Natural Resources Site Technical Due Diligence

Prepared for
Property of Threemile Canyon Farms

January 2025

Parametrix

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Property of Threemile Canyon Farms

Prepared by

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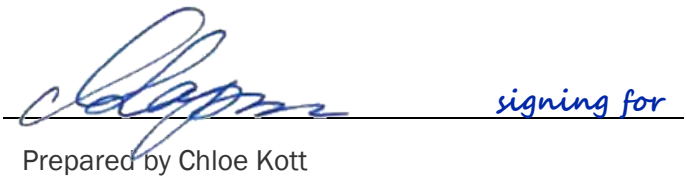
Certification

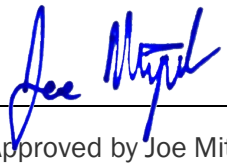
The technical material and data contained in this document were prepared under the supervision and direction of the undersigned.



signing for

Prepared by Chloe Kott

Checked by Colton Kyro



Approved by Joe Mitzel, PE

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APPENDICES

Acronyms and Abbreviations

ACIS	Applied Climate Information System
DSL	Oregon Department of State Lands
EFU	Exclusive Farm Use
FEMA	Federal Emergency Management Agency
HUC	Hydrologic Unit Code
IPaC	Information for Planning and Consultation
LWI	Local Wetland Inventory
NOAA	National Oceanic Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
ORBIC	Oregon Biodiversity Information Center
PP	photo point
SAI	Space Age Industrial
SP	sample plot
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

1. Introduction

The purpose of this Natural Resources Due Diligence report is to describe the general natural resources characteristics of the Site (see map in Figure 1) owned by Threemile Canyon Farms. The Site is located in the Morrow County, Oregon (Township 4N, Range 23E, Sections 23, 24, and 25, portion of tax lot 110; Township 4N, Range 24E, Section 19, tax lot 121, and portion of tax lot 110). A portion of the Site is located within the Exclusive Farm Use (EFU), while another portion falls under the Space Age Industrial (SAI) county zoning designation (Morrow County 2023).

Parametrix evaluated the Site using readily available data, including aerial photographs, topographic maps, public GIS datasets, and information from agency websites. Parametrix also reviewed the rare species location records requested from the Oregon Biodiversity Information Center (ORBIC). In addition, a 1-day site visit was conducted on December 18, 2023, to inspect the Site for natural resources of special concern. Background data are presented in Appendix B. All ORBIC resource records obtained for the project are confidential and are not included as an appendix to this report but are on file with Parametrix . Representative site photographs are included in Appendix C.

2. Methods

2.1 Review of Existing Information

The following available environmental data, maps, and materials related to the site were reviewed:

- Aerial imagery of the Site from 1952 to 2023 (EDR 2023; Google Earth 2023; Nationwide Environmental Title Research, LLC 2023).
- Federal Emergency Management Agency (FEMA) flood insurance rate map (FEMA 2023).
- Natural Resources Conservation Service (NRCS) Web Soil Survey in the Site. (USDA NRCS 2023).
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) in the Site (USFWS 2023a).
- USFWS Critical Habitat for Threatened and Endangered Species maps (USFWS 2023b).
- USFWS Information for Planning and Consultation (IPaC) resource list (USFWS 2023c).
- Oregon Department of Agriculture (ODA) WeedMapper (ODA 2023a).
- ODA Oregon Listed Plants by County (ODA 2023b).
- ODA Noxious Weed Policy and Classification System (ODA 2023c).
- ORBIC Rare, Threatened, and Endangered Species Records (within a 2-mile radius of the project; generated March 24, 2023) (ORBIC 2023).
- Oregon Department of Fish and Wildlife (ODFW) Threatened and Endangered Species List (ODFW 2023).

There is no Local Wetland Inventory (LWI) at the Site and its vicinity.

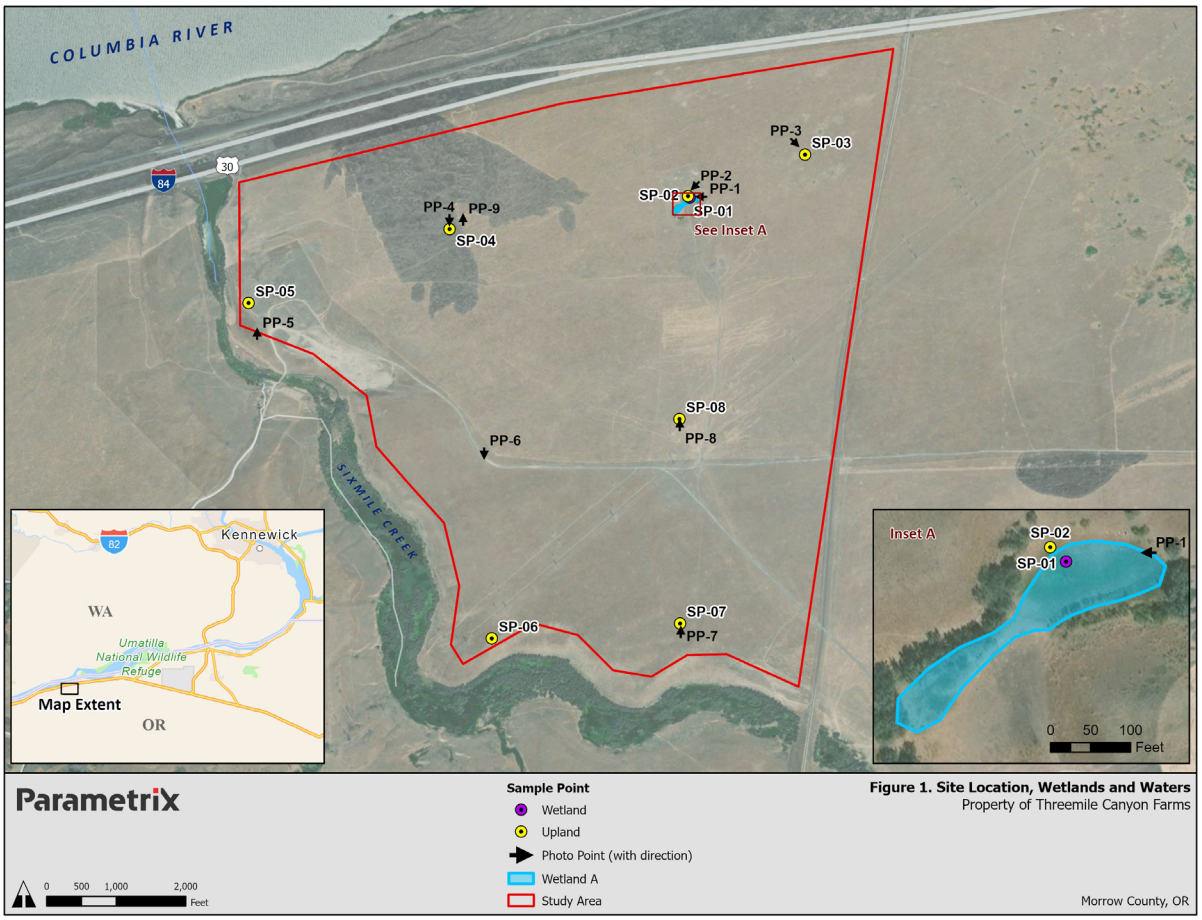

Figure 1. Site Map

2.2 Site Visit

Parametrix scientists Colton Kyro and Chloe Kott conducted a site visit on December 18, 2023, to identify whether waters of the United States and/or waters of the state occur within the Site and to assess vegetation, wildlife habitat characteristics, and other natural resources of special concern.

Weather during the site visit was cloudy with a high of 39°F. There was no precipitation during the site visit.

The presence of wetlands and waters was determined using methods specified in the U.S. Army Corps of Engineers (USACE) *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (USACE 2008). Vegetation, soil, and hydrology conditions were documented at eight sample plot (SP) locations. At each SP, Parametrix collected vegetation, soils, and hydrology data on standardized wetland determination data forms and documented field conditions with photographs. Additionally, Parametrix documented site conditions at 20 photo point (PP) locations. Sample plot and photo point locations were recorded using a handheld GPS. The locations of the SPs and the PPs are shown on Figure 1. Representative photographs are included in Appendix C. Wetland determination data forms are included in Appendix D.

General observations regarding wildlife habitats, vegetation communities, and signs of avian and wildlife site use were documented in field notes.

3. General Characteristics and Existing Conditions

3.1 Landscape Setting and Site Use

The Site is located within the Crow Butte-Lake Umatilla watershed (Hydrologic Unit Code [HUC] 170701010905) and the Poverty Ridge-Sixmile Canyon (HUC 170701010804) (USGS 2023). The topography of the Site is a mostly uniform flat plains with occasional bedrock outcroppings; hillsides and cliffs are present along the south and west site border above the Sixmile Canyon. The Site has an elevation range of approximately 340 to 440 feet above sea level.

The Site consists of pastureland currently used for cattle grazing operations, a gravel mine, and undeveloped land. The Site is bordered by Highway 84/Vietnam Veterans Memorial Highway and the Columbia River to the north, a Union Pacific railway and undeveloped grasslands to the east, and Sixmile Canyon to the south and west. The Columbia River is located approximately 0.31 miles to the north of the Site. Six Mile Creek runs approximately 0.09 miles to the west of the Site. Willow Creek Wildlife Area is located approximately 5.53 miles west of the Site.

3.2 Hydrology and Precipitation

Parametrix reviewed historical and current precipitation data from the weather station in Boardman, Oregon, available on the National Oceanic Atmospheric Administration (NOAA) Regional Climate Center website powered by the Applied Climate Information System (ACIS) (ACIS 2023). The normal range of annual precipitation in the area is between 6.72 and 8.57 inches. Most of the annual precipitation falls as rain or snow between October and May. The average growing season lasts 210 days, from the beginning of April to the end of October; however, there is a dry season that extends from June to October, with normal monthly precipitation ranging from 0.11 to 0.86 inches. Average temperatures range from 41.2°F to 65.8°F, with the highest monthly average temperature in July at 91.8°F and the lowest monthly average temperature in January at 27.9°F. The site visit was conducted in mid-December outside of the growing season, during the wet season.

Parametrix conducted precipitation analysis to determine whether monthly precipitation in the 3-month period prior to the site visit was normal. According to the WETS table for the period 1991 to 2020 and recorded precipitation for September, October, and November 2023, the hydrologic condition on the Site was normal for this time of the year.

3.3 Soils

According to NRCS soil mapping, several soil map units are mapped within the Site (USDA NRCS 2023 (see Table 1). All soils within the Site are nonhydric, well-drained, or excessively drained soils. Appendix B includes descriptions of the listed soil map units.

Table 1. Summary of Soils Mapped Within the Study Area

Map Unit Symbol	Map Unit Name	Hydric Soil	Drainage Class
13E	Gravden very gravelly loam, 20 to 40 percent slopes	No	Well-drained
37A	Prosser silt loam, 0 to 2 percent slopes	No	Well-drained
38D	Prosser-Rock outcrop complex, 1 to 20 percent slopes	No	Well-drained
41B	Quinton loamy fine sand, 2 to 5 percent slopes	No	Excessively drained
42D	Quinton-Rock outcrop complex, 2 to 20 percent slopes	No	Excessively drained

3.4 Upland Habitat

The vegetation within the Site is dominated by herbaceous bulbous blue grass (*Poa bulbosa*), long-beak stork's-bill (*Erodium botrys*), downy cheatgrass (*Bromus tectorum*), and bluebunch fescue (*Festuca idahoensis*). Occasionally, stands of shrubs were present, including rubber rabbitbrush (*Ericameria nauseosa*), broom snakeweed (*Gutierrezia sarothrae*), big sagebrush (*Artemisia tridentata*), and bitter-brush (*Purshia tridentata*). Trees of Russian-olive (*Elaeagnus angustifolia*) were present in upland around wetland boundary.

Vegetation communities formed by these plants are non-hydrophytic because they are dominated either by upland species or by species that are not listed in the National Wetland Plant List (Lichvar et al. 2016).

3.5 Wetlands and Waters

NWI indicates that a 1.31-acre freshwater palustrine unconsolidated bottom persistent emergent semipermanently flooded excavated (PUB/EM1Fx) feature is located in the northeastern portion of the Site (USFWS 2023a) (Appendix B). Historical aerial photographs from 1952 to 2020 indicate that this excavation occurred sometime between 1970 and 1977, likely due to earth material excavation (EDR 2023). Gravel mining operations are visible starting in 1977. Saturation signatures of the wetland are persistent through time. There are no LWIs for Morrow County.

3.5.1 Wetland A

Presence of wetland was confirmed in the location where the NWI feature was mapped. Wetland A was classified as a freshwater palustrine emergent persistent feature in the depressional hydrogeomorphic class. No open water was observed. Wetland vegetation was formed by common reed (*Phragmites australis*), fowl blue grass (*Poa palustris*), and rough cockleburr (*Xanthium strumarium*). Hydrology is supplied by water table exposed by excavation. Soils were found to be hydric. Wetland A lacks a hydrologic surface connection to any other wetlands or waters.

3.6 Floodplains

The FEMA floodplain maps show a 100-year floodplain in the narrow valley of the Sixmile Canyon, and also along the Columbia River (Maps 40149C0100D and 41049C0125D, effective December 18, 2007) (FEMA 2023).

The Site is located above the 100-year floodplain elevations.

3.7 Listed, Candidate, or Species of Concern

Available environmental data indicated that there are several special status species records within the vicinity, including a 2-mile radius buffer (ORBIC 2023; USFWS 2023c; NOAA 2023). Table 2 presents a summary of sensitive species that are known to occur in the vicinity and their occurrence potential within the Site; Appendix E includes descriptions of listed species habitats.

Bull trout (*Salvelinus confluentus*), Pacific lamprey (*Entosphenus tridentatus*), and steelhead (*Oncorhynchus mykiss*) occur in the Umatilla River and Columbia River (USFWS 2023c; ORBIC 2023). An additional protected aquatic species, Northwestern pond turtle (*Actinemys marmorata*), is known to occur in the vicinity (ORBIC 2023; Oregon Conservation Strategy 2023). However, suitable habitats (perennial waterbodies) are not present at the Site. The only wetland location at the Site is isolated from and located upslope from any suitable aquatic habitat where turtles can possibly occur. Therefore, these species were determined to be absent from the Site.

Monarch butterfly (*Danaus plexippus*), a federally listed candidate species, occurs in the vicinity (USFWS 2023c; USFWS 2023d). A small population of narrowleaf milkweed was found on the Site. Nectar of this flowering plant is essential food for this butterfly. However, due to the size of milkweed population, the forage supply is very limited at the site. Therefore, it was determined that this species is not likely to occur at the Site.

Table 2. Summary of Federal and State Statuses for Species Mapped in the Study Area and Vicinity

Description	Common Name (Scientific Name)	Federal Status [a]	State Status [a]	Occurrence Potential [b]
Mammals	Washington ground squirrel (*Urocitellus washingtoni*)	–	E	Present
Birds	Bald eagle (*Haliaeetus leucocephalus)*	D; Bald and Golden Eagle Protection Act	–	Absent
	Golden eagle (*Aquila chrysaetos)*	D; Bald and Golden Eagle Protection Act	–	Absent
Reptiles	Northwestern pond turtle (*Actinemys marmorata*)	PT	–	Not Likely to Occur
Fish	Bull trout (*Salvelinus confluentus*)	T	SC (Umatilla SMU [c] [BM, CP]; John Day SMU [BM, CP])	Absent
	Pacific lamprey (*Entosphenus tridentatus*)	SOC	S	Absent
	Steelhead (*Oncorhynchus mykiss*) (population 28; Middle Columbia River evolutionary significant units, summer run)	T	SC (Middle Columbia SMU [c]/ESU [BM, CP, EC])	Absent
Invertebrate Animals	Monarch butterfly (*Danaus plexippus*)	C	–	Not Likely to Occur
Plants	Lawrence's milkvetch (*Astragalus collinus var. laurentii)*	–	T	Absent

a D = delisted; E = endangered; SOC = species of concern; SC = sensitive-critical; S = sensitive; T = threatened; PT = proposed threatened; C = candidate for listing.

b May Occur = species is expected to occur and habitat meets special requirements; Not Likely to Occur = habitat is only marginally suitable or is suitable but not within species geographic range; Absent = habitat does not meet species requirements as currently understood in the scientific community.

c SMU = Species Management Units; ESU = Evolutionary Significant Unity; BM = Blue Mountains; CP = Columbia Plateau; EC = East Cascades.

Various migratory birds that are protected under the Migratory Bird Treaty Act of 1918 may forage on or nest on the Site. The bald eagle (*Haliaeetus leucocephalus)* is also protected under the Bald and Golden Eagle Protection Act of 1940 and is known to occur in the vicinity (USFWS 2023c). Bald eagles prefer large trees for perching and nesting, typically near rivers, large lakes, and other open water. Such habitats are not present at the Site, and this species was determined to be absent from the Site. The golden eagle (*Aquila chrysaetos*) is also protected under the Bald and Golden Eagle Protection Act of 1940 and is known to occur in the vicinity (USFWS 2023c). Golden eagles prefer cliffs and steep escarpments in grassland, chapparal, shrubland, and forest for nesting, typically near canyonlands, rimrock terrain, and riverside cliffs and bluffs (Cornell Lab of Ornithology 2023). Such habitats are not present at the Site, and this species was determined to be absent from the Site. Other protected bird species identified by IPaC include the following:

- American white pelican (*Pelecanus erythrorhynchos*).
- California gull (*Larus californicus*).
- Evening grosbeak (*Coccothraustes vespertinus*).
- Lewis's woodpecker (*Melanerpes lewis*).
- Rufous hummingbird (*Selasphorus rufus*).

American white pelican and California gull do not occur on the Site due to a lack of large open water bodies. Evening grosbeak does not occur on the Site due to a lack of deciduous woodlands at elevations between 5,000 and 10,000 feet. Lewis's woodpecker does not occur on the Site due to a lack of pine forest and open riparian woodland dominated by cottonwood. Rufous hummingbird does not occur on the Site due to a lack of forest and coniferous or deciduous trees (USFWS 2023d).

There are no designated critical habitats for federally listed or candidate animal or plant species protected under the Endangered Species Act on the Site (USFWS 2023b).

The Washington ground squirrel (*Urocitellus washingtoni*) is listed as a state endangered species in Oregon. The Washington ground squirrel survey was conducted in separate study. Survey methods, results, and recommendations were included in the *Washington Ground Squirrel Survey* technical memorandum (Parametrix 2023), which was provided to the property owner.

3.8 Noxious Weeds

Plant species listed as noxious by the Oregon Department of Agriculture (ODA 2023a) and/or as designated weeds by the Oregon Department of State Lands (DSL) are present on the Site. (See Table 3 below.)

Table 3. Noxious Weeds That Are Present or Have Potential to Be Present on the Site

Scientific Name	Common Name	ODA List/DSL Designation [a]
Centaurea solstitialis L.	Yellow star thistle	List B
Centaurea diffusa	Tumble knapweed	List B
Cynoglossum officinale	Houndstongue	List B
Phragmites australis	Common reed	List B
Onopordum acanthium	Scotch thistle	List B

Note: DSL-designated weed = known problem species.

a List B =a weed of economic importance that is regionally abundant but may have limited distribution in some counties (ODA 2023c).

4. Regulatory Requirements

4.1 Federal

Wetland and water resources found on the Site were evaluated using requirements established in the Final Rule: Revised Definition of "Waters of the United States"; Conforming Guidance (Federal Register Vol. 88, No. 173; 33 Code of Federal Regulations (CFR) Part 328; and 40 CFR Part 120. September 8, 2023).

Wetland A is likely not jurisdictional to the USACE, as it does not meet the definition of any jurisdictional waters defined in paragraphs (a)(1), (a)(2), (a)(3), and (a)(4) of the Final Rule. Also, due to Wetland A's lack of continuous surface connection to or significant effect on larger downstream waters, the wetland does not meet the relatively permanent or significant nexus standards defined in paragraph (a)(5). Site development would not require permitting under Section 404 of the Clean Water Act.

Federally listed threatened and endangered species or designated critical habitat are not present within the Site; therefore, site development would not require permitting under Section 10 or Section 7 of the Endangered Species Act.

The Migratory Bird Treaty Act makes it illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale any migratory bird or the parts, nests, or eggs of such bird except under the terms of a valid federal permit from the USFWS. To avoid and minimize effects to migratory birds, initial site development (vegetation clearing and grubbing) should be conducted during the nonnesting season. The nonnesting season generally extends from August 1 to January 31 and splits into two major timeframes:

- Early Nesting Season: February 1 to April 15. Raptors (owls, eagles, falcons, and hawks), herons, geese, and hummingbirds are early nesters.
- Primary Nesting Season: April 15 to July 31. Songbirds and most other avian species are late nesters.

Initial vegetation disturbance (clearing and grubbing) should be conducted during the nonnesting season. If vegetation disturbance occurs during the nesting season, the Site should be surveyed for nesting birds by a qualified biologist. If an active nest is found, an exclusion buffer around the nest should be established at an appropriate distance assigned by the biologist. Temporary protection fencing should be installed and maintained around the buffer area until young chicks have fledged to avoid impacts to migratory birds. Once young have fledged, construction may commence in the protected area.

4.2 State of Oregon

Wetland A is likely exempt from DSL jurisdiction per Oregon Administrative Rule 141-085-0515(7) Exempt Artificially Created Wetlands and Ponds.

"Artificially created wetlands and ponds created entirely from upland, regardless of size, are not waters of this state, if they are constructed for the purpose of: (g) surface mining."

As described in Section 3.5, Wetland A is a result of gravel mining, which was active starting in 1977; therefore, OAR 141-085-0515(7)(g) applies. Impact to Wetland A is not subject to the Oregon Removal/Fill Law requirements.

Washington ground squirrel protection was addressed in the *Washington Ground Squirrel Survey* technical memorandum (Parametrix 2023). There is no permitting nexus to the state agency's review of the development; therefore, coordination with ODFW would not be required for the site development. However, ODFW provides recommendations for minimizing impacts to this protected species and its habitat.

Plant species listed noxious by the ODA (ODA 2023c) or designated as weeds by DSL are present on the Site. Site development has the potential to spread the noxious/invasive weed species. To avoid the spread of the noxious weeds, best management practices shall be established at the Site for control, containment, or eradication of listed noxious weeds.

4.3 Local

The Morrow County Comprehensive Plan calls for protection of riparian vegetation, wetlands, bald and golden eagle nest sites, and land areas incorporated in wildlife preserves, refuges, or private or governmental game management areas (Morrow County Ordinance OR-1-2013) (Morrow County 2013a).

Based on the site's location and natural resources characteristics, this Site contains no resources on the adopted Statewide Planning Goal 5 inventories for significant natural resources, and associated local natural resource-specific permits from the County would not be needed for the Site development (Morrow County 2013b, 2013c).

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Appendix A

Curriculum Vitae

Chloe Kott

SCIENTIST II

Chloe Kott is a multi-faceted Environmental Professional with a demonstrated history of delivering customer satisfaction and project management expertise. Her background includes environmental risk, due diligence, wildlife ecology, and regulatory research. Her expertise includes preparing Phase I ESAs, Records Search with Risk Assessments, and 24 CFR Part 50 and Part 58 Environmental Reviews for clientele throughout the country. Her experience further includes preparing technical documentation in support of National Environmental Policy Act (NEPA) and the US Department of Housing and Urban Development. She is currently working on wetlands and waters delineations and permitting, ESA permitting, and assists with a variety of natural resource projects with Parametrix.

EXPERIENCE

Years of Experience: 6 years
Time with Parametrix: 3 months

EDUCATION

BS, Fish, Wildlife, & Conservation Biology, 2017

Selected Project Experience

Three Mile Canyon Washington Ground Squirrel Survey

Confidential Client | Arlington, OR

Chloe assisted with fieldwork and drafted report for Washington ground squirrel presence on the Site.

Raptor and Sensitive Bird Species Surveys

Oregon Parks and Recreation Department | Terrebonne, OR

Chloe prepared report describing methods, findings, and recommendations on raptor and sensitive bird species observed at a newly acquired parcel.

Haul Road Emergency Repair

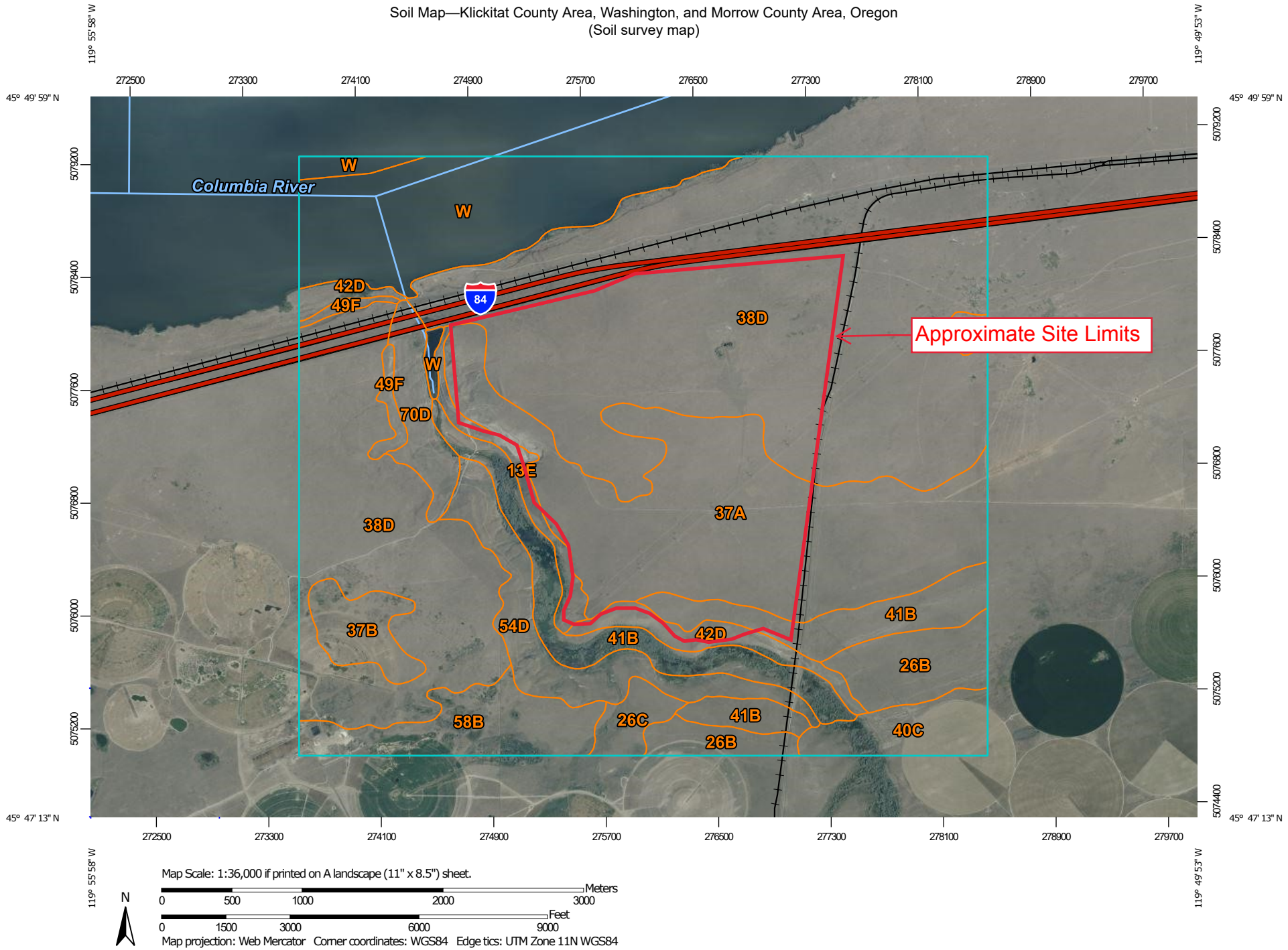
Port of Grays Harbor | Grays Harbor, WA

Chloe conducted fieldwork and prepared a report on sensitive bird species for the Haul Road emergency bank stabilization project. The Haul Road located along the bank of the Chehalis River where bank erosion continues to threaten critical infrastructure. Haul Road.

Appendix B

Background

Soil Map—Klickitat County Area, Washington, and Morrow County Area, Oregon
(Soil survey map)



Map Scale: 1:36,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 500 1000 2000 3000

Feet: 0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N 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.

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: Klickitat County Area, Washington
Survey Area Data: Version 18, Aug 29, 2023

Soil Survey Area: Morrow County Area, Oregon
Survey Area Data: Version 11, Sep 8, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Jun 3, 2020—Jun 26, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
W	Water	24.0	0.5%
Subtotals for Soil Survey Area		**24.0**	**0.5%**
Totals for Area of Interest		**5,161.2**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13E	Gravden very gravelly loam, 20 to 40 percent slopes	61.2	1.2%
26B	Koehler loamy fine sand, 2 to 5 percent slopes	181.5	3.5%
26C	Koehler loamy fine sand, 5 to 12 percent slopes	50.2	1.0%
37A	Prosser silt loam, 0 to 2 percent slopes	838.8	16.3%
37B	Prosser silt loam, 2 to 7 percent slopes	108.0	2.1%
38D	Prosser-Rock outcrop complex, 1 to 20 percent slopes	2,358.5	45.7%
40C	Quincy loamy fine sand, 2 to 12 percent slopes	112.7	2.2%
41B	Quinton loamy fine sand, 2 to 5 percent slopes	376.7	7.3%
42D	Quinton-Rock outcrop complex, 2 to 20 percent slopes	97.8	1.9%
49F	Rock outcrop-Rubble land complex, very steep	30.3	0.6%
54D	Sagehill fine sandy loam, 12 to 20 percent slopes	199.5	3.9%
58B	Taunton fine sandy loam, 2 to 5 percent slopes	183.3	3.6%
70D	Warden very fine sandy loam, 12 to 20 percent slopes	91.7	1.8%
W	Water	446.7	8.7%
Subtotals for Soil Survey Area		**5,136.8**	**99.5%**
Totals for Area of Interest		**5,161.2**	**100.0%**

Morrow County Area, Oregon

13E—Gravden very gravelly loam, 20 to 40 percent slopes

Map Unit Setting

National map unit symbol: 21rx
Elevation: 500 to 1,700 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 150 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Gravden and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gravden

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Gravelly alluvium and colluvium

Typical profile

H1 - 0 to 3 inches: very gravelly loam
H2 - 3 to 7 inches: very gravelly loam
H3 - 7 to 14 inches: extremely gravelly loam
H4 - 14 to 20 inches: cemented material
H5 - 20 to 60 inches: cemented material

Properties and qualities

Slope: 20 to 40 percent
Depth to restrictive feature: 10 to 20 inches to duripan; 20 to 60 inches to duripan
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D
Ecological site: R007XY020OR - South 8-10 PZ
Hydric soil rating: No

Data Source Information

Soil Survey Area: Benton County Area, Washington
Survey Area Data: Version 19, Aug 29, 2023

Soil Survey Area: Klickitat County Area, Washington
Survey Area Data: Version 18, Aug 29, 2023

Soil Survey Area: Morrow County Area, Oregon
Survey Area Data: Version 11, Sep 8, 2023

Morrow County Area, Oregon

37A—Prosser silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 21t3
Elevation: 300 to 600 feet
Mean annual precipitation: 7 to 9 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Prosser and similar soils: 65 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Prosser

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 29 inches: silt loam
H3 - 29 to 39 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R007XY014OR - Loamy 8-10 PZ

Hydric soil rating: No

Data Source Information

Soil Survey Area: Benton County Area, Washington
Survey Area Data: Version 19, Aug 29, 2023

Soil Survey Area: Klickitat County Area, Washington
Survey Area Data: Version 18, Aug 29, 2023

Soil Survey Area: Morrow County Area, Oregon
Survey Area Data: Version 11, Sep 8, 2023

Morrow County Area, Oregon

38D—Prosser-Rock outcrop complex, 1 to 20 percent slopes

Map Unit Setting

National map unit symbol: 21t5
Elevation: 300 to 600 feet
Mean annual precipitation: 7 to 9 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Prosser and similar soils: 60 percent
Rock outcrop: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Prosser

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 29 inches: silt loam
H3 - 29 to 39 inches: unweathered bedrock

Properties and qualities

Slope: 1 to 20 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R007XY014OR - Loamy 8-10 PZ
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 1 to 20 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Data Source Information

Soil Survey Area: Benton County Area, Washington
Survey Area Data: Version 19, Aug 29, 2023

Soil Survey Area: Klickitat County Area, Washington
Survey Area Data: Version 18, Aug 29, 2023

Soil Survey Area: Morrow County Area, Oregon
Survey Area Data: Version 11, Sep 8, 2023

Morrow County Area, Oregon

41B—Quinton loamy fine sand, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 21t9
Elevation: 250 to 700 feet
Mean annual precipitation: 7 to 8 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Quinton and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Quinton

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands over basalt

Typical profile

H1 - 0 to 30 inches: loamy fine sand
H2 - 30 to 37 inches: gravelly loamy fine sand
H3 - 37 to 47 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R007XY011OR - Sands 8-10 PZ

Hydric soil rating: No

Data Source Information

Soil Survey Area: Benton County Area, Washington
Survey Area Data: Version 19, Aug 29, 2023

Soil Survey Area: Klickitat County Area, Washington
Survey Area Data: Version 18, Aug 29, 2023

Soil Survey Area: Morrow County Area, Oregon
Survey Area Data: Version 11, Sep 8, 2023

Morrow County Area, Oregon

42D—Quinton-Rock outcrop complex, 2 to 20 percent slopes

Map Unit Setting

National map unit symbol: 21tb
Elevation: 250 to 700 feet
Mean annual precipitation: 7 to 8 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Quinton and similar soils: 60 percent
Rock outcrop: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Quinton

Setting

Landform: Strath terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands over basalt

Typical profile

H1 - 0 to 30 inches: loamy fine sand
H2 - 30 to 37 inches: gravelly loamy fine sand
H3 - 37 to 47 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R007XY011OR - Sands 8-10 PZ
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Strath terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Data Source Information

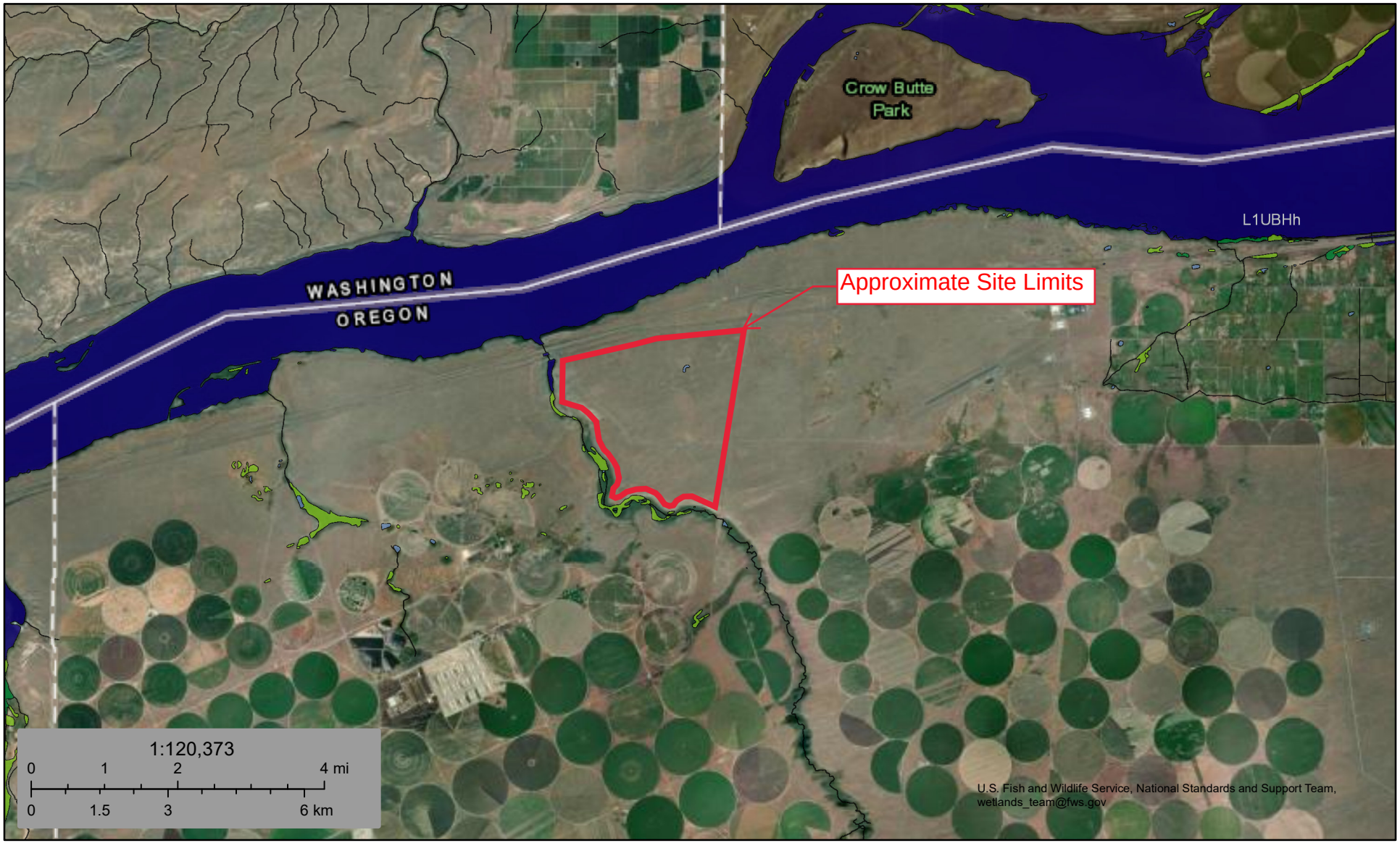
Soil Survey Area: Benton County Area, Washington
Survey Area Data: Version 19, Aug 29, 2023

Soil Survey Area: Klickitat County Area, Washington
Survey Area Data: Version 18, Aug 29, 2023

Soil Survey Area: Morrow County Area, Oregon
Survey Area Data: Version 11, Sep 8, 2023

U.S. Fish and Wildlife Service
National Wetlands Inventory

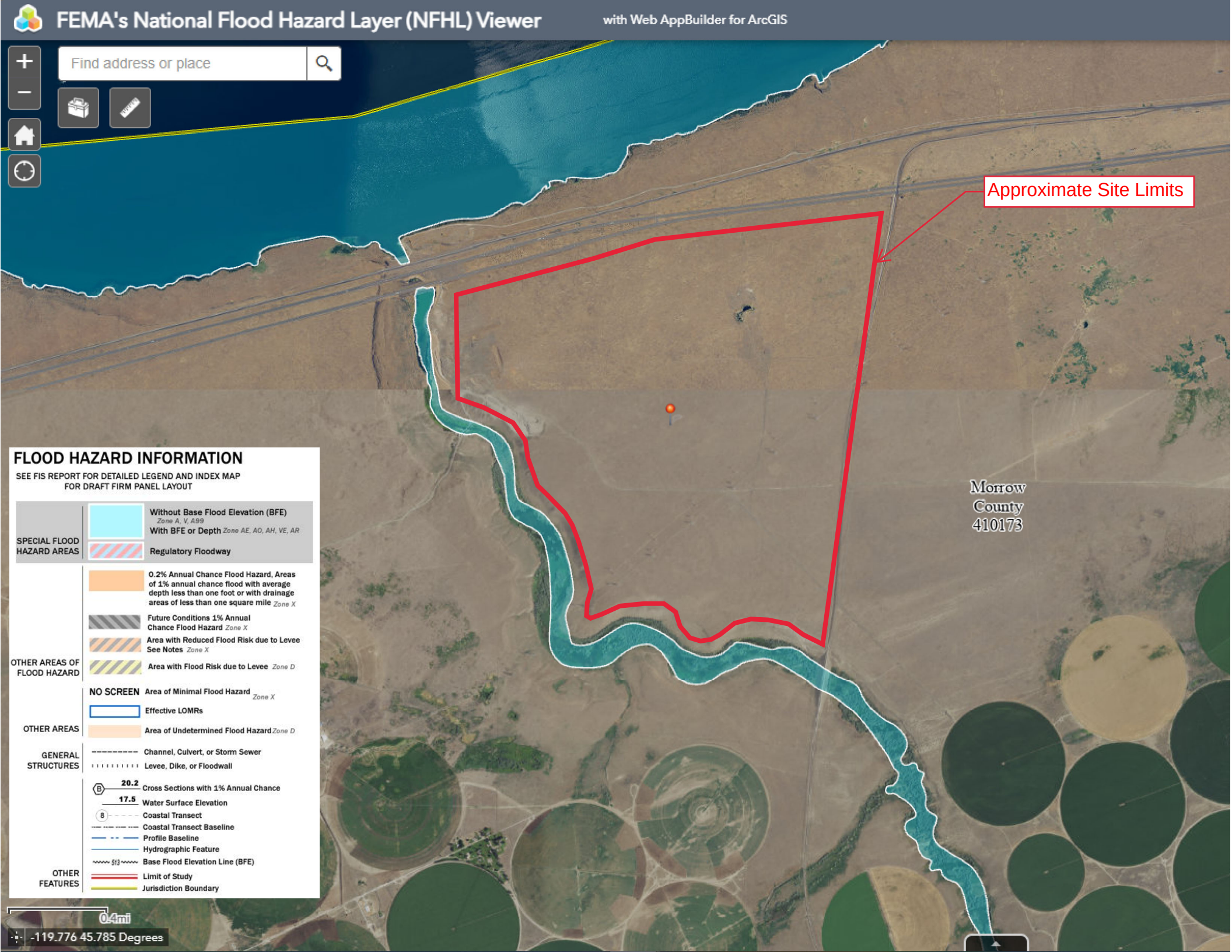
National Wetlands Inventory



December 4, 2023

Wetlands

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


FEMA's National Flood Hazard Layer (NFHL) Viewer
with Web AppBuilder for ArcGIS
Find address or place
Approximate Site Limits
Morrow
County
410173
FLOOD HAZARD INFORMATION
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP
FOR DRAFT FIRM PANEL LAYOUT
SPECIAL FLOOD HAZARD AREAS
Without Base Flood Elevation (BFE) Zone A, V, A99
With BFE or Depth Zone AE, AO, AH, VE, AR
Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD
0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
Future Conditions 1% Annual Chance Flood Hazard Zone X
Area with Reduced Flood Risk due to Levee See Notes Zone X
Area with Flood Risk due to Levee Zone D
OTHER AREAS
NO SCREEN Area of Minimal Flood Hazard Zone X
Effective LOMRs
Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES
Channel, Culvert, or Storm Sewer
Levee, Dike, or Floodwall
OTHER FEATURES
20.2 Cross Sections with 1% Annual Chance
17.5 Water Surface Elevation
Coastal Transect
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature
Base Flood Elevation Line (BFE)
Limit of Study
Jurisdiction Boundary
0.4mi
-119.776 45.785 Degrees

Site

Morrow County

Boardman, OR 97818

Inquiry Number:

December 07, 2023

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

12/07/23

Site Name:

Site
Morrow County
Boardman, OR 97818
EDR Inquiry # 7514816.5

Client Name:

Parametrix, Inc.
700 NE Multnomah
Portland, OR 97232
Contact: Adam Romey

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2020	1"=875'	Flight Year: 2020	USDA/NAIP
2016	1"=875'	Flight Year: 2016	USDA/NAIP
2012	1"=875'	Flight Year: 2012	USDA/NAIP
2009	1"=875'	Flight Year: 2009	USDA/NAIP
2005	1"=875'	Flight Year: 2005	USDA/NAIP
2001	1"=875'	Acquisition Date: January 01, 2001	USGS/DOQQ
1996	1"=875'	Acquisition Date: July 12, 1996	USGS/DOQQ
1981	1"=875'	Flight Date: June 26, 1981	USGS
1977	1"=875'	Flight Date: July 01, 1977	USGS
1970	1"=875'	Flight Date: July 06, 1970	USGS
1952	1"=875'	Flight Date: September 14, 1952	USGS

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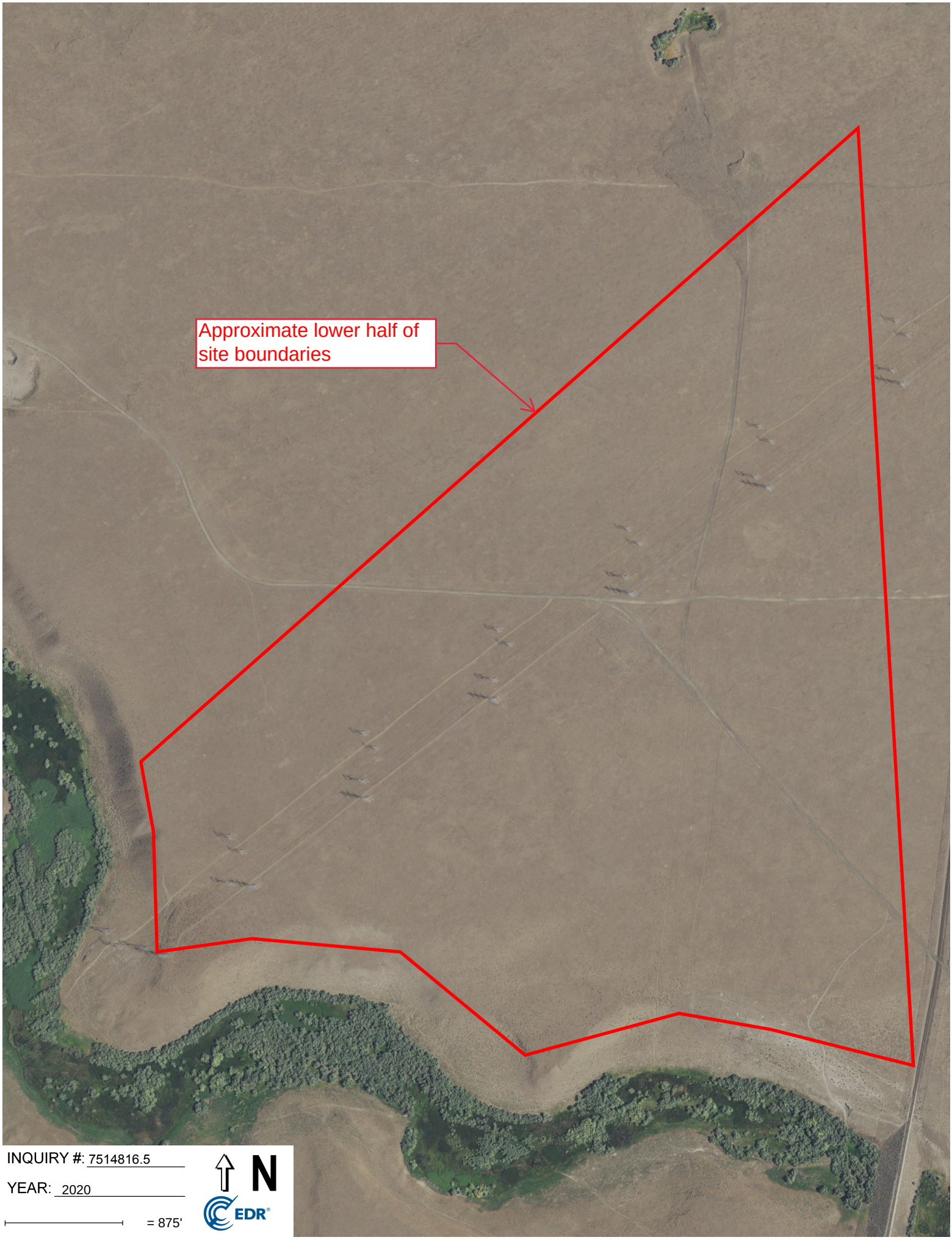
Approximate lower half of site boundaries
INQUIRY #: 7514816.5
YEAR: 2020
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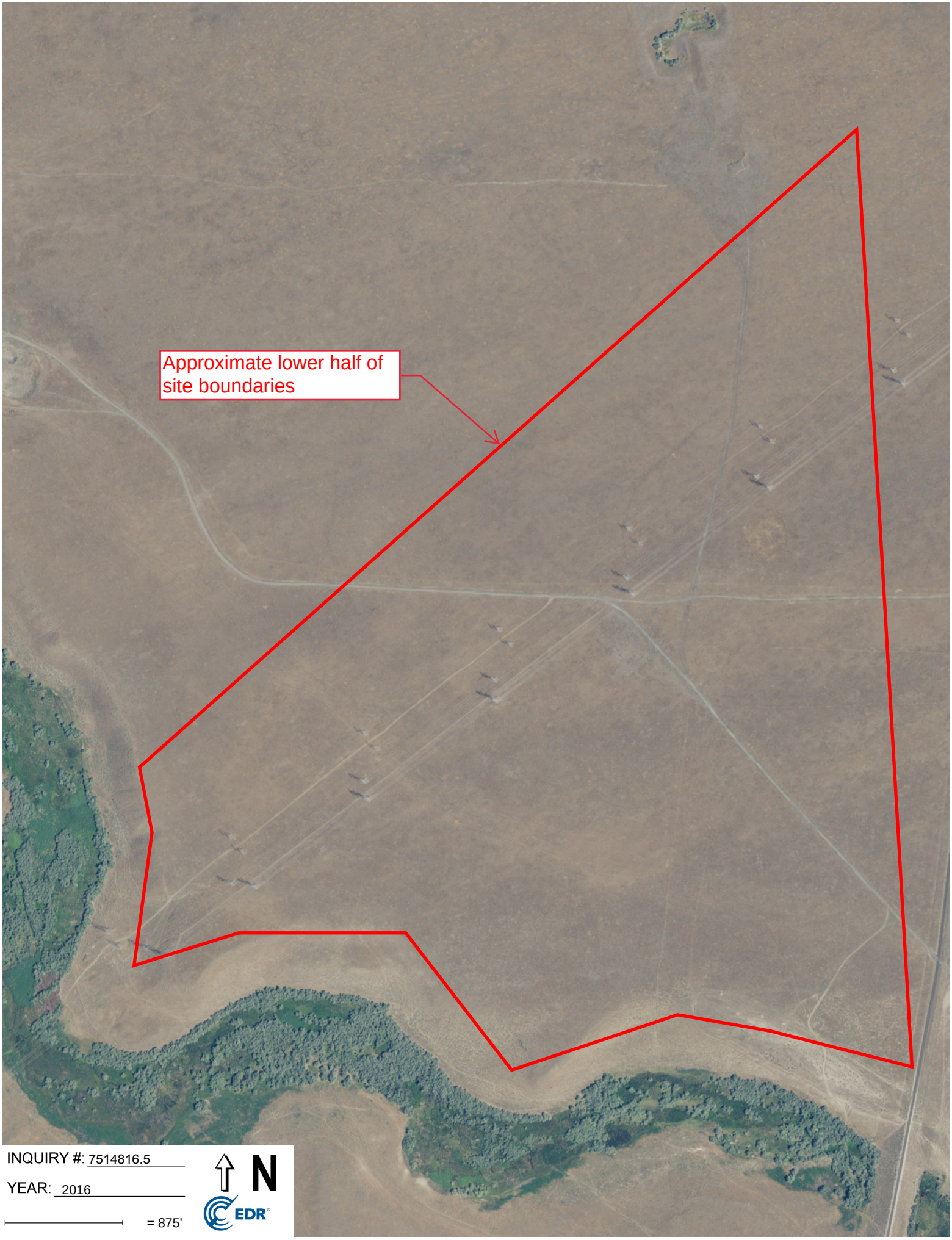
N
EDR



INQUIRY #: 7514816.5

YEAR: 2016

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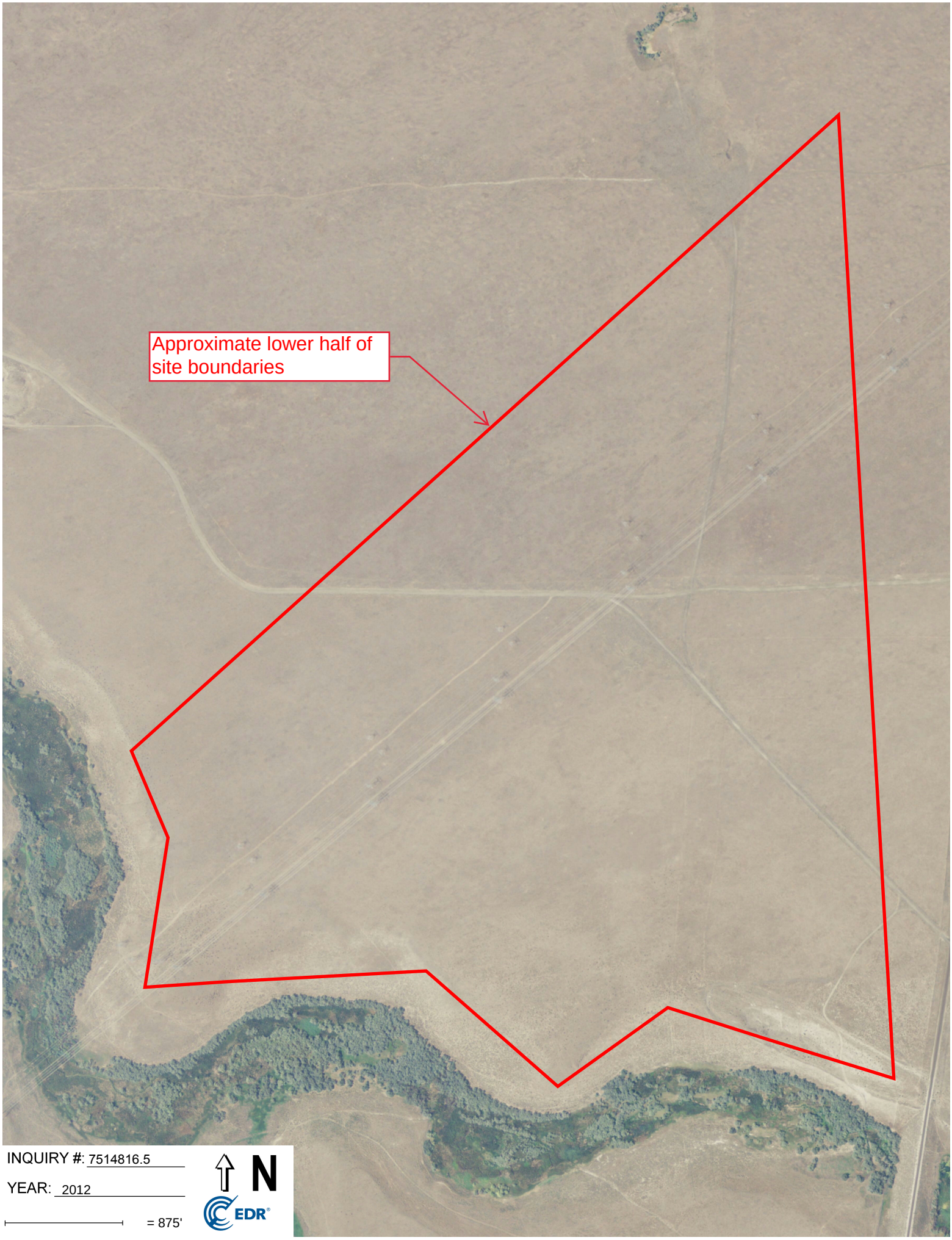

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YEAR: 2012

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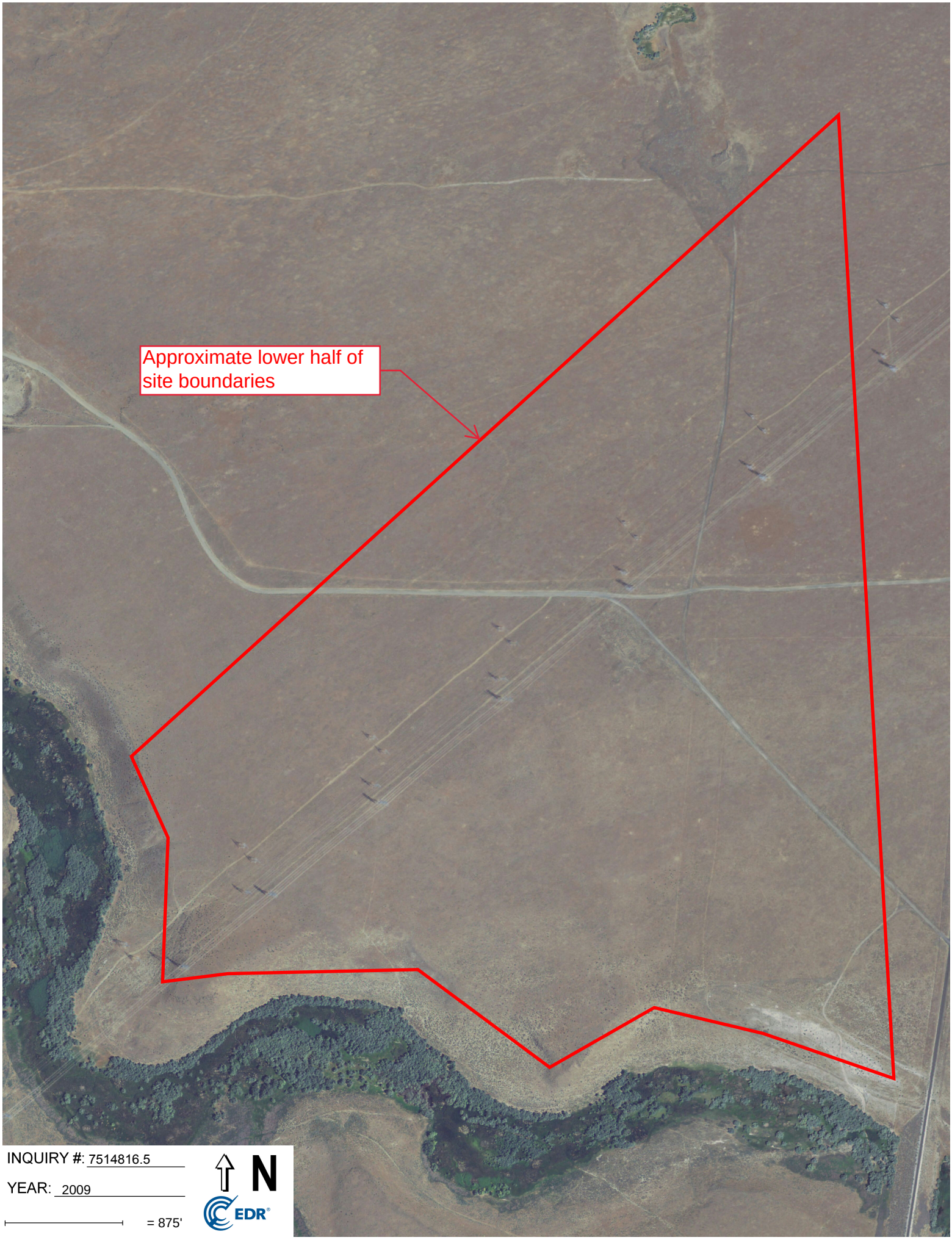

INQUIRY #: 7514816.5

YEAR: 2009

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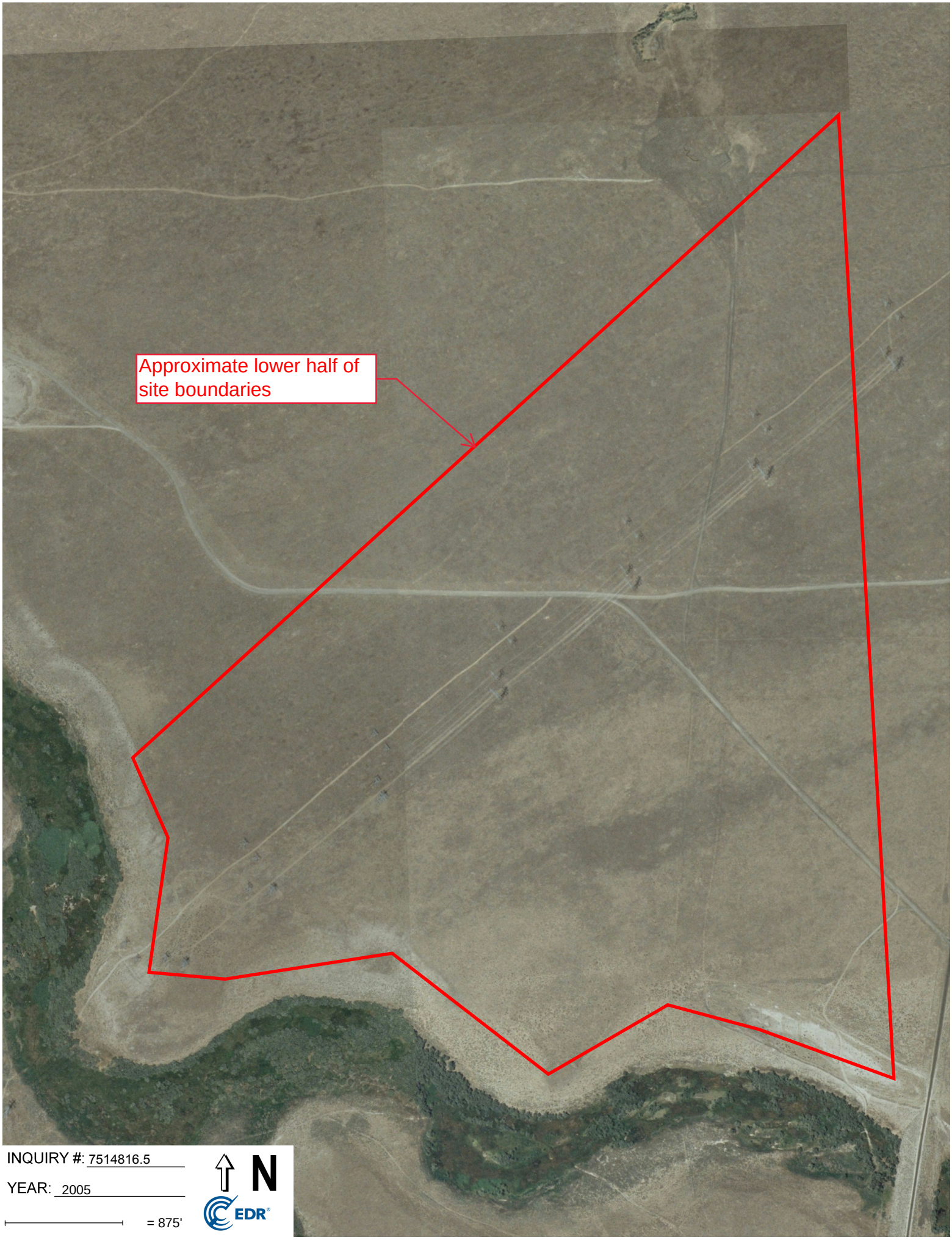

INQUIRY #: 7514816.5

YEAR: 2005

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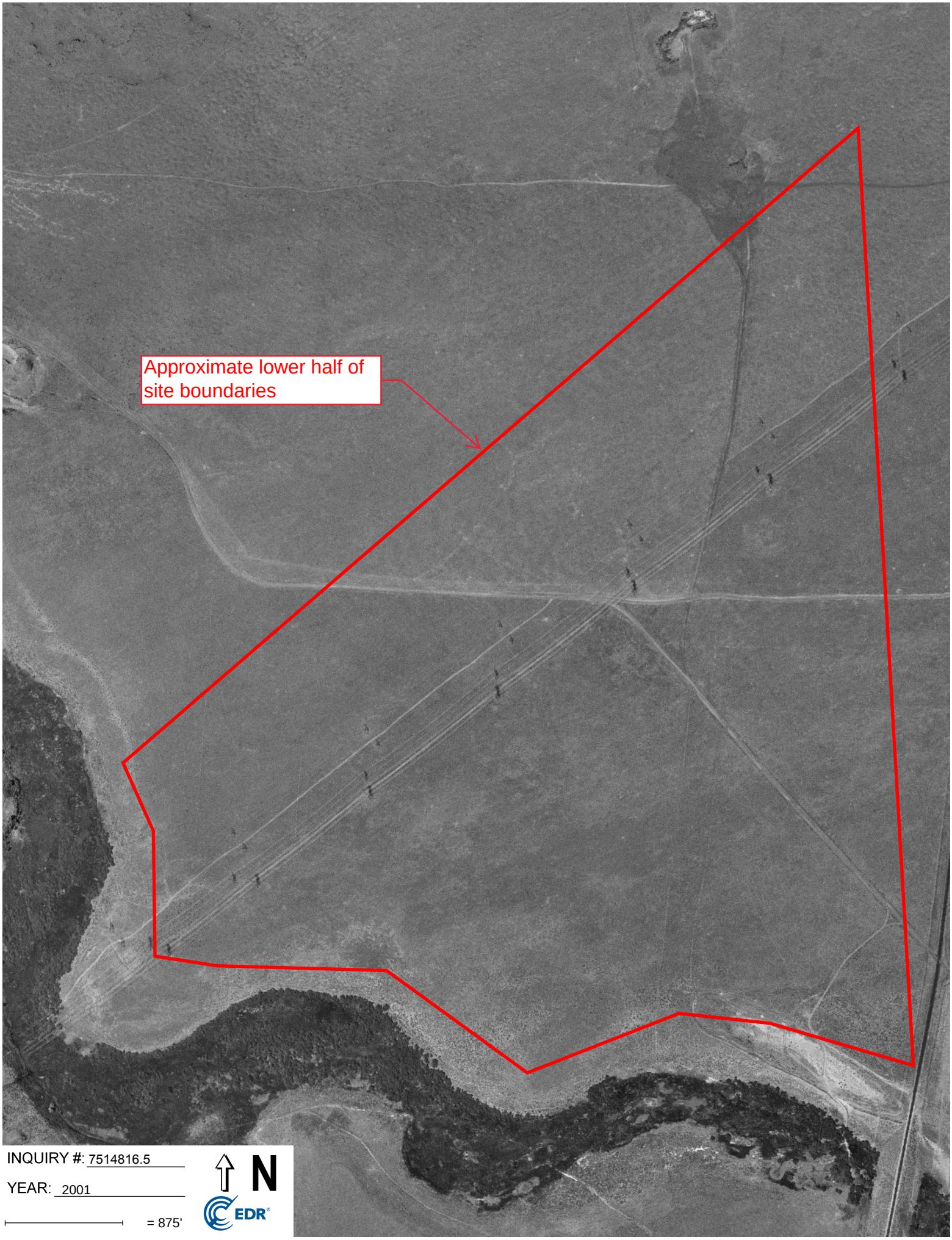

INQUIRY #: 7514816.5

YEAR: 2001

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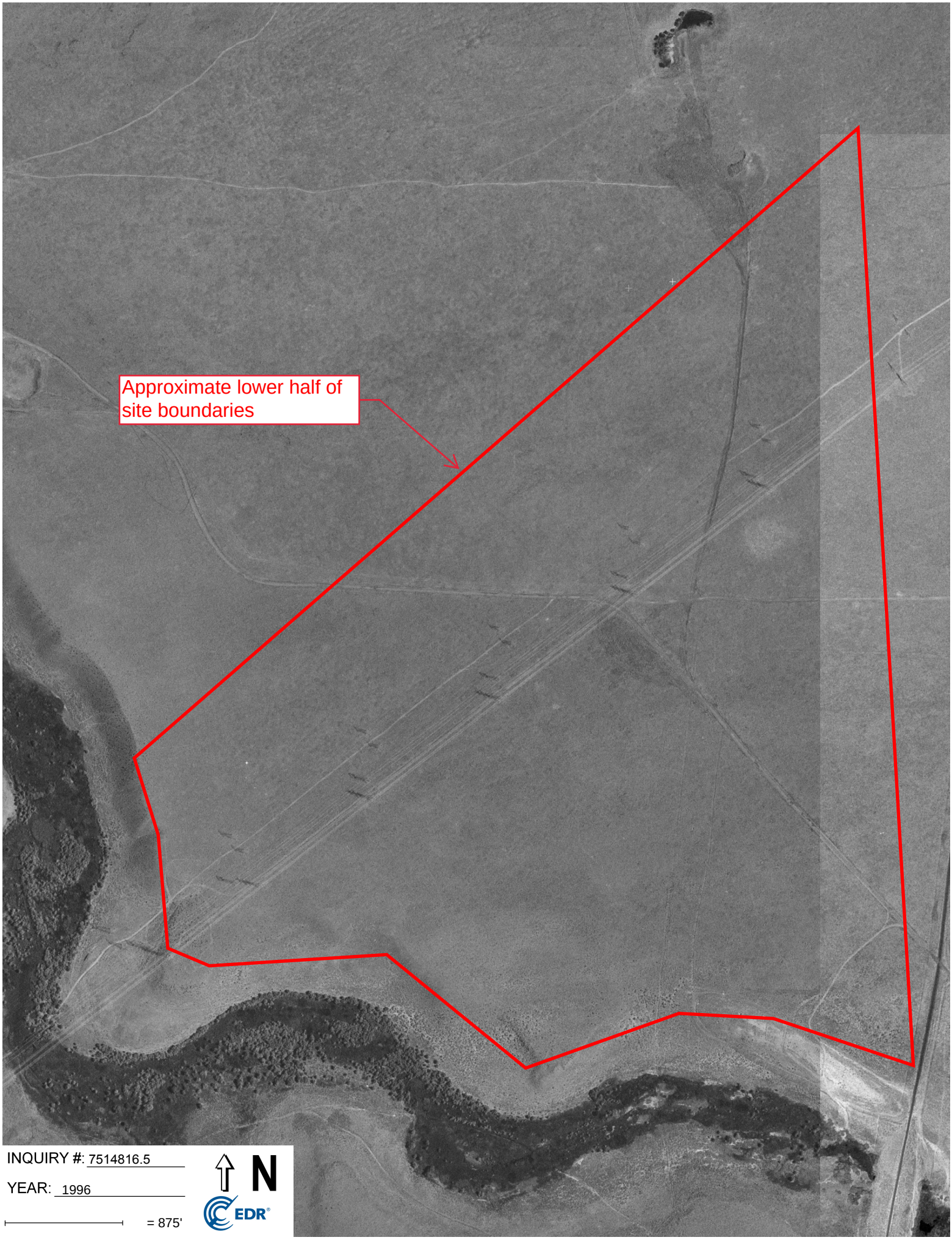

INQUIRY #: 7514816.5

YEAR: 1996

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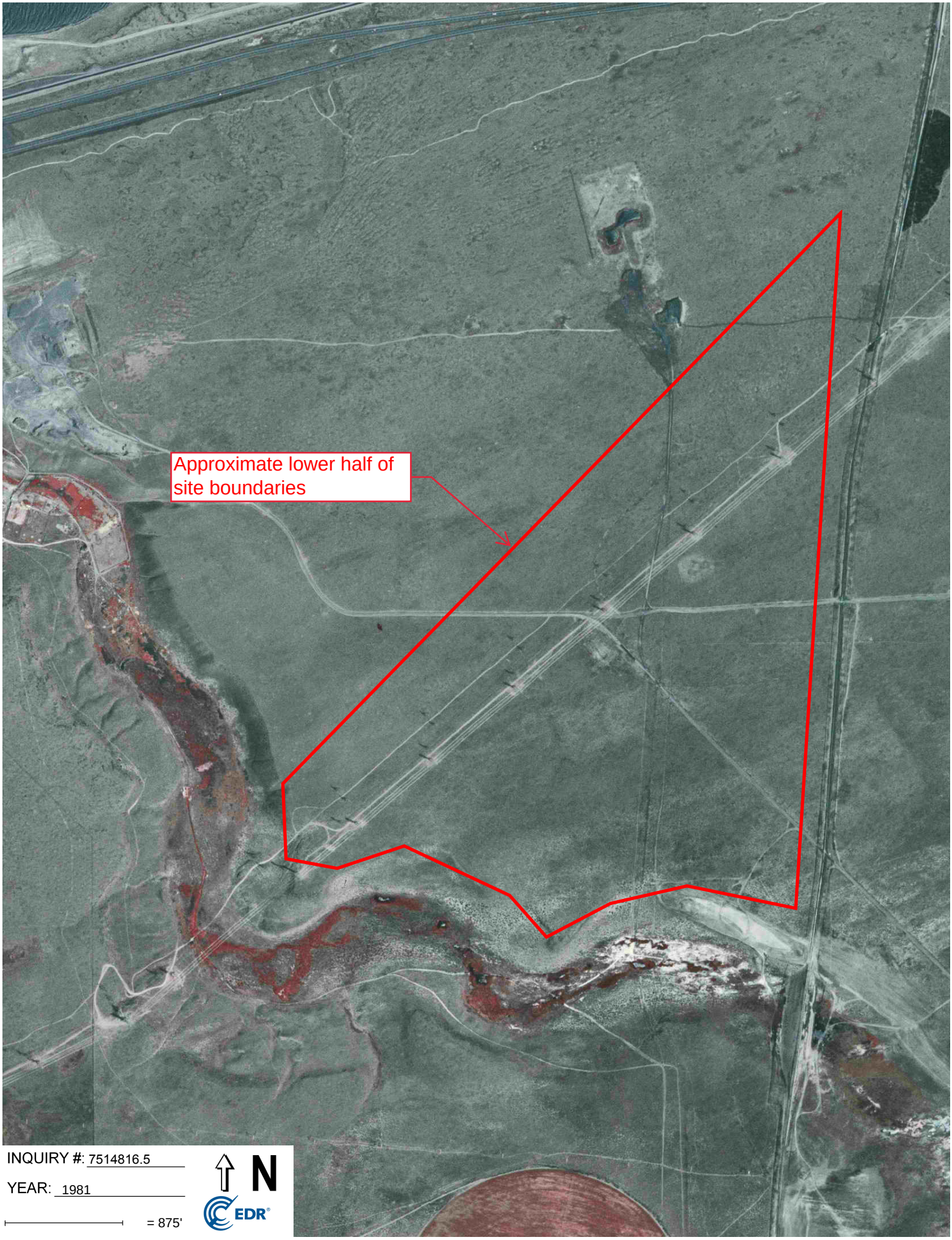

INQUIRY #: 7514816.5

YEAR: 1981

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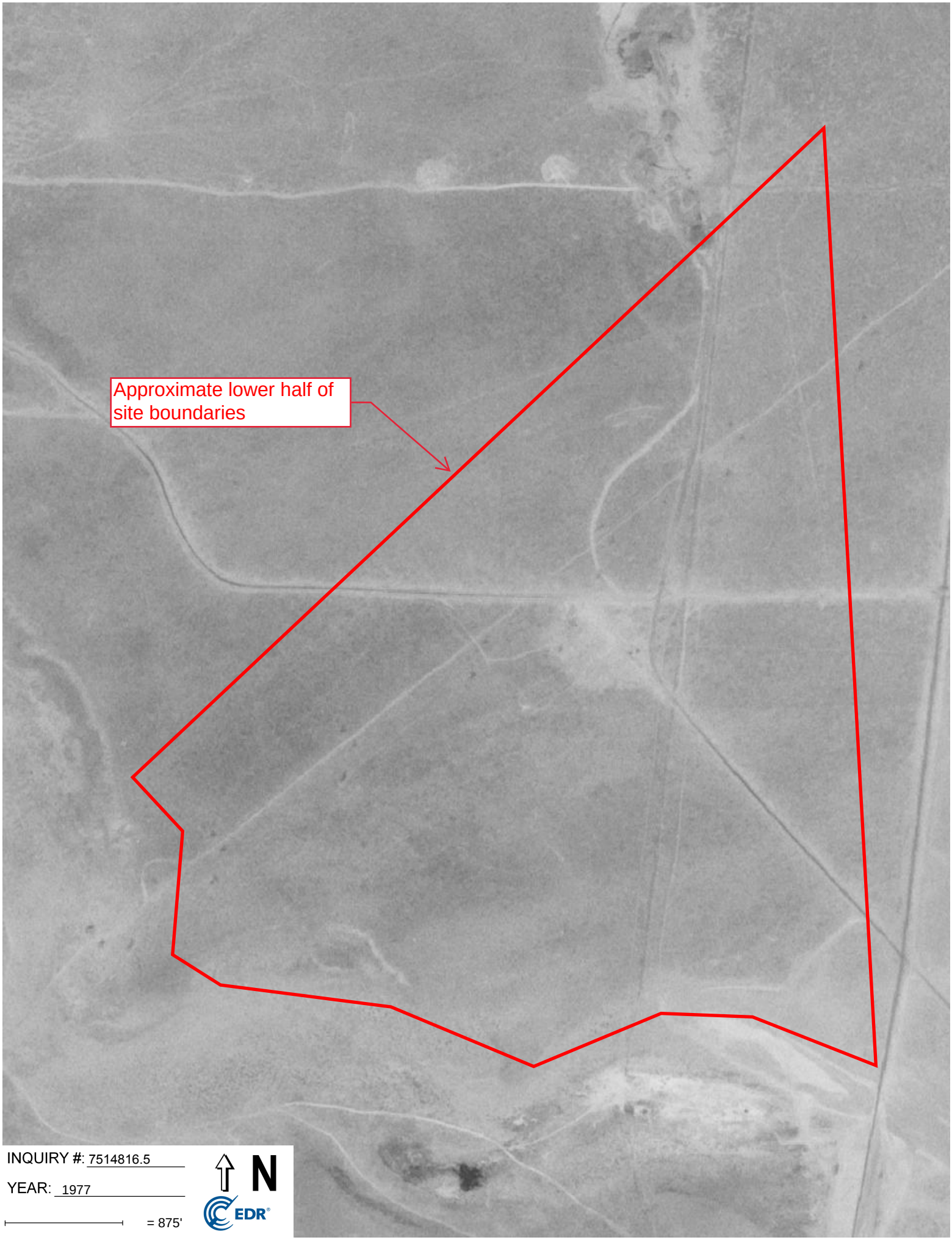
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YEAR: 1977
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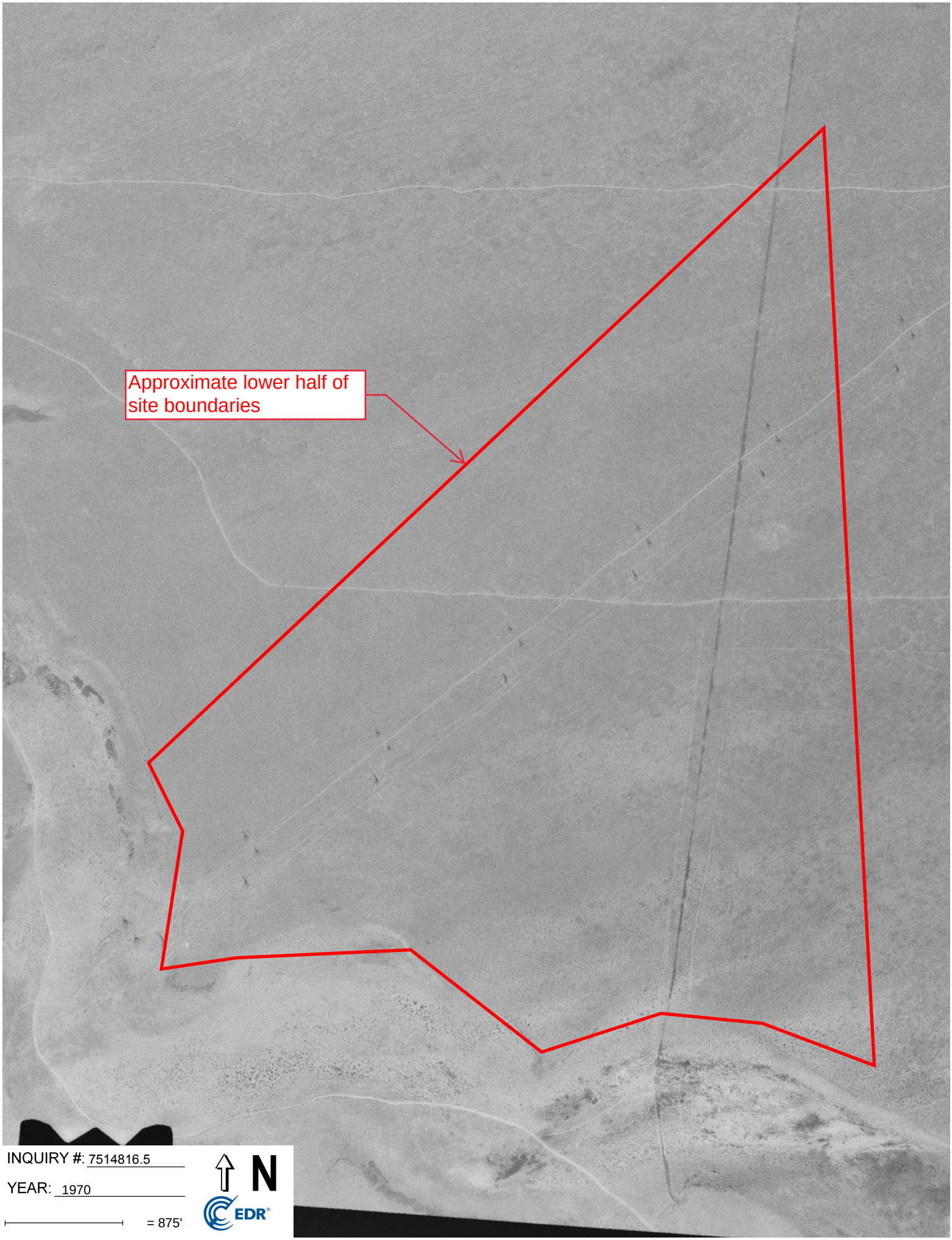
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YEAR: 1970
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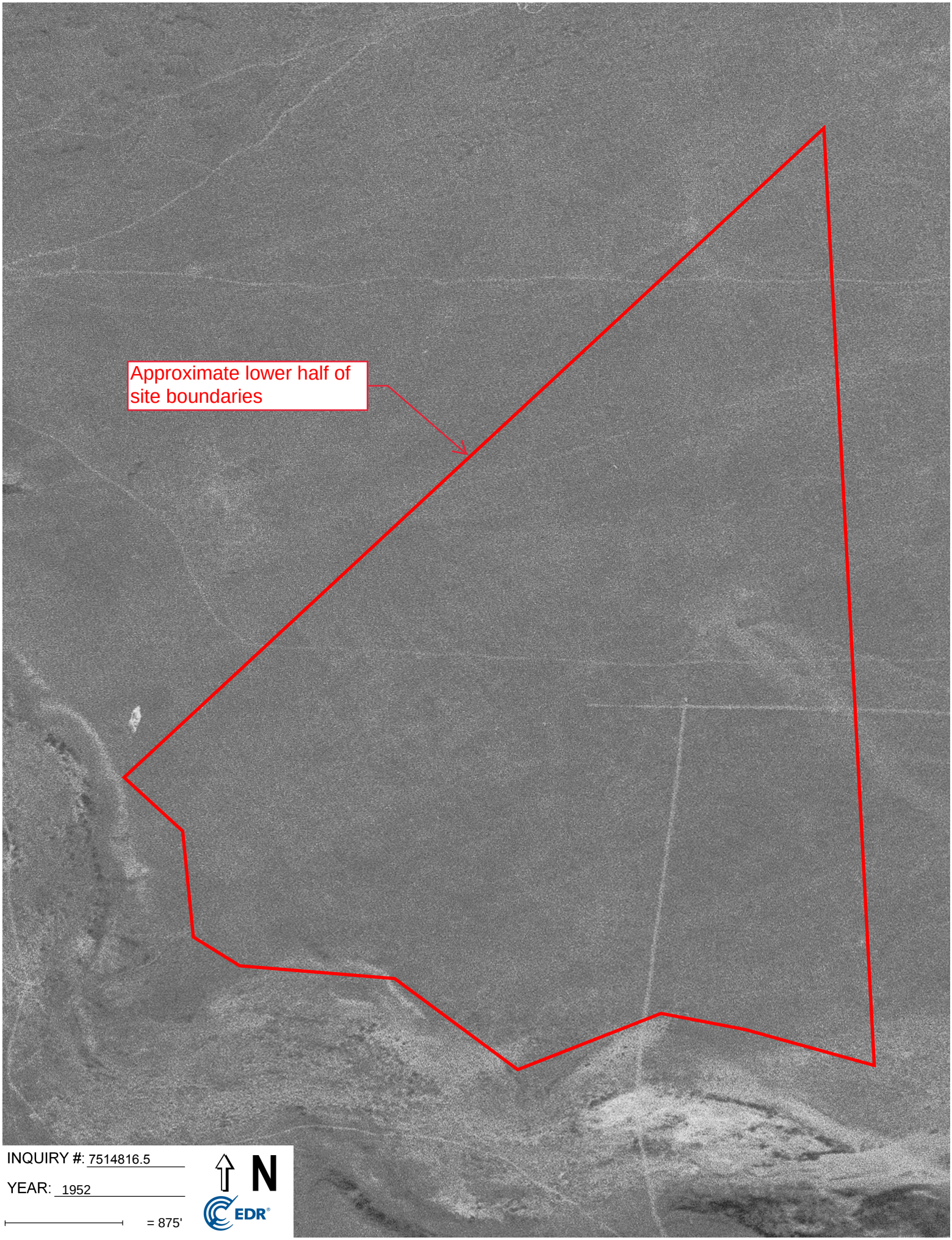
Approximate lower half of site boundaries
INQUIRY #: 7514816.5
YEAR: 1952
= 875'
N
EDR

7514815.5

December 07, 2023

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

12/07/23

Client Name:

Parametrix, Inc.
700 NE Multnomah
Portland, OR 97232
Contact: Adam Romey

7514815.5

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Search Results:

Year	*Scale*	*Details*	*Source*
2020	1"=1250'	Flight Year: 2020	USDA/NAIP
2016	1"=1250'	Flight Year: 2016	USDA/NAIP
2014	1"=1250'	Flight Year: 2014	USDA/NAIP
2011	1"=1250'	Flight Year: 2011	USDA/NAIP
2005	1"=1250'	Flight Year: 2005	USDA/NAIP
2001	1"=1250'	Acquisition Date: January 01, 2001	USGS/DOQQ
1996	1"=1250'	Acquisition Date: July 12, 1996	USGS/DOQQ
1981	1"=1250'	Flight Date: June 26, 1981	USGS
1977	1"=1250'	Flight Date: July 01, 1977	USGS
1970	1"=1250'	Flight Date: July 06, 1970	USGS
1952	1"=1250'	Flight Date: September 14, 1952	USGS

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Approximate upper half of site boundaries
INQUIRY #: 7514815.5
YEAR: 2020
= 1250'
N
EDR

INQUIRY #: 7514815.5

YEAR: 2016

= 1250'

N

EDR

INQUIRY #: 7514815.5

YEAR: 2014

= 1250'

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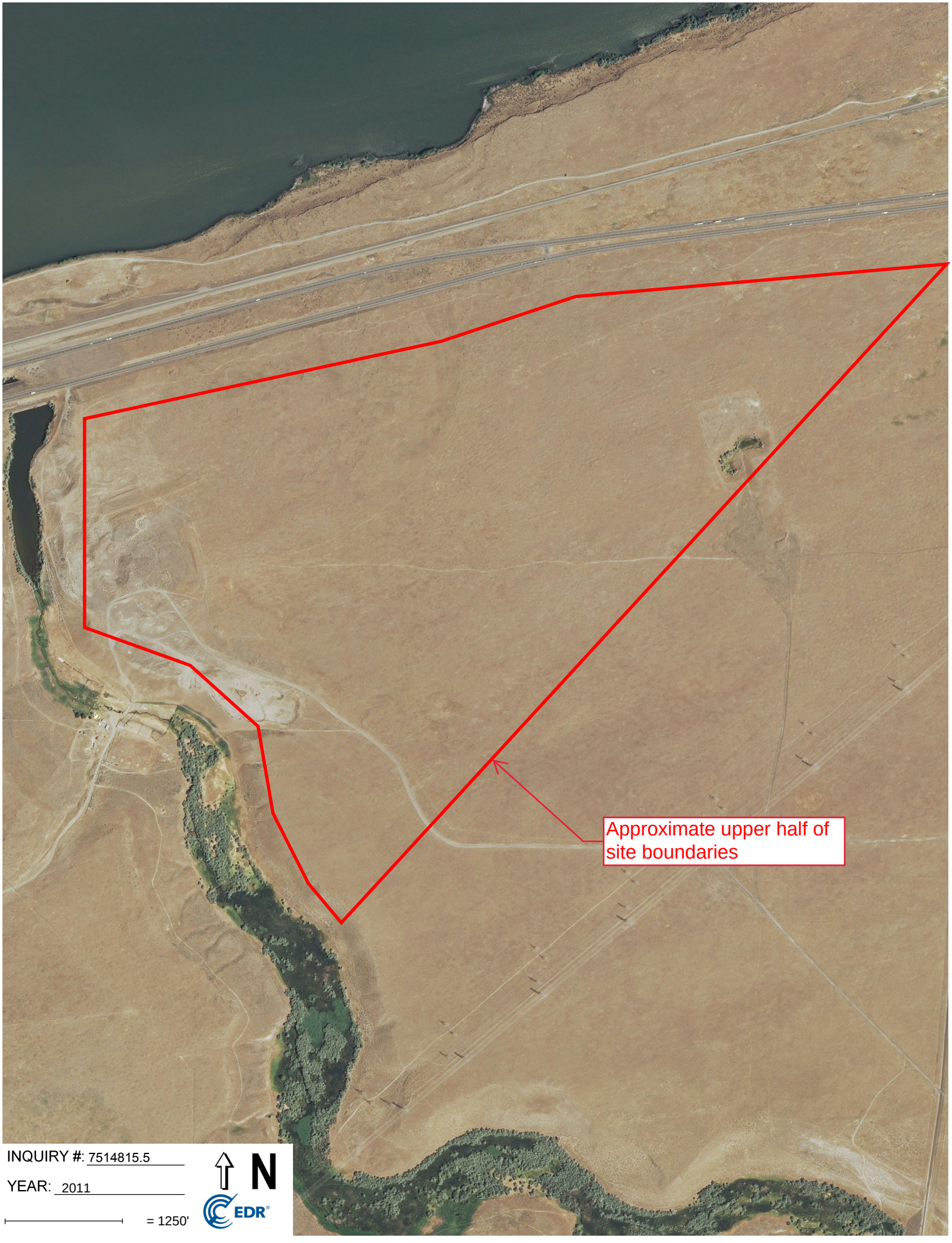

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YEAR: 2011

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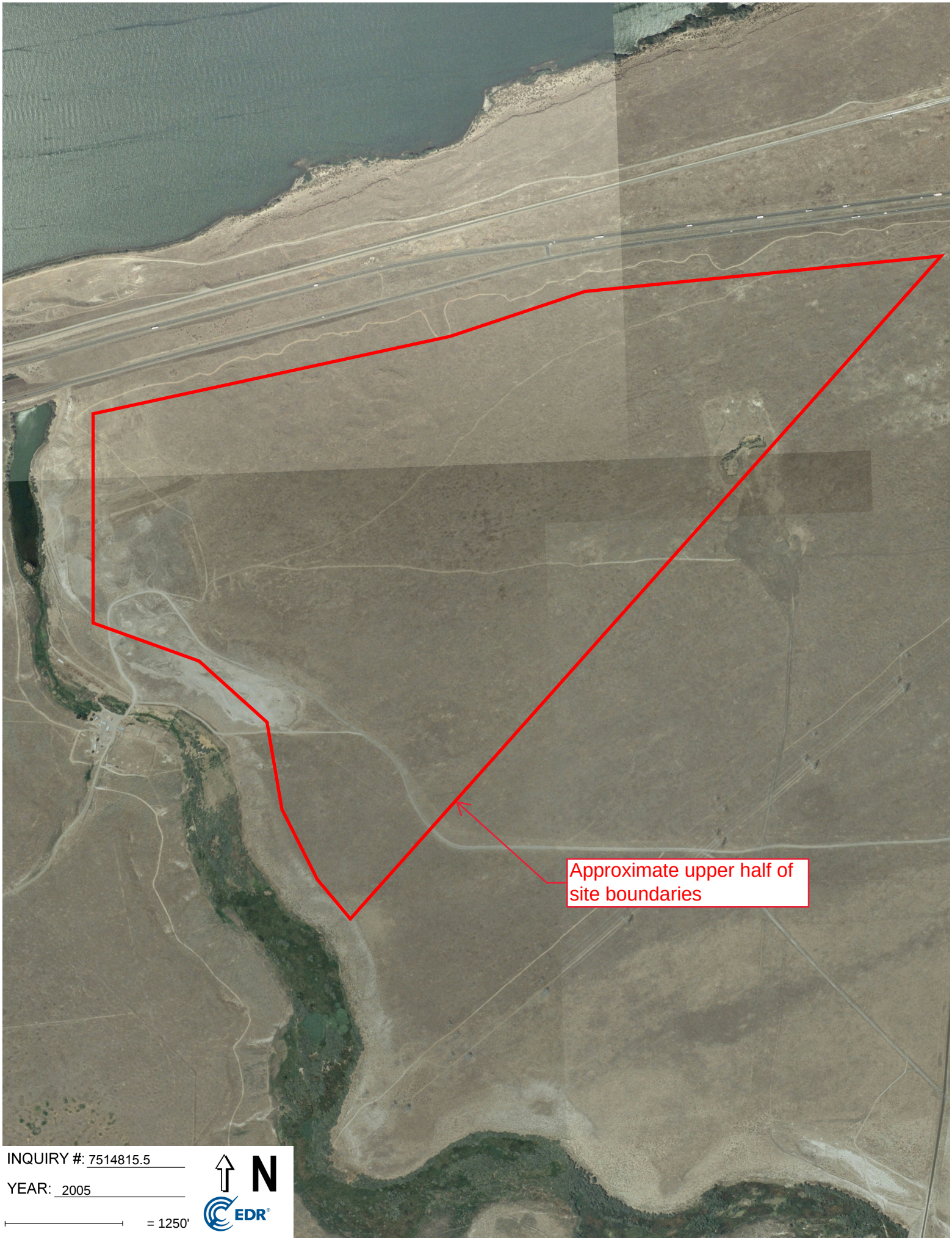

INQUIRY #: 7514815.5

YEAR: 2005

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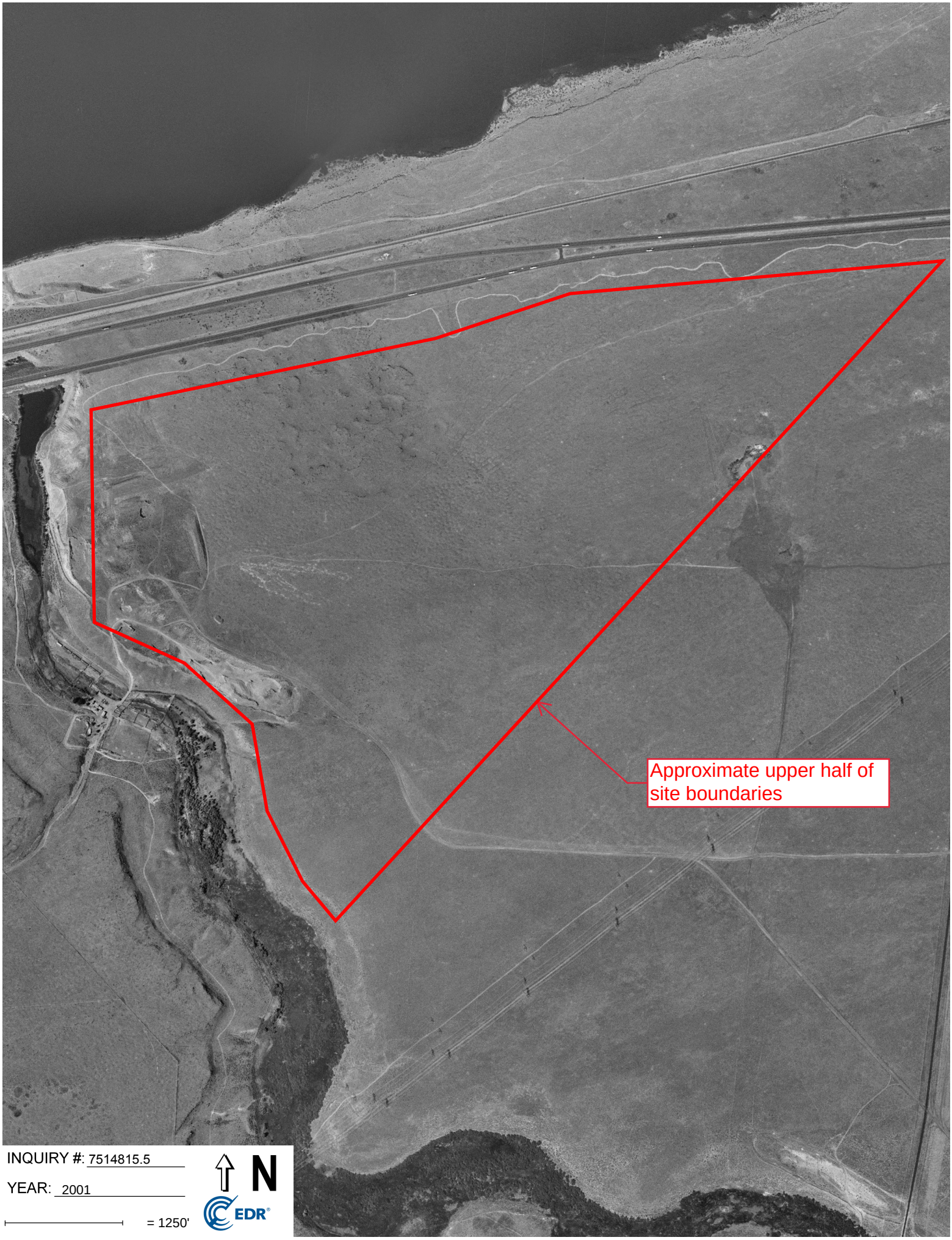

INQUIRY #: 7514815.5

YEAR: 2001

= 1250'

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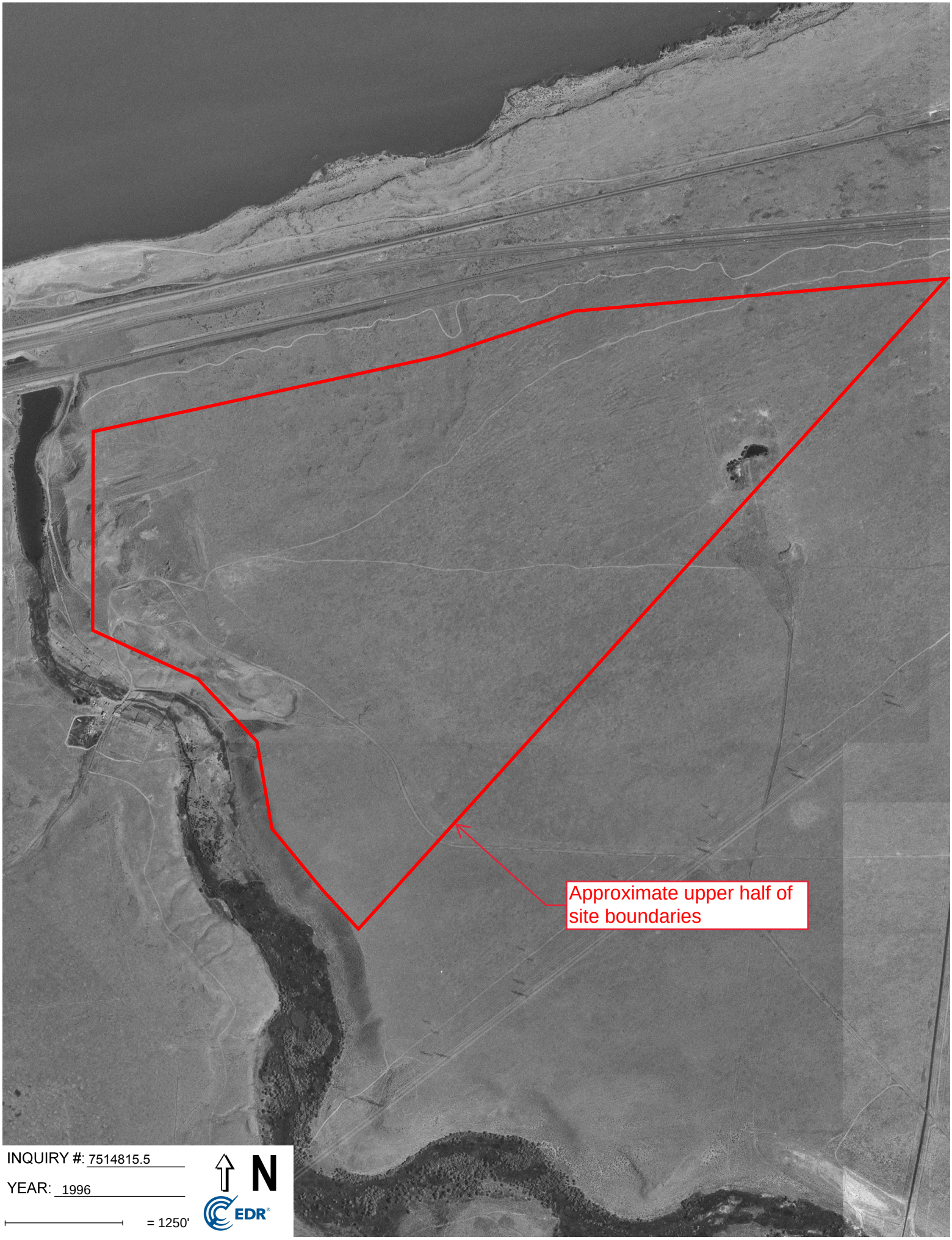
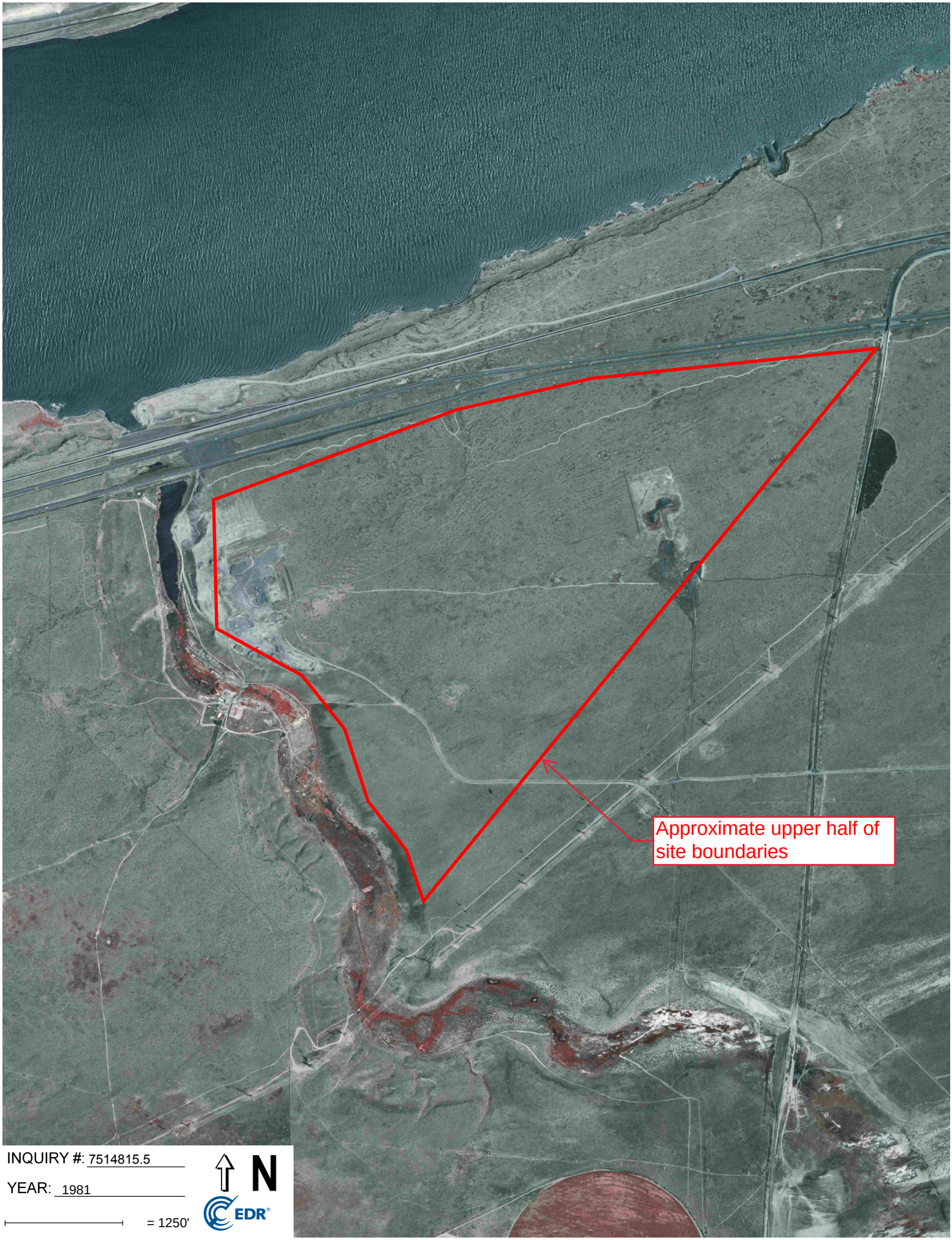
EDR


Approximate upper half of site boundaries
INQUIRY #: 7514815.5
YEAR: 1996
= 1250'
N
EDR



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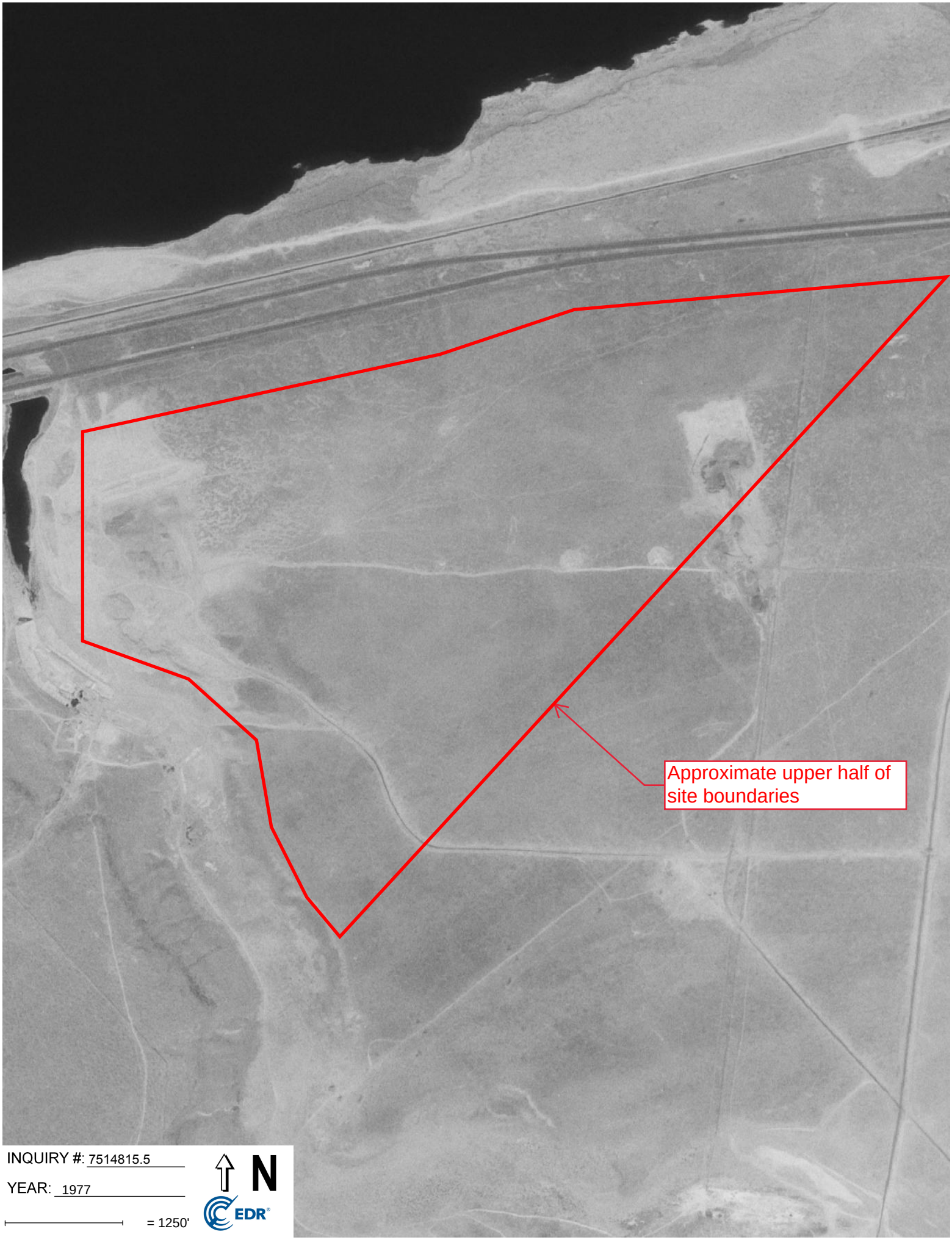
YEAR: 1981

= 1250'

N

EDR



INQUIRY #: 7514815.5

YEAR: 1977

= 1250'

N

EDR

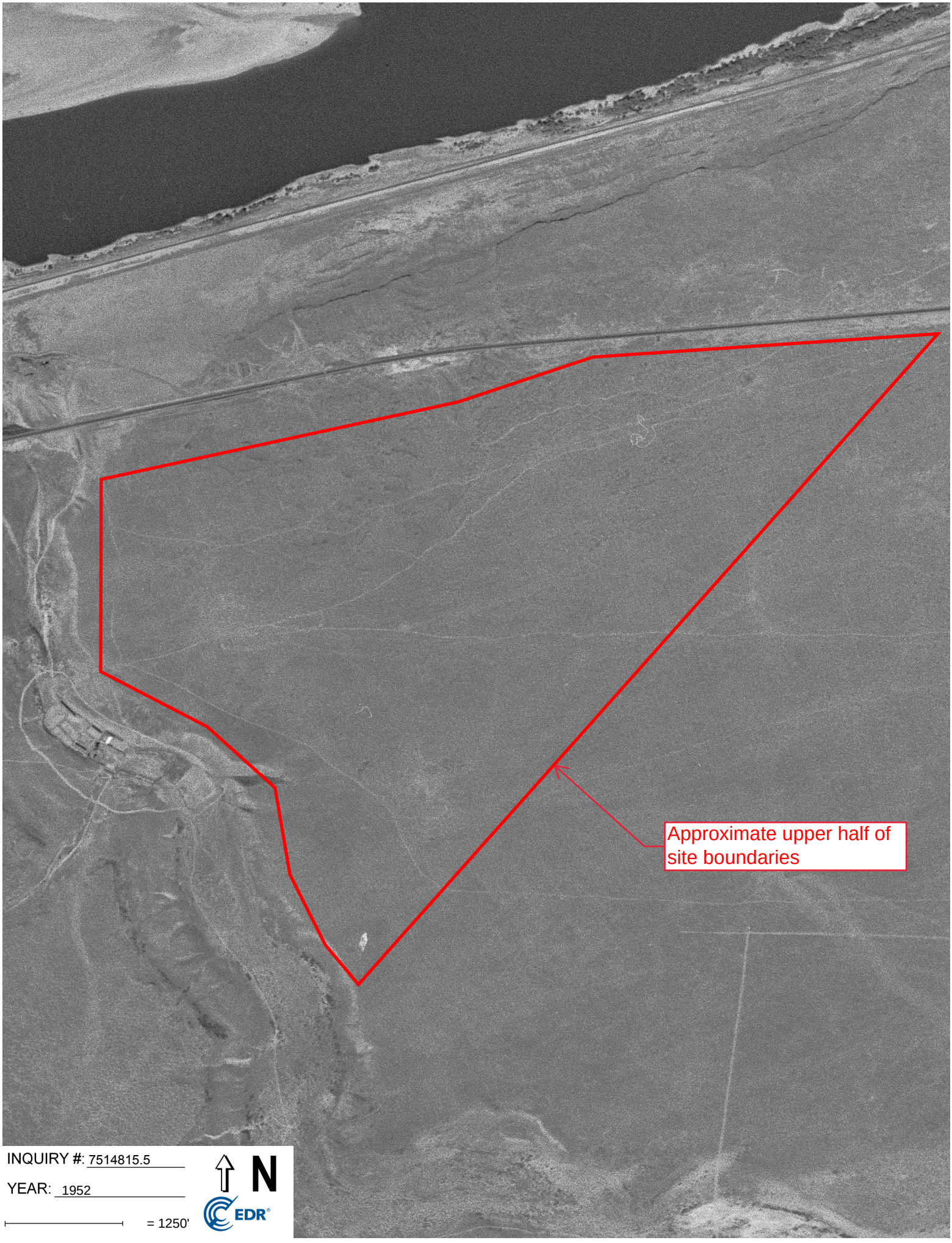
INQUIRY #: 7514815.5

YEAR: 1970

= 1250'

N

EDR



INQUIRY #: 7514815.5

YEAR: 1952

= 1250'

N

EDR

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

IPaC resource list

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

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

Location

Morrow County, Oregon

Local office

Oregon Fish And Wildlife Office

(503) 231-6179
(503) 231-6195

2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398

Endangered species

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

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

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

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

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

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

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

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

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

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

Reptiles

NAME	STATUS
Northwestern Pond Turtle Actinemys marmorata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Fishes

NAME	STATUS
Bull Trout Salvelinus confluentus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8212	Threatened

Insects

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

Critical habitats

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

There are no critical habitats at this location.

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

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[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.

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

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.	Breeds Dec 1 to Aug 31
Golden Eagle *Aquila chrysaetos* 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/1680	Breeds Jan 1 to Aug 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 and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

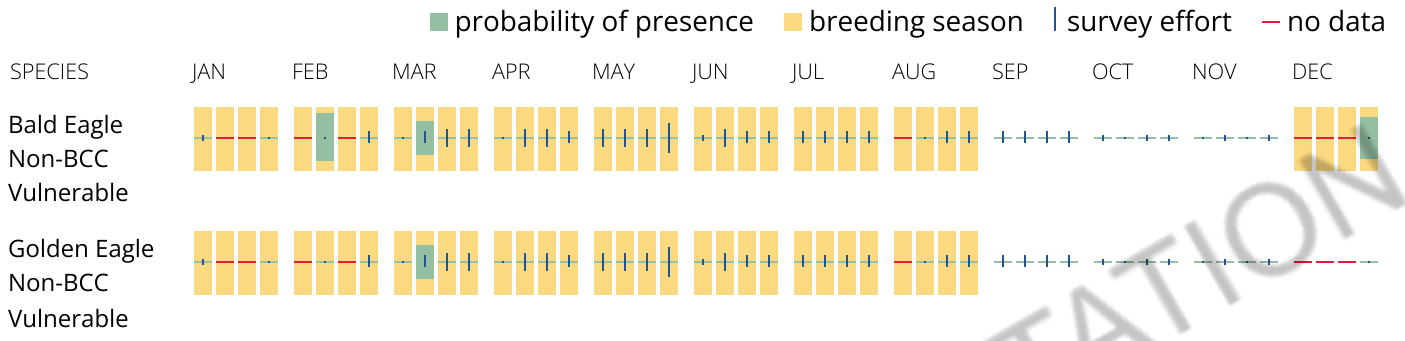
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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

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

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



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

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

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

Migratory birds

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

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

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

Additional information can be found using the following links:

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

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

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, 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 White Pelican pelecanus erythrorhynchos This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6886	Breeds Apr 1 to Aug 31
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.	Breeds Dec 1 to Aug 31
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle Aquila chrysaetos 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/1680	Breeds Jan 1 to Aug 31
Lewis's Woodpecker Melanerpes lewis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15

Western Grebe aechmophorus occidentalis Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

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

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

Breeding Season (■)

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

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

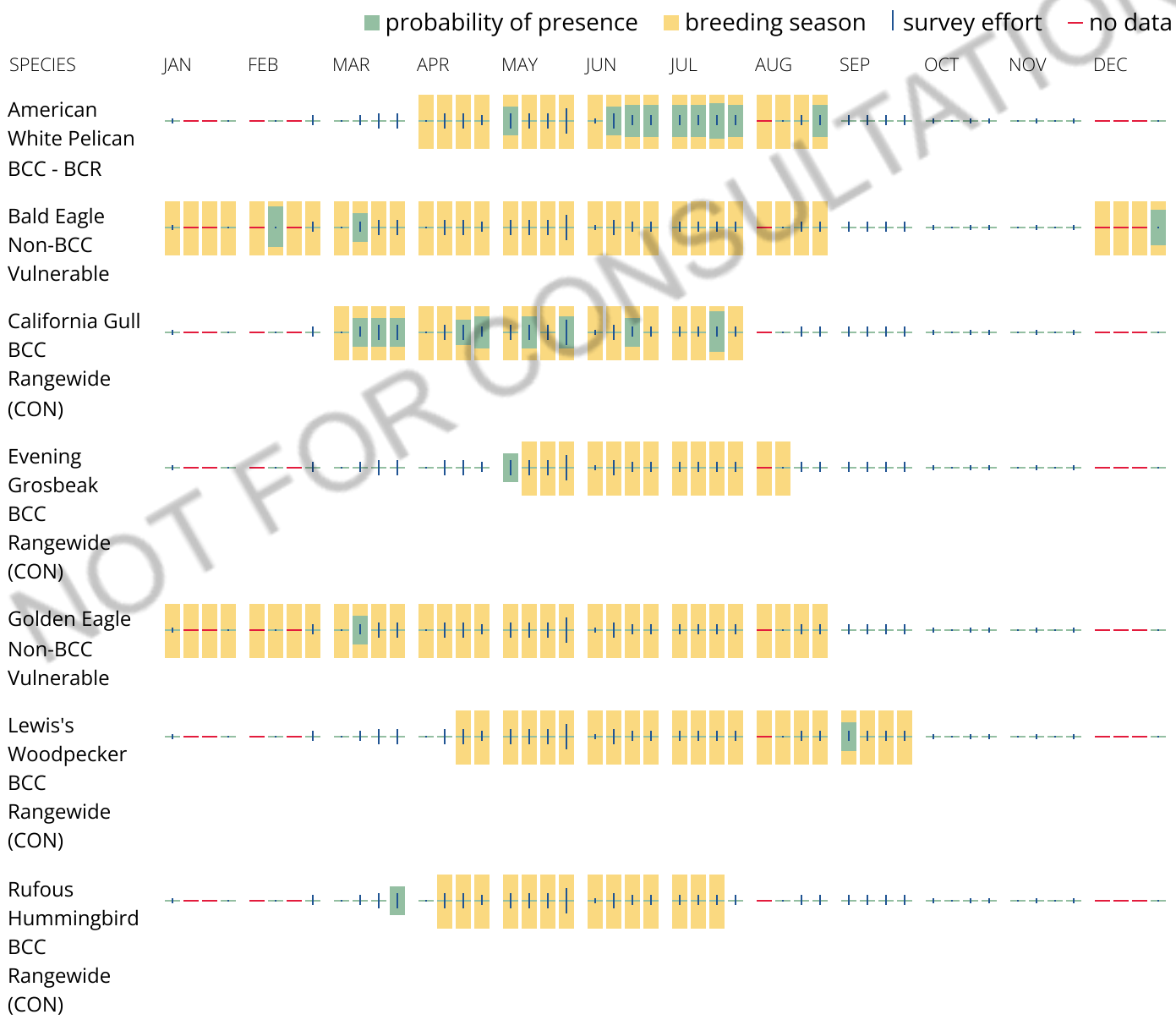
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

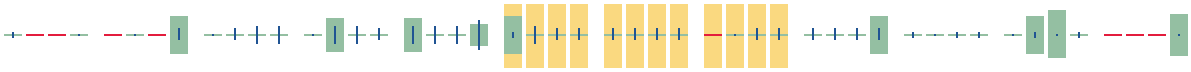
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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



Western Grebe
BCC
Rangewide
(CON)



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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

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

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

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

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

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

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird

on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is

the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

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

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.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1C

FRESHWATER POND

PUB/EM1Fx

A full description for each wetland code can be found at the National Wetlands Inventory website

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

Data limitations

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

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

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

Data exclusions

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

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or

products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

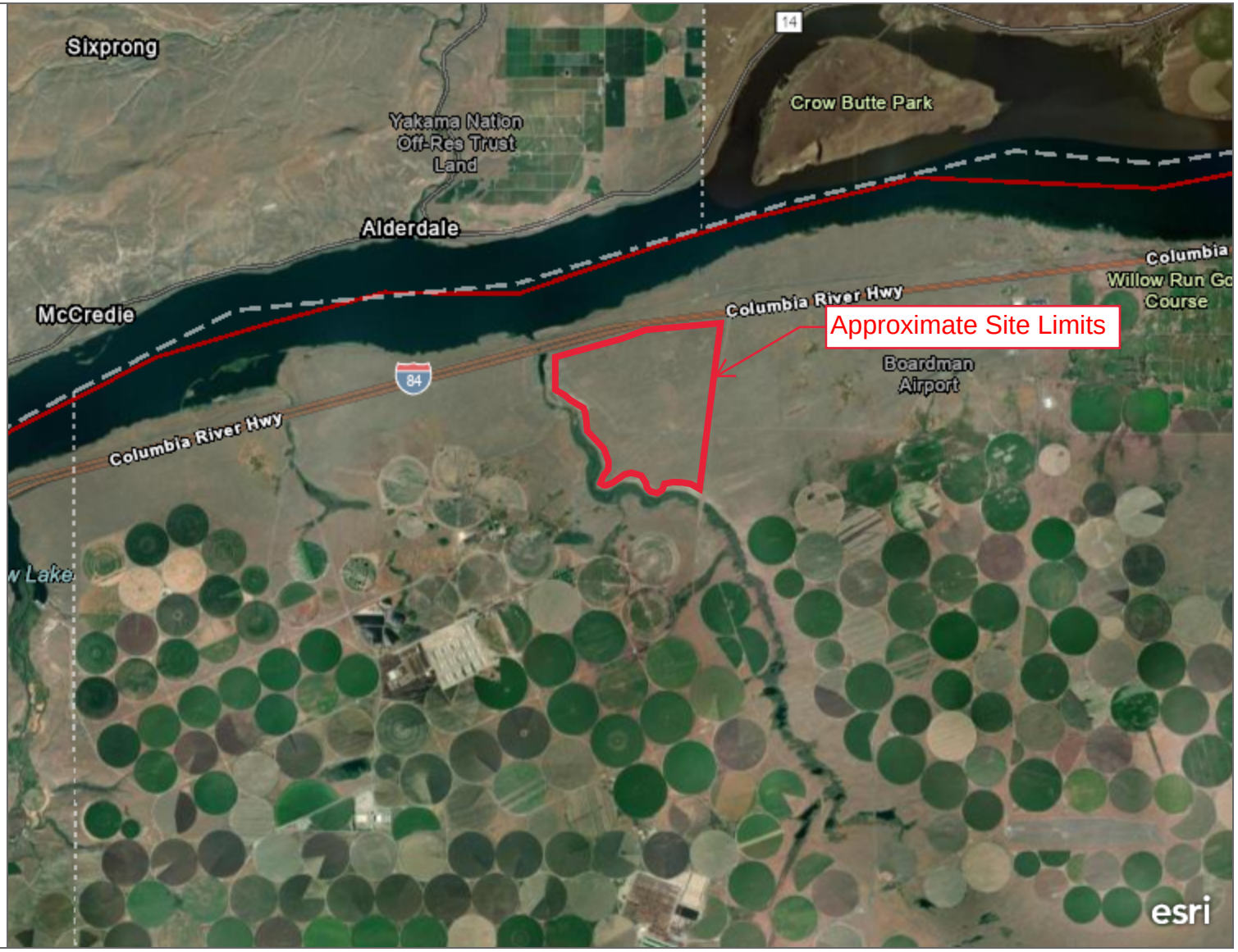
Critical Habitat for Threatened & Endangered Species [USFWS]

Final Polygon Features

Final Linear Features

Proposed Polygon Features

Proposed Linear Features



A specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

Appendix C

Photos

Site Photographs

Job Name: Due Diligence

Job Number/Phase (Task) Mo/Yr: 553-4805-014 / February 2024

Photo No. 1. Wetland A, SP-01.

Photo No. 2. Wetland A at the bottom of depression, upland slopes of depression.

Photo No. 3. General view of the site, upland shrub. Location of SP-3.

Photo No. 4. Upland grassland. Location of SP-04.

Photo No. 5. Southern border of the site. The slope to Six Mile Creek is located outside of the study area.

Photo No. 6. General view of the site.

Photo No. 7. General view of the site. Location of SP-07.

Photo No. 8. General view of the site. Location of SP-08.

Photo No. 9. Rock outcrops.

Appendix D

Determination Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site | City/County: Unincorporated Morrow County | Sampling Date: December 18, 2023
Applicant/Owner: Confidential Client | State: Oregon | Sampling Point: **SP-01**
Investigator(s): Colton Kyro, Chloe Kott | Section, Township, Range: 4N23E24SENE
Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): concave | Slope (%): None
Subregion (LRR): (B) Columbia/Snake River Plateau | Lat: 45.817335 | Long: -119.874741 | Datum: NAD 83
Soil Unit (Name-ID-Hydric Rating): Prosser-Rock outcrop complex, 1-20% slopes - 38D - No | NWI classification: PUB/EM1Fx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Precipitation prior to fieldwork:
Precipitation was within the normal range for the three months prior to the site visit.

Remarks:
SP-01 was collected in an abandoned gravel mine.

VEGETATION

		Absolute	Dominant	Indicator
Tree Stratum	(Plot size: r =15')	% Cover	Species?	Status
1.				
2.				
3.				
4.				
		0% = Total Cover		
Sapling/Shrub Stratum	(Plot size: r =10')			
1.				
2.				
3.				
4.				
5.				
		0% = Total Cover		
Herb Stratum	(Plot size: r = 5')			
1.	*Phragmites australis*	80%	Yes	FACW
2.	*Poa palustris*	30%	Yes	FAC
3.	*Xanthium strumarium*	15%	No	FAC
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		125% = Total Cover		
Woody Vine Stratum	(Plot size: r = 5')			
1.				
2.				
		0% = Total Cover		

% Bare Ground in Herb Stratum 0% % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Coastal salt grass (*Distichlis spicata*) was also observed in the wetland.

SOIL

Sampling Point: SP-01

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]	[3]Texture	Remarks
0 - 1	2.5Y 2/2	100					SL	
1 - 5	2.5Y 2/2	95	7.5YR 4/6	5	C	M, PL	SL	
5+								Bedrock

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

[3]Texture: S = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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 C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 5

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

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 X No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site | City/County: Unincorporated Morrow County | Sampling Date: December 18, 2023
Applicant/Owner: Confidential Client | State: Oregon | Sampling Point: **SP-02**
Investigator(s): Colton Kyro, Chloe Kott | Section, Township, Range: 4N23E24SENE
Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): convex | Slope (%): 3-5%
Subregion (LRR): (B) Columbia/Snake River Plateau | Lat: 45.817384 | Long: -119.874818 | Datum: NAD 83
Soil Unit (Name-ID-Hydric Rating): Prosser-Rock outcrop complex, 1-20% slopes - 38D - No | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Precipitation prior to fieldwork:
Precipitation was within the normal range for the three months prior to the site visit.

Remarks:

VEGETATION

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum	(Plot size: r = 15')			
1.				
2.				
3.				
4.				
		0%	= Total Cover	
Sapling/Shrub Stratum	(Plot size: r = 10')			
1.				
2.				
3.				
4.				
5.				
		0%	= Total Cover	
Herb Stratum	(Plot size: r = 5')			
1.	*Poa bulbosa*	70%	Yes	FACU
2.	*Aristida longiseta*	15%	No	NOL
3.	*Lactuca serriola*	10%	No	FACU
4.	*Xanthium strumarium*	10%	No	FAC
5.	*Centaurea diffusa*	5%	No	NOL
6.				
7.				
8.				
9.				
10.				
11.				
		110%	= Total Cover	
Woody Vine Stratum	(Plot size: r = 5')			
1.				
2.				
		0%	= Total Cover	

% Bare Ground in Herb Stratum 0% % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ 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.

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

Remarks:
Russian olive (*Elaeagnus angustifolia*) also in this upland outside of the plot. Russian olive borders wetland around.

SOIL

Sampling Point: SP-02

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]	[3]Texture	Remarks
0 - 1	10YR 3/3	99	2.5Y 5/6	1	C	M	LS	Gravel inclusions
1+								Bedrock

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

[3]Texture: S = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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 C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 1

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site | City/County: Unincorporated Morrow County | Sampling Date: December 18, 2023
Applicant/Owner: Confidential Client | State: Oregon | Sampling Point: **SP-03**
Investigator(s): Colton Kyro, Chloe Kott | Section, Township, Range: 4N24E19NENW
Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): concave | Slope (%): <3%
Subregion (LRR): (B) Columbia/Snake River Plateau | Lat: 45.818991 | Long: -119.868211 | Datum: NAD 83
Soil Unit (Name-ID-Hydric Rating): Prosser-Rock outcrop complex, 1-20% slopes - 38D - No | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Precipitation prior to fieldwork:
Precipitation was within the normal range for the three months prior to the site visit.

Remarks:

VEGETATION

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: r = 15')	% Cover	Species?	Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: r = 10')			
1. *Gutierrezia sarothrae*	15%	Yes	NOL
2. *Ericameria nauseosa*	5%	Yes	NOL
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: r = 5')			
1. *Poa bulbosa*	70%	Yes	FACU
2. *Bassia scoparia*	20%	No	FAC
3. *Lactuca serriola*	5%	No	FACU
4. *Salsola kali*	5%	No	NOL
5. *Asclepias fascicularis*	1%	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	101% = Total Cover		
Woody Vine Stratum (Plot size: r = 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0% | % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ 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.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: SP-03

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]	[3]Texture	Remarks
0 - 12	12.5Y 5/3	100					LS	

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

[3]Texture: S = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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 C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site | City/County: Unincorporated Morrow County | Sampling Date: December 18, 2023
Applicant/Owner: Confidential Client | State: Oregon | Sampling Point: **SP-04**
Investigator(s): Colton Kyro, Chloe Kott | Section, Township, Range: 4N23E24SENW
Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): concave | Slope (%): None
Subregion (LRR): (B) Columbia/Snake River Plateau | Lat: 45.816166 | Long: -119.888287 | Datum: NAD 83
Soil Unit (Name-ID-Hydric Rating): Prosser-Rock outcrop complex, 1-20% slopes - 38D - No | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Precipitation prior to fieldwork:
Precipitation was within the normal range for the three months prior to the site visit.

Remarks:
SP-04 was collected in a localized depression.

VEGETATION

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum	(Plot size: r = 15')			
1.				
2.				
3.				
4.				
		0%	= Total Cover	
Sapling/Shrub Stratum	(Plot size: r = 10')			
1.				
2.				
3.				
4.				
5.				
		0%	= Total Cover	
Herb Stratum	(Plot size: r = 5')			
1.	*Erodium botrys*	60%	Yes	FACU
2.	*Poa bulbosa*	15%	Yes	FACU
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		75%	= Total Cover	
Woody Vine Stratum	(Plot size: r = 5')			
1.				
2.				
		0%	= Total Cover	

% Bare Ground in Herb Stratum 25% | % Cover of Biotic Crust ____

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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ 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.

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

Remarks:
Area was recently burned in Summer 2023. Dead rubber rabbitbrush (*Ericameria nauseosa*) and burn marks were observed.

SOIL

Sampling Point: SP-04

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]	[3]Texture	Remarks
0 - 16	10YR 3/3	100					LS	

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

[3]Texture: S = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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 C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site | City/County: Unincorporated Morrow County | Sampling Date: December 18, 2023
Applicant/Owner: Confidential Client | State: Oregon | Sampling Point: **SP-05**
Investigator(s): Colton Kyro, Chloe Kott | Section, Township, Range: 4N23E23NESE
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): convex | Slope (%): <3%
Subregion (LRR): (B) Columbia/Snake River Plateau | Lat: 45.813304 | Long: -119.899658 | Datum: NAD 83
Soil Unit (Name-ID-Hydric Rating): Gravden very gravelly loam, 20-40 % slopes - 13E - No | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Precipitation prior to fieldwork:
Precipitation was within the normal range for the three months prior to the site visit.

Remarks:

VEGETATION

		Absolute	Dominant	Indicator
Tree Stratum	(Plot size: r = 15')	% Cover	Species?	Status
1.				
2.				
3.				
4.				
		0% = Total Cover		
Sapling/Shrub Stratum	(Plot size: r = 10')			
1.	*Artemisia tridentata*	30%	Yes	NOL
2.	*Purshia tridentata*	10%	Yes	NOL
3.				
4.				
5.				
		40% = Total Cover		
Herb Stratum	(Plot size: r = 5')			
1.	*Bromus tectorum*	20%	Yes	NOL
2.	*Holcus lanatus*	15%	Yes	FAC
3.	*Erodium botrys*	5%	No	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		40% = Total Cover		
Woody Vine Stratum	(Plot size: r = 5')			
1.				
2.				
		0% = Total Cover		

% Bare Ground in Herb Stratum 60% % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ 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.

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

Remarks:

SOIL

Sampling Point: SP-05

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]	[3]Texture	Remarks
0 - 12	10YR 3/3	100					coGS	Small gravel inclusions

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

[3]Texture: S = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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 C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site | City/County: Unincorporated Morrow County | Sampling Date: December 18, 2023
Applicant/Owner: Confidential Client | State: Oregon | Sampling Point: **SP-06**
Investigator(s): Colton Kyro, Chloe Kott | Section, Township, Range: 4N23E25SENW
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): convex | Slope (%): <3%
Subregion (LRR): (B) Columbia/Snake River Plateau | Lat: 45.800002 | Long: -119.886077 | Datum: NAD 83
Soil Unit (Name-ID-Hydric Rating): Quinton-Rock outcrop complex, 2-20 % slopes - 42D - No | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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

Precipitation prior to fieldwork:
Precipitation was within the normal range for the three months prior to the site visit.

Remarks:

VEGETATION

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: r = 15')	% Cover	Species?	Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: r = 10')			
1. *Ericameria nauseosa*	10%	Yes	NOL
2. *Purshia tridentata*	5%	Yes	NOL
3.			
4.			
5.			
	15% = Total Cover		
Herb Stratum (Plot size: r = 5')			
1. *Bromus tectorum*	60%	Yes	NOL
2. *Erodium botrys*	50%	Yes	FACU
3. *Poa bulbosa*	50%	Yes	FACU
4. *Holcus lanatus*	10%	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	170% = Total Cover		
Woody Vine Stratum (Plot size: r = 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0% % Cover of Biotic Crust ____

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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ 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.

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

Remarks:

SOIL

Sampling Point: SP-06

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]	[3]Texture	Remarks
0 - 16	10YR 3/3	100					fS	

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

[3]Texture: S = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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 C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site | City/County: Unincorporated Morrow County | Sampling Date: December 18, 2023
Applicant/Owner: Confidential Client | State: Oregon | Sampling Point: **SP-07**
Investigator(s): Colton Kyro, Chloe Kott | Section, Township, Range: 4N23E25SENE
Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): concave | Slope (%): None
Subregion (LRR): (B) Columbia/Snake River Plateau | Lat: 45.800539 | Long: -119.875455 | Datum: NAD 83
Soil Unit (Name-ID-Hydric Rating): Quinton loamy fine sand, 2-5 % slopes - 41B - No | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Precipitation prior to fieldwork:
Precipitation was within the normal range for the three months prior to the site visit.

Remarks:

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: r = 15')			
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: r = 10')			
1. *Ericameria nauseosa*	5%	Yes	NOL
2.			
3.			
4.			
5.			
	5% = Total Cover		
Herb Stratum (Plot size: r = 5')			
1. *Bromus tectorum*	70%	Yes	NOL
2. *Festuca idahoensis*	60%	Yes	FACU
3. *Draba verna*	30%	No	NOL
4. *Holcus lanatus*	10%	No	FAC
5. *Erodium botrys*	10%	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	180% = Total Cover		
Woody Vine Stratum (Plot size: r = 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0% | % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ 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.

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

Remarks:

SOIL

Sampling Point: SP-07

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]	[3]Texture	Remarks
0 - 16	10YR 3/4	100					fS	

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

[3]Texture: S = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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 C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site | City/County: Unincorporated Morrow County | Sampling Date: December 18, 2023
Applicant/Owner: Confidential Client | State: Oregon | Sampling Point: **SP-08**
Investigator(s): Colton Kyro, Chloe Kott | Section, Township, Range: 4N23E24SESE
Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): concave | Slope (%): <3%
Subregion (LRR): (B) Columbia/Snake River Plateau | Lat: 45.808601 | Long: -119.875409 | Datum: NAD 83
Soil Unit (Name-ID-Hydric Rating): Prosser silt loam, 0-2 % slopes - 37A - No | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (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	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Precipitation prior to fieldwork:
Precipitation was within the normal range for the three months prior to the site visit.

Remarks:

VEGETATION

		Absolute	Dominant	Indicator
Tree Stratum	(Plot size: r = 15')	% Cover	Species?	Status
1.				
2.				
3.				
4.				
		0%	= Total Cover	
Sapling/Shrub Stratum	(Plot size: r = 10')			
1.	*Ericameria nauseosa*	3%	Yes	NOL
2.	*Gutierrezia sarothrae*	2%	Yes	NOL
3.				
4.				
5.				
		5%	= Total Cover	
Herb Stratum	(Plot size: r = 5')			
1.	*Poa bulbosa*	70%	Yes	FACU
2.	*Erodium botrys*	60%	Yes	FACU
3.	*Bromus tectorum*	60%	Yes	NOL
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		190%	= Total Cover	
Woody Vine Stratum	(Plot size: r = 5')			
1.				
2.				
		0%	= Total Cover	

% Bare Ground in Herb Stratum 0% % Cover of Biotic Crust ____

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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ 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.

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

Remarks:

SOIL

Sampling Point: SP-08

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]	[3]Texture	Remarks
0 - 16	10YR 3/3	100					LS	Small gravel inclusions

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

[3]Texture: S = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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 C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 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)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

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:

Appendix E

Special Status Species

Federally and State Listed Species Occurrence Potential

Common Name (Scientific Name)	Federal Status	State Status	Habitat Characteristics	Occurrence Potential
Mammals				
Washington ground squirrel (*Urocitellus washingtoni*)	Not Listed	Endangered	Washington ground squirrels inhabit sites with sandy-loam texture soils that are deep to accommodate its burrow structures. Habitat also requires sufficient forage. Shrubsteppe and native grassland habitats are preferred. Silt loam soils, especially those classified as Warden soils, may be the most important habitat feature (WDFW 2023). There are ORBIC records of occurence of the species on and near the site.	**Present.** Site survey confirmed presence in one location. Suitable soil type (Prosser silt loam)/habitat present.
Birds				
Bald eagle (*Haliaeetus leucocephalus*)	Delisted. Bald and Golden Eagle Protection Act	Not Listed	Seacoasts, rivers, large lakes or marshes or other large bodies of open water with an abundance of fish. Typically requires old-growth and mature stands of coniferous or hardwood trees for perching, roosting, and nesting (National Wildlife Federation 2023).	**Absent.** Suitable habitat not present.
Golden eagle (*Aquila chrysaetos)*	Delisted. Bald and Golden Eagle Protection Act	Not Listed	Cliffs and steep escarpments in grassland, chapparal, shrubland, and forest for nesting, typically near canyonlands, rimrock terrain, and riverside cliffs and bluffs at elevations up to 12,000 feet (Cornell Lab of Ornithology 2023).	**Absent.** Suitable escarpments and elevation not present.
Fish				
Bull trout (*Salvelinus confluentus*)	Threatened	Sensitive-Critical	Bottom of deep pools in cold rivers and large tributary streams, often in moderate to fast currents with temperatures 45°–50° F. Now confined mostly to headwater streams (FWS 2023).	**Absent.** Suitable aquatic habitat not present.
Pacific lamprey (*Entosphenus tridentatus*)	Species of Concern	Sensitive	Riffle and side channel habitat; juveniles emigrate to ocean where they mature into adults (USFWS 2023).	**Absent.** Suitable aquatic habitat not present.
Steelhead (*Oncorhynchus mykiss* pop. 28) (Middle Columbia River ESU, summer run)	Threatened	Sensitive-Critical	All salmonids require sufficient invertebrate organisms for food; cool, flowing waters free of pollutants; high dissolved oxygen concentrations in rearing and incubation habitats; water of low sediment content during the growing season (for visual feeding); clean gravel substrate for reproduction; and unimpeded migratory access to and from spawning and rearing areas (USWFS 2023). Documented in Columbia River and tributaries (ORBIC 2023).	**Absent.** Suitable aquatic habitat not present.
Reptiles				
Northwestern Pond Turtle (*Actinemys marmorata*)	Proposed Threatened	Not Listed	Can be found in marshes, streams, rivers, ponds, and lakes. They use sparsely-vegetated ground nearby for digging nests and moist, shrubby or forested areas for aestivation and over-wintering. They require sunny logs/vegetation for basking and safe movement corridors between aquatic and terrestrial habitat (Oregon Conservation Strategy 2023).	**Absent.** Suitable aquatic habitat not present.

Federally and State Listed Species Occurrence Potential

Common Name (Scientific Name)	Federal Status	State Status	Habitat Characteristics	Occurrence Potential
Invertebrate Animals				
Monarch butterfly (*Danaus plexippus*)	Candidate	Not Listed	Associated with healthy and abundant milkweed which is needed for larval consumption. Sufficient quality and quantity of nectar from flower is needed for adult feeding through the breeding and migration seasons (USFWS 2023). Small population of milkweed was found on site.	**Not Likely to Occur.** May forage on-site, however, supply of forage material is very limited.
Plants				
Lawrence's milkvetch (*Astragalus collinus var. laurentii)*	Not Listed	Threatened	This species is endemic to the Columbia Plateau of northern Oregon, within the Columbia Basin ecoregion. The majority of known occurrences are small and fragmented, with poor estimated viability. The species is listed to occur in Morrow County. It occupies sandy or rocky soils overlaying basalt on dry slopes mostly at elevations ranging from 2000 to 3400 ft.	**Absent.** Suitable aquatic habitat not present.

NOTES

Occurrence Potential

Present = Known recent records. Species observed during recent survey.
May occur = Species is expected to occur and habitat meets special requirements.
Not likely to occur = Habitat is only marginally suitable or is suitable but not within species geographic range.
Absent = Habitat does not meet species requirements as currently understood in the scientific community. Project site is outside species geographic range. Surveys conducted to verify absence.

Federal Categories (USFWS and NMFS)

LE = Listed as endangered by the federal government
LT = Listed as threatened by the federal government
PE/PT = Proposed for listing as endangered or threatened
C = Candidate for federal listing
SOC = Species of concern

State Categories (ODFW for fish/wildlife, ODA for plants)

LE = Listed as endangered by state
LT = Listed as threatened by state
PE/PT = Proposed for listing as endangered or threatened
C = Candidate for state listing
S = Sensitive
C = Sensitive critical

References

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