Injection Well Inventory is provided by the Oklahoma Environmental Protection Agency. This inventory includes Class V Injections Wells which are utilized to inject non-hazardous waste into or above the Underground Source of Drinking Water.

Water Wells **WATER WELLS**

A list of water well locations in the Oklahoma Water Resources Board (OWRB)'s Water Well Record Search.

Liability Notice

Reliance on information in Report: The Physical Setting Report (PSR) DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as a review of environmental databases and physical characteristics for the site or adjacent properties.

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APPENDIX G

Qualifications of Environmental Professionals

John Allison

Environmental Specialist

Education: Bachelor of Science, Environmental Science

Experience: 2 years (total)

John Allison is an environmental specialist with 2 years of experience in environmental consulting. He has expertise in environmental studies and NEPA documentation, GIS data collection, wetland delineation, assessing threatened and endangered species habitat, and Section 404 permitting. Responsibilities include coordination/assisting with environmental field investigations, drafting biological evaluations for threatened and endangered species and jurisdictional waters and wetlands, drafting hazardous materials assessments, and performing GPS data collection and analysis. His experience includes projects of various sizes ranging from county bridge replacements to major freeway widening and interchange projects.

Recent Projects:

- Colonel James Jabara Airport Environmental Assessment
- Constant Creek Interceptor Delineation, El Dorado, KS
- I-70 Environmental Assessment Re-evaluation
- Data Reconnaissance
    - SH-45 in Alfalfa County, SH-34 in Woodward County
- Oklahoma Turnpike Authority Program
    - Environmental Studies

Murray Verbonitz

Environmental Project Manager

Education:	Master of Science, Environmental Engineering Bachelor of Science, Chemistry Bachelor of Arts, Public Affairs and Administration
Experience:	16 years (total)

Murray Verbonitz is an environmental project manager with over 16 years of environmental consulting and general managerial experience. He has knowledge of federal, state, and local environmental regulations and guidelines which have served a variety of clients in private and public sectors. His technical work has included the development of soil, air, and water sampling programs, supervision of subsurface drilling programs for soil and hydrogeologic site investigations, interpretation of collected data, and remediation program design. He has conducted wetland and waterway delineations and overseen the preparation of USACE Section 10, 404 (Nationwide and Individual), and 408 Permits as well as the development of wetland/stream mitigation plans. He has conducted or coordinated various aspects of NEPA Survey including wetland delineation, biological assessments, habitat evaluations, cultural/archeological studies, noise modeling, and the development of Categorical Exclusion, Environmental Assessment, and Environmental Impact Statement documents. Other responsibilities have included overseeing the preparation of hundreds of stormwater pollution prevention plans, spill prevention control and countermeasure plans, and Phase I environmental site assessments (Phase I ESA) for a variety of facilities. As a consultant, he has developed compliance schedules and coordinated or conducted training for client facility staff regarding environmental compliance tasks. His current role at Garver primarily focuses on managing NEPA document development and general permitting issues for various transportation projects.

Experience:

Phase I Environmental Site Assessments *(Various Sites, USA)*

As an environmental professional, Mr. Verbonitz has written or reviewed over 500 Phase I Environmental Site Assessments. Subject properties have included vacant land, energy infrastructure, multi-tenant commercial buildings, high-rise towers, filling stations, manufacturing facilities, industrial properties, airports, ranches, and multi-unit residential housing complexes. The listed facilities have been in a variety of settings from extremely rural areas to dense urban downtown locations. Assessments have been conducted throughout many states including Oklahoma, Texas, Kansas, Arkansas, Colorado, New Mexico, California, Missouri, Illinois, and Louisiana. Mr. Verbonitz has expert knowledge of the current Phase I ESA standard (ASTM E1527-21) and strives to identify any environmental condition while conducting environmental due diligence for clients.

Recent Projects:

- **Project 7 Ridgway Water Treatment Plant,** NEPA Documentation
- **Oklahoma Department of Transportation SH-53, SH-19, SH-27, and SH-58 Widening, Resurfacing, and Bridge,** Environmental Studies and NEPA Documentation
- **Oklahoma Department of Transportation Okfuskee County Bridge Replacement,** Environmental Studies and NEPA Documentation,
- **Oklahoma Turnpike Authority Program Management Environmental Studies**

APPENDIX D

Public Involvement

Canton WMA Shooting Range Notice of Public Opinion

Facebook (Posted 1/22/2024, comments collected through 1/31/2024) - Comments are pasted exactly as written, some irrelevant but all are included.

JT Taylor	For those of us that actively hunt Canton MWA in the surrounding area every year, I look so forward to an upgrades in the range. Rather than just trolling the Facebook page I actually went and submitted my written response. I love the idea of splitting the 200, 100, 50 yard ranges and three different ranges maybe with a berm between them or some thing I also love the idea of having a new archery range, I also inquired if it would be a 3-D archery range
Tieler Osborn	Be nice to see some of these wma's being planted and flooded like they used to be…
John Shirley	We need more upgraded shooting ranges that aren't just 50 yards.
Derrick Bibbs	Need to limit nonresident hunters by making them draw tags and make it a point system so the get one tag every 5 years
JT Taylor	Derrick Bibbs what does this have to do with a shooting range on Canton MWA?
Derrick Bibbs	JT Taylor it don't but like I said it needs to happen
Kevin Peake	All for it 100%!!! I can come up catch some.fish and then do some.shooting ! Heck yes !!!! Love it !
Randell Hembree	Hickory creek wma shooting range was supposed upgraded 2 years ago as ranger said. Never been touched!!
Michael Stone	Dewayne Cantellay Mcdonald
Michael Colvard	I think it be amazing
Glenn Payette	Can we afford it now after paying ex director ???
Tyler Wright	Glenn Payette. By not giving employees raises.
Tracy Thomas	I hope we all get one close
Tracy Thomas	Is there any in Osage county
Tony Bravo	Tracy Thomas not Osage but the new one in Newkirk is nice
Tracy Thomas	Tony Bravo thanks I didn't know bout it
Jay Barnett	Someone needs to monitor and clean up Ft. GIBSON GUN RANGE.
Blaine Taylor	Why wont you address the Roman Nose dam fiasco ?
JT Taylor	Blaine Taylor obviously no one cares about lake Watonga, they found all that stuff in 21 when they started doing repairs on it, remember? They found somebody else to come in. They were supposed to fix that leak, so fell on the backside of the dam and they never did they just covered it up and went forward.
Blaine Taylor	JT Taylor Yep. The ODWC is in charge of that. I'm gonna stay up their ass about it until they give us an answer. Apparently they are wanting to "improve" the range at Canton just like they "made improvements" to Lake Watonga.They need to stand down and let the adults run that office.
Jerry Shaw	Blaine Taylor I knew I could count on you!
Blaine Taylor	Jerry Shaw join me. Together We will make enough noise that ODWC can no longer keep their head in the sand.
Jerry Shaw	Blaine Taylor Yeah, no thanks. I understand the system and the delays it unavoidably brings.
Blaine Taylor	Jerry Shaw these make believe federal regulations are just a new excuse. If that was the problem the ODWC would be screaming that from the mountain tops.They are like a child just looking for an excuse to not do their job.Q: What is the maximum effective range of an excuse ? A: ZERO METERS
Jerry Shaw	I believe you meant "made up" federal regulations. Well, this is my last attempt to help you. If you cannot do even the most simple research on your own, even when given the title of the act, I really feel I am wasting my time trying to assist. If you cannot do the basic, most simple efforts to educate yourself when facts are literally handed to you, but insist on just calling it made up, you are on your own.
Kyle Keener	Where was the public comment for adding bonus point in the once in a lifetime draw for money adding point creep to our system?
Clay Sutton	Kyle Keener my thought as well.

ODWC Website Survey Monkey Comments (Posted from 1/17/2024 through 1/31/2024)

	I think the proposed changes will be great for the range and anyone wanting to get into the sport of shooting. I use the range a lot and it would be great to separate the different styles of shooting.
1/25/2024	The range gets a lot of shooters annually. Thanks for the attention to the range.
1/25/2024	I think it is a great idea as I and my relatives use it. There needs to be some way of catching/identifying the people who keep shooting up the signs. Also, the grassy range area needs to be sprayed for stickers as they are horrible there now. An archery range would be fantastic!
1/24/2024	Parking needs to be closer to the range
1/24/2024	I think it's a great idea im for it
1/23/2024	Yes please upgrade we love using the shooting range at canton.
1/22/2024	I live next to the shooting range and I do not like the Proposed shotgun range. For the simple reasons of the lost of the hunting ground. I hope that the berms that separate the three ranges are high enough and made out of something that bullets won't ricochet off of. I've lived next to the range for a year and a half and from time to time I have ricochets go over my house. The ricochets of only happened when people are firing as fast as they possibly can. Not much the wildlife department can do about that. There needs to be a fence that goes all the way around the containment area. Looks like there has been one in the past that has been taken down and now you can stumble into the firing line if you don't know where you're going.
1/22/2024	It all looks like a amazing idea
1/22/2024	I think this will be a addition to the range!
1/22/2024	Do it!
1/22/2024	I'm all for it. The last time I was there I was rather disappointed in the condition of the range. I had to basically build my own target stand. Improvements are much needed.
1/22/2024	Please upgrade this site. Living in Enid there is not much opportunity to take kids to shoot except canton
1/22/2024	Please have close parking to the ranges.
1/22/2024	This is great. Good work.

APPENDIX E

Agency Coordination

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, TULSA DISTRICT
2488 E. 81 ST
TULSA, OKLAHOMA 74137

31 August 2023

Operations Division
Natural Resources and Recreation Branch

Mr. Cliff Schleusner, Chief
U.S. Fish and Wildlife Service
Wildlife & Sport Fish Restoration Program
P.O. Box 1306
Albuquerque, NM 87103

Dear Mr. Schleusner:

The U.S. Army Corps of Engineers (USACE), in Cooperation with the Oklahoma Department of Wildlife Conservation (ODWC), will be the Lead Federal Agency as defined by the Council on Environmental Quality's (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA), 40 CFR 1500-1508, for the following project: Canton Lake Shooting Range Rehabilitation project. As the designated Lead Federal Agency, the USACE will be developing an EA and coordinating with all cooperating agencies.

Furthermore, the USACE will also lead the National Historic Preservation Act, Section 106 as outlined in 36 CFR 800.2(a)2, including both consultation with Tribes and the State Historic Preservation Office. The USACE recognizes the U.S. Fish and Wildlife Service (Service) Wildlife and Sport Fish Restoration Program will provide financial assistance to the Oklahoma Department of Wildlife Conservation for this project and acknowledges the Service as a cooperating agency.

Please direct questions regarding the NEPA implementation and environmental review of these projects to Jason Person, jason.a.person@usace.army.mil or 918-669-4922.

PERRY.BRANDON.L.1241445352
Digitally signed by PERRY.BRANDON.L.1241445352
Date: 2023.08.31 13:38:00 -05'00'

Lee Perry
Team Lead,
Natural Resources Management Branch

cc:
Andrea Crews, Federal Aid Coordinator, Oklahoma Department of Wildlife Conservation

Philips-Schaap, Megan E.

From: Amanda Thomas <amanda.thomas@odwc.ok.gov>
Sent: Tuesday, October 24, 2023 7:17 AM
To: Philips-Schaap, Megan E.
Subject: Fwd: Canton Wildlife Management Area Shooting Range

Categories: Filed by Newforma

Get Outlook for iOS

From: Jonathon Cross <jonathon@noda-oeda.org>
Sent: Monday, October 23, 2023 10:20:48 AM
To: Amanda Thomas <amanda.thomas@odwc.ok.gov>
Subject: [EXTERNAL] Canton Wildlife Management Area Shooting Range

To Whom It May Concern,

This letter is to inform you that Northern Oklahoma Development Authority fully supports the proposed project. We have no other comments.

Sincerely,
Jonathon Cross
Executive Director
Northern Oklahoma Development Authority

Philips-Schaap, Megan E.

From: Amanda Thomas <amanda.thomas@odwc.ok.gov>
Sent: Wednesday, October 18, 2023 10:57 AM
To: Philips-Schaap, Megan E.
Subject: Fwd: Environmental Impact Review

See below response in Canton EA.
Thank you.

Get Outlook for iOS

From: DEQ EnvReviews <EnvReviews@deq.ok.gov>
Sent: Wednesday, October 18, 2023 9:45 AM
To: Amanda Thomas <amanda.thomas@odwc.ok.gov>
Subject: Environmental Impact Review

Dear Ms. Thomas:

In response to your request, we have completed a general environmental impact review for the project listed below.

Project
Letter dated September 28, 2023 – Solicitation for Input for the Canton Wildlife Management Area Shooting Range | Longdale, Blaine County, OK [36.12320, -98.57072]

Adverse Environmental Impacts Under DEQ Jurisdiction
None anticipated.

Additional Regulatory Considerations
Prior to beginning any construction activity disturbing more than one acre, you must submit an NOI and obtain authorization under OKR10, construction stormwater. If you need assistance, please contact DEQ's Stormwater Unit at (405) 702-6100.

Note: This is a summary of the most common regulatory requirements that may be applicable to your project. Other regulatory requirements may apply.

For future projects, please include GPS coordinates in decimal degrees (DD.DDDDD) and continue including street addresses, section/township/range, or other location information.

Please submit future requests via either our online contact portal or email by attaching a single pdf file containing your request and any attachments.

Thank you for the opportunity to provide our comments. If you have any questions or need clarification, please contact me.

Respectfully,

Jon Roberts | Env. Programs Manager III
Office of Continuous Improvement | Department of Environmental Quality
p. 405-702-7111

Philips-Schaap, Megan E.

From: Amanda Thomas <amanda.thomas@odwc.ok.gov>
Sent: Wednesday, November 22, 2023 11:57 AM
To: Philips-Schaap, Megan E.
Subject: Fw: Canton WMA Shooting Range

Please see response below from Water Resources Board.

Amanda Thomas
Shooting Range Coordinator, C & E Division

Headquarters
1801 N. Lincoln Blvd.
Oklahoma City, Oklahoma 73105
O: (405) 521-2085
C: (405) 570-1605
wildlifedepartment.com

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

From: Bonnie Moats <Bonnie.Moats@owrb.ok.gov>
Sent: Wednesday, November 22, 2023 11:46 AM
To: Amanda Thomas <amanda.thomas@odwc.ok.gov>
Subject: Canton WMA Shooting Range

Dear Ms. Thomas,

The OWRB permitting staff reviewed your environmental impact statement and found no issues for comment or concern. Please let us know if you have any additional questions.

Sincerely,

Bonnie Moats
Water Right Specialist
Water Rights Administration Division
OKLAHOMA WATER RESOURCES BOARD
405.530.8844 • owrb.ok.gov • Facebook • Twitter

OKLAHO

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, TULSA DISTRICT
2488 EAST 81ST STREET
TULSA, OKLAHOMA 74137-4209

February 12, 2024

Regulatory Office

Ms. Amanda Thomas
Oklahoma Department of Wildlife Conservation
Post Office Box 53465
Oklahoma City, OK 73152

Dear Ms. Thomas:

Please refer to your request, dated September 28, 2023, regarding the proposed Canton Wildlife Management Area Shooting Range improvements located at latitude 36.12499, longitude -98.57076, in Blaine County, Oklahoma. We have reviewed the submitted data relative to Section 404 of the Clean Water Act (CWA).

Your proposal is not subject to regulation pursuant to Section 404 of the CWA, and a Department of the Army (DA) permit will not be required. Should your method of construction necessitate such a discharge into jurisdictional waters of the U.S., we suggest that you resubmit that portion of your project so that we may determine whether an individual DA permit will be required.

This No Permit Required determination does not address nor include any consideration for geographic jurisdiction on aquatic resources and shall not be interpreted as such.

Although Section 404 CWA authorization is not required, this does not preclude the possibility that a real estate interest or other Federal, State, or local permits may be required. If you desire to complete a "Customer Service Survey" on your experience with the Corps Regulatory Program, you are invited to visit https://regulatory.ops.usace.army.mil/customer-service-survey/ on the internet at your convenience and submit your comments.

Your project has been assigned Identification Number SWT-2023-00463. If you have any questions, please contact Mr. Christian Luper at (918) 669-7400.

Sincerely,

Christian Luper
Andrew R. Commer
Chief, Regulatory Office

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, TULSA DISTRICT
2488 EAST 81ST STREET
TULSA, OKLAHOMA 74137-4290

October 4, 2023

Regulatory Office

Ms. Amanda Thomas
Oklahoma Department of Wildlife Conservation
PO Box 53465
Oklahoma City, OK 73152

Dear Mr. Thomas:

Please reference your correspondence, dated September 28,2023, concerning a solicitation for input for the Canton WMA Shooting Range. The proposed project is located in Section 15, Township 19 North, Range 13 West, in Blaine County, Oklahoma.

A preliminary review indicates potentially jurisdictional waters may be present on described lands within the proposal. A Department of the Army permit may be required if the proposed project requires the placement of dredge or fill material into these areas.

We ask that you re-submit your request once more detailed site specific information, including construction plans, is available. Please address any planned impacts to possible jurisdictional areas which may be present on the described lands.

Your request has been assigned Identification Number SWT-2023-00463. Please reference this number during any future correspondence. If you have any questions, please contact Mr. Brett Adams at (918) 669-7534.

Sincerely,

Brett Adams
For: Andrew R. Commer
Chief, Regulatory Office

USDA

United States Department of Agriculture

October 10, 2023

Amanda Thomas
Shooting Range Coordinator, C&E Division
Oklahoma Dept. of Wildlife Conservation
P.O. Box 53465, Oklahoma City, OK 73152

Re: Canton Wildlife Management Area Shooting Range

Dear Ms. Thomas:

Per your request, we have reviewed the subject project information and determined that the proposed project will not impact any easements, watersheds or prime farmland soils as defined by the Farmland Protection Policy Act.

If I can be of further assistance, let me know.

Sincerely,

Steve Glasgow
STATE RESOURCE CONSERVATIONIST

Natural Resources Conservation Service
100 USDA, Suite 206
Stillwater, OK 74074-2655
Voice (405) 742-1233 – FAX (855) 421-4639

Verbonitz, Murray J.

From: Verbonitz, Murray J.
Sent: Tuesday, January 30, 2024 8:03 AM
To: Hughes, Jeremy - FPAC-NRCS, OK
Cc: Clark, Paul - FPAC-NRCS, OK; Philips-Schaap, Megan E.
Subject: RE: [External Email]NRCS Coordination for Farmland Impacts - Canton WMA Gun Range EA
Attachments: Canton WMA EA AD-1006 Farmland Conversion Impact Rating_Garver.pdf

Jeremy

Attached is the AD-1006 form with Parts VI and VII completed. Thank you.

Sincerely,

Murray Verbonitz
Garver
918-858-4879

From: Hughes, Jeremy - FPAC-NRCS, OK <jeremy.hughes2@usda.gov>
Sent: Monday, November 20, 2023 7:26 PM
To: Verbonitz, Murray J. <MJVerbonitz@GarverUSA.com>
Cc: Clark, Paul - FPAC-NRCS, OK <paul.d.clark@usda.gov>
Subject: FW: [External Email]NRCS Coordination for Farmland Impacts - Canton WMA Gun Range EA

Jeremy Hughes
District Conservationist Team 3
Acting District Conservationist Team 1
USDA-NRCS
Ph. 580.256.5320 ext.122
Email: jeremy.hughes2@usda.gov

From: Baird, Andrew - FPAC-NRCS, OK <Andrew.Baird@usda.gov>
Sent: Monday, November 20, 2023 2:49 PM
To: Hughes, Jeremy - FPAC-NRCS, OK <jeremy.hughes2@usda.gov>
Cc: Clark, Paul - FPAC-NRCS, OK <paul.d.clark@usda.gov>; MJVerbonitz@GarverUSA.com
Subject: RE: [External Email]NRCS Coordination for Farmland Impacts - Canton WMA Gun Range EA

Good afternoon,

I have attached the completed AD-1006 pertaining to the Canton WMA Gun Range EA project in Blaine County. Please print a copy and file in 310-landuse and send a copy to the originator.

Sincerely,

Andrew B. Baird
Soil Scientist

USDA-NRCS Clinton TSO
(580) 715-3433

From: Hughes, Jeremy - FPAC-NRCS, OK <jeremy.hughes2@usda.gov>
Sent: Tuesday, November 14, 2023 10:09 AM
To: Baird, Andrew - FPAC-NRCS, OK <Andrew.Baird@usda.gov>
Cc: Clark, Paul - FPAC-NRCS, OK <paul.d.clark@usda.gov>; MJVerbonitz@GarverUSA.com
Subject: FW: [External Email]NRCS Coordination for Farmland Impacts - Canton WMA Gun Range EA

Mr. Baird,

This is a new one just received. Thank you!

Jeremy Hughes
District Conservationist Team 3
Acting District Conservationist Team 1
USDA-NRCS
Ph. 580.256.5320 ext.122
Email: jeremy.hughes2@usda.gov

From: Verbonitz, Murray J. <MJVerbonitz@GarverUSA.com>
Sent: Monday, November 13, 2023 5:02 PM
To: Hughes, Jeremy - FPAC-NRCS, OK <jeremy.hughes2@usda.gov>
Cc: Philips-Schaap, Megan E. <MEPhilips-Schaap@GarverUSA.com>; blaineccd@conservation.ok.gov
Subject: [External Email]NRCS Coordination for Farmland Impacts - Canton WMA Gun Range EA

Jeremy Hughes,

Good morning. Please see the attached letter requesting your review and completion of the NRCS portions of the attached AD-1006 form. Note that the acres to be converted were calculated by using the largest area possible to accommodate and future changes in design plans.

Attachments Include:
Request letter, location map, conceptual layout map, and farmland classification report
AD-1006 form
Conceptual design KMZ

In order to maintain the schedule of the project, please complete and return this form to me within the next 45 days. Let me know if you have any questions or require and other materials. Thank you,

Sincerely,

OBS Ref. 2023-472-STA-ODWC

Dear Amanda Thomas, October 23, 2023

We have reviewed occurrence information on federal and state threatened, endangered, or candidate species currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 15-T19N-R13W, Blaine County

We found 4 occurrences of relevant species within the vicinity of the project location as described.

Species Name	Common Name	Federal Status
Grus americana	**Whooping Crane**	**Listed Endangered**
County	***TRS***	***Count***
Blaine	Sec. 11-T18N-R13W	1
Blaine	Sec. 17-T19N-R13W	1
Blaine	Sec. 24-T19N-R13W	1
Haliaeetus leucocephalus	**Bald Eagle**	**Protected**
County	***TRS***	***Count***
Blaine	Sec. 5-T19N-R13W	1

Additionally, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following link helpful.

ONHI, guide to ranking codes for endangered and threatened species:
http://www.oknaturalheritage.ou.edu/content/biodiversity-info/ranking-guide/

Kristin Comolli
Oklahoma Natural Heritage Inventory
(405) 325-4700
kcomolli@ou.edu

Oklahoma Historical Society
State Historic Preservation Office

May 21, 2024

Mr. Jeff Knack
US Army Corps of Engineers – OD-NR
2488 East 81st
Tulsa, OK 74137-4290

RE: File #1607-24; USACE Proposed DWC Canton WMA Gun Range Project #CAN-FY22-004

Dear Mr. Knack:

We have received and reviewed the documentation submitted on the referenced project in * County. Additionally, we have examined the information contained in the Oklahoma Landmarks Inventory (OLI) files and other materials on historic resources available in our office. We find that there are no known historic properties affected within the referenced project's area of potential effect.

In addition to our review, you must contact the Oklahoma Archeological Survey (OAS), 111 East Chesapeake, #102, Norman OK 73019-5111 (#405-325-7211, FAX #405-325-7604), to obtain a determination about the presence of prehistoric resources that may be eligible for the National Register of Historic Places. Should the OAS conclude that there are no prehistoric archaeological sites or other types of "historic properties," as defined in 36 CFR Part 800.16(l), which are eligible for inclusion in the National Register of Historic Places within the project area and that such sites are unlikely to occur, we concur with that opinion.

The OAS may conclude that an additional on-site investigation of all or part of the project impact area is necessary to determine the presence of archaeological resources. In the event that such an investigation reveals the presence of prehistoric archaeological sites, we will defer to the judgment of the OAS concerning whether or not any of the resources should be considered "historic properties" under the Section 106 review process. If sites dating from the historic period are identified during the survey or are encountered during implementation of the project, additional assessments by the State Historic Preservation Office will be necessary.

Should further correspondence pertaining to this project be necessary, please reference the above underlined file number. If you have any questions, please contact Kristina Wyckoff, Historical Archaeologist, at 405-521-6381. Thank you.

Sincerely,

Lynda Ozan
Deputy State Historic
Preservation Officer

LO:jr

800 Nazih Zuhdi Drive, Oklahoma City, OK 73105-7917
405-521-6249 | Fax 405-522-0816 | www.okhistory.org/shpo

Oklahoma Archeological Survey
THE UNIVERSITY OF OKLAHOMA

May 31, 2024

U.S. Army Corps of Engineers
Attn: Jeff Knack
Chief, Natural Resources
& Recreation Branch
2488 East 81st St.
Tulsa, OK 74137-4290

Re: OAS FY24-1846 USACE *Cultural Resources Survey Report for the ODWC Canton WMA Gun Range.*
Report by Rob Nold & Mitchell Miranda (Stantec).
Legal Location: Section 15, T19N, R13W, Blaine County, Oklahoma.

Dear Mr. Knack,

This agency received the above-referenced cultural resources survey reports of investigations regarding the proposed Canton WMA Gun Range Project for review and comment. From the information provided, we understand that Stantec surveyed the 13-acre overall Area of Potential Effects (APE) December 4-5, 2023. No archaeological sites were documented. USACE recommends a finding of *No Effect on Historic Properties.*

I concur with the findings and recommendations as they pertain to prehistoric archaeological resources and defer opinion on overall project effects to the State Historic Preservation Office.

This review has been conducted in cooperation with the State Historic Preservation Office, Oklahoma Historical Society. You must also have a letter from that office to document your consultation pursuant to Section 106 of the National Historic Preservation Act.

Sincerely,

Kary L. Stackelbeck, Ph.D.
State Archaeologist

cc: SHPO

APPENDIX F

Environmental Stewardship Plan

ENVIRONMENTAL STEWARDSHIP PLAN

CANTON WILDLIFE MANAGEMENT AREA SHOOTING RANGE

BLAINE COUNTY, OK

JANUARY 2024

TABLE OF CONTENTS

- Site Location Map
- Existing Site Facilities
- Proposed Renovation and Expansion

1.0 Introduction

New and renovated Wildlife Management Area (WMA) shooting ranges provide safe, environmentally responsible opportunities for new and existing hunters, and recreational and competitive shooters to hone their skills and improve their safe firearm handling skills.

Proposed renovation and expansion of the existing shooting range on Canton WMA is located in Blaine County, Oklahoma. The shooting range is located on property owned by the U.S. Army of Corps of Engineers (USACE), under license for operations and management by the ODWC, and funded by the ODWC and United States Fish and Wildlife Service (USFWS). The shooting range footprint studied for environmental assessment in 2023/24 is approximately 41 acres in size and is located approximately 0.35 miles east of Canton Lake, approximately 1 mile southwest of Longdale, Oklahoma, and located north and east of Thunder Road Scenic Drive, and north and south of EW-615 in Section 15, Township 19N, Range 13W.

Proposed renovation and expansion plans include improvements to the existing 200-yard rifle range, adding 100-yard rifle range and 50-yard pistol range, covered metal shooting stations including 4 shooting benches/tables for all 3 ranges, a shotgun/trap range, an archery range, fencing, gates, restrooms, and associated parking lots. All range components will include American Disabilities Act (ADA) parking and access.

To date, there are no federal or state environmental laws specific to non-military shooting ranges. This Environmental Stewardship Plan (ESP) was adapted and modified from materials within the National Shooting Sports Foundation's manual, National Rifle Association Range Source Book, and U.S. Environmental Protection Agency Best Management Practices for Lead at Outdoor Shooting Ranges.

This ESP, revised in January 2024, was developed as a result of Oklahoma Department of Wildlife Conservation's (ODWC) commitment to environmental resources on ODWC WMAs statewide.

1.1 Mission Statement

We manage and protect fish and wildlife, along with their habitats, while also growing our community of hunters and anglers, partnering with those who love the outdoors, and fostering stewardship with those who care for the land.

WHO WE ARE: The Oklahoma Department of Wildlife Conservation (ODWC) with its 359 employees is responsible for managing Oklahoma's fish and wildlife resources and habitat.

WHAT WE BELIEVE: The state's fish and wildlife belong to all Oklahomans and should be managed so their populations will be sustained forever.

HOW WE ARE FUNDED: ODWC does not receive general state tax appropriations. License sales and federal Wildlife and Sportfish Restoration Program grant revenues are the main funding sources. Every license dollar spent by sportsmen in Oklahoma is used to fund ODWC's user pay/user benefit conservation efforts.

1.2 Purpose

The purpose of this ESP is to provide ODWC employees with techniques to prevent or minimize environmental impacts associated with an outdoor range by:

- Reviewing existing conditions and identifying areas of potential environmental concern that may exist or develop;
- Recommending best management practices (BMPs) for areas of concern, if any;
- Prioritizing and implementing appropriate actions to manage the areas of concerns;
- Evaluate ESP progress as needed and make appropriate revisions for subsequent years.

1.3 Goals

ODWC BMPs for managing lead include:

- Side berm and backstop berm construction and inspection.
- Control runoff by using organic ground cover and/or engineered runoff controls.
- Establish and maintain full vegetative or coarse ground cover to prevent soil erosion.
- Soil pH monitoring.
- Control lead through the addition of lime.
- Reclamation and recycling lead as needed.
- Noise.
- Document BMP activities and keep records.

2.0 Existing Shooting Range Site Assessment

2.1 Location

The existing shooting range is located within a rural area approximately 0.35 miles east of Canton Lake, approximately 1 mile southwest of Longdale, Oklahoma, and located east of Thunder Road Scenic Drive, and south of EW-615 in Section 15, Township 19N, Range 13W.

2.2 Facilities

The existing shooting range is approximately 200-yards long and 30-yards wide. The existing site has a covered shooting area with 3 shooting benches, earthen backstop/sandhill located 200-yards down range, target frames at 35-, 100-, 150-, and 200- yards, dirt/gravel parking area, and dirt/gravel road. Users are required to bring their own targets to attach to the existing target frames. Users must park approximately 100-yards from covered shooting area in a designated parking area to access the shooting range. Walk-in traffic only is an effort to reduce the amount and size of targets and trash used at the shooting range.

2.3 Environmental Conditions

Habitat/Vegetation: The site habitat consists of upland forest, food plots, upland grasses, developed roadways, and an existing shooting range.

Population: There are scattered rural homesteads.

Noise: Per Oklahoma Statute Title 63. Public Health and Safety §63-709.2. Noise – Exemption from liability.

Soil: Soils consist of Nobscot, Waldeck, and Tivoli, classified as sandy soils with low hydric soil ratings.

Water: There are no known surface water bodies and/or wetlands at this location.

3.0 Proposed Renovation and Expansion

Proposed renovation and expansion plans include improvements to the existing 200-yard rifle range, adding 100-yard rifle range and 50-yard pistol range, covered metal shooting stations including 4 shooting benches/tables for all 3 ranges, a shotgun/trap range, an archery range, fencing, gates, restrooms, and associated parking lots. All range components will include American Disabilities Act (ADA) parking and access.

3.1 200-yard Rifle Range

The existing 200-yard rifle range will be re-constructed at its current location. The 200-yard rifle range will have a covered metal shooting station with 4 fixed shooting benches/tables, target frames up to 200-yards, side berms, and a backstop berm.

Renovation/New Construction BMPs include:

- **Bullet Containment:** Side berms and backstop berms are constructed to increase safety, reduce noise levels, and capture and contain bullets and bullet fragments.

    - Side berms will be constructed at a minimum height of 10 feet.
    - Backstop berms will be constructed at a minimum height of 20 feet.
    - The uppermost layer (1 – 2 foot in depth) must be free of large rocks and other debris to minimize ricochet and bullet fragmentation.
- **Control runoff by using vegetative or coarse ground cover and/or engineered runoff controls.**
    - **Range Floor:** If feasible, slope the range floor gently towards the side berms and backstop.
- **Establish and maintain full vegetative or coarse ground cover to prevent soil erosion.**

3.2 100-yard Rifle Range

A 100-yard rifle range will be constructed west of the existing rifle range. The proposed rifle range will have a covered metal shooting station with 4 fixed shooting benches/tables, targets up to 100-yards, side berms, and a backstop berm.

Renovation/New Construction BMPs include:

- **Bullet Containment:** Side berms and backstop berms are constructed to increase safety, reduce noise levels, and capture and contain bullets and bullet fragments.
    - Side berms will be constructed at a minimum height of 10 feet.
    - Backstop berms will be constructed at a minimum height of 20 feet.
    - The uppermost layer (1 – 2 foot in depth) must be free of large rocks and other debris to minimize ricochet and bullet fragmentation.
- **Control runoff by using vegetative or coarse ground cover and/or engineered runoff controls.**
    - **Range Floor:** If feasible, slope the range floor gently towards the side berms and backstop.
- **Establish and maintain full vegetative or coarse ground cover to prevent soil erosion.**

3.3 50-yard Pistol Range

A 50-yard pistol range will be constructed west of the existing rifle range and new 100-yard range. The proposed pistol range will have a covered metal shooting station with 4 fixed shooting benches/tables, targets up to 50-yards, side berms, and a backstop berm. Side berms and backstop berms are constructed to increase safety, reduce noise levels, and capture and contain bullets and bullet fragments.

Renovation/New Construction BMPs include:

- **Bullet Containment:** Side berms and backstop berms are constructed to increase safety, reduce noise levels, and capture and contain bullets and bullet fragments.
    - Side berms will be constructed at a minimum height of 10 feet.

    - Backstop berms will be constructed at a minimum height of 20 feet.
    - The uppermost layer (1 – 2 foot in depth) must be free of large rocks and other debris to minimize ricochet and bullet fragmentation.
- **Control runoff by using vegetative or coarse ground cover and/or engineered runoff controls.**
    - **Range Floor:** If feasible, slope the range floor gently towards the side berms and backstop.
- **Establish and maintain full vegetative or coarse ground cover to prevent soil erosion.**

3.4 Shotgun/Trap Range

A shotgun/trap range will be constructed north and west of the existing rifle range. The proposed shotgun/trap range will have a concrete trap pad with only five stations at the 16-yard mark, making the shape of the shooting dispersal pattern smaller and more concentrated.

Renovation/New Construction BMPs include:

- **Shotfall Zone:** The shotgun/trap range will have a concrete trap pad with only five stations at the 16-yard mark, making the shape of the shooting dispersal pattern smaller and more concentrated.
- **Control runoff by using vegetative or coarse ground cover and/or engineered runoff controls.**
- **Field:** Shotgun/trap fields should be built level with minimal slope. Allowable variation + / - 2 inches.
- **Establish and maintain full vegetative or coarse ground cover to prevent soil erosion.**

3.5 Archery Tower/Range

The archery tower/range will be constructed west of the existing rifle range and 100- and 50-yard ranges. Safety side berms will be constructed along the east boundary of the archery range (bordering the 50-yard pistol range). The archery tower/range will have 4 shooting lanes and will include concrete ADA accessible sidewalks to the range and range floor. Lead exposure is not a concern in the archery range area therefore there will not be any BMPs associated with the archery range.

3.6 Parking Lot Area

The parking lot area will be surfaced with gravel and will include concrete ADA accessible parking spaces and sidewalks to the ranges. The parking lot area is an area where firing will not occur. Lead exposure is not a concern in the parking area therefore there will not be any BMPs associated with the parking area.

3.7 Restrooms (if applicable)

The restroom area is an area where firing will not occur. Lead exposure is not a concern in the restroom area therefore there will not be any BMPs associated with the restroom area.

4.0 Best Management Practices

Based on the environmental stewardship plan goals, the BMPs listed, the availability of funds, and ODWCs commitment to shooting range renovations and new developments, the following priorities were chosen:

4.1 Side berm and backstop berm construction and inspection.

- **Bullet Containment:** Side berms and backstop berms are constructed to increase safety, reduce noise levels, and capture and contain bullets and bullet fragments.
    - Side berms will be constructed at a minimum height of 10 feet.
    - Backstop berms will be constructed at a minimum height of 20 feet.
    - The uppermost layer (1 – 2 foot in depth) must be free of large rocks and other debris to minimize ricochet and bullet fragmentation.
- Visual observation. Repair if minor. Report if major.
- Complete shooting range inspections to assess major concerns. The inspections should include corrective actions.

4.2 Control runoff by using vegetative or coarse ground cover and/or engineered runoff controls.

- **Range Floor:** If feasible, slope the range floor gently towards the side berms and backstop.
- Vegetation absorbs rainwater and slows down surface water runoff, thereby reducing the time that the lead is in contact with water.
- Mulches and composts can reduce the amount of water that comes in contact with the lead fragments.
- **Shotfall Zone:** The shotgun/trap range will have a concrete trap pad with only five stations at the 16-yard mark, making the shape of the shooting dispersal pattern smaller and more concentrated.
- **Field:** Shotgun/trap fields should be built level with minimal slope. Allowable variation + / - 2 inches.
- Drainage swale for stormwater management. It is important to control stormwater runoff from the facility because of the potential lead content within the water that may be carried off-site.

- Spread mulches and/or composts at least 2 inches thick over impacted areas and/or low-lying areas where lead may accumulate.
- A detention pond, filter bed, dam, dike, or ground contouring may be placed to slow down or trap water runoff from the range.

4.3 Establish and maintain full vegetative or coarse ground cover to prevent soil erosion.

- Vegetation absorbs rainwater and slows down surface water runoff, thereby reducing the time that the lead is in contact with water.
- Maintain ground cover to minimize soil erosion and the amount of lead that will run off.
- Visual observation. Repair if minor. Report if major.
- Complete shooting range inspections to assess major concerns. The inspections should include corrective actions.

4.4 Soil pH Monitoring.

- The optimal soil pH for minimizing lead solubility and preventing the migration of lead through the soil column into underlying groundwater is between 6.5 to 8.5 (EPA 2005).
- The soil pH should be tested annually with a pH meter.
- Results of the soil testing should be documented.
- Use BMPs to deploy techniques to prevent or minimize environmental impacts associated with an outdoor range.

4.5 Control lead through the addition of lime.

- Spread lime to neutralize acidic soils and raise pH levels.

4.6 Reclamation and recycling lead as needed.

- To minimize ricochet of bullets and bullet fragments.
- Keep slope integrity and repair impact pockets.
- Spread lime during rebuild to neutralize acidic soils and raise pH levels.
- Lead recovery should be conducted by an experienced and qualified contractor.

4.7 Noise: Oklahoma Statute Title 63. Public Health and Safety §63-709.2. Noise Exemption from liability.

A. Notwithstanding any municipal ordinance or rule regulating noise to the contrary, a governmental official may not seek a civil or criminal penalty or

injunction against a shooting range, or its owner or operators, on the basis of noise emanating from the range, provided the noise at the property line of the shooting range does not exceed one hundred fifty (150) decibels.

B. No person shall bring any suit in law or equity or any other claim for relief against a shooting range, or its owners or operators, based upon noise emanating from the shooting range, provided the noise at the property line of the range does not exceed one hundred fifty (150) decibels.

C. Notwithstanding any law to the contrary, any ordinance or rule relating to noise adopted by any local unit of government, whether before, on, or after the effective date of this act, shall not be deemed to be enforceable against a shooting range, provided the noise at the property line of the range does not exceed one hundred fifty (150) decibels. The ordinance or rule shall not serve as the basis for any suit in law or equity, whether brought by a governmental official or person. In no event shall the provisions of this subsection affect the outcome of any suit brought prior to the effective date of this act in which a final order of judgment or relief has been entered.

4.8 Document BMP Activities and Keep Records.

- Document all activities associated to BMPs and lead management.

5.0 Action Plan

The BMP goals were made to initiate management practices that would create long-term environmental benefits as ODWC progresses with shooting range renovation and new developments.

- As ODWC shooting ranges are renovated and newly developed, recommended BMPs in this revised ESP should be implemented to meet the environmental goals outlined as follows:
    1. During the environmental assessment (EA) phase,
    2. If an EA has already been completed, implementation will occur during renovation and/or new construction,
    3. If an existing range does not meet the criteria above, implementation will occur within the first year of the revised ESP.
    4. Record the ESP implementation date. Note: Original ESPs on file will remain in effect until the implementation date of the revised ESP has been recorded.
    5. Request Wildlife Division to add to Wildlife Management Area Plans.

6.0 Measuring Success

- Document all activities associated to BMPs and lead management.

- Records should be kept for the life of the range.
- Long-term success will be monitored through documentation and records supporting the use of recommended BMPs.
- Records may be documented in the Wildlife Management Area Planning application.
- Other records may include range inspection forms, documentation of repairs, soil monitoring logs, lead control techniques performed logs, lead reclamation and recycle logs, etc.

Tables:

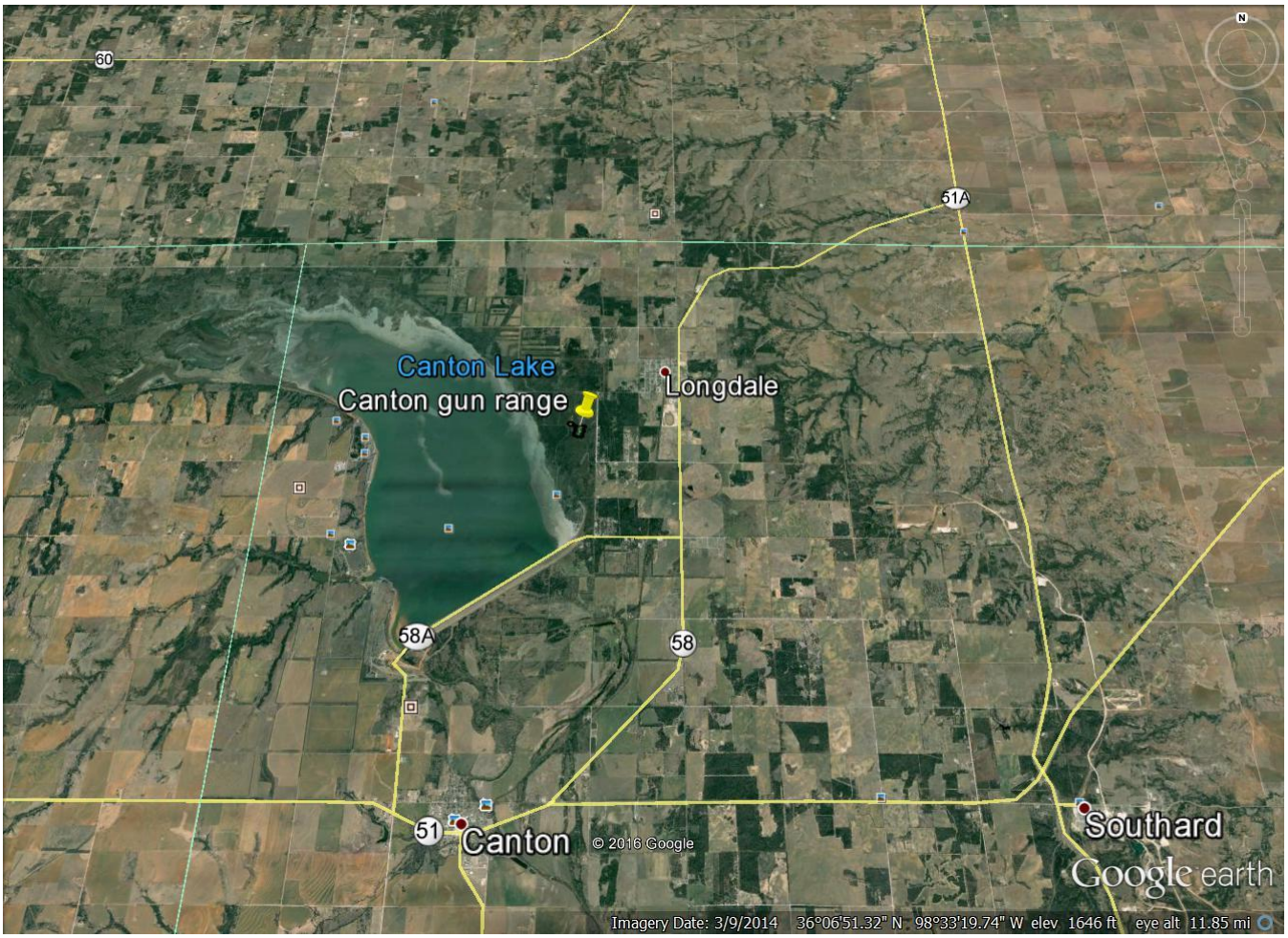
Table 3-2 – Calculating Weight of Lime to Increase Soil pH Values*

		Current pH							
		4.0	4.3	4.5	4.8	5.0	5.5	6.0	6.5
Desired pH	5.0-6.0	14	11	8	5	3	-	-	-
	6.5-8.5	-	-	-	20	17	11	7	-

* Lime requirements stated as pounds of lime/100 square foot of problem area for clay soils in temperate climates (i.e., Mid-Atlantic/Northeast US).

Figures

- **Site Location Map**



- **Existing Site Facilities**

Dirt/gravel parking lot and road/pathway.

Covered shooting area with wooden/metal shooting benches.

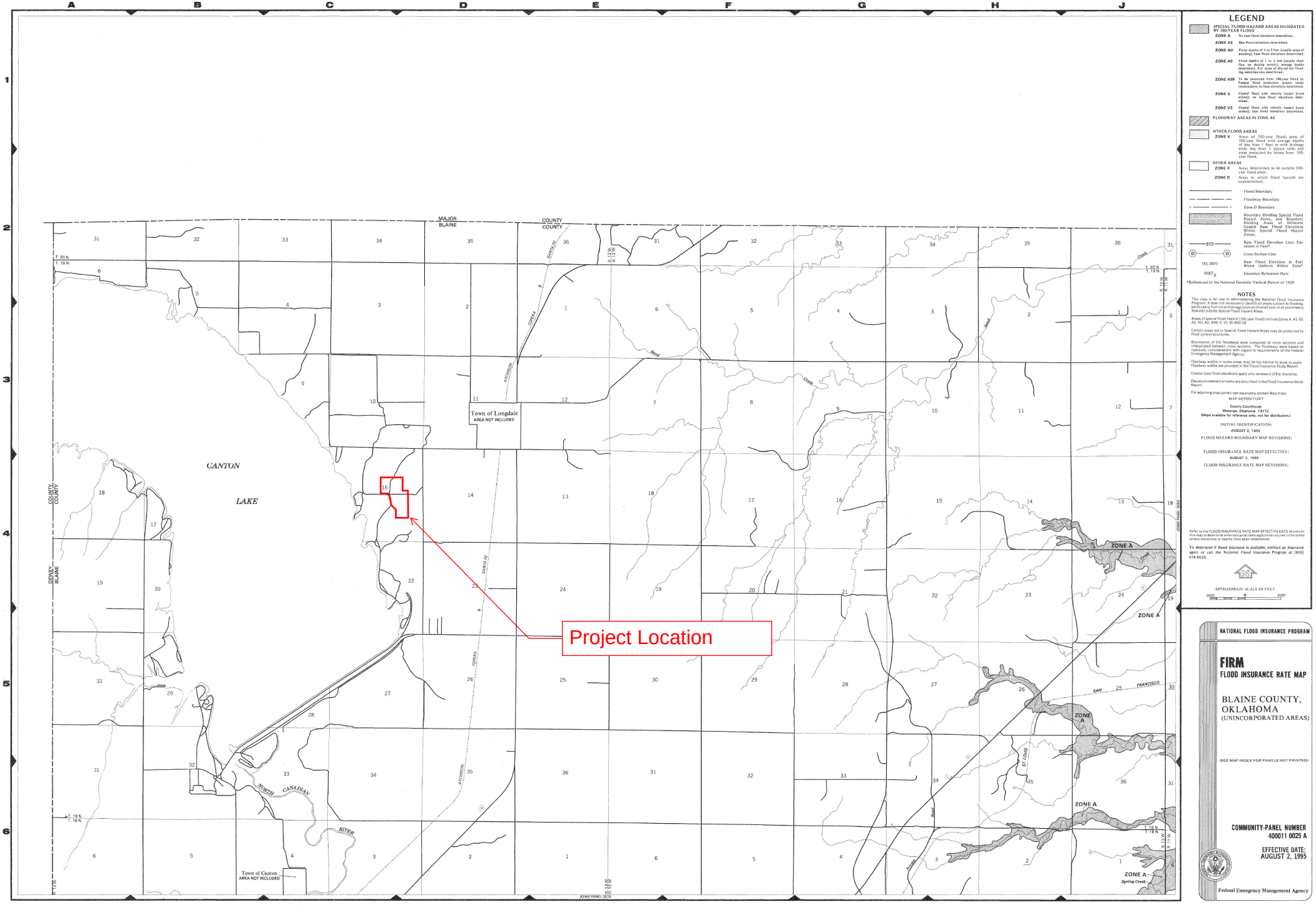
Existing Rifle range with target frames at 35-,100-, 150-, and 200-yards.

- **Proposed Renovation and Expansion**

Proposed renovation and expansion plans include improvements to the existing 200-yard rifle range, adding 100-yard rifle range and 50-yard pistol range, covered metal shooting stations including 4 shooting benches/tables for all 3 ranges, a shotgun/trap range, an archery range, fencing, gates, restrooms, and associated parking lots. All range components will include American Disabilities Act (ADA) parking and access.

APPENDIX G

Floodplains



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Special Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet*

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

$RM7_X$ — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Areas of special flood hazard (100-year flood) include Zones A, A1-30, AE, AH, AO, A99, V, V1-30 AND VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Coastal base flood elevations apply only landward of the shoreline.

Elevations reference marks are described in the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY

County Courthouse
Watonga, Oklahoma 73772
(Maps available for reference only, not for distribution.)

INITIAL IDENTIFICATION:
AUGUST 2, 1995

FLOOD HAZARD BOUNDARY MAP REVISIONS:

FLOOD INSURANCE RATE MAP EFFECTIVE:
AUGUST 2, 1995

FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE DATE shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
2000 0 2000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

BLAINE COUNTY, OKLAHOMA
(UNINCORPORATED AREAS)

(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
400011 0025 A

EFFECTIVE DATE:
AUGUST 2, 1995

Federal Emergency Management Agency

APPENDIX H

USDA Form AD-1006
Farmland Conversion Impacts Rating

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request November 13, 2023	
Name of Project Canton WMA Environmental Assessment		Federal Agency Involved USFWS / USACE	
Proposed Land Use Gun Range Facility		County and State Blaine County, Oklahoma	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 11/13/23	Person Completing Form: Andrew Baird
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated 5237	Average Farm Size 651
Major Crop(s) Winter Wheat	Farmable Land In Govt. Jurisdiction Acres: 447085 % 74	Amount of Farmland As Defined in FPPA Acres: 325112 % 54	
Name of Land Evaluation System Used CALES	Name of State or Local Site Assessment System NONE	Date Land Evaluation Returned by NRCS 11/20/23	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	8.5	0	0	0
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	8.5	0	0	0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	8.4			
B. Total Acres Statewide Important or Local Important Farmland	0			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.001			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	49.1			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	58.7			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	0			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	10			
6. Distance To Urban Support Services	(15)	10			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	10			
9. Availability Of Farm Support Services	(5)	5			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	60	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	58.7	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	60	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	118.7	0	0	0

Site Selected: A	Date Of Selection 11/21/2023	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

Name of Federal agency representative completing this form: Murray Verbonitz | Date: 11/21/2023

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

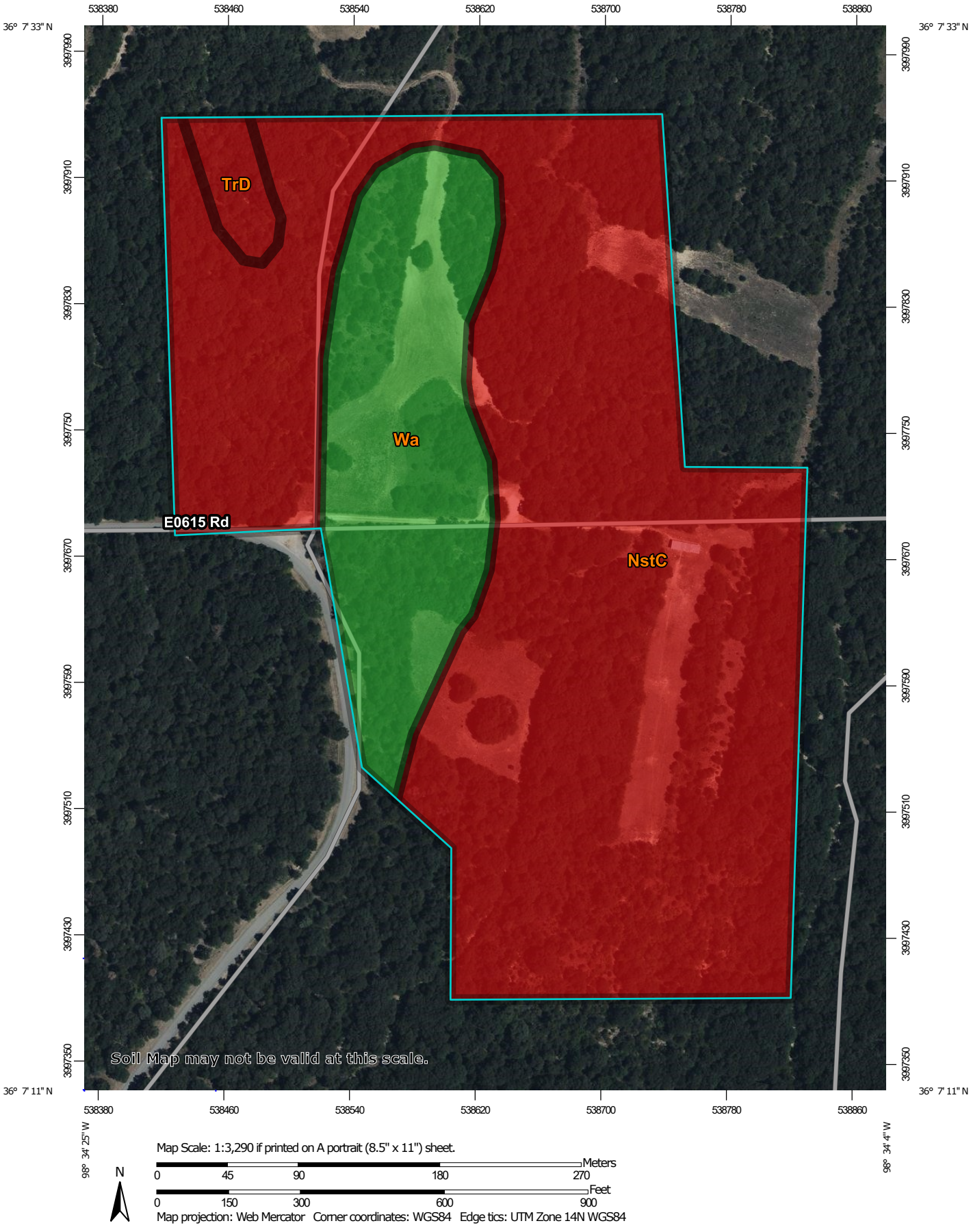
Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Farmland Classification—Blaine County, Oklahoma
(Farmland Classificatoin)



Map Scale: 1:3,290 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

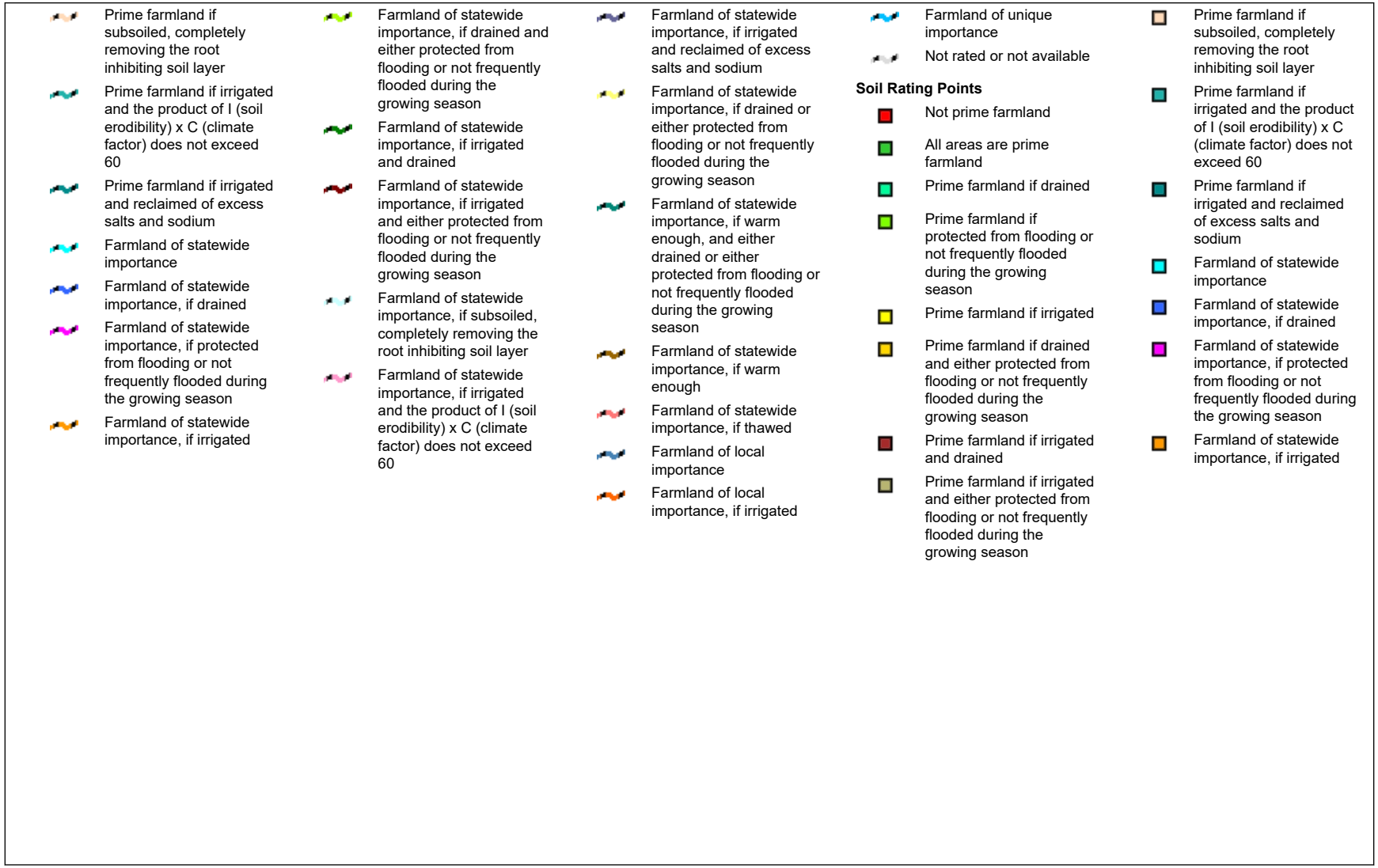
Soils

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
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- 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: Blaine County, Oklahoma
Survey Area Data: Version 20, Sep 6, 2023

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

Date(s) aerial images were photographed: Jul 23, 2022—Aug 10, 2022

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

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NstC	Nobscot sand, 0 to 5 percent slopes	Not prime farmland	31.8	77.4%
TrD	Tivoli fine sand, 5 to 30 percent slopes	Not prime farmland	0.9	2.1%
Wa	Waldeck fine sandy loam, 0 to 1 percent slopes, occasionally flooded	All areas are prime farmland	8.4	20.5%
Totals for Area of Interest			**41.1**	**100.0%**

Description

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.

Rating Options

Aggregation Method: No Aggregation Necessary

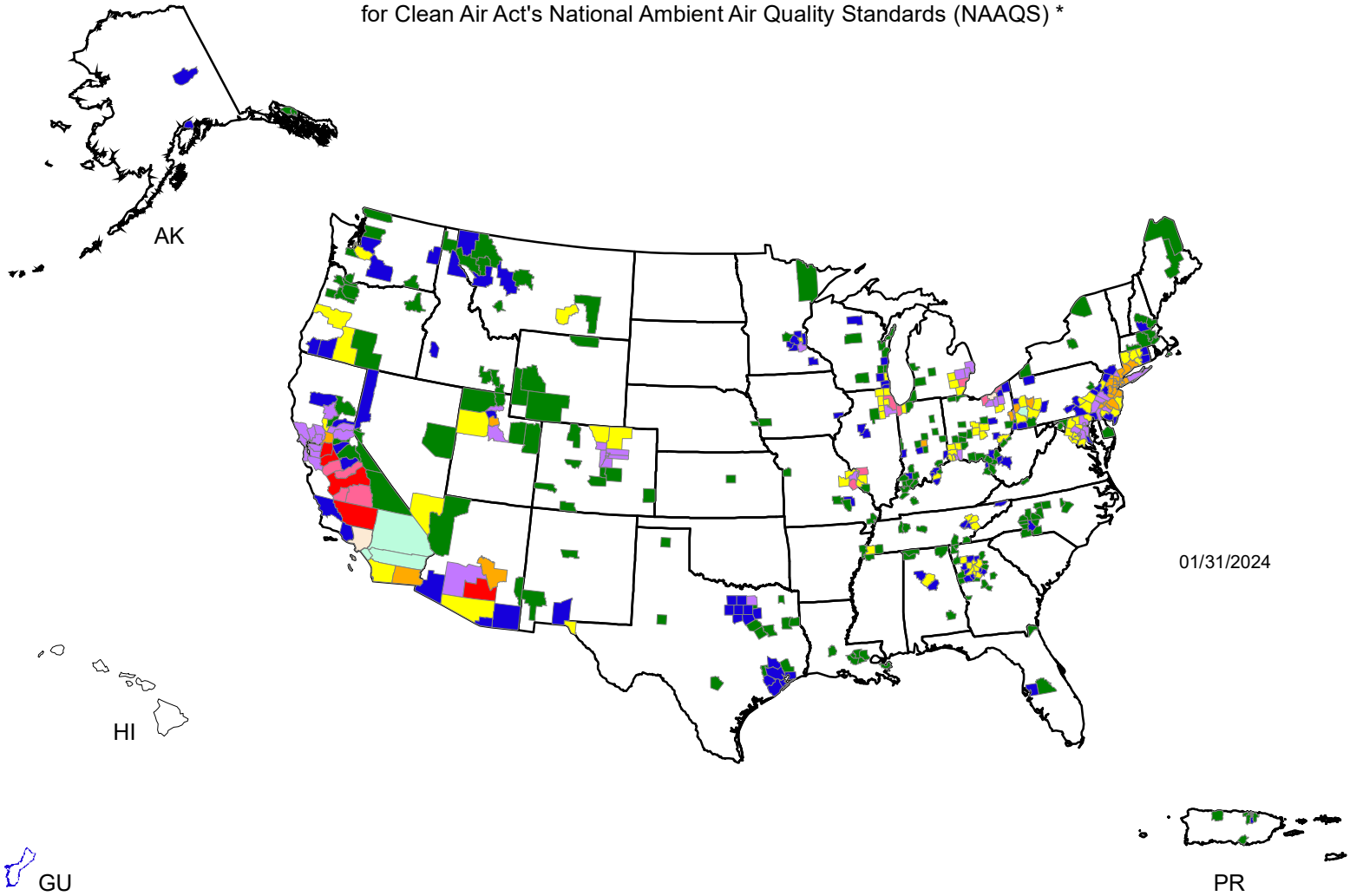
Tie-break Rule: Lower

APPENDIX I

National Ambient Air Quality Standards Non-Attainment Areas

Counties Designated "Nonattainment" or "Maintenance"

for Clean Air Act's National Ambient Air Quality Standards (NAAQS) *



Legend **

- County Designated Nonattainment or Maintenance for 9 NAAQS Pollutants
- County Designated Nonattainment or Maintenance for 8 NAAQS Pollutants
- County Designated Nonattainment or Maintenance for 7 NAAQS Pollutants
- County Designated Nonattainment or Maintenance for 6 NAAQS Pollutants
- County Designated Nonattainment or Maintenance for 5 NAAQS Pollutants
- County Designated Nonattainment or Maintenance for 4 NAAQS Pollutants
- County Designated Nonattainment or Maintenance for 3 NAAQS Pollutants
- County Designated Nonattainment or Maintenance for 2 NAAQS Pollutants
- County Designated Nonattainment or Maintenance for 1 NAAQS Pollutants

* The National Ambient Air Quality Standards (NAAQS) are health standards for Carbon Monoxide, Lead (1978 and 2008), Nitrogen Dioxide, 8-hour Ozone (2008), Particulate Matter (PM-10 and PM-2.5 (1997, 2006 and 2012), and Sulfur Dioxide.(1971 and 2010)

** Included in the counts are counties designated for NAAQS and revised NAAQS pollutants. Revoked 1-hour (1979) and 8-hour Ozone (1997) are excluded. Partial counties, those with part of the county designated nonattainment and part attainment, are shown as full counties on the map.