Filed per 3-30-2022 ESB Order
Response to Post-Hearing ESB 03

Phase I Environmental Site Assessment

Caldwell Solar Site Additional Area
Fredonia, Kentucky

August 19, 2021

Cardno®

Phase I Environmental Assessment (ESA) Report

Caldwell Solar Site Additional Area
Fredonia, Kentucky

Prepared for: Caldwell Solar, LLC
Attn: Courtney Polissero - Project Manager
8400 Normandale Lake Boulevard, Suite 1200
Bloomington, MN 55437
Phone: (952) 988-9000

Prepared by: Cardno Inc.
534 Industrial Park Road
Bluefield, Virginia 24605

George Robertson
Senior Project Manager
george.robertson@cardno.com
Phone: (304) 809-0537

Date: August 19, 2021

Project #: E320201000 04 AR

Table of Contents

Figures

Appendices

Commonly Used Acronyms

AAI	All Appropriate Inquiry
ABCA	Analysis of Brownfield Cleanup Alternatives
ACM	Asbestos Containing Material
AST	Aboveground Storage Tank
ASTM	American Society for Testing & Materials
BFA	Brownfield Agreement
BLS	Below Land Surface
Cardno	Cardno Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CREC	Controlled Recognized Environmental Condition
EP	Environmental Professional
ERNS	Emergency Response Notification System
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
ESI	Expanded Site Inspection
FOIA	Freedom of Information Act
FIRM	Flood Insurance Rate Map
Historical	Historical Recognized Environmental Condition
IC	Institutional Controls
LBP	Lead-Based Paint
LUST	Leaking Underground Storage Tank
MSL	Mean Sea Level
NFRAP	No Further Remedial Action Plan
NPL	National Priority List
PA/SI	Preliminary Assessment/Site Inspection
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PPB	Parts per Billion
PPM	Parts Per Million
PRG	Preliminary Remediation Goal
RACM	Regulated Asbestos Containing Material
RBC	Risk Based Concentrations
RBSL	Risk Based Screening Level
RCRA	Resource Conservation and Recovery Act
RCRA CORRACT	RCRA Information Systems
RCRA GEN	RCRA System Generators
RCRA TSD	RCRA Treatment, Storage, and Disposal Facilities
REC	Recognized Environmental Condition
ROD	Record of Decision
SHWS	State Hazardous Waste Site
SWL	Solid Waste Facilities List
TAL	Target Analyte List
TMS	Tax Map Serial

USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank

1 Executive Summary

At the request of **Caldwell Solar, LLC**, **Cardno Inc**. (**Cardno**) has conducted a Phase I Environmental Site Assessment (*ESA*) of approximately 1,575 acres of farmland known as the Caldwell Solar Site Additional Area (Site). The Site is located in western Caldwell County in Kentucky.

This Phase I ESA was performed in accordance with American Society for Testing & Materials (*ASTM*) Practice E-1527-13 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" developed by ASTM Subcommittee E50.02 for Commercial Real Estate Transactions. ASTM E-1527-13 also meets the All Appropriate Inquiries (*AAI*) standards set forth by the United States Environmental Protection Agency (*USEPA*) in 40 CFR Part 312. Any exceptions to, or deletions from, this practice are described in *Sections 2.4* and *9.0* of this report.

The objective of this Phase I ESA was to identify Recognized Environmental Conditions (*RECs*) as defined in ASTM Practice E-1527-13 with regard to the subject property.

This Phase I ESA included the following types of investigation:

- A records review of pertinent regulatory agency databases and applicable local records;
  - A **Environmental Risk Information Services (*ERIS*)** environmental database search report;
  - ERIS Aerial photographs from 1952, 1967, 1971, 1983, 1990, 2004, 2006, 2008, 2014, and 2020;
  - ERIS Historical Sanborn® Fire Insurance maps were not available for the Site; and
  - ERIS Historical topographical maps dated 1908, 1910, 1954, 1967, and 2016;
- A review of site background and other available information for the subject property to evaluate present and past land use; and
- Reconnaissance to assess the Site for evidence of RECs conducted by Mr. George Robertson of Cardno on July 13-14, 2021.

Cardno has performed this Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-13. Any exceptions to, or deletions from, this practice are described in *Sections 2.4* and *9.0* of this report.

This assessment has revealed evidence of the following REC in connection with the Site:

- Extensive oily sediment in the mechanical shed on the northeast side of the Gill Farm Complex and petroleum related debris in and surrounding the barn/equipment shed on the northeast side of the Gill Farm Complex is considered a REC for the Site.

The following non-ASTM concern was identified for the Site:

- Out-of-use ASTs are present at the Jones Farm Complex – West, the Gill Farm Complex, and near the southwest end of Craig Cemetery Road.
- Extensive debris including old farm implements and tools, vehicles, trash, tires, empty petroleum product containers, spent oil filters, a battery, brush piles and scrap plastic, wood, and metal were observed across the Gill Farm Complex.

Conclusions and opinions presented in this assessment are based solely on the information derived from the study sources and references cited in this document and are subject to the limitations of the sources and methods employed. Except as specified herein, this Phase I ESA report is for the exclusive use of the Client, its officers, directors, employees, and authorized representatives.

2 Introduction

Cardno conducted a Phase I Environmental Site Assessment (*ESA*) of land tracts totaling approximately 1,575 acres known as the Caldwell Solar Site Additional Area (Site). The Site is located in western Caldwell County, Kentucky, and is largely comprised of farmland.

2.1 Purpose

The purpose of this Phase I ESA is to identify to the extent possible any RECs, Controlled RECs, or Historical RECs on the property.

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

Controlled Recognized Environmental Condition (CREC) – A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Historical Recognized Environmental Condition (HREC) – A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

This assessment is completed with respect to the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (*CERCLA*) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner defense to CERCLA liability; that is, the practices that constitute 'all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice' as defined in 42 USC§9601(35(B)).

2.2 Detailed Scope of Services

The Phase I ESA is a general characterization of possible RECs present on a property. This ESA was completed in accordance with ASTM E-1527-13 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." ASTM E-1527-13 meets the standard set forth by the USEPA in the AAI Rule. The services provided are detailed below:

- Review of federal and state lists of environmentally regulated sites to determine if the subject property or nearby properties are listed as having a present or past environmental problem, are under investigation, or are regulated by state or federal environmental regulatory agencies;
- Review of site background information, including aerial photographs, title records, and interviews with persons familiar with the subject property to evaluate present and past land uses;
- Physical inspection and photographic documentation of the subject property and adjacent properties to identify obvious indications of present or past activities that have or could have environmentally impacted the subject property; and
- Development of a report documenting Cardno's findings.

2.3 Significant Assumptions

No significant assumptions were made prior to the initiation of this Phase I ESA.

2.4 Limitations and Exceptions

The findings of this assessment are based on the following inherent limitations and/or exceptions:

- The representations contained herein are based on the available data and on the contracted scope of the work. Cardno and the Environmental Professional (EP) make no representations or conclusions on information beyond the scope of this assessment;
- Cardno derived the data in this report primarily through visual inspections, examination of records in the public domain, and interviews with informed individuals about the subject property. The passage of time, manifestation of latent conditions, or the occurrence of future events may require further study at the subject property, analysis of the data, and revaluation of the findings, observations, and conclusions in the report;
- The data reported and the findings, observations, and conclusions expressed in this report are limited by the scope of work prescribed by ASTM E-1527-13;
- No warranty or guarantee, whether expressed or implied, is made with respect to the data or the reported findings, observations, and conclusions, which are based solely upon site conditions in existence at the time of the investigation;
- Cardno presents professional opinions and findings of a scientific and technical nature. The report shall not be construed to offer legal opinion or legal representations as to the requirements of, nor compliance with, environmental laws, rules, regulations, or policies of federal, state, or local governmental agencies. Any use of the Phase I ESA report constitutes acceptance of the limits of Cardno's liability. Cardno's liability extends only to its client and not to any other parties who may obtain the Phase I ESA Report;
- The conclusions presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and the project indicated. This report is not a definitive study of contamination at the subject property and should not be interpreted as such. An evaluation of the subsurface soil and groundwater conditions was not performed as part of this investigation. No sampling or chemical analyses of structural material or other media was completed as part of this study unless explicitly stated; and
- This report is based, in part, on unverified information supplied to Cardno by third party sources. While efforts have been made to substantiate this third party information, Cardno cannot guarantee its completeness or accuracy.

2.5 Special Terms and Conditions

Cardno performed this assessment for the users as part of their environmental due diligence on the Site and no additional terms and conditions are specified.

2.6 User Reliance

This report, including supporting field data and notes (collectively referred to hereinafter as "information"), was prepared or collected by Cardno for the benefit of the user, Caldwell Solar, LLC. The report is not intended for use by any other party.

3 Site Description

3.1 Site Location and Description

The Site consists of approximately 1,575 acres of largely farmland known as the Caldwell Solar Site Additional Area and is located southeast of Fredonia in western Caldwell County, Kentucky. A Topographic Site Location Map, consisting of the relevant portions of the United States Geological Survey (*USGS*) topographic maps, Crider and Fredonia Quadrangles, Kentucky, is included as *Figure 1.* The Site and surrounding properties are depicted on *Figure 2*.

3.2 Site and Vicinity General Characteristics

The Site is located southeast of Fredonia in western Caldwell County, Kentucky. The surrounding area is primarily farm and forested land. According to Caldwell County administration, there are no zoning restrictions for the County.

Caldwell County was formed in 1809 from Livingston County. During the late 1800s, Princeton (located approximately five miles east of the Site) became a junction for the Illinois Central and Louisville & Nashville railroads. The Illinois Central railroad track currently passes along the northern border of the Site. The County experienced an agricultural boom in the 1900s and its economy remains largely based in agriculture.

3.3 Current Use of the Site

The Site is currently used for farming with some undeveloped forest land. Site photos of the current condition are included in *Appendix C*.

3.4 Descriptions of Structures, Roads, Other Improvements on the Site

Most of the Site is currently developed as cropland and grazing land (*Figure 2*). Structures were observed at the Jones Farm Complex – West (6858 Old Fredonia Road, on the west side of the Site) including a house, barn, equipment shed and two storage sheds. Structures observed at the Jones Farm Complex – East (south of Old Fredonia Road, near center of Site) including a house, an equipment shed, Harvestore, four silos, three storage sheds and a livestock feeding shed. An old barn was observed in an agricultural field adjacent to the pond located southeast of the intersection of Old Fredonia and Crider Dulaney Roads. An overgrown barn was also observed in the agricultural field located south of the west end of Crider Road.

Structures observed at the Gill Farm Complex located at the west end of Bobby Gill Road (in the south-central area of the Site) including an overgrown dilapidated house, barn/equipment shed, maintenance shed, office/storage shed, livestock shed, and two dilapidated sheds. Two silos and a feed hopper were located near the office/storage shed and livestock shed.

An occupied house was observed on the south side of Bobby Gill Road. An old barn is located west of Old Fredonia Road, southeast side of Site. A livestock shed was observed south of the intersection of Craig Cemetery Road with an unimproved gravel road. An equipment shed was observed in the pasture located at the south end of the unimproved road extending south of Craig Cemetery Road. A shed was located near the southwest end of Craig Cemetery Road.

Old Fredonia Road wraps around the western, central and eastern sides of the Site. Crider Dulaney Road extends south of Old Fredonia Road on the southwest side of the Site. Bobby Gill and Craig Cemetery Roads extend generally southwestward off Old Fredonia Road on the east and southeast sides of the Site. Skinframe Creek Road connects between Old Fredonia and Marion Roads on the northeast side of the Site. Old Fredonia Road, west of Skinframe Creek Road, is sometimes referred to as Skinframe Creek Road. Marion Road (Route 91) extends along the northeast side of the Site. Crider Road borders the north side of the Site, west of Marion Road.

3.5 Current Uses of the Adjoining Properties

North	Agricultural, residential and forest
South	Forest and agricultural
East	Agricultural, residential and forest
West	Agricultural and forest

4 User Provided Information

4.1 Title Records

The user did not provide Cardno with current title records and Cardno did not review a chain-of-title in conjunction with this assessment.

4.2 Environmental Liens or Activity and Use Limitations

A liens search was not conducted as part of this assessment. Cardno did not identify any environmental liens or use restrictions (other than zoning) for the Site.

4.3 Specialized Knowledge

The user has no specialized knowledge about the Site.

4.4 Commonly Known or Easily Ascertainable Information

The Site was used for agricultural cropland and grazing land.

4.5 Valuation Reduction for Environmental Issues

No opinion or knowledge was provided regarding environmental issues causing a reduction in property value.

4.6 Owner, Property Manager, and Occupant Information

The user did not provide Cardno with current ownership records and Cardno did not review property records at the Caldwell County Courthouse.

4.7 Reason for Performing Phase I ESA

This Phase I ESA was performed for the users as part of environmental due diligence at the Site in preparation for property development.

4.8 AAI User Questionnaire

The client verbally communicated Site information and AAI User Questionnaire was not completed.

4.9 Other

No other User provided information was utilized for this assessment.

5 Records Review

5.1 Standard Environmental Record Sources

Records were obtained and reviewed to help identify RECs in connection with the Site. Federal and state regulatory databases were reviewed to further identify any known sources of contamination on or within designated research radii of the subject property. The federal records searched during this assessment included sites that handle or dispose of hazardous materials and sites that otherwise have been identified to have air, soil, or groundwater contamination. The state records reviewed included hazardous waste sites, landfills, and sites with registered or leaking underground storage tanks (*USTs*).

Cardno contracted with ERIS to perform the regulatory review (*Appendix A*). The results are discussed below and the regulatory databases reviewed and corresponding research distances are summarized in the report in *Appendix A*. Review of the federal and state databases was conducted according to ASTM E-1527-13 and AAI standards for Phase I ESAs. Figures illustrating the locations of the sites identified during the database search (relative to the site and depicting the appropriate designated research radii corresponding to each database) are also included in *Appendix A*.

Federal and state reporting lists are summarized in the following table. Listings requiring further discussion are described below.

Federal Reporting Lists	Listings Reported
National Priority List (NPL)	0
National Priority List Delisted (NPL Delisted)	0
Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) - SEMS	0
SEMS LIEN	0
Facility Registration System (*FRS*) – Formerly FINDS List	0
RCRA Corrective Action Facilities (*RCRAC*)	0
RCRA Treatment, Storage, and Disposal Facilities (*TSD*)	0
RCRA Conditionally Exempt Small Quantity Generator (*CESQG*)	0
RCRA Generator (*GEN*)	0
Polyfluorinated alkyl substance (*PFAS*) NPL	0
PFAS Toxic Release Inventory (*TRI*)	0
Toxic Release Inventory System (*TRIS*)	0
Toxic Substances Control Act (*TSCA*)	0
Hist. TSCA	0
Federal Fungicide and Toxic Substances (*FTTS*)	0
Potentially Responsible Party (*PRP*)	0
FED DRYCLEANERS	0
Delisted FED DRY	0
Formerly Used Defense Sites (*FUDS*)	0
Material Licensing Tracking Systems (*MLTS*)	0
Mines	0

Federal Reporting Lists	Listings Reported
State Hazardous Waste Sites (*SHWS*)	1
ALT FUELS	0
Section Seven Tracking System (*SSTS*)	0
Polychlorinated Biphenyl (*PCB*)	0
Hist. MLTS	0
Hazardous Materials Information Resource System (*HMIRS*)	0
Federal Brownfields	0
Emergency Response Notification System (*ERNS*)	0
Integrated Compliance Information System (*ICIS*)	0
Superfund Enterprise Management System (*SEMS*) Archive	0
Federal Engineering and Institutional Controls (*IC/EC*)	0
State/Local/Tribal Reporting Lists	**Listings Reported**
State/Tribal Hazardous Waste Sites (*SHWS*)	0
State Spills	1
State/Tribal (SWF/LF)	0
Leaking Underground Storage Tank (*LUST*) "Ky. Petroleum Storage Tank Fund"	0
Voluntary Cleanup Program (*VCP*)	0
State/Tribal Underground Storage Tank (*UST*)/ Aboveground Storage Tank (*AST*)	0
State/Tribal Delisted Storage Tank	0
State/Tribal LUST	0
State/Tribal Brownfields	0
State Other	0
State Department of Solid and Hazardous Waste (*DSHW*)	0
State ENG	0
State INST	0
Brownfields INV	0
Tribal ILST	0
Tribal IUST	0

5.1.1 Database Listings at the Site

The Site was not identified in the ERIS database.

5.1.2 Database Listings Adjoining or Surrounding the Site

Two locations were identified adjoining or near the Site in the ERIS database as follows:

- SPILLS is a list of incidents reported to the Kentucky Department of Environmental Protection (*KDEP*) where hazardous materials may have been spilled or otherwise released. The ERIS

database indicated an adjoining location on the east side of the Site, at the intersection of Skinframe Creek and Marion Roads, was identified in SPILLS as H.T. Hackney (Incident ID #2424992). Approximately 250 gallons of diesel were spilled in a truck accident at this location on April 28, 2017. The release was immediately restored and the incident was closed. As discussed in *Section 6.2*, Cardno observed no visible staining, stressed vegetation, or other visual indication of environmental contamination at this location on July 13, 2021. This historical release does not appear to represent REC in connection with the Site.

- SHWS is a list of hazardous waste sites maintained by the KDEP. Princeton Transfer Station was identified at a lower elevation at 10129 US Highway 62 West, approximately 5,042 feet (0.95mile) southeast of the Site. A diesel fuel spill was cleaned up at this location and the case was closed on November 16, 2009. Based on its distance from the Site and apparent cross-gradient location in relation to the Site, this truck fueling spill is not considered a REC in connection with the Site.

5.1.3 Database Listings Near the Site and Orphans

None of the six unplottable "orphan" facilities were identified at or adjoining the Site.

5.2 Additional Environmental Records

No additional environmental records were identified.

5.3 Physical Setting

5.3.1 Topography

Cardno has reviewed the most current USGS Topographic Maps covering the subject property (*Figure 1*). The purpose of this review is to evaluate the hydraulic conditions at the Site and surrounding properties. It is not the purpose of this report to evaluate the geotechnical condition of the subject property; therefore, no geotechnical documents were examined.

The Kentucky Almanac shows that Caldwell County is within the Pennyroyal Plateau region of Kentucky. The terrain features rolling hills, caves, and karst topography. Karst features include sinkholes and swallows. According to the USGS topographic maps (Crider and Fredonia, Kentucky Quadrangles), local topography appears to be rolling with upland areas across the south side of the Site. South of Skinframe Creek, topography generally slopes to the northwest. North of Skinframe Creek, topography slopes to the south. Skinframe Creek flows westward across the north side of the Site. Hewlett Creek flows northeastward across the west side of the Site before its confluence into Skinframe Creek.

5.3.2 Local Geology

Local geology is summarized based on an examination of the William B. Rogers and R.D. Trace, Geologic Map of the Crider Quadrangle, Caldwell County, Kentucky, and the William B. Rogers and W.H. Hayes, Geologic Map of the Fredonia Quadrangle, Western Kentucky. The Caldwell Solar Site is underlain primarily by the Late Mississippian Period, Meramecian Series, Fredonia Limestone Member of the Ste. Genevieve Limestone Formation. The Fredonia Limestone Member typically consists of light gray and light to medium gray finely crystalline, commonly dolomitic, limestone occasionally oolitic with rare chert nodules. Its basal unit is composed of cherty limestone that weathers to reddish brown. According to United States Geological Survey (USGS) information provided by ERIS, the upland area at the southwest corner of the Site is underlain by Upper Cretaceous conglomerates of the Tuscaloosa Formation.

According to E. Glynn Beck, Generalized Geologic Map for Land-Use Planning: Caldwell County, Kentucky, the Caldwell Solar Site is in an area underlain by limestone prone to karst development. Planning guidance indicates that, depending on topography, this area has slight to moderate limitations for light industrial development. The area is characterized as excellent for foundations, severely limited for septic systems, with locally fast drainage through fractures and danger of groundwater contamination. Locally, the upper few feet may be rippable and sinkholes are possible.

5.3.3 Hydrogeology

According to the Groundwater Atlas of the United States and the USGS, the Interior Low Plateaus aquifers and confining units are sandstone and limestone aquifers in rocks of Pennsylvanian age, limestone aquifers in rocks of Mississippian age, and limestone and dolomite aquifers in rocks of Devonian, Silurian, and Ordovician age. A large part of the Interior Low Plateaus Province is underlain by limestone aquifers in Mississippian rocks. These aquifers have been called the Mississippian Plateau aquifers in Kentucky and the Highland Rim aquifer system in Tennessee. They are present in limestone that is either flat lying or gently dipping and are capped by a layer of regolith that varies greatly in thickness. In general, the limestone aquifers that yield the largest quantities of water to wells and springs are the Upper Mississippian Ste. Genevieve, and the underlying St. Louis Limestones.

In most places, the Mississippian aquifers are covered by regolith, which mostly consists of weathered material or residuum. This material consists of clay, silt, sand, and pebble-sized particles of limestone or chert, which are derived mostly from weathering of the underlying bedrock.

Precipitation infiltrates the land surface and percolates downward to the water table, which marks the top of the zone of saturation. The water moves through intergranular spaces in the unconsolidated material of the regolith. However, in the underlying limestone bedrock, the water moves through zones of secondary permeability created by dissolution enlargement of bedding planes and fractures by the slightly acidic water. The solution openings store and transmit most of the water that moves through the limestone and discharges to streams, springs, and wells. Little water passes through the blocks of limestone between the bedding planes and fractures. Freshwater circulates through the limestone aquifers to depths as great as 500 feet below land surface. However, most of the circulation is at depths of less than 300 feet. All other factors being equal, the freshwater circulation is deepest where the local topographic relief and attendant hydraulic gradients are greatest.

The altitude of the potentiometric surfaces in the Ste. Genevieve and the St. Louis Limestone ranges from less than 400 feet above sea level in the west to more than 900 feet above sea level in three small areas in the east. However, little, if any, regional ground-water flow occurs. Most of the flow is local, toward springs and the few streams that drain the area. An escarpment that bounds the aquifer on the north is aptly named the "Dripping Springs Escarpment" because of the many small seeps and springs that discharge water along it. The water locally moves along fractures and bedding planes that might be nearly perpendicular to one another. Consequently, the arrows that show ground-water flow direction indicate only the general direction of water movement in a complex flow system that has many local horizontal and vertical components.

The hydraulic characteristics of the Mississippian aquifers vary greatly over short distances. For example, the ability of limestone with large, interconnected solution openings to transmit and yield water is several orders of magnitude greater than that of the almost impermeable blocks of limestone between solution openings, fractures, and bedding planes. These large differences are reflected in the yield and specific capacity of wells completed in the limestone aquifers and the discharges of springs that issue from these aquifers.

Site-specific groundwater information is not available. Data concerning the direction of groundwater flow at the site are not available; however, groundwater is expected to generally mimic the surface topography.

According to the Water Resource Development Commission by the Kentucky Geological Survey's Groundwater Resources of Caldwell County, Kentucky, water in Caldwell County is obtained from Mississippian through Pennsylvanian sedimentary rocks and from unconsolidated Cretaceous and Quaternary sediments.

5.3.4 Soils

According to the National Cooperative Soil Survey, Site soils consist of approximately 35% Crider silt loam that is well drained, with moderately low runoff potential when the soil is thoroughly wet. Approximately 2% is Crider-Pembroke Silt Loam that is well drained, with moderately low runoff potential. Approximately 15% is Crider-Baxter complex that is well drained, with moderately high runoff potential. Approximately 3% is Elk Silt Loam that is well drained, with moderately low runoff potential. About 4% is

Lindside Silt Loam that is moderately well drained, with moderately high runoff potential. Approximately 3% is Newark Silt Loam that is somewhat poorly drained with moderately low runoff potential when drained and high runoff potential when undrained. Approximately 22% is Nicholson Silt Loam that is moderately well drained with moderately high runoff potential. Approximately 9% is Nolin Silt Loam that is moderately well drained with moderately low runoff potential. Approximately 2% is Ottwood Silt Loam that is moderately well drained with moderately high runoff potential. Approximately 5% is Udarents, loamy soil which is formed on slopes.

5.4 Historical Use Information on the Site and Adjoining Properties

The following sources of information were reviewed to determine the historical uses of the Site: historic topographic maps and aerial photographs. The ERIS Database searched for Sanborn® Fire Insurance maps; however, coverage was not provided. Historical research documentation is included in *Appendix B*.

5.4.1 Historic Topographic Maps

Topographic maps of the Crider and Fredonia Quadrangles dated 1908, 1910, 1954, 1967, and 2016 were reviewed. The 1908 and 1910 maps show an Illinois Central railroad track northeast of the Site. Old Fredonia and Crider Dulaney Roads appear established across the Site. The east-west thoroughfare (now Marion Road) appears to be south of its current location. Unimproved dirt roads appear in the locations of the current Bobby Gill and Craig Cemetery Roads. Rural residential and agricultural structures appear along Old Fredonia Road and south of Marion Road.

Relative to the 1910 map, the 1954 map shows the location of Marion Road appears shifted north of the Site, north of the Illinois Central railroad tracks. Skinframe Creek (formerly named White Sulphur Creek) appears to flow southwestward across the north side of the Site. Bobby Gill and Craig Cemetery Road appear paved. Small structures (likely residences) appear along the newly constructed Crider Road at the north boundary of the Site.

Relative to the 1954 map, the 1967 map shows increased development of Crider near the northeast corner of the Site. Less detail is shown on the 2016 map. No RECs were identified based on the information provided on the maps.

5.4.2 Aerial Photographs

Aerial photographs obtained from ERIS for 1952, 1967, 1971, 1983, 1990, 2004, 2006, 2008, 2014, and 2020 were reviewed. The 1971 aerials were of poor quality.

The 1952 photo shows Illinois Central railroad track and Marion Road located northeast of the Site. Old Fredonia, Crider, Crider Dulaney, Bobby Gill, and Craig Cemetery Roads appear established across the Site. Jones Farm Complex - West appears on the west side of the Site, the Jones Farm Complex - East appears in the central area of the Site, and the Gill Farm Complex appears in the south-central area of the Site. Between 1971 and 1983, the Harvestor, several large silos and mechanical sheds, and livestock feeding buildings appear added at the Jones Farm Complex – East. Between 1983 and 1998, silos and sheds (possibly including the mechanical shed) appear to have been constructed at the Gill Farm Complex. No other significant changes were apparent. No RECs were identified based on the information provided on the photographs.

5.4.3 Sanborn® Fire Insurance Maps

Sanborn® Fire Insurance maps were not available for the Site and surrounding area (*Appendix B*).

6 Site Reconnaissance

The objective of the site reconnaissance is to obtain information indicating the likelihood of identifying RECs in connection with the Site. This evidence can be circumstantial, such as the observation of

stressed vegetation, staining, unlabeled or suspicious containers or structures, unidentified oily substances, pooled liquids, and/or odors.

6.1 Methodology and Limiting Conditions

On July 13-14, 2021, Mr. George Robertson of Cardno, performed reconnaissance of the Site and surrounding properties. Site reconnaissance observations are provided in the following sections. This Phase I ESA did not include sampling or screening of any materials. At the time of the reconnaissance, it was not possible to enter the interiors of some Site structures. However, exterior inspections of structures did not appear to indicate staining, stressed vegetation, tank fill ports or vents, or other similar features indicative of potential RECs. Photographs of the subject property taken during the site visit are included in *Appendix C*.

6.2 Site Visit/Reconnaissance

This section discusses general observations made during Site reconnaissance. The Site was developed as agricultural cropland. No evidence of USTs was observed at the Site.

The following structures were observed at the Site:

Jones Farm Complex – West: This complex at 6858 Old Fredonia Road includes a house, a barn, equipment shed and two storage sheds. ASTs: Approximately 550-gallon steel off-road diesel with dispenser located adjacent to equipment shed; 1,000-gallon, steel, liquid propane gas (LPG); 250-gallon trailer-mounted empty polyethylene tank for fertilizer/herbicide/pesticide; and two 100-gallon trailer-mounted empty polyethylene for fertilizer/herbicide/pesticide.

Jones Farm Complex – East: This complex located south of Old Fredonia Road, near center of Site includes a house, an equipment shed, a Harvestore, four silos, three storage sheds and a livestock feeding shed. No ASTs were observed.

Southeast of Intersection of Old Fredonia and Crider Dulaney Roads: An old barn was observed in an agricultural field adjacent to pond at this location.

South of west end of Crider Road: An overgrown barn was observed in agricultural field at this location.

Gill Farm Complex: This complex located at the west end of Bobby Gill Road includes an overgrown dilapidated house, a barn/equipment shed, a maintenance shed, an office/storage shed, a livestock shed, two dilapidated sheds, two silos and feed hopper. ASTs: Approximately 550-gallon, steel off-road diesel with secondary containment and dispenser (owned by Southern States), empty 2,200-gallon polyethylene tank, empty 220-gallon polyethylene tote, half full 210-gallon Slow Release Nitrogen Plus tote, empty steel 500-gallon horizontal water tank, empty 550-gallon trailer-mounted polyethylene fertilizer/herbicide/pesticide tank and empty 110-gallon polyethylene tank.

South of Bobby Gill Road: The Gill House was observed on the south side of Bobby Gill Road.

West of Old Fredonia Road: An old barn is located west of Old Fredonia Road, southeast side of Site.

South of Intersection of Craig Cemetery Road and gravel road: A livestock shed was located south of the intersection of Craig Cemetery Road and an unimproved gravel road.

Southwest end of Craig Cemetery Road: A storage shed was located near the end of Craig Cemetery Road. AST: Approximately 300-gallon, steel off-road diesel AST with dispenser (owned by Southern States) located next to fence at end of Craig Cemetery Road.

South end of gravel road extending south of Craig Cemetery Road: An equipment shed was located in a pasture near the south end of the unimproved gravel road extending south of Craig Cemetery Road.

On-Site:

- An old cemetery was observed in the woods located north of Skinframe Creek and northwest of Skinframe Creek Road (*Photo 6*).

- Farm equipment, some scrap metal debris, a dirt pile and a partly burned wood pile were observed at the Jones Farm Complex – East (*Photo 11*).
- No staining, stressed vegetation or other visible signs of a spill were observed at or around the approximately 550-gallon off-road diesel AST and dispenser located adjacent to the equipment shed at the Jones Farm Complex – West, at 6858 Old Fredonia Road (*Photo 18*).
- Extensive debris including old farm implements and tools, a truck, a combine, a small generator, household trash, old houseware, automotive tires, wire, empty five-gallon plastic buckets for hydraulic fluid and oil, empty gallon and quart size plastic containers for oil, antifreeze, and hydraulic fluid, empty approximately 2.5-gallon gasoline containers, a truck battery, brush piles and scrap plastic, wood, and metal were observed across the Gill Farm Complex (*Photos 21-28* and *Figure 3*).
- A pile of approximately two dozen empty, one-gallon and approximately 2.5-gallon herbicide containers was located on the ground surface on the south side of the Gill Farm Complex. No staining or stressed vegetation was observed around the empty containers.
- A small generator, two refrigeration compressor units and a stored upright compressor were observed on concrete pads at the office/storage shed on the west side of the Gill Farm Complex. No staining was observed on the surrounding concrete surfaces.
- Partly full 55-gallon drums of oil and hydraulic fluid, empty and partly full five-gallon buckets of oil and hydraulic fluid, spent oil filters, a compressed gas cylinder, trash and corn feed were observed on the concrete floor inside a barn/equipment shed on the northeast side of the Gill Farm Complex (*Photo 25* and *Figure 3*). Some oil staining was observed on the floor inside the barn/storage shed. Because petroleum related debris were also observed surrounding the barn/equipment shed it may be possible that the surrounding ground surface has been impacted by petroleum products. Petroleum related debris in and surrounding the barn/equipment shed located on the northeast side of the Gill Farm Complex is considered a REC.
- Oily sediment and debris including spent oil filters, oil, and hydraulic fluid containers and old farm machinery cover the concrete slab floor of the mechanical shed on the northeast side of the Gill Farm Complex (*Photo 26* and *Figure 3*). Due to its extensive horizontal coverage and thickness (1-2 inches), the oily sediment in the mechanical shed located on the east side of the Gill Farm Complex is considered a REC.
- A rusty, approximately 550-gallon, steel, off-road diesel AST with built-in secondary containment and dispenser (owned by Southern States) was observed adjacent to the office/storage shed on the southwest side of the Gill Farm Complex (*Photo 28*). No staining, stressed vegetation or other visible signs of a spill were observed at or around the AST.
- An approximately 300-gallon, steel, off-road diesel AST with dispenser was observed near the southwest end of Craig Cemetery Road on the southwest side of the Site (*Photo 34*). No staining or stressed vegetation was observed at or around the AST. According to Mr. William Jones, the land owner, the AST is empty and not in use. The AST is owned by Southern States, electric service was previously disconnected and the owner is being contacted to remove the AST (*see Section 7*).
- No staining, stressed vegetation, or other visible signs of a spill or other release were observed at or around the approximate location of the abandoned William Jones No. 1 well (*Photo 36, Figure 2*). According to Kentucky Department of Mines and Minerals, Division of Oil and Gas records, the William Jones No. 1 (Permit No. 90183) spudded on May 3, 1999, and was drilled to a total depth of 2,943 feet (*Appendix E*). During drilling of this gas exploration well, fresh water was encountered from approximately 470 to 500 feet below ground surface (bgs). No natural gas was encountered. On June 21, 1999, the well was abandoned as a dry hole by plugging from surface to a depth of 601 feet bgs.

Off-Site:

> No visual evidence of a release (e.g. staining or stressed vegetation) was observed at the location of SPILLS Incident ID #2424992 (H.T. Hackney) at the intersection of Skinframe Creek and Marion Roads, adjoining the northeast side of the Site (*Photo 4*).

> Stressed grass was observed next to two silos on the north side of Old Fredonia Road, east of the Jones Farm Complex – West (*Photo 16*). According to Mr. Bill Jones, owner of adjacent property at 6858 Old Fredonia Road, a liquid fertilizer spill caused the burned grass observed near the off-site silos (*see Section 7*). Mr. Jones said that no cleanup was required and no action was taken. Based on the composition of the spill, its off-site location and its minimal extent, the fertilizer spill is not considered a REC in connection with the Site.

6.3 Hazardous Substances in Connection with Identified Uses

A review of Federal and Kentucky regulatory databases revealed no violations for the use of agricultural chemicals (i.e. fertilizer, herbicides, and pesticides) at the Site. No other hazardous substances were observed in use at the Site.

6.4 Petroleum Products and Containers

As discussed in *Section 6.2*, off-road diesel ASTs are located at the Jones Farm Complex – West (6858 Old Fredonia Road), the Gill Farm Complex and at the southwest end of Craig Cemetery Road. Partly full oil and hydraulic fluid 55-gallon drums, as well as partly full oil and hydraulic fluid five-gallon buckets were observed on the concrete floor inside a barn/equipment shed on the northeast side of the Gill Farm Complex. Oil and hydraulic fluid containers were observed in the mechanical shed on the east side of the Gill Farm Complex.

6.5 Unidentified Substance Containers

No significant unidentified containers were observed at the Site.

6.6 Storage Tanks – USTs / ASTs

No indications of USTs were observed at the Site. As discussed in *Section 6.2*, the following ASTs were observed:

- An approximately 550-gallon steel off-road diesel with dispenser located adjacent to equipment shed; a 1,000-gallon, steel, liquid propane gas (LPG); a 250-gallon trailer-mounted empty polyethylene for fertilizer/herbicide/pesticide; and two 100-gallon trailer-mounted empty polyethylene tanks for fertilizer/herbicide/pesticide were observed at the Jones Farm Complex – West.
- An approximately 550-gallon, steel off-road diesel with secondary containment and dispenser (owned by Southern States), an empty 2,200-gallon polyethylene tank, an empty 220-gallon polyethylene tote, a half full approximately 210-gallon Slow Release Nitrogen Plus tote, an empty steel 500-gallon horizontal water tank, an empty 550-gallon trailer mounted polyethylene fertilizer/herbicide/pesticide tank and an empty 110-gallon polyethylene tank were observed at the Gill Farm Complex.
- An approximately 300-gallon, steel, off-road diesel AST with dispenser was observed near the southwest end of Craig Cemetery Road.

6.7 Solid Waste Disposal

As described in *Section 6.2*, extensive debris including old farm implements and tools, a truck, a combine, a small generator, household trash, old houseware, automotive tires, wire, empty five-gallon plastic buckets (hydraulic fluid and some labels not legible), empty gallon and quart size oil, antifreeze and hydraulic fluid plastic containers, empty gasoline containers (approximately 2.5-gallons), empty approximately 1- and 2.5-gallon herbicide containers, a truck or tractor battery, brush piles, and scrap plastic, wood, and metal were observed across the Gill Farm Complex.

6.8 Evidence of Polychlorinated Biphenyls

Pole-mounted transformers belonging to **Kentucky Utilities Company (*KU*)** were observed at near the house at the Jones Farm Complex – West, near the house at the Jones Farm Complex – East, and near the house and barn/shed at the Gill Farm Complex. Blue non-PCB stickers were not visible on the pole-mounted transformers. All of the pole-mounted transformers appeared to be in good condition with no staining on the utility pole or surrounding surfaces.

6.9 Floor Drains / Sumps

No buildings were entered and no drains or sumps were observed at the Site.

6.10 Other Environmental Concerns

No other environmental conditions were observed at the Site.

7 Interviews

Two property owners (Mr. Bill Jones and William “Eddie” Jones) were interviewed in person during Site reconnaissance on July 13 – 14, 2021. On July 13, 2021, Mr. Bill Jones, owner of property at 6858 Old Fredonia Road, indicated that a liquid fertilizer spill burned grass near the off-site silos on the north side of Old Fredonia Road, adjacent to the west side of the Site. Mr. Bill Jones said that no cleanup was required and no action was taken. Mr. Jones provided directions to safely access remote Site areas.

On July 14, 2021, Mr. William “Eddie” Jones, owner of property in the south area of Site, stated that the approximately 300-gallon, steel, off-road diesel AST located near the southwest end of Craig Cemetery Road on the southwest side of the Site is empty and not in use. The AST is owned by Southern States, electric service was previously disconnected and the owner is being contacted to remove the AST.

8 Conclusions

Cardno has performed this Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-13. Any exceptions to, or deletions from, this practice are described in *Sections 2.4* and *9.0* of this report.

This assessment has revealed evidence of the following REC in connection with the Site:

> Extensive oily sediment in the mechanical shed on the northeast side of the Gill Farm Complex and petroleum related debris in and surrounding the barn/equipment shed on the northeast side of the Gill Farm Complex is considered a REC for the Site.

The following non-ASTM concern was identified for the Site:

> Out-of-use ASTs are present at the Jones Farm Complex – West, the Gill Farm Complex and near the southwest end of Craig Cemetery Road.

> Extensive debris including old farm implements and tools, vehicles, trash, tires, empty petroleum product containers, spent oil filters, a battery, brush piles and scrap plastic, wood and metal were observed across the Gill Farm Complex.

Conclusions and opinions presented in this assessment are based solely on the information derived from the study sources and references cited in this document. Conclusions drawn from the results of this assessment should be made while recognizing the limitations of the sources and methods used. Except as specified herein, this Phase I Environmental Site Assessment report was produced for the exclusive use of the Client.

9 Deviations

As noted in Section 6.1, it was not possible to enter the interiors of some Site structures. No other deviations or deletions were made to the scope as defined by ASTM E-1527-13.

10 Significant Data Gaps

Cardno did not encounter any significant data gaps during this assessment.

11 Additional Services

No additional services were provided for this assessment.

12 References

American Society for Testing and Materials International (*ASTM*) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation: E1527-13.

American Society for Testing and Materials International (*ASTM*) Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process, Designation: E1528-06.

Beck, E. Glynn, D.A. Williams, and D.I. Carey, Generalized Geologic Map for Land-Use Planning: Caldwell County, Kentucky.

Miller, James A., 1999, Groundwater Atlas of the United States.

Kentucky Geological Survey, 2005, Groundwater Resources of Caldwell County, Kentucky, County Report 17, Series XII.

Rogers, W.B., and Hays, W.H. 1967, Geologic Map of the Fredonia Quadrangle, western Kentucky, USGS Quadrangle Map GQ-607.

Rodgers, W.B., and Trace, R.D., 1976, Geologic map of the Crider Quadrangle, Caldwell County, Kentucky: USGS Geologic Quadrangle Map GQ-1283.

USEPA, Standards and Practices for All Appropriate Inquiries; Final Rule. 40 Code of Federal Regulations, Part 312. Federal Register Volume 70, Number 210. December 23, 2008.

13 Signature of Environmental Professional

This Phase I ESA was overseen and/or performed by Cardno Senior Project Manager, Mr. George Robertson, a Professional Geologist (P.G.) with over 30 years of experience in environmental practice. He has managed and/or otherwise been directly involved in hundreds of environmental site assessments during this period (*Appendix D*).

I declare that, to the best of my professional knowledge and belief, I meet the definition of an Environmental Professional (EP) as defined in 40 CFR § 312.10. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312 and ASTM 1527-13.

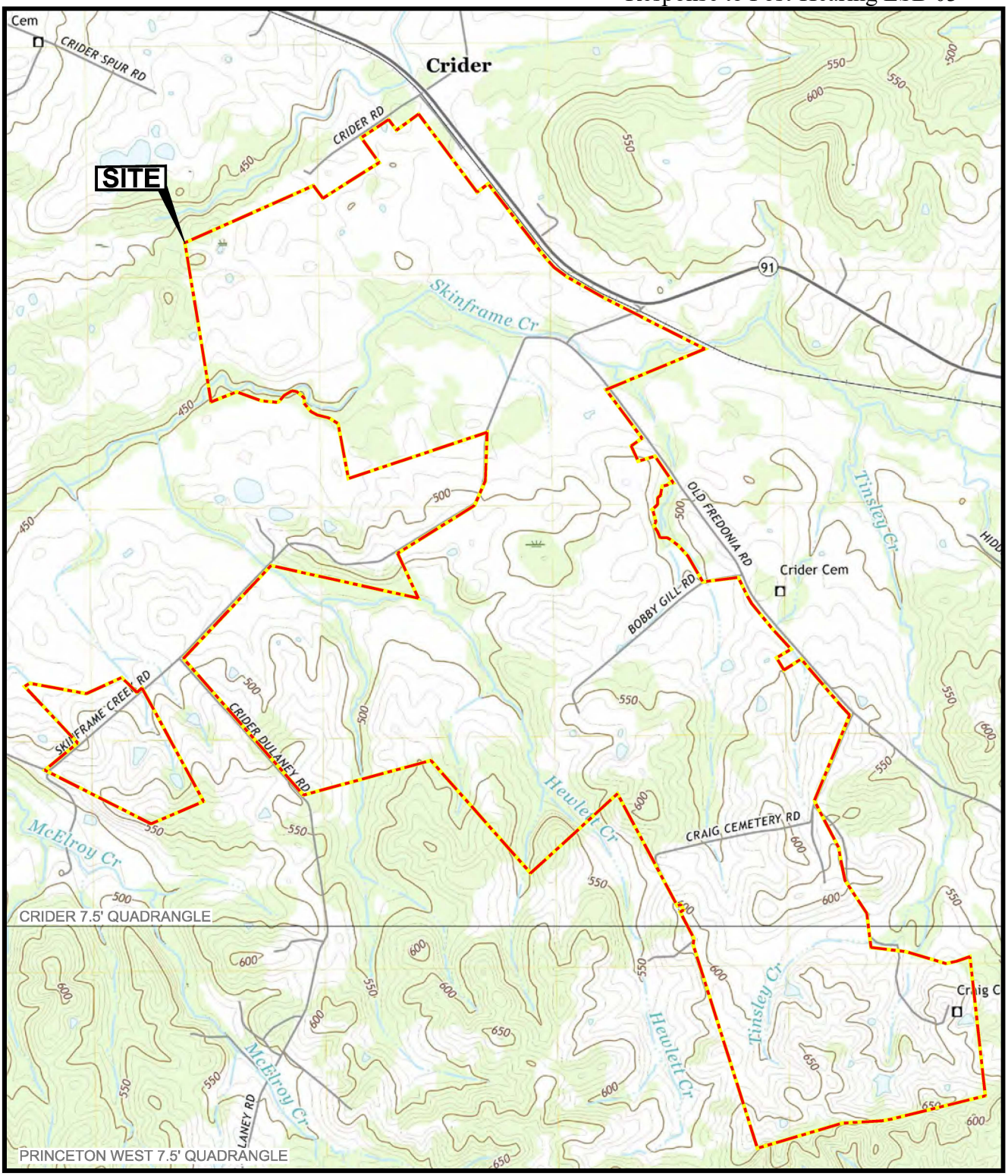
08/19/2021

George A. Robertson
Senior Project Manager

Date

Phase I ESA
Caldwell Solar Site Additional Area
Fredonia, Kentucky

FIGURES

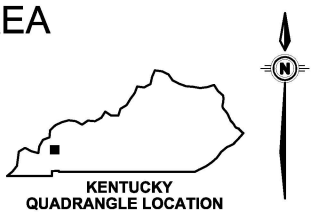


CALDWELL SOLAR, LLC
CALDWELL SOLAR SITE ADDITIONAL AREA
FREDONIA, KENTUCKY

Cardno

2,000' 0 2,000'

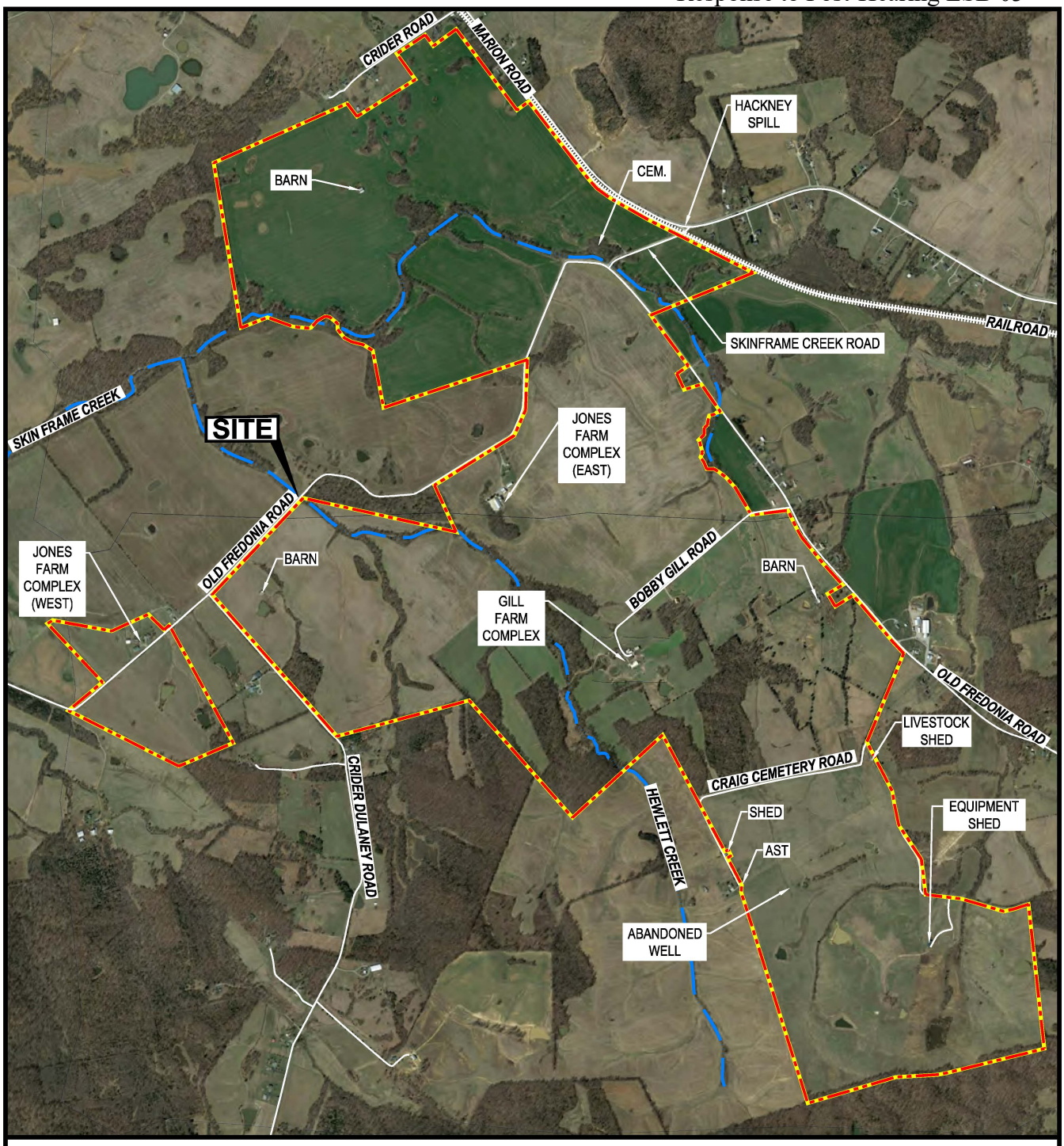
SCALE 1:24,000



E320201000-04-AR
7/23/2021
Bluefield, Virginia

Topographic Site Location Map

FIGURE 1



Cardno Bluefield	Drawn: DJD Checked: GR Date: 7/23/2021 Scale: 1"=2000' Project No.: E320201000-04 File No.N:CPF:OHIO\GOLDEN	CALDWELL SOLAR, LLC CALDWELL SOLAR SITE ADDITIONAL AREA FREDONIA, KENTUCKY	Figure 2 SITE MAP

80' 0 80'

SCALE: 1" = 80'

N

Drawn:	DJD
Checked:	GR
Date:	7/23/2021
Scale:	1"=80'
Project No.:	E320201000-04
File No.N:CPF:OHIO\GOLDEN	

Cardno
Bluefield

CALDWELL SOLAR, LLC
CALDWELL SOLAR SITE ADDITIONAL AREA
FREDONIA, KENTUCKY

Figure 3

GILL FARM COMPLEX

Phase I ESA
Caldwell Solar Site Additional Area
Fredonia, Kentucky

A

ERIS RADIUS REPORT

DATABASE REPORT

Project Property:	*Caldwell Solar Site* *n/a* *Fredonia KY*
Project No:	*E320201000*
Report Type:	*Database Report*
Order No:	*21070600556*
Requested by:	*Cardno Inc.*
Date Completed:	*July 9, 2021*

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

Table of Contents

Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY

Reliance on information in Report: This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as database review of environmental records.

License for use of information in Report: No page of this report can be used without this cover page, this notice and the project property identifier. The information in Report(s) may not be modified or re-sold.

Your Liability for misuse: Using this Service and/or its reports in a manner contrary to this Notice or your agreement will be in breach of copyright and contract and ERIS may obtain damages for such mis-use, including damages caused to third parties, and gives ERIS the right to terminate your account, rescind your license to any previous reports and to bar you from future use of the Service.

No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by ERIS Information Inc. ("ERIS") using various sources of information, including information provided by Federal and State government departments. The report applies only to the address and up to the date specified on the cover of this report, and any alterations or deviation from this description will require a new report. This report and the data contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein and does not constitute a legal opinion nor medical advice. Although ERIS has endeavored to present you with information that is accurate, ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.

Trademark and Copyright: You may not use the ERIS trademarks or attribute any work to ERIS other than as outlined above. This Service and Report (s) are protected by copyright owned by ERIS Information Inc. Copyright in data used in the Service or Report(s) (the "Data") is owned by ERIS or its licensors. The Service, Report(s) and Data may not be copied or reproduced in whole or in any substantial part without prior written consent of ERIS.

Executive Summary

Property Information:

Project Property:	*Caldwell Solar Site* *n/a Fredonia KY*
Project No:	*E320201000*
Coordinates:	
Latitude:	*37.13668512*
Longitude:	*-87.96900806*
UTM Northing:	*4,110,474.87*
UTM Easting:	*413,934.93*
UTM Zone:	*16S*
Elevation:	*541 FT*

Order Information:

Order No:	*21070600556*
Date Requested:	*July 6, 2021*
Requested by:	*Cardno Inc.*
Report Type:	*Database Report*

Historicals/Products:

Aerial Photographs	*Historical Aerials (Boundaries)*
ERIS Xplorer	*ERIS Xplorer*
Excel Add-On	*Excel Add-On*
Fire Insurance Maps	*US Fire Insurance Maps*
Physical Setting Report (PSR)	*Physical Setting Report (PSR)*
Topographic Map	*Topographic Maps*

Executive Summary: Report Summary

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

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
State								
BROWNFIELDS	Y	0.5	0	0	0	0	-	0
SHWS	Y	1	0	0	0	0	**1**	**1**
DELISTED SHWS	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	0	0	0	-	0
HIST LANDFILL	Y	0.5	0	0	0	0	-	0
SB193	Y	0.5	0	0	0	0	-	0
PSTEAF	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	0	0	-	-	0
DELISTED STORAGE TANK	Y	0.25	0	0	0	-	-	0
ENG	Y	0.5	0	0	0	0	-	0
INST	Y	0.5	0	0	0	0	-	0
VCP	Y	0.5	0	0	0	0	-	0
BROWNFIELD INV	Y	0.5	0	0	0	0	-	0
Tribal								
INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED ILST	Y	0.5	0	0	0	0	-	0
DELISTED IUST	Y	0.25	0	0	0	-	-	0
County	***No County standard environmental record sources available for this State.***							
Additional Environmental Records								
Federal								
PFAS NPL	Y	0.5	0	0	0	0	-	0
FINDS/FRS	Y	PO	0	-	-	-	-	0
TRIS	Y	PO	0	-	-	-	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0
PFAS WATER	Y	0.5	0	0	0	0	-	0
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
TSCA	Y	0.125	0	0	-	-	-	0
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0
FORMER NIKE	Y	1	0	0	0	0	0	0
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	0.25	0	0	0	-	-	0
SMCRA	Y	1	0	0	0	0	0	0
MRDS	Y	1	0	0	0	0	0	0
URANIUM	Y	1	0	0	0	0	0	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCB	Y	0.5	0	0	0	0	-	0
State								
SPILLS	Y	0.125	0	**1**	-	-	-	**1**
CDL	Y	PO	0	-	-	-	-	0
Tribal	***No Tribal additional environmental record sources available for this State.***							
County	***No County additional environmental record sources available for this State.***							
	Total:		0	**1**	0	0	**1**	**2**

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

Executive Summary: Site Report Summary - Project Property

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

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

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	SPILLS	H.T. Hackney	HWY 91 N. at intrrsection of Skinframe Creek Rd. Princeton KY ***INC ID*	*Status:*** 2424992 | Env. Closed	NNE	0.03 / 144.25	-50	15
2	SHWS	Princeton Transfer Station	10129 US 62 W Princeton KY 42445	SE	0.95 / 5,041.89	-20	15

Executive Summary: Summary by Data Source

Standard

State

SHWS - State Leads Priority List

A search of the SHWS database, dated May 25, 2021 has found that there are 1 SHWS site(s) within approximately 1.00 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
Princeton Transfer Station	10129 US 62 W Princeton KY 42445	SE	0.95 / 5,041.89	2

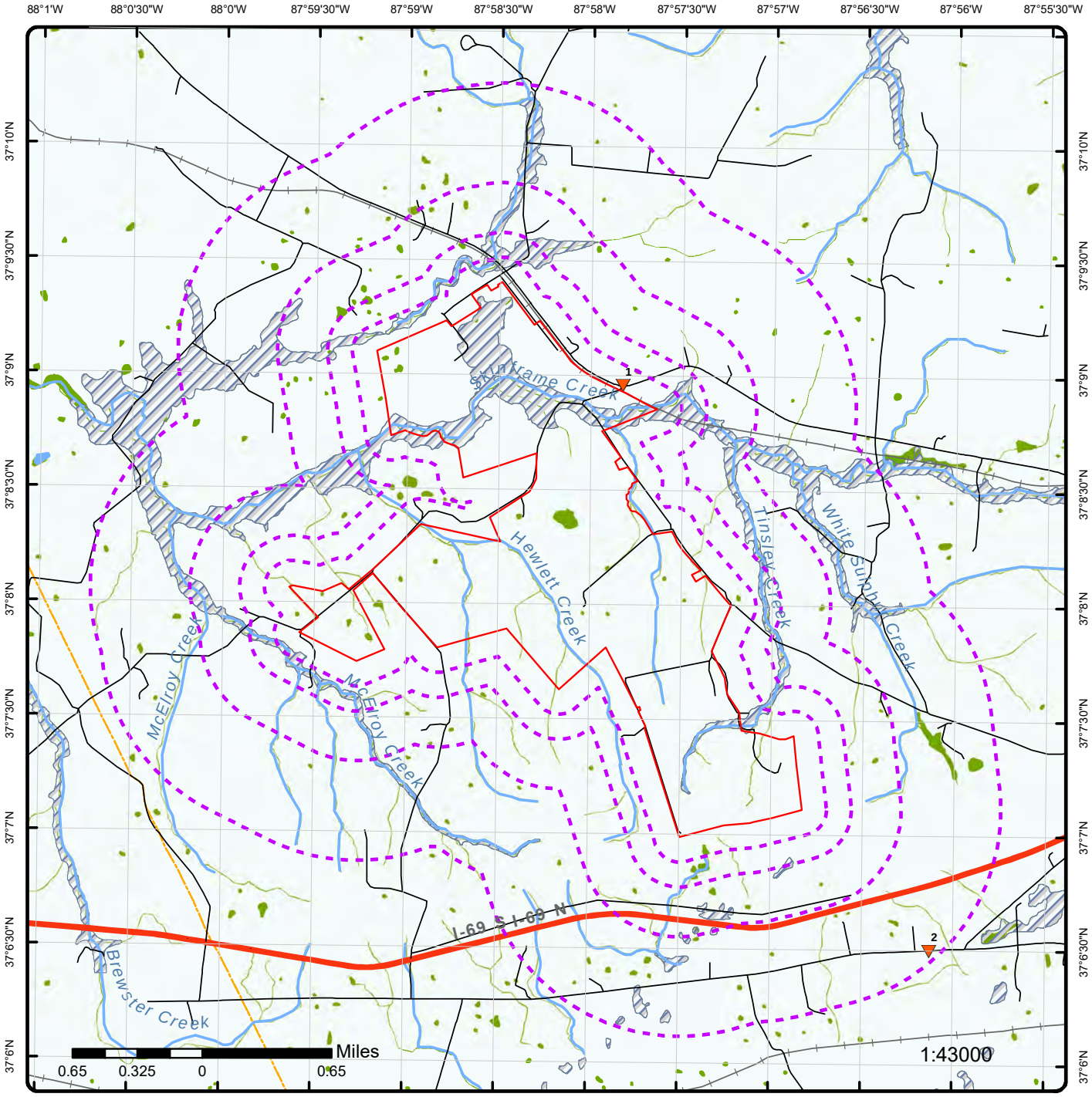
Non Standard

State

SPILLS - Incidents

A search of the SPILLS database, dated May 27, 2021 has found that there are 1 SPILLS site(s) within approximately 0.12 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
H.T. Hackney	HWY 91 N. at intrrsection of Skinframe Creek Rd. Princeton KY ***INC ID* | *Status**: 2424992 | *Env. Closed*	NNE	0.03 / 144.25	1



Map: 1.0 Mile Radius

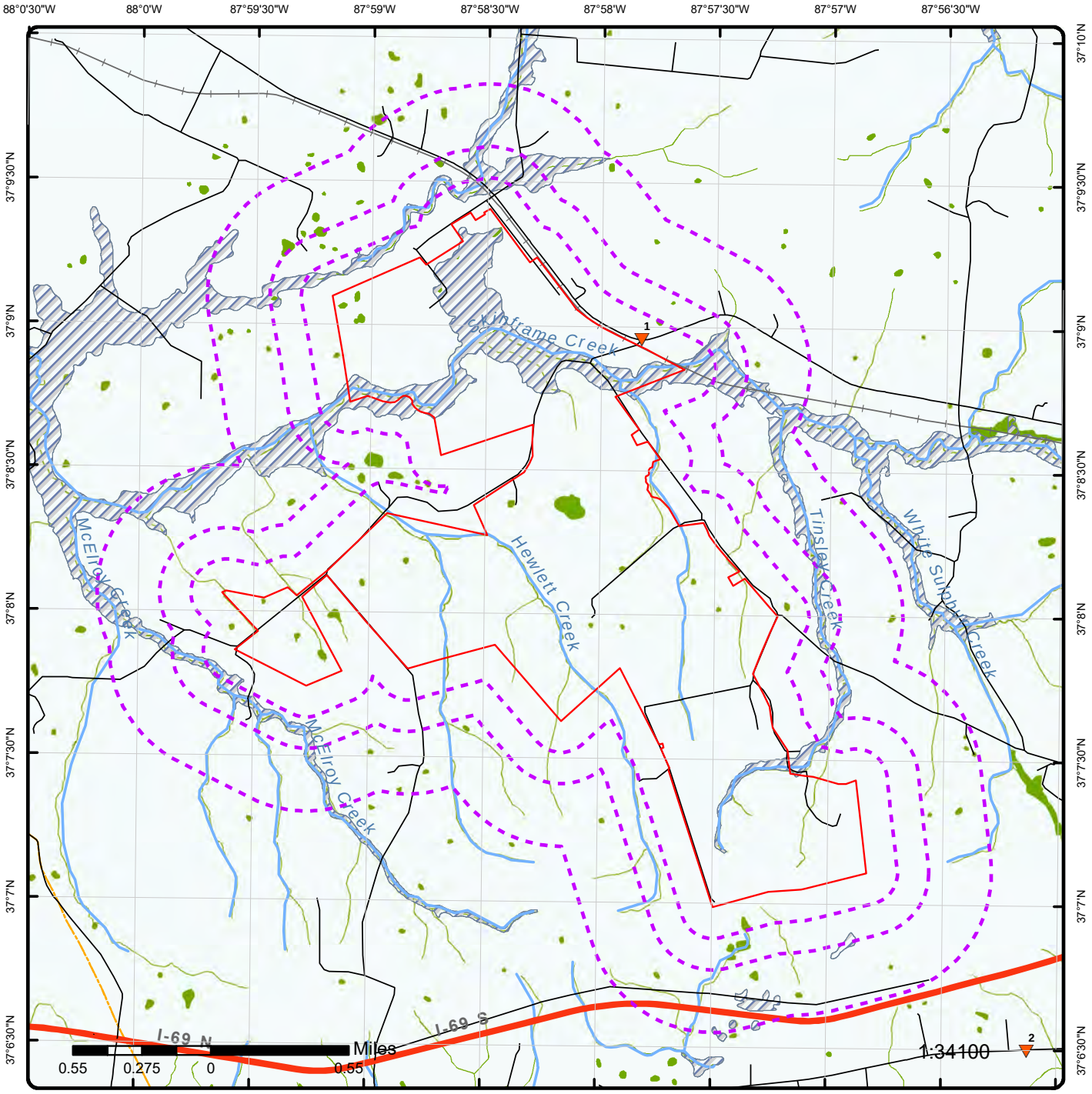
Order Number: 21070600556

Address: n/a, Fredonia, KY

- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- County Boundary
- Rails
- Major Highways
- Major Highways Ramps
- Major Roads
- Major Roads Ramps
- Secondary Roads
- Secondary Roads Ramps
- Local Roads and Ramps
- State Boundary
- National Priority List Sites
- National Wetland
- Indian Reserve Land
- 100 Year Flood Zone
- 500 Year Flood Zone
- Historic Fill
- FWS Special Designation Areas
- State Brownfield Sites
- State Brownfield Areas
- State Superfund Areas:Dept. of Defense
- State Superfund Areas:NPL
- WQARF Areas
- Federal Lands: Dept. of Defense (owned/administered areas)
- Plume

Source: © 2016 ESRI

© ERIS Information Inc.



Map: 0.5 Mile Radius

Order Number: 21070600556

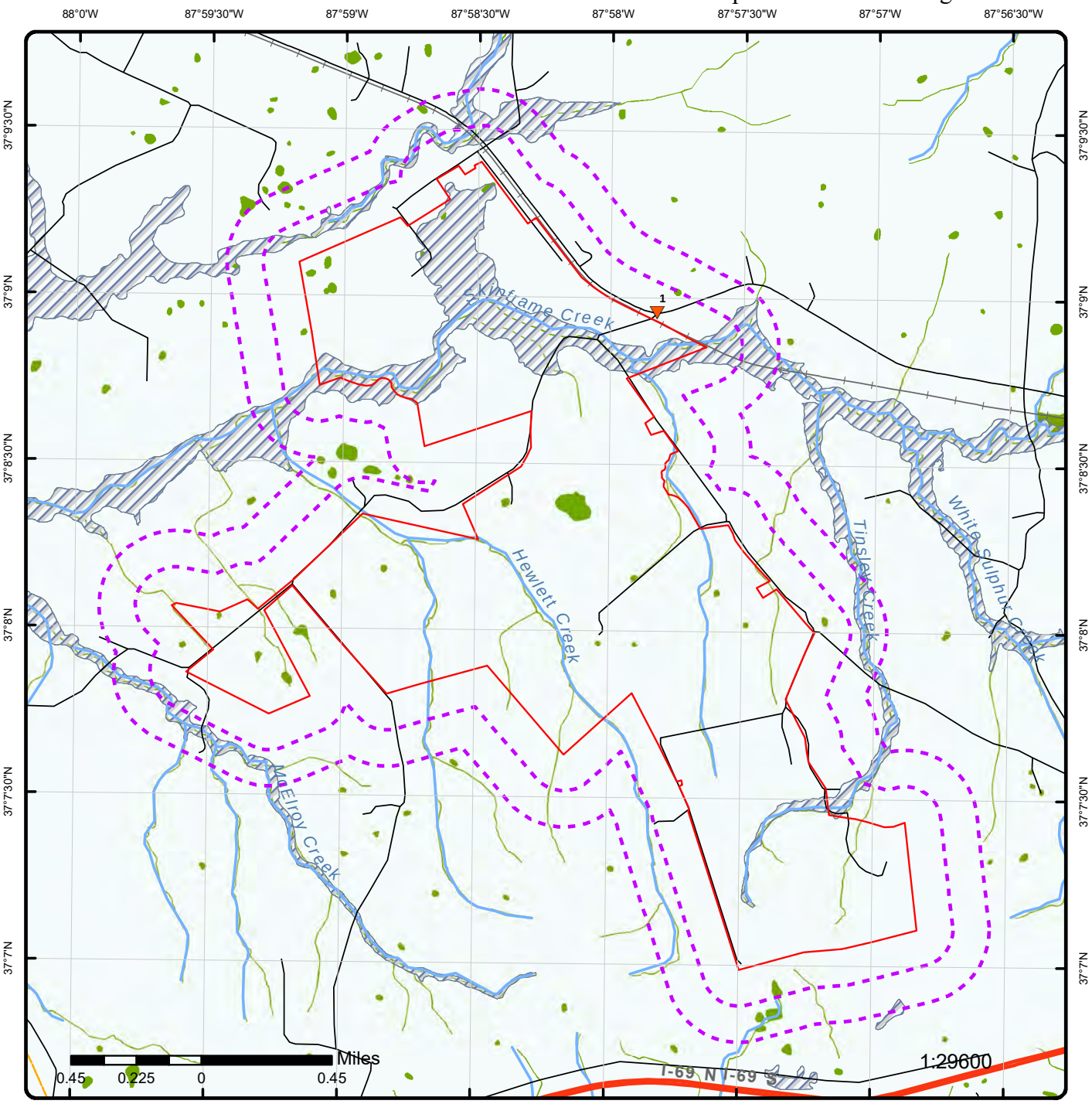
Address: n/a, Fredonia, KY

ERIS

- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- County Boundary
- Rails
- Major Highways
- Major Highways Ramps
- Major Roads
- Major Roads Ramps
- Secondary Roads
- Secondary Roads Ramps
- Local Roads and Ramps
- State Boundary
- National Priority List Sites
- National Wetland
- Indian Reserve Land
- 100 Year Flood Zone
- 500 Year Flood Zone
- Historic Fill
- FWS Special Designation Areas
- State Brownfield Sites
- State Brownfield Areas
- State Superfund Areas:Dept. of Defense
- State Superfund Areas:NPL
- WQARF Areas
- Federal Lands: Dept. of Defense (owned/administered areas)
- Plume

Source: © 2016 ESRI

© ERIS Information Inc.



Map: 0.25 Mile Radius

Order Number: 21070600556

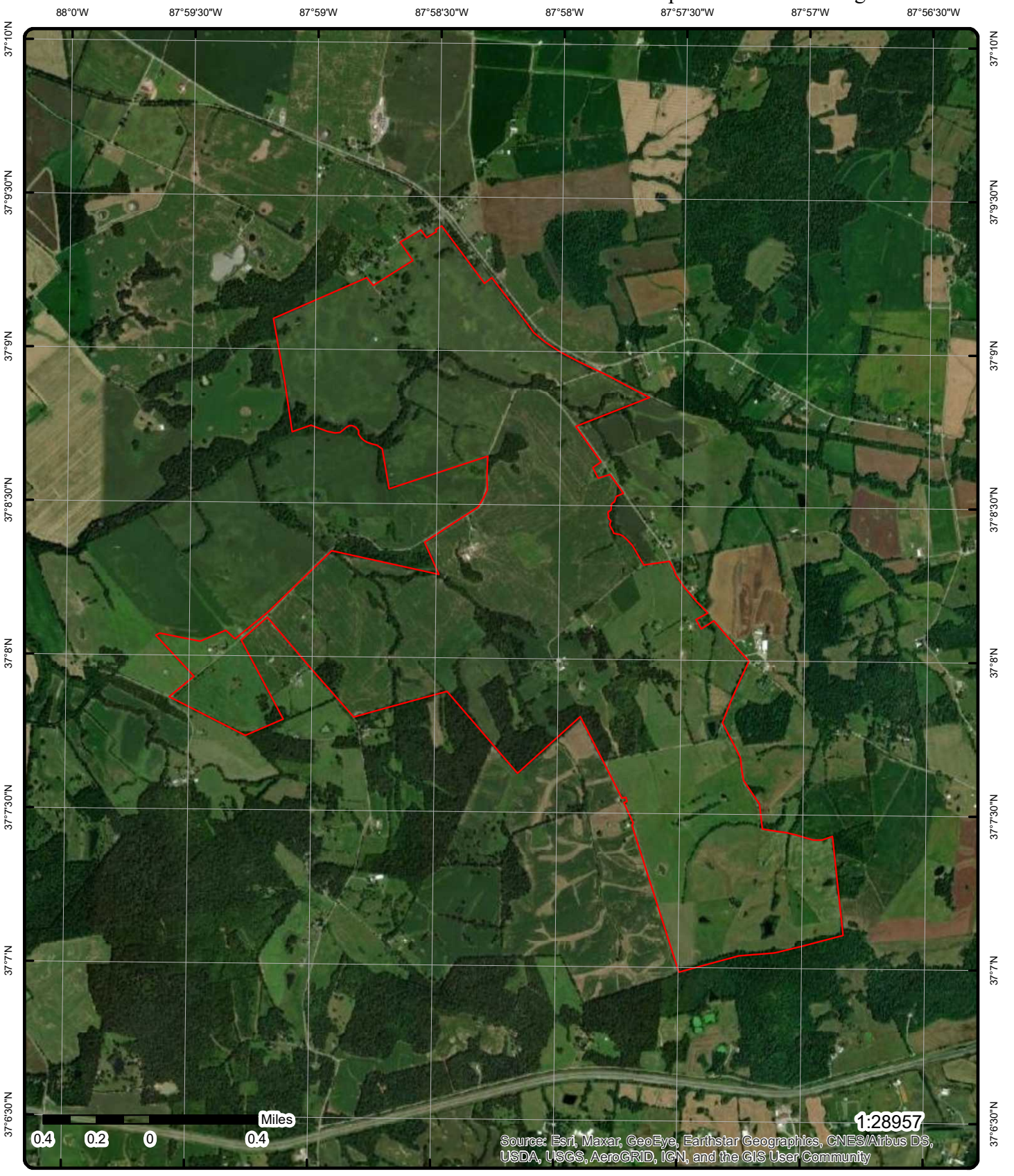
Address: n/a, Fredonia, KY

ERIS

- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- County Boundary
- Rails
- Major Highways
- Major Highways Ramps
- Major Roads
- Major Roads Ramps
- Secondary Roads
- Secondary Roads Ramps
- Local Roads and Ramps
- State Boundary
- National Priority List Sites
- National Wetland
- Indian Reserve Land
- 100 Year Flood Zone
- 500 Year Flood Zone
- Historic Fill
- FWS Special Designation Areas
- State Brownfield Sites
- State Brownfield Areas
- State Superfund Areas:Dept. of Defense
- State Superfund Areas:NPL
- WQARF Areas
- Federal Lands: Dept. of Defense (owned/administered areas)
- Plume

Source: © 2016 ESRI

© ERIS Information Inc.



Aerial **Year: 2016**

Address: n/a, Fredonia, KY

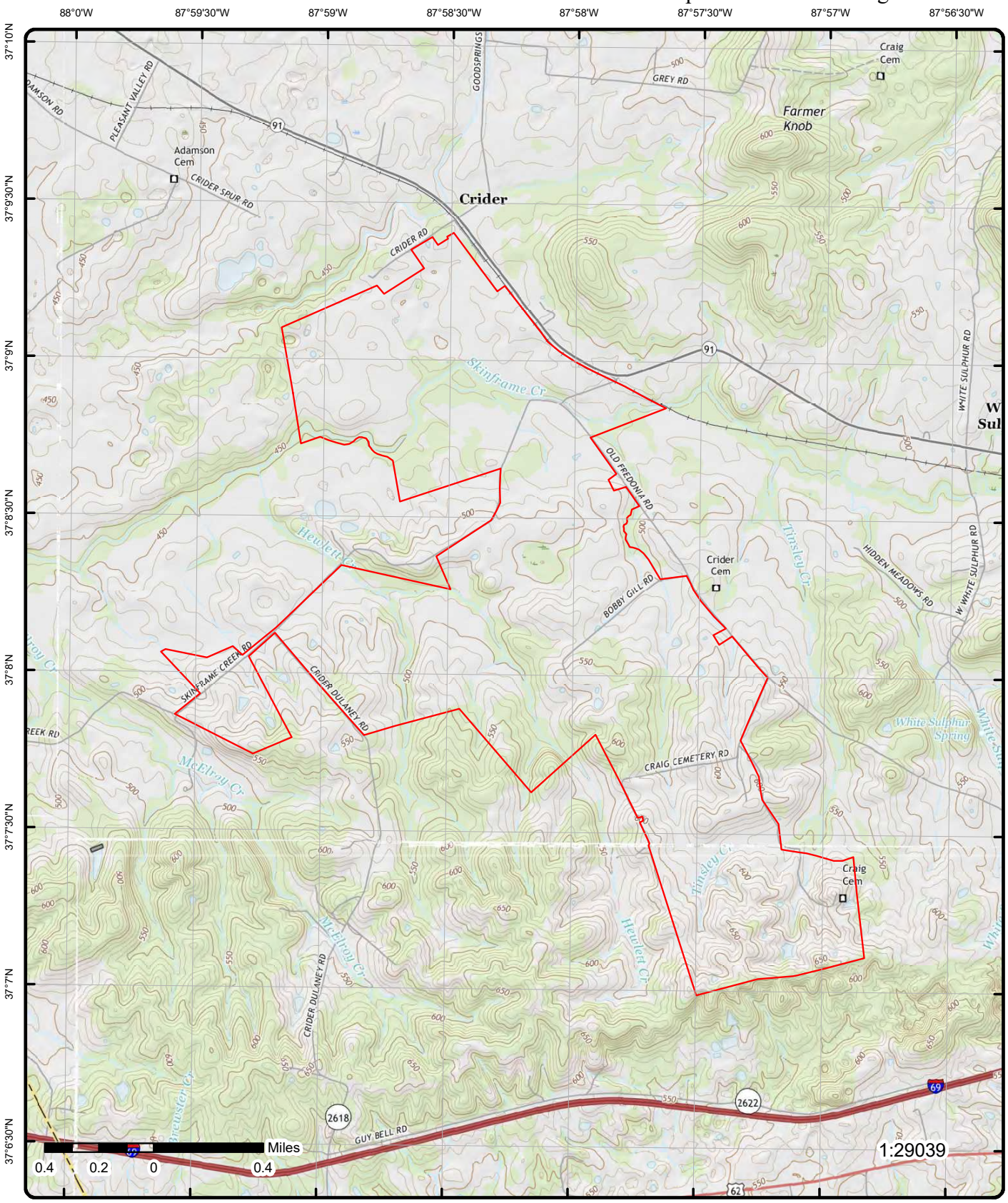
Source: ESRI World Imagery

Order Number: 21070600556

ERIS

© ERIS Information Inc.

Filed per 3-30-2022 ESB Order
Response to Post-Hearing ESB 03



Topographic Map

Year: 2016

Order Number: 21070600556

Address: n/a, KY

Quadrangle(s): Fredonia, KY; Eddyville, KY; Princeton West, KY; Crider, KY

Source: USGS Topographic Map

ERIS

© ERIS Information Inc.

Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	1 of 1	NNE	0.03 / 144.25	491.19 / -50	H.T. Hackney HWY 91 N. at intrrsection of Skinframe Creek Rd. Princeton KY	SPILLS

INC ID:	2424992	**Notification:**	No
MARS Function Code:	Q751	**Date:**	4/28/2017
Status:	Env. Closed	**Lead Invest ID:**	9467
Priority:	Emergency, Immed. Resp.	**Lead Investigator:**	Tichenor, Larry
Program Code:	08	**Flw Up Prior Desc:**	
Program:	Solid Waste	**Recen Cpl Eval Act:**	
Substances:	Diesel:250	**Recent ENF Act:**	
Closure Type Desc:	Env. Closed-Restored	**Locked Flag:**	Yes
Incident End Date:		**Waterbody:**	
Begin Emerg Dt:	4/28/2017	**Regional Office:**	Madisonville Regional Office
End Emerg Dt:	4/28/2017 8:42:00 AM	**County:**	Caldwell
Record Date:		**Lat Dac Degrees:**	37.1498
First Report Date:	4/28/2017 7:32:00 AM	**Long Dec Degrees:**	-87.96558
Completed:	Yes		
Source:	H.T. Hackney		
Incident Type S:	TRANSPORTATION ACCIDENT - TRUCK		
Incident Desc:	There was a spill of 250 Gallons of diesel and KY Transportation is on seen to assist with spill.		
Location Desc:	HWY 91 N. at intrrsection of Skinframe Creek Rd.		
Other Substance Desc:			
Z Coordinate Method Desc:	Unknown		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	1 of 1	SE	0.95 / 5,041.89	521.05 / -20	Princeton Transfer Station 10129 US 62 W Princeton KY 42445	SHWS

Agency Interest ID:	34741	**AI Lat:**	37.103333
AI State:	KY	**AI Long:**	-87.971389
AI County:	Caldwell		

Detail

AAZZ No:	3	**SI Address Line 1:**	10129 US 62 W
Site Status:	Closed	**SI Address Line 2:**	
Closure Option:	Option C Restored	**SI City:**	Princeton
Closure Date:	11/16/2009	**SI State:**	KY
Regulatory Desc:	Petroleum Cleanup	**SI Zip:**	42445
SI Desg:	DSL spill	**SI Long:**	-87.95381000000002
SI County:	Caldwell	**SI Lat:**	37.34186
Acreage:			
SI Description:	Truck fueling spill		

Unplottable Summary

Total: 6 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
HMIRS		KY Hwy 91 near 17 mile marker	PRINCETON KY		818164595
RCRA NON GEN	CALDWELL CO. AREA VOCATIONAL CTR.	RT 1, MARION ROAD ***EPA Handler ID:*** KYD981476419	PRINCETON KY	42445	862164827
SPILLS	Chris Hooks	Water well located behind house at 2034 Marion Rd, Fredonia. Coming from Eddyville on Highway 641 N into Fredonia, turn right on Highway 91 N and go ***INC ID	Status:*** 2360474 | Env. Closed	about 1/4 mile., Fredonia KY		827163401
SPILLS	Caldwell Co Water District (AI ID: 33819)	12498-14440 Marion Road 15-45 Goodsprings Rd, Crider Rd, 331-744 E. White Sulpher Rd. ***INC ID	Status:*** 2423443 | Env. Closed	Caldwell KY		861616455
SPILLS	Chris Hooks	Water well located behind house at 2034 Marion Rd., Fredonia. Coming from Eddyville on Hwy. 641 N into Fredonia, turn right on Hwy 91N and go about 1/4 ***INC ID	Status:*** 2358724 | Env. Closed	mile., Fredonia KY		827163082
SPILLS	Caldwell County;	Rock quarry access road near Marion Road (Hwy 91), Caldwell County, near Fredonia. ***INC ID	Status:*** 2308120 | Env. Closed	Fredonia KY		827176430

Unplottable Report

Site:

KY Hwy 91 near 17 mile marker PRINCETON KY

HMIRS

Incident County: CALDWELL

HMIR Incident Reports

Report No:	E-2011030394	***Fed DOT Agency Nm:***	
Report Type:	A hazardous material incident	***Fed DOT Report No:***	
Date of Incident:	2011-03-21	***Report Submit Src:***	Web
Time of Incident:	0815	***Inc Multiple Rows:***	No
Haz Class Code:		***Inc Non US State:***	
Hazardous Class:	1.5D	***Mode Transport:***	Highway
Commodity Short Nm:	EXPLOSIVE, BLASTING, TYP	***Transport Phase:***	In Transit
Commodity Long Nm:	EXPLOSIVE, BLASTING, TYPE B OR EXPLOSIVE, AGENT BLASTING, TYPE B	***Incident Occrrnce:***	
Trade Name:	Power Nel 1500	***Mat Ship Approval?:***	Yes
ID No:	UN0331	***Mat Ship Approv No:***	SP-12677
Haz Waste Ind:	No	***Undecl Hazmat Ship?:***	No
Haz Waste EPA No:		***Packaging Type:***	Cargo Tank Motor Vehicle (CTMV)
HMIS Tox Inhalation?:	No	***Packing Group:***	II
TIH Hazard Zone:		***Carrier Reporter:***	Mine Equipment & Mill Supply Company
Qty Released:	500	***CR Street Name:***	370 MIne Equipment Road
Unit of Measure:	Solid - Pound	***CR City:***	Dawson Springs
What Failed:	109	***CR State:***	KY
What Failed Desc:	Closure (e.g., Cap, Top, or Plug)	***CR Postal Code:***	42408
How Failed Code:	310	***CR Non US State:***	
How Failed Desc:	Ripped or Torn	***CR Fed DOT ID:***	90419
Failure Cause Code:	511	***CR Hazmat Reg ID:***	0511105540738
Failure Cause Desc:	Dropped	***CR Country:***	US
Ident. Markings:	MC312	***Shipper Name:***	Mine Equipment & Mill Supply Company
Cont1 Pkging Type:		***Shipper Street Name:***	370 Mine Equipment Road
Cont1 Const Mat:		***Shipper City:***	Dawson Springs
Cont1 Head Type:		***Shipper State:***	KY
Cont1 Pkg Capacity:	16000	***Shipper Postal:***	42408
C1 Capacity UOM:	SLB	***Shipper Non US St:***	
Cont1 Pkg Amt:	14000	***Shipper Country:***	US
C1 Pkg Amt UOM:	SLB	***Shipper Waybill:***	22713
Cont1 Pkg No:	1	***Ship Hazmat Reg ID:***	0511105540738
C1 Pkg NO Failed:	1	***Origin City:***	Madisonville
Cont1 Pkg Mnfctr:		***Origin State:***	KY
Cont1 Pkg Mnfct Dt:	0-00-00 00:00:00	***Origin Postal:***	42431
Cont1 Pkg Serial NO:		***Origin Non US St:***	
C1 Pkg Last Test Dt:	0-00-00 00:00:00	***Origin Country:***	US
C1 Test Const Mat:		***Destination City:***	SALEM
C1 Pkg Dsign Pres.:	0	***Destination State:***	KENTUCKY
C1 Dsign Press UOM:		***Destination Postal:***	42078
C1 Pkg Shell Thick:	0	***Destination Non US:***	
C1 Shell Thick UOM:		***Destination Country:***	US
C1 Head Thickness:	0	***Cont2 Package Type:***	
C1 Head Thick UOM:		***Cont2 Const Mat:***	
C1 Pkg Srvc Pres.:	0	***Cont2 Pkg Capacity:***	0
C1 Srvc Press UOM:		***Cont2 Capacity UOM:***	
C1 Valve/Device Fail?:	No	***Cont2 Pkg Amount:***	0
C1 Device Type:		***Cont2 Pkg Amt UOM:***	
C1 Device Mnfctr:		***Cont2 Pkg No:***	0
C1 Device Model:		***Cont2 Pkg No Failed:***	0
NRC No:	970709		
RAM Pkg Category:		***Haz NonHosp Public:***	0
RAM Pkg Cert.:	FALSE	***Haz NonHosp Old:***	

RAM Pkg Cert. NBR:		***Tot Haz Non Hosp Inj:***	
RAM Nuclide S:		***Total Hazmat Injuries:***	0
RAM Transport Index:		***Evacuation Indicator:***	Yes
RAM UOM:		***Public Evacuated:***	5
RAM Activity Rpted:	0	***Employees Evac:***	0
RAM UOM Rpted:		***Total Evacuated:***	5
RAM Activity:	0	***Total Evacuation Hrs:***	6
RAM Activity UOM:		***Major Artery Closed:***	Yes
RAM Mat Safety:		***Mjr Artery Hrs Closed:***	6
Spillage Result:	Yes	***Material Involved:***	Yes
Fire Result:	No	***Estimated Speed:***	45
Explosion Result:	No	***Weather Conditions:***	Sunny
Water Sewer Result:	No	***Vehicle Overturn:***	Yes
Gas Dispersion:	No	***Vehicle Left Roadway:***	No
Environment Damage:	No	***Passenger Aircraft:***	No
No Release Result:	No	***Cargo Baggage:***	
Fire EMS Report:	No	***Ship Non Transport:***	No
Fire EMS EMS Report:		***Ship Air First Flight:***	No
Police Report:	Yes	***Ship Air Subflight:***	No
Police Report No:	KY0BBQ000261	***Ship Init Transport:***	No
In House Cleanup:	Yes	***Ship Phase Transfer:***	No
Other Cleanup:	No	***Contact Name:***	MARTY VINCENT
Damage > 500:	Yes	***Contact Title:***	HSE MANAGER
Material Loss:	1000	***Contact Business:***	Mine Equipment & Mill Supply Company
Carrier Damage:	12000	***Contact Street:***	370 Mine Equipment Road
Property Damage:	500	***Contact City:***	Dawson Springs
Response Cost:	7500	***Contact State:***	KY
Remediation Cost:	10000	***Contact Postal:***	42408
Damage Old Form:	0	***Contact Non US St:***	
Total Damages Amt:	31000	***Contact Country:***	US
Hazmat Fatality:	No	***Inc. Report Prepared:***	Carrier
Haz Fatal Employees:	0	***HMIS Serious Incidnt:***	Yes
Haz Fatal Respndrs:	0	***HMIS Serious Fatality:***	No
Haz Fatal Gen Public:	0	***HMIS Serious Injury:***	No
Tot Hazmat Fatalities:	0	***HMIS Flight Plan:***	No
Non Hazmat Fatality:	No	***HMIS Serious Evacs:***	Yes
Non Hazmat Fatals:	0	***HMIS Major Artery:***	Yes
Hazmat Injury:	No	***HMIS Bulk Release:***	No
Haz Hospital Empl:	0	***HMIS Marine Pollutnt:***	No
Haz Hospital Resp:	0	***HMIS Radioactive:***	No
Haz Hosp Gen Public:	0	***HMIS Gen Pkg Type:***	TANK
Haz Hosp Old Form:	0	***HMIS Container Code:***	MC312
Total Haz Hosp Inj:	0	***HMIS Container Desc:***	Cargo tanks
Haz Non Hosp Empl:	0	***HMIS Bulk Incident:***	Yes
Haz Non Hosp Resp:	0	***Undeclared Shipment:***	No

Description of Events: Driver was traveling North from Princeton, KY on KY Highway 91 near the 17 mile marker and rounded a curve at approximately 0815 hours on 03/21/2011. He was driving a 2007 Mack Granite, tri-axle auger truck carrying two types of blasting agent. They were UN0331 and UN0332. The driver stated he was meeting another truck (loaded with rock) that was sightly on the center line in a curve when he moved over as close to the shoulder of the road as he could to avoid a head on collision when his right front tire dropped off the shoulder of the road way. He attempted to steer back on to the roadway when the vehicle skidded and over turned. The driver assessed the situation for personal injuries and contacted emergency personnel and then his supervisor. State Police, EMS, DOT/Vehicle Enforcement, State Fire Marshal, EPA, Ambulance, State Highway Dept as well as local athorities were notified. Each responder began their investigation and then clean up began. Spilled product was contained and did not enter into a water way or stream. Residents in the immediate area were notified and evacuated for precautionary measures. Carrier notified the NRC Hotline and filed report as per required.

Recommend Actions Taken: Road way in this area is very narrow. This driver as well as other drivers will be trained as to watch for other oncoming traffic and narrow roadways. Training methods will include slowing to a safe speed to meet conditions of particular road ways and possibly turning on hazard warning lights in these areas. Changes will be made to the doors on top of the containers for added securement. Defensive driver training will be included in the retraining of the driver involved.

Site: ***CALDWELL CO. AREA VOCATIONAL CTR.***
RT 1, MARION ROAD PRINCETON KY 42445

RCRA NON GEN

EPA Handler ID:	KYD981476419
Gen Status Universe:	No Report
Contact Name:	ARTHUR DUNN
Contact Address:	P.O. BOX 350 , , PRINCETON , KY, 42445 , US
Contact Phone No and Ext:	502-365-5563
Contact Email:	

Contact Country: US
County Name: CALDWELL
EPA Region: 04
Land Type: State
Receive Date: 20170606
Location Latitude:
Location Longitude:

Violation/Evaluation Summary

Note: VIOLATION or UNDETERMINED: There are VIOLATION or UNDETERMINED details or records associated with this facility (EPA ID) in the Compliance Monitoring and Enforcement table dated April, 2021.

Violation Details

Citation:
Violation Short Description: Universal Waste - Small Quantity Handlers
Violation Type: 273.B
Violation Determined Date: 20160404
Scheduled Compliance Date: 20160504
Return to Compliance: Documented
Actual Return to Compl: 20160511
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 20160412
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Evaluation Details

Evaluation Start Date: 20160620
Evaluation Type Description: COMPLIANCE SCHEDULE EVALUATION
Violation Short Description: Universal Waste - Small Quantity Handlers
Return to Compliance Date: 20160511
Evaluation Agency: State

Evaluation Start Date: 20160404
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: Universal Waste - Small Quantity Handlers
Return to Compliance Date: 20160511
Evaluation Agency: State

Evaluation Start Date: 20110708
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 20081027
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 20080620
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 19950918
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19890601
Handler Name: CALDWELL CO. AREA VOCATIONAL CTR.
Source Type: Notification
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: F003
Waste Code Description: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Hazardous Waste Handler Details

Sequence No: 2
Receive Date: 20170606
Handler Name: CALDWELL CO. AREA VOCATIONAL CTR.
Source Type: Notification
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: State
Name: KENTUCKY DEPARTMENT OF EDUCATION
Date Became Current:
Date Ended Current:
Phone: 502-365-5563
Source Type: Notification

Street No:
Street 1: UNKNOWN
Street 2:
City: UNKNOWN
State: KY
Country: US
Zip Code: 00000

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	State	***Street 1:***	UNKNOWN
Name:	KENTUCKY DEPARTMENT OF EDUCATION	***Street 2:***	
Date Became Current:		***City:***	UNKNOWN
Date Ended Current:		***State:***	KY
Phone:	502-365-5563	***Country:***	
Source Type:	Notification	***Zip Code:***	00000

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	State	***Street 1:***	UNKNOWN
Name:	KENTUCKY DEPARTMENT OF EDUCATION	***Street 2:***	
Date Became Current:		***City:***	UNKNOWN
Date Ended Current:		***State:***	KY
Phone:	502-365-5563	***Country:***	US
Source Type:	Notification	***Zip Code:***	00000

Historical Handler Details

Receive Dt:	19890601
Generator Code Description:	Very Small Quantity Generator
Handler Name:	CALDWELL CO. AREA VOCATIONAL CTR.

Site: ***Chris Hooks***
Water well located behind house at 2034 Marion Rd, Fredonia. Coming from Eddyville on Highway 641 N into Fredonia, turn right on Highway 91 N and go about 1/4 mile., Fredonia KY

SPILLS

INC ID:	2360474	***Notification:***	No
MARS Function Code:		***Date:***	4/11/2013
Status:	Env. Closed	***Lead Invest ID:***	52078
Priority:	Routine	***Lead Investigator:***	Whybark, Kristine
Program Code:	01	***Flw Up Prior Desc:***	Routine
Program:	Air	***Recen Cpl Eval Act:***	
Substances:	Odor:	***Recent ENF Act:***	
Closure Type Desc:	Env. Closed-Mitigated	***Locked Flag:***	Yes
Incident End Date:		***Waterbody:***	
Begin Emerg Dt:		***Regional Office:***	Paducah Regional Office
End Emerg Dt:		***County:***	Caldwell
Record Date:		***Lat Dac Degrees:***	
First Report Date:	4/11/2013 11:26:09 AM	***Long Dec Degrees:***	
Completed:	Yes		
Source:	Chris Hooks		
Incident Type S:	ODOR		
Incident Desc:	Sewer-type odor suspected to originate from sulfur water well being used in irrigation system.		
Location Desc:	Water well located behind house at 2034 Marion Rd, Fredonia. Coming from Eddyville on Highway 641 N into Fredonia, turn right on Highway 91 N and go about 1/4 mile.		
Other Substance Desc:			
Z Coordinate Method Desc:			

Site: ***Caldwell Co Water District (AI ID: 33819)***
12498-14440 Marion Road 15-45 Goodsprings Rd, Crider Rd, 331-744 E. White Sulpher Rd. Caldwell KY

SPILLS

INC ID:	2423443	***Notification:***	Yes
MARS Function Code:		***Date:***	3/17/2017
Status:	Env. Closed	***Lead Invest ID:***	47226
Priority:	Routine	***Lead Investigator:***	Thomas, Randy
Program Code:	03	***Flw Up Prior Desc:***	
Program:	Drinking Water	***Recen Cpl Eval Act:***	
Substances:	Population Affected:43	***Recent ENF Act:***	
Closure Type Desc:	Env. Closed-No Action Necessary	***Locked Flag:***	Yes
Incident End Date:	3/18/2018	***Waterbody:***	
Begin Emerg Dt:		***Regional Office:***	Madisonville Regional Office
End Emerg Dt:		***County:***	Caldwell
Record Date:		***Lat Dac Degrees:***	37.116262
First Report Date:	3/16/2016 3:00:00 PM	***Long Dec Degrees:***	-87.895209
Completed:	No		
Source:	Caldwell Co Water District (AI ID: 33819)		
Incident Type S:	DW-LINE BREAK/LEAK		

Incident Desc: Line Break/Leak
Location Desc: 12498-14440 Marion Road 15-45 Goodsprings Rd, Crider Rd, 331-744 E. White Sulpher Rd.
Other Substance Desc:
Z Coordinate Method Desc:

Site: ***Chris Hooks***
Water well located behind house at 2034 Marion Rd., Fredonia. Coming from Eddyville on Hwy. 641 N into Fredonia, turn right on Hwy 91N and go about 1/4 mile., Fredonia KY

SPILLS

INC ID:	2358724	***Notification:***	No
MARS Function Code:		***Date:***	3/12/2013
Status:	Env. Closed	***Lead Invest ID:***	58732
Priority:	Routine	***Lead Investigator:***	Carroll, Christopher
Program Code:	06	***Flw Up Prior Desc:***	
Program:	Groundwater	***Recen Cpl Eval Act:***	
Substances:	Water:	***Recent ENF Act:***	
Closure Type Desc:	Env. Closed-No Action Necessary	***Locked Flag:***	Yes
Incident End Date:	3/19/2013	***Waterbody:***	
Begin Emerg Dt:		***Regional Office:***	Madisonville Regional Office
End Emerg Dt:		***County:***	Caldwell
Record Date:		***Lat Dac Degrees:***	
First Report Date:	3/12/2013 10:45:00 AM	***Long Dec Degrees:***	
Completed:	Yes		

Source: Chris Hooks
Incident Type S: ODOR
Incident Desc: Sewer-type odor suspected to originate from sulfur water well being used in irrigation system.
Location Desc: Water well located behind house at 2034 Marion Rd., Fredonia. Coming from Eddyville on Hwy. 641 N into Fredonia, turn right on Hwy 91N and go about 1/4 mile.
Other Substance Desc:
Z Coordinate Method Desc:

Site: ***Caldwell County;***
Rock quarry access road near Marion Road (Hwy 91), Caldwell County, near Fredonia. Fredonia KY

SPILLS

INC ID:	2308120	***Notification:***	No
MARS Function Code:		***Date:***	2/17/2010
Status:	Env. Closed	***Lead Invest ID:***	45875
Priority:	Routine	***Lead Investigator:***	Jewell, Laura
Program Code:	01	***Flw Up Prior Desc:***	
Program:	Air	***Recen Cpl Eval Act:***	
Substances:	PM2.5 (Particulate Matter - 2.5 Microns Or Less):	***Recent ENF Act:***	
Closure Type Desc:	Env. Closed-Mitigated	***Locked Flag:***	Yes
Incident End Date:		***Waterbody:***	
Begin Emerg Dt:		***Regional Office:***	Paducah Regional Office
End Emerg Dt:		***County:***	Caldwell
Record Date:		***Lat Dac Degrees:***	
First Report Date:	2/17/2010 10:00:40 AM	***Long Dec Degrees:***	
Completed:	Yes		

Source: Caldwell County;
Incident Type S: AIR RELEASE, FUGITIVE EMISSIONS
Incident Desc: Fugitive from new access road to a rock quarry, perhaps Martin Marietta.
Location Desc: Rock quarry access road near Marion Road (Hwy 91), Caldwell County, near Fredonia.
Other Substance Desc:
Z Coordinate Method Desc:

Appendix: Database Descriptions

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

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

Standard Environmental Record Sources

Federal

Formerly Utilized Sites Remedial Action Program: DOE FUSRAP

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

Government Publication Date: Mar 4, 2017

National Priority List: NPL

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

Government Publication Date: Apr 27, 2021

National Priority List - Proposed: PROPOSED NPL

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

Government Publication Date: Apr 27, 2021

Deleted NPL: DELETED NPL

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Government Publication Date: Apr 27, 2021

SEMS List 8R Active Site Inventory: SEMS

The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

Government Publication Date: Mar 23, 2021

Inventory of Open Dumps, June 1985: ODI

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

Government Publication Date: Jun 1985

SEMS List 8R Archive Sites: SEMS ARCHIVE

The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

Government Publication Date: Mar 23, 2021

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

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

Government Publication Date: Oct 25, 2013

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

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

Government Publication Date: Dec 31, 1998

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP

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

Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS

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

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action: RCRA CORRACTS

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

Government Publication Date: Apr 5, 2021

RCRA non-CORRACTS TSD Facilities: RCRA TSD

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

Government Publication Date: Apr 5, 2021

RCRA Generator List: RCRA LQG

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

Government Publication Date: Apr 5, 2021

RCRA Small Quantity Generators List: RCRA SQG

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

Government Publication Date: Apr 5, 2021

RCRA Very Small Quantity Generators List: RCRA VSQG

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

Government Publication Date: Apr 5, 2021

RCRA Non-Generators: RCRA NON GEN

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

Government Publication Date: Apr 5, 2021

Federal Engineering Controls-ECs: FED ENG

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Feb 23, 2021

Federal Institutional Controls- ICs: FED INST

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

Government Publication Date: Feb 23, 2021

Land Use Control Information System: LUCIS

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

Government Publication Date: Sep 1, 2006

Emergency Response Notification System: ERNS 1982 TO 1986

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

Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989

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

Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS

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

Government Publication Date: Nov 9, 2020

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

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jan 6, 2021

FEMA Underground Storage Tank Listing: FEMA UST

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

Government Publication Date: Dec 31, 2017

Facility Response Plan: FRP

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

Government Publication Date: Dec 2, 2020

Historical Gas Stations: HIST GAS STATIONS

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

Government Publication Date: Jul 1, 1930

Petroleum Refineries: REFN

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

Government Publication Date: Jul 10, 2020

Petroleum Product and Crude Oil Rail Terminals: BULK TERMINAL

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

Government Publication Date: Apr 28, 2020

LIEN on Property: SEMS LIEN

The EPA Superfund Enterprise Management System (SEMS) provides LIEN information on properties under the EPA Superfund Program.

Government Publication Date: Mar 23, 2021

Superfund Decision Documents: SUPERFUND ROD

This database contains a listing of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD), along with other associated memos and files. This information is maintained and made available by the US EPA (Environmental Protection Agency).

Government Publication Date: Jun 28, 2021

State

Brownfield Redevelopment Program: BROWNFIELDS

A list of sites in the Brownfield Redevelopment Program. This list is made available by the Kentucky Energy and Environment Cabinet (EEC).

Government Publication Date: Apr 22, 2021

State Leads Priority List: SHWS

State Leads Priority List that containins a listing of State Hazardous Waste sites. This list is maintained by The Kentucky Department of Environmental Protection (DEP). This database is state equivalent CERCLIS.

Government Publication Date: May 25, 2021

Delisted State Leads Priority List: DELISTED SHWS

This database contains a list of closed State Hazardous Waste sites that were removed from the Kentucky Department of Environmental Protection (DEP).

Government Publication Date: May 25, 2021

Solid Waste Facilities and Landfills: SWF/LF

A list of Solid Waste Facilities (SWF) and Landfills (LF) made available by the Kentucky Department of Environmental Protection (DEP). This list includes registered contained landfills, construction/demolition debris landfills, residual landfills and special waste landfills.

Government Publication Date: Apr 12, 2021

Historic Landfills: HIST LANDFILL

According to the Kentucky Department of Environmental Protection (DEP), before solid waste management was regulated in Kentucky, most towns or cities had a common location where household waste and a vast array of other materials were disposed. These "old town dumps" were the de facto landfill for the area, and were rarely operated in a manner consistent with current standards. In most cases they were not properly capped to prevent migration of contaminated leachate and other pollutants. Division records indicate more than 600 of these sites are scattered across the state. The DEP's Solid Waste Branch Closure Section addresses proper closure and remediation of these historic sites. Closure/remediation work is presently ongoing at several sites across the state.

Government Publication Date: Mar 24, 2014

SB193 Branch Site Inventory List: SB193

This list is comprised of sites that have performed permanent closure activities at regulated underground storage tank facilities and have known soil and/or groundwater contamination. Historical listing made available by the underground storage tank branch in the Department of Environmental Protection (DEP) of Kentucky State.

Government Publication Date: Apr 30, 1985

Ranking List for UST Facilities: PSTEAF

A list of UST facilities under site investigation which are eligible to receive reimbursement from Financial Responsibility Account (FRA) and Petroleum Storage Tank Account (PSTA) of the Petroleum Storage Tank Environmental Assurance Fund (PSTEAF). Reimbursements from the FRA and PSTA are determined by this ranking system. This list is maintained by the Kentucky Department of Environmental Protection (DEP).

Government Publication Date: May 1, 2021

Underground Storage Tanks: UST

A list of registered Underground Storage Tanks (USTs) maintained by the Underground Storage Tank Branch in the Kentucky Department of Environmental Protection (DEP).

Government Publication Date: May 3, 2021

Delisted Storage Tank: DELISTED STORAGE TANK

This database contains a list of closed storage tank sites that were removed from the Underground Storage Tank Branch in the Kentucky Department of Environmental Protection (DEP).

Government Publication Date: May 3, 2021

Sites with Engineering Controls: ENG

Sites on the Institutional Controls and State Leads Lists that have engineering controls in place; both lists made available by the Kentucky Department of Environmental Protection (DEP).

Government Publication Date: May 25, 2021

Sites with Institutional Controls: INST

Sites with institutional controls in place, provided by the Kentucky Department of Environmental Protection (DEP). Institutional controls are put in place to regulate activities on the property, such as a requirement that the property never be used for residential development or to prohibit the use of groundwater from below the property.

Government Publication Date: May 25, 2021

Voluntary Cleanup Program Sites: VCP

The Kentucky Department of Environmental Protection (DEP) maintains an inventory of sites that are in the Voluntary Cleanup Program.

Government Publication Date: Mar 29, 2021

Kentucky Brownfield Inventory: BROWNFIELD INV

Kentucky Brownfield Inventory consists primarily of properties that are receiving, or have received, assessments and/or cleanups under federal brownfield funding to states or local government entities. This list is managed by the Kentucky Department for Environmental Protection (DEP).

Government Publication Date: May 27, 2021

Tribal

Leaking Underground Storage Tanks (LUSTs) on Indian Lands: INDIAN LUST

LUSTs on Tribal/Indian Lands in Region 4, which includes Kentucky. There are no LUST records in Kentucky at this time.

Government Publication Date: Oct 14, 2017

Underground Storage Tanks (USTs) on Indian Lands: INDIAN UST

USTs on Tribal/Indian Lands in Region 4, which includes Kentucky. There are no UST records in Kentucky at this time.

Government Publication Date: Oct 14, 2017

Delisted Tribal Leaking Storage Tanks: DELISTED ILST

Leaking Underground Storage Tank facilities which have been removed from the Regional Tribal LUST lists made available by the EPA.

Government Publication Date: Apr 14, 2020

Delisted Tribal Underground Storage Tanks: DELISTED IUST

Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.

Government Publication Date: Apr 14, 2020

County

No County standard environmental record sources available for this State.

Additional Environmental Record Sources

Federal

PFOA/PFOS Contaminated Sites: PFAS NPL

List of sites where PFOA or PFOS contaminants have been found in drinking water or soil. Made available by the Federal Environmental Protection Agency (EPA).

Government Publication Date: Mar 1, 2021

Facility Registry Service/Facility Index: FINDS/FRS

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

Government Publication Date: Nov 2, 2020

Toxics Release Inventory (TRI) Program: TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U. S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Feb 19, 2020

Perfluorinated Alkyl Substances (PFAS) Releases: PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a Per- or polyfluorinated alkyl substance (PFAS) included in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances. The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment.

Government Publication Date: Feb 19, 2020

Perfluorinated Alkyl Substances (PFAS) Water Quality: PFAS WATER

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

Government Publication Date: Jul 20, 2020

Hazardous Materials Information Reporting System: HMIRS

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

Government Publication Date: Sep 1, 2020

National Clandestine Drug Labs: NCDL

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

Government Publication Date: Oct 5, 2020

Toxic Substances Control Act: TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Apr 11, 2019

Hist TSCA: HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing: FTTS ADMIN

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

Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing: FTTS INSP

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

Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List: PRP

Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.

Government Publication Date: Apr 27, 2021

State Coalition for Remediation of Drycleaners Listing: SCRD DRYCLEANER

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS): ICIS

The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance program activities. These activities include Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.

Government Publication Date: Mar 24, 2021

Drycleaner Facilities: FED DRYCLEANERS

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) online search. The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

Government Publication Date: May 5, 2021

Delisted Drycleaner Facilities: DELISTED FED DRY

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

Government Publication Date: May 5, 2021

Formerly Used Defense Sites: FUDS

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DoD) is responsible for an environmental restoration. This list is published by the U.S. Army Corps of Engineers.

Government Publication Date: Jan 28, 2020

Former Military Nike Missile Sites: FORMER NIKE

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

Government Publication Date: Dec 1, 1984

PHMSA Pipeline Safety Flagged Incidents: PIPELINE INCIDENT

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

Government Publication Date: Jul 7, 2020

Material Licensing Tracking System (MLTS): MLTS

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

Government Publication Date: May 11, 2021

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

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

Government Publication Date: Jan 31, 2010

Mines Master Index File: MINES

The Master Index File (MIF) contains mine identification numbers issued by the Department of Labor Mine Safety and Health Administration (MSHA) for mines active or opened since 1971. Note that addresses may or may not correspond with the physical location of the mine itself.

Government Publication Date: Nov 3, 2020

Surface Mining Control and Reclamation Act Sites: SMCRA

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of Abandoned Mine Land (AML) impacts, as well as information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Government Publication Date: Dec 18, 2020

Mineral Resource Data System: MRDS

The Mineral Resource Data System (MRDS) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps.

Government Publication Date: Mar 15, 2006

Uranium Mill Tailings Radiation Control Act Sites: URANIUM

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

Government Publication Date: Mar 4, 2017

Alternative Fueling Stations: ALT FUELS

List of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE). The National Renewable Energy Laboratory (NREL) obtains information about new stations from trade media, Clean Cities coordinators, a Submit New Station form on the Station Locator website, and through collaborating with infrastructure equipment and fuel providers, original equipment manufacturers (OEMs), and industry groups.

Government Publication Date: Apr 27, 2021

Registered Pesticide Establishments: SSTS

List of active EPA-registered foreign and domestic pesticide-producing and device-producing establishments based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that facilities producing pesticides, active ingredients, or devices be registered. The list of establishments is made available by the EPA.

Government Publication Date: Apr 13, 2021

Polychlorinated Biphenyl (PCB) Notifiers: PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Nov 19, 2020

State

Incidents: SPILLS

A list of incidents reported to the Kentucky Department of Environmental Protection (Kentucky DEP) where hazardous materials may have been spilled and/or released.

Government Publication Date: May 27, 2021

Clandestine Drug Laboratory Locations: CDL

The Kentucky Department of Environmental Protection's (DEP) Division of Waste Management Superfund Branch maintains this list of clandestine methamphetamine laboratory locations.

Government Publication Date: Oct 2, 2020

Tribal

No Tribal additional environmental record sources available for this State.

County

No County additional environmental record sources available for this State.

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Phase I ESA
Caldwell Solar Site Additional Area
Fredonia, Kentucky

B

HISTORIC RESEARCH DOCUMENTATION

TOPOGRAPHIC MAPS

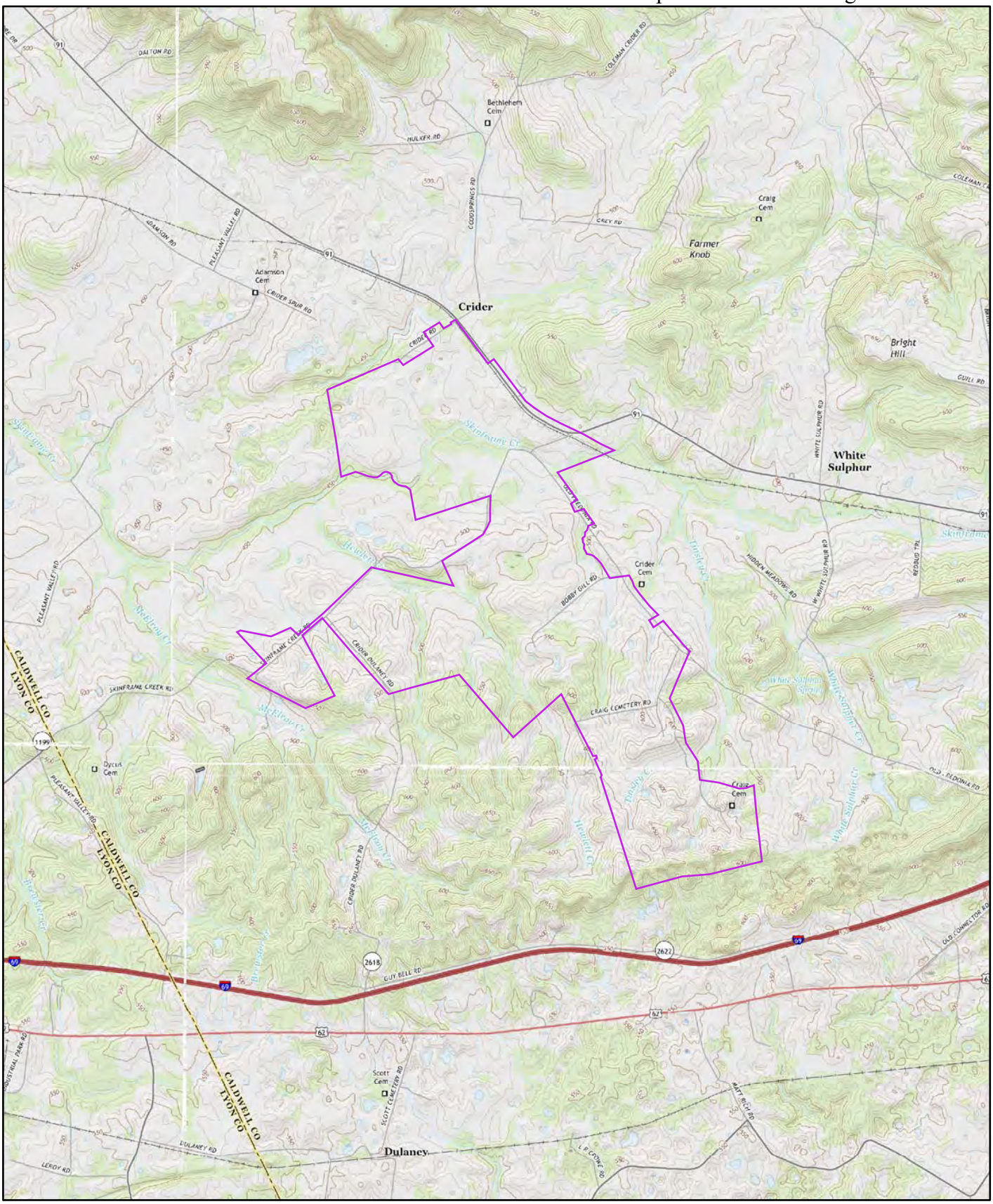
Project Property:	Caldwell Solar Site n/a Fredonia KY
Project No:	E320201000
Requested By:	Cardno Inc.
Order No:	21070600556
Date Completed:	July 07, 2021

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

We have searched USGS collections of current topographic maps and historical topographic maps for the project property. Below is a list of maps found for the project property and adjacent area. Maps are from 7.5 and 15 minute topographic map series, if available.

Year	Map Series
2016	7.5
1967	7.5
1954	7.5
1910	15
1908	15

Topographic Maps included in this report are produced by the USGS and are to be used for research purposes including a phase I report. Maps are not to be resold as commercial property.
No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by ERIS Information Inc.(in the US) and ERIS Information Limited Partnership (in Canada), both doing business as 'ERIS', using Topographic Maps produced by the USGS. This maps contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein. Although ERIS has endeavored to present you with information that is accurate, ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.



2016

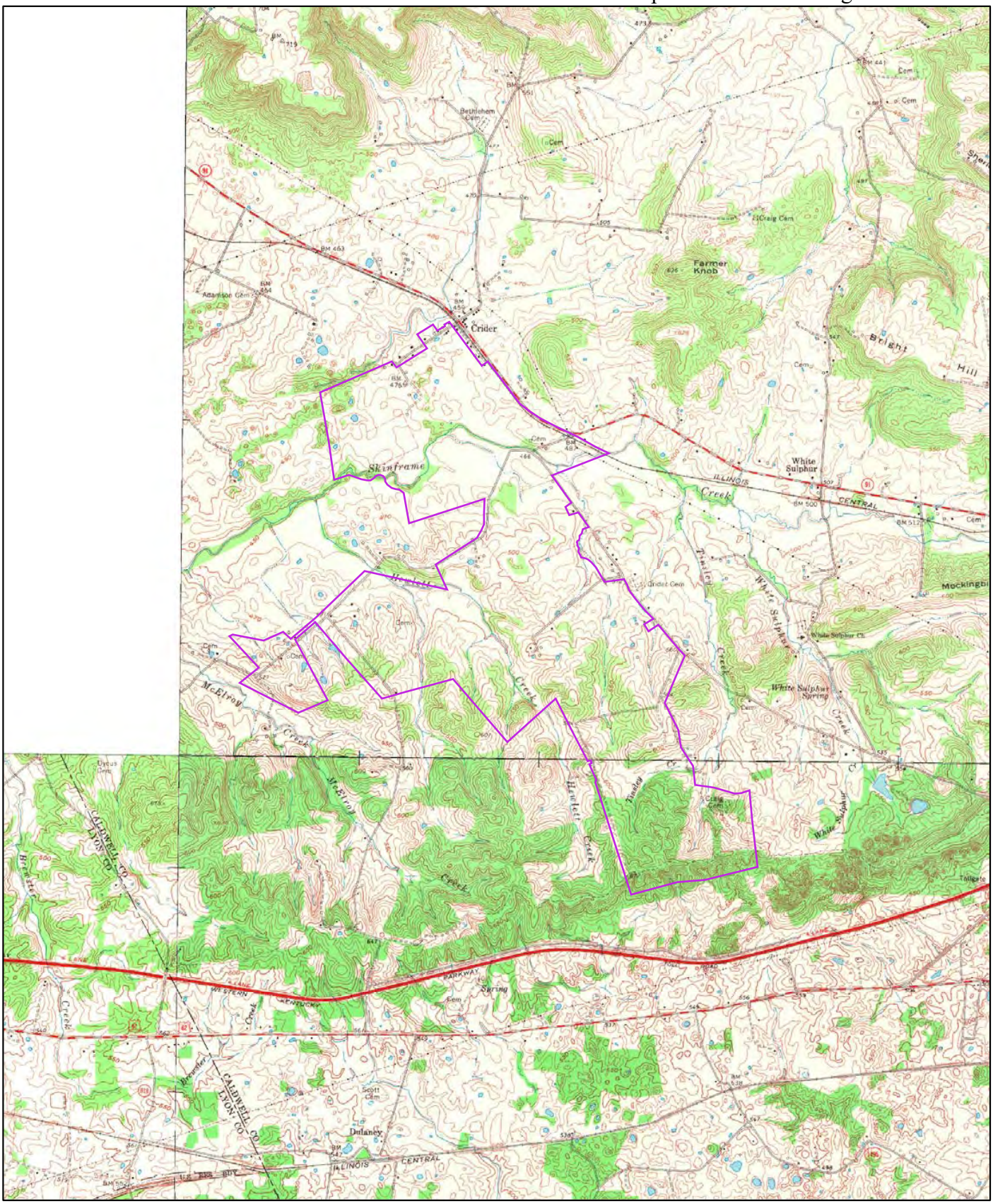
0 0.2 0.4 0.8 1.2 1.6 Miles

Order No. 21070600556

Quadrangle(s): Crider,KY; Princeton West,KY

Source: USGS 7.5 Minute Topographic Map

ERIS



1967

0 0.2 0.4 0.8 1.2 1.6 Miles

Order No. 21070600556

Quadrangle(s): Crider,KY; Princeton West,KY

Source: USGS 7.5 Minute Topographic Map

ERIS

1954

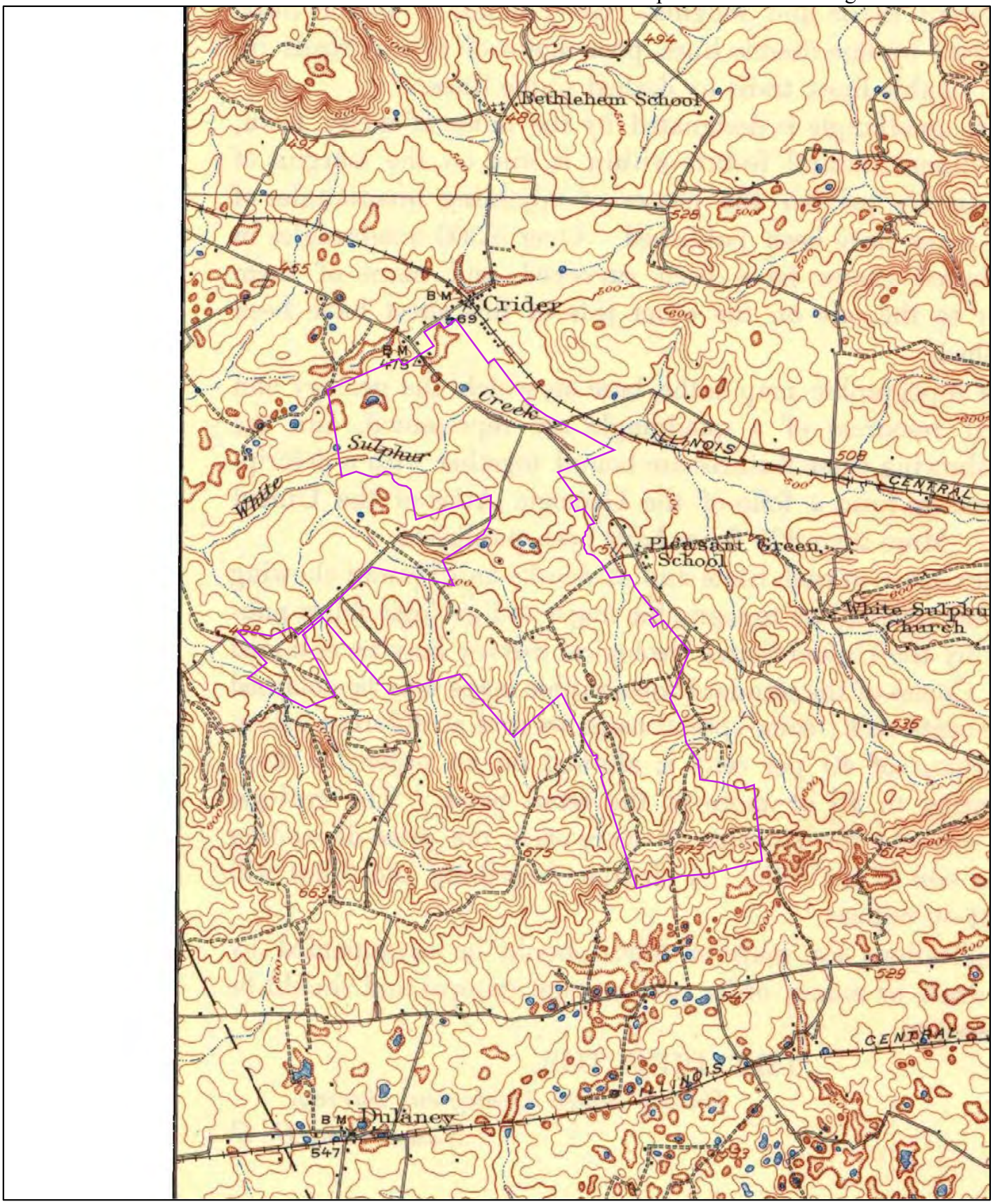
0 0.2 0.4 0.8 1.2 1.6 Miles

Order No. 21070600556

Quadrangle(s): Crider,KY; Princeton West,KY

Source: USGS 7.5 Minute Topographic Map

ERIS



1910

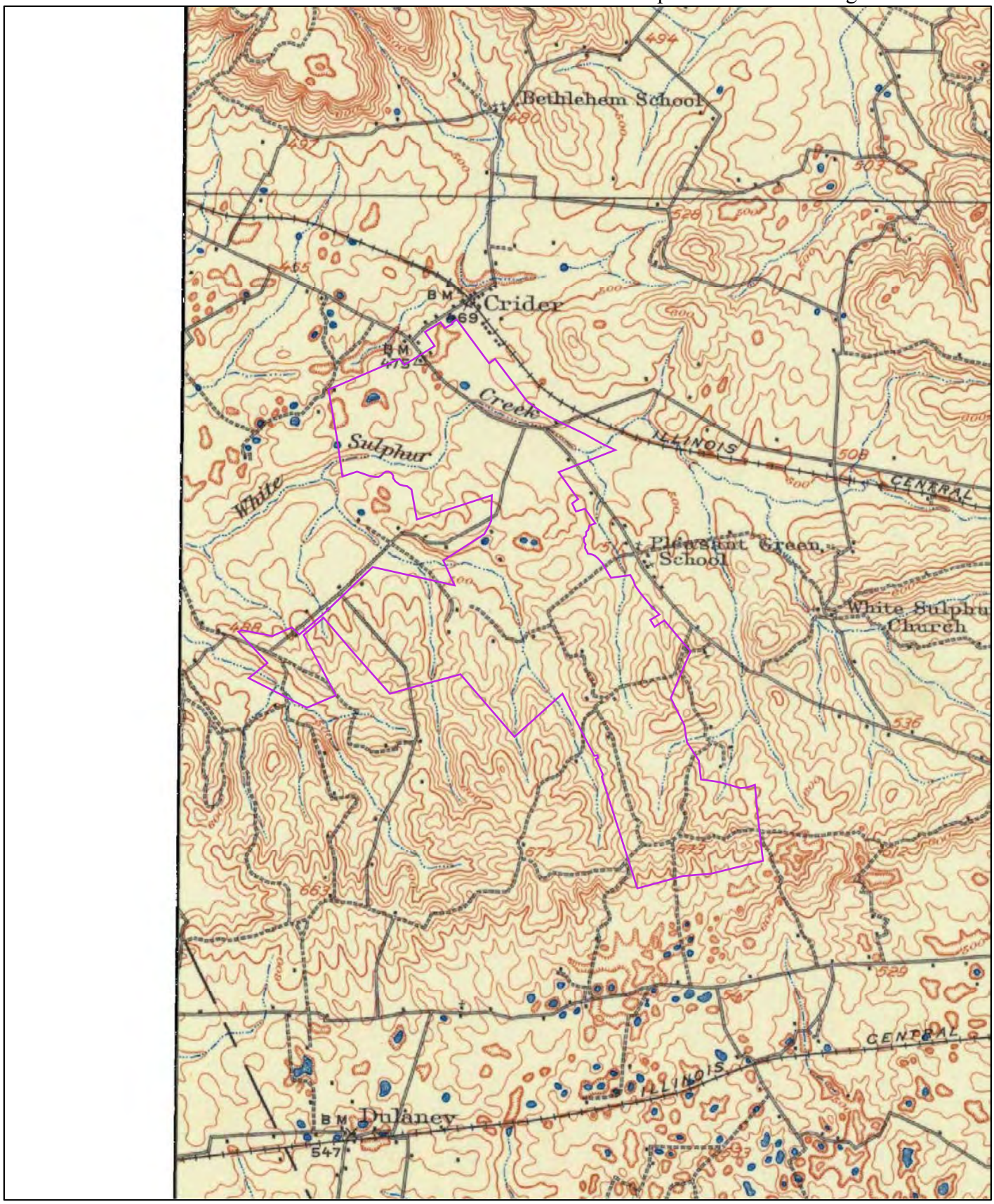
0 0.2 0.4 0.8 1.2 1.6 Miles

Order No. 21070600556

Quadrangle(s): Princeton,KY

Source: USGS 15 Minute Topographic Map

ERIS



1908

0 0.2 0.4 0.8 1.2 1.6 Miles

Order No. 21070600556

Quadrangle(s): Princeton,KY

Source: USGS 15 Minute Topographic Map

HISTORICAL AERIALS

Project Property:	Caldwell Solar Site n/a Fredonia KY
Requested By:	Cardno Inc.
Order No:	21070600556
Data Completed:	July 13,2021

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

Date	Source	Scale	Comments
2020	National Agriculture Information Program	1" to 1700'	
2014	National Agriculture Information Program	1" to 1700'	
2008	National Agriculture Information Program	1" to 1700'	
2006	National Agriculture Information Program	1" to 1700'	
2004	National Agriculture Information Program	1" to 1700'	
1998	US Geological Survey	1" to 1700'	
1983	National High Altitude Photography	1" to 1700'	
1971	National Aeronautics Space Administration	1" to 1700'	
1967	US Geological Survey	1" to 1700'	
1952	US Geological Survey	1" to 1700'	

2020

2014

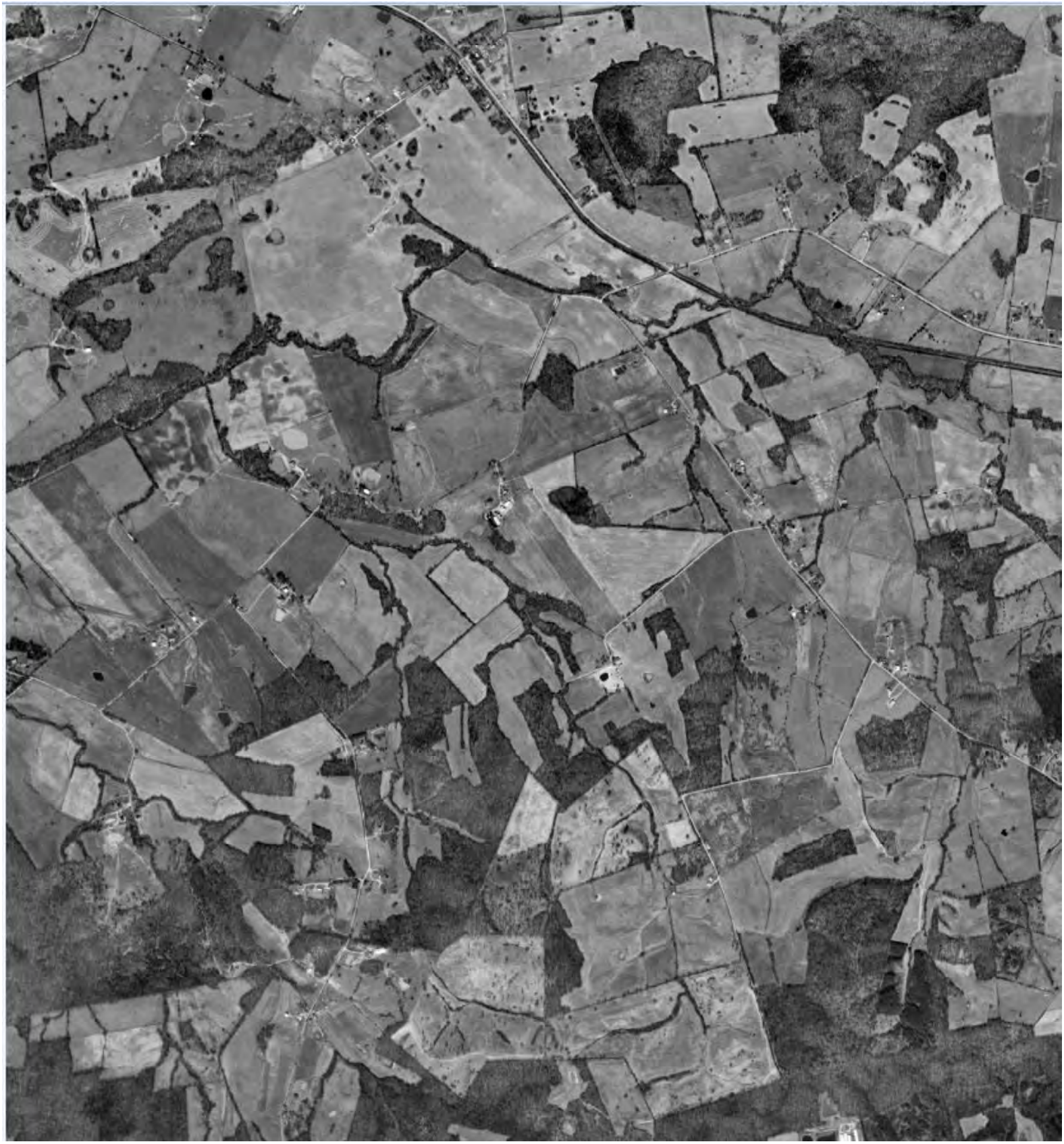
2008

2006

2004

1998

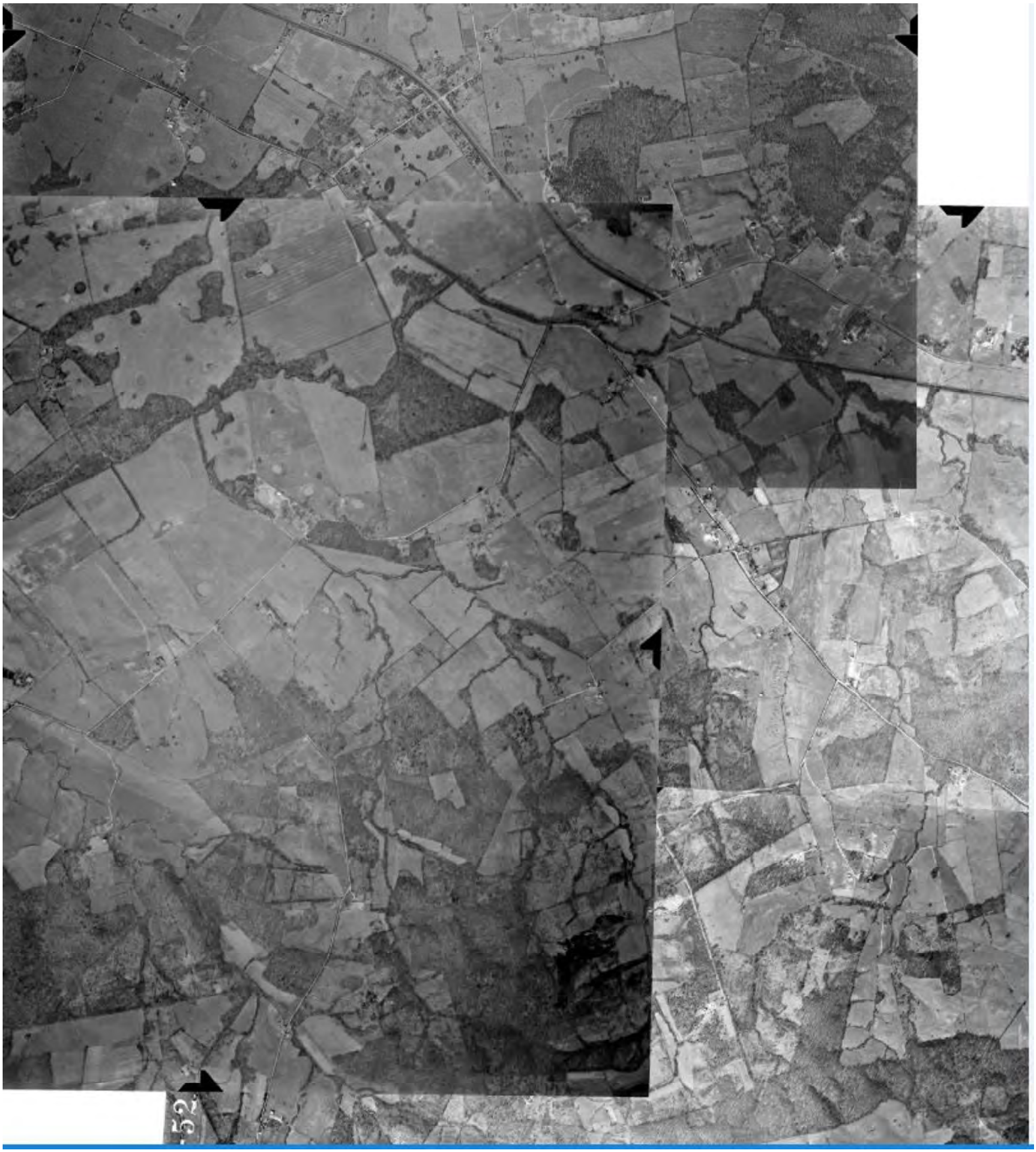
1983



1971

1967

1952



FIRE INSURANCE MAPS

Project Property:	Caldwell Solar Site n/a Fredonia KY
Project No:	E320201000
Requested By:	Cardno Inc.
Order No:	21070600556
Date Completed:	July 07, 2021

Please note that no information was found for your site or adjacent properties.

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

PSR
PHYSICAL SETTING REPORT

Property Information

Order Number:		21070600556p
Date Completed:		July 7, 2021
Project Number:		E320201000
Project Property:		Caldwell Solar Site n/a Fredonia KY
Coordinates:		
	Latitude:	37.13668512
	Longitude:	-87.96900806
	UTM Northing:	4110474.87368 Meters
	UTM Easting:	413934.923526 Meters
	UTM Zone:	UTM Zone 16S
	Elevation:	540.75 ft
	Slope Direction:	WSW

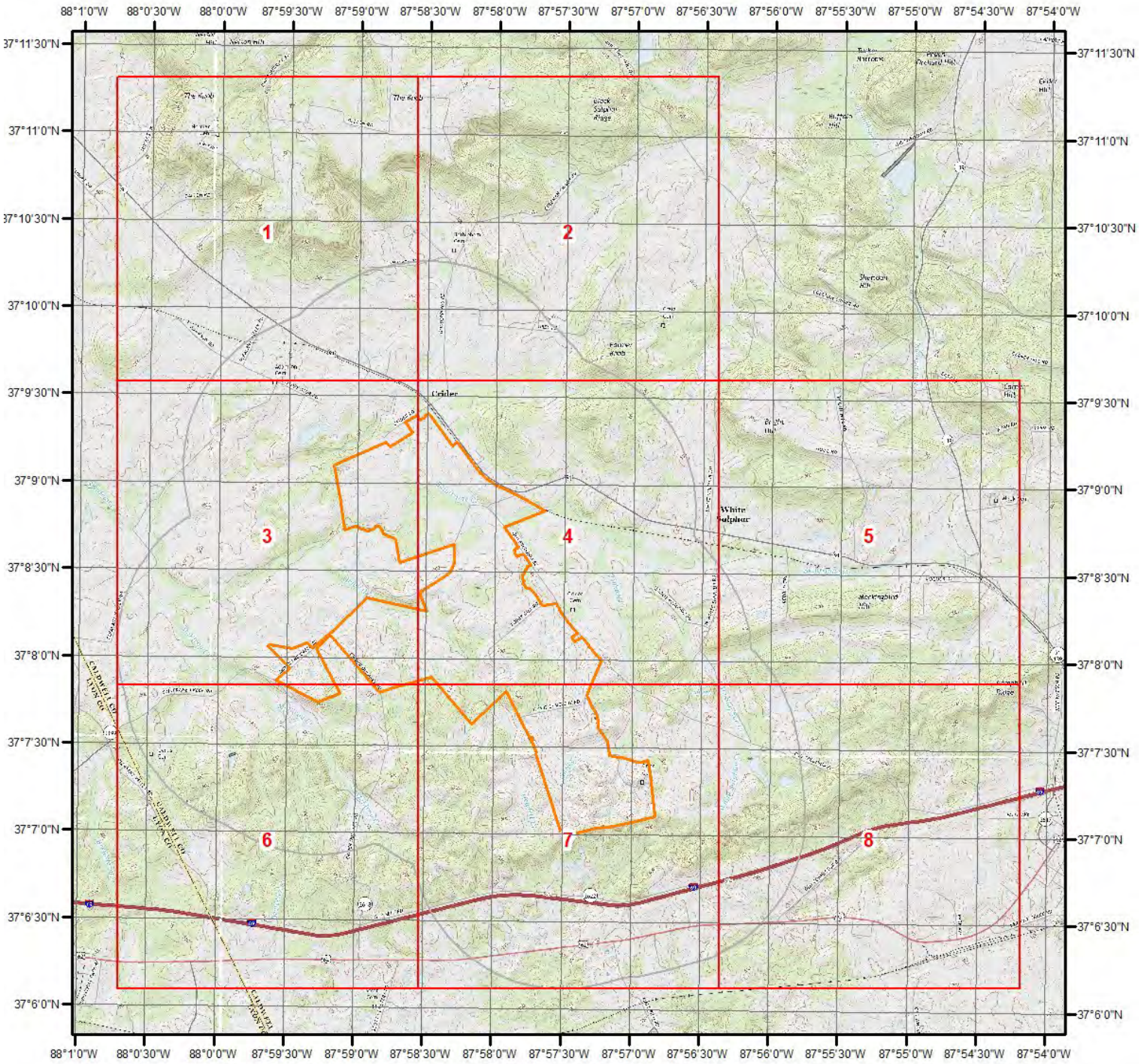
The ERIS ***Physical Setting Report - PSR*** provides comprehensive information about the physical setting around a site and includes a complete overview of topography and surface topology, in addition to hydrologic, geologic and soil characteristics. The location and detailed attributes of oil and gas wells, water wells, public water systems and radon are also included for review.

The compilation of both physical characteristics of a site and additional attribute data is useful in assessing the impact of migration of contaminants and subsequent impact on soils and groundwater.

Disclaimer

This Report does not provide a full environmental evaluation for the site or adjacent properties. Please see the terms and disclaimer at the end of the Report for greater detail.

Topographic Information



Current USGS Topo (2016)

0 0.2 0.4 0.8 1.2 1.6 2 2.4 Miles

N

Quadrangle(s): Crider,KY; Eddyville,KY; Fredonia,KY; Olney,KY; Princeton East,KY; Princeton West,KY

Source: USGS 7.5 Minute Topographic Map

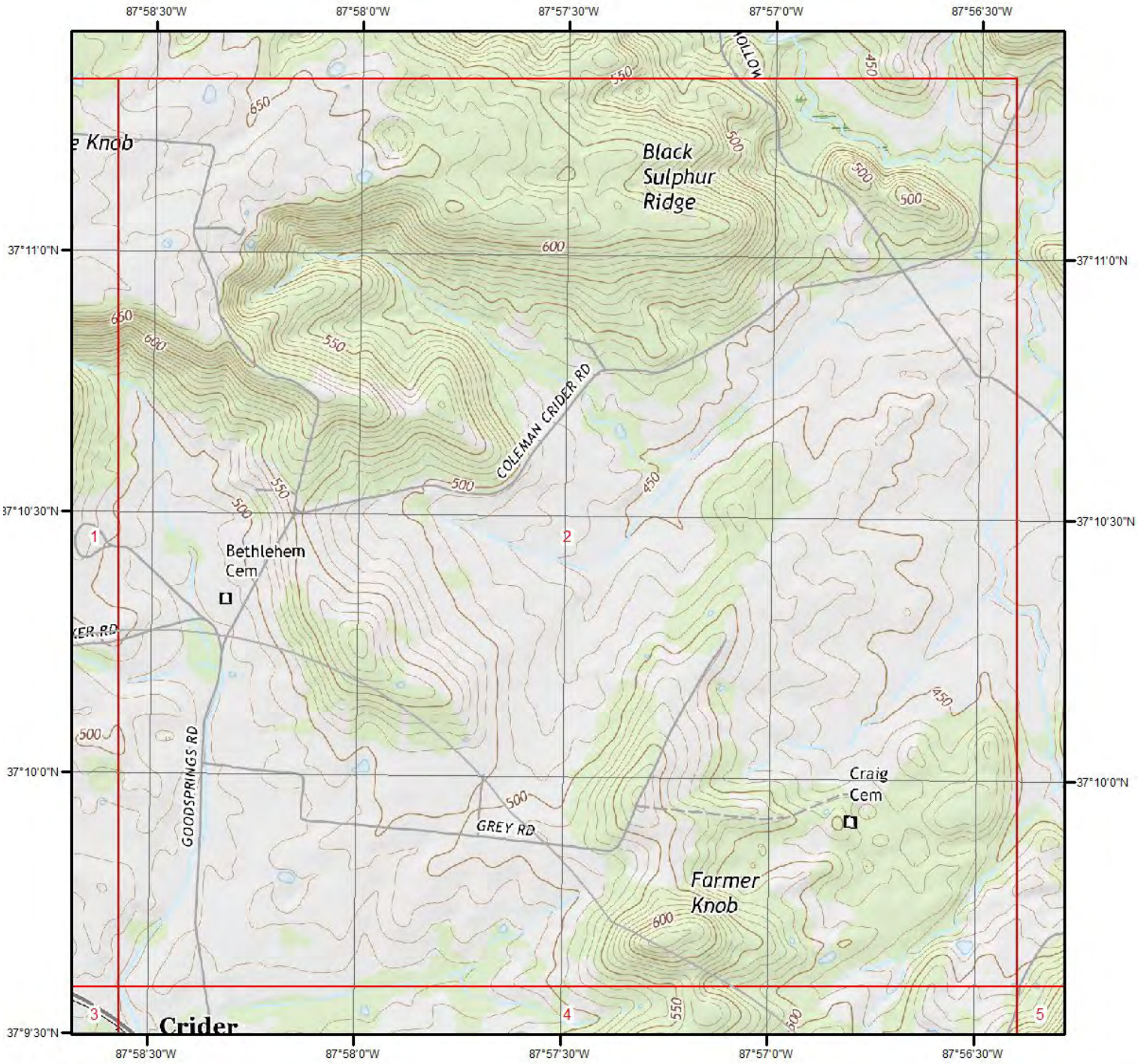
Topographic Information

Current USGS Topo - Page 1

Quadrangle(s): Crider,KY; Fredonia,KY

Source: USGS 7.5 Minute Topographic Map

Topographic Information



Current USGS Topo - Page 2

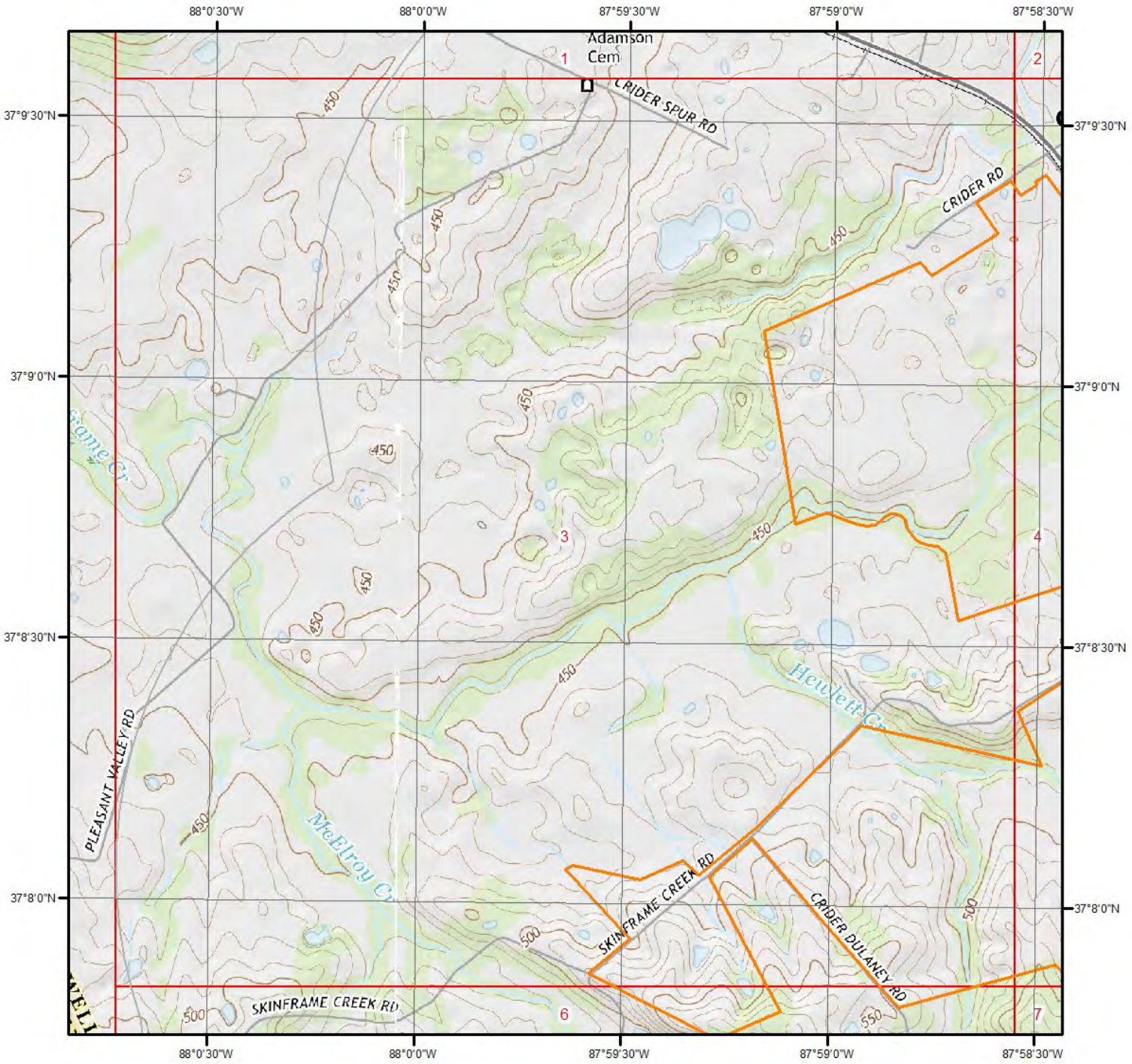
0 0.2 0.4 0.8 Miles

N

Quadrangle(s): Crider,KY

Source: USGS 7.5 Minute Topographic Map

Topographic Information



Current USGS Topo - Page 3

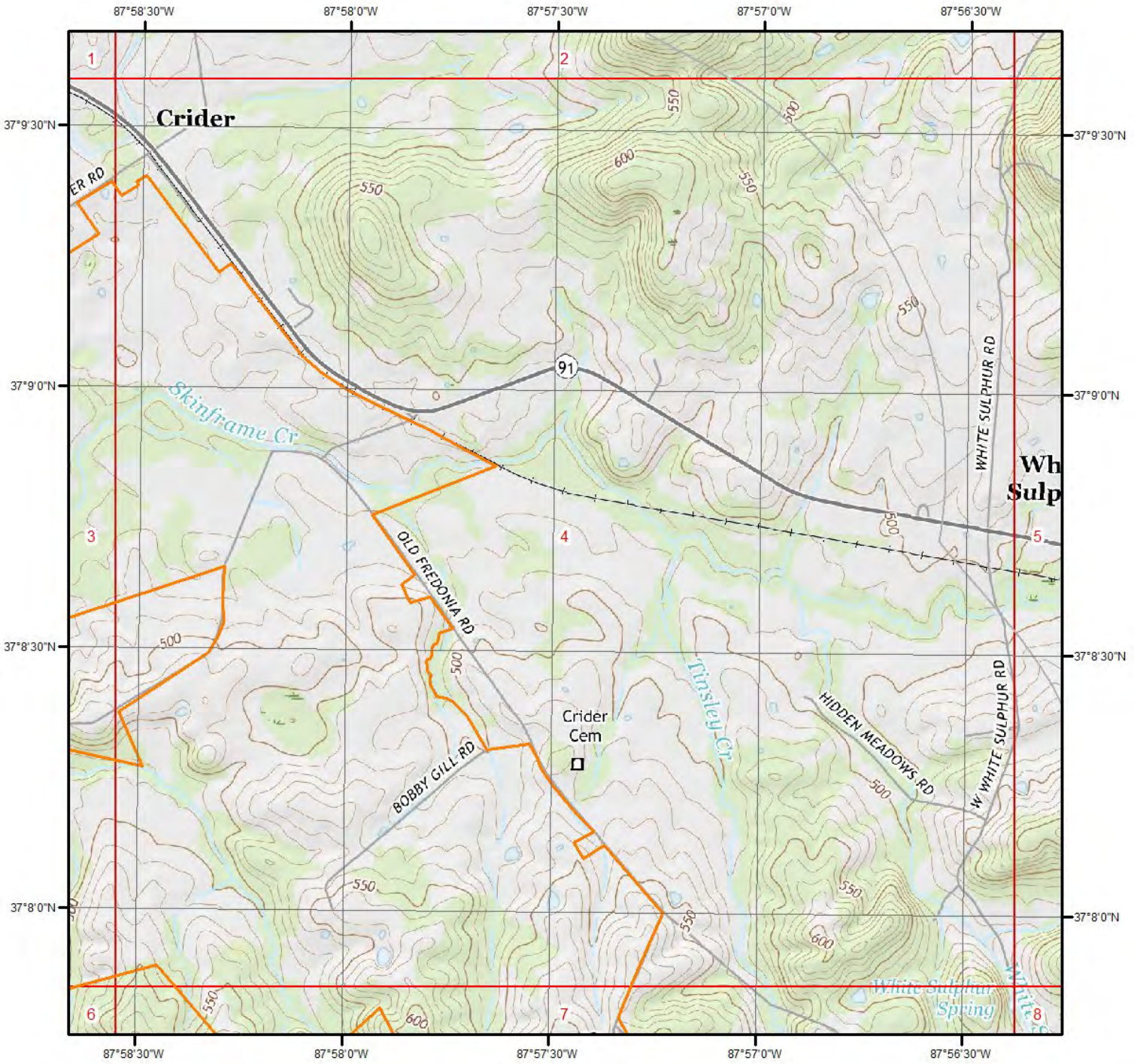
0 0.2 0.4 0.8 Miles

N

Quadrangle(s): Crider,KY; Fredonia,KY

Source: USGS 7.5 Minute Topographic Map

Topographic Information



Current USGS Topo - Page 4

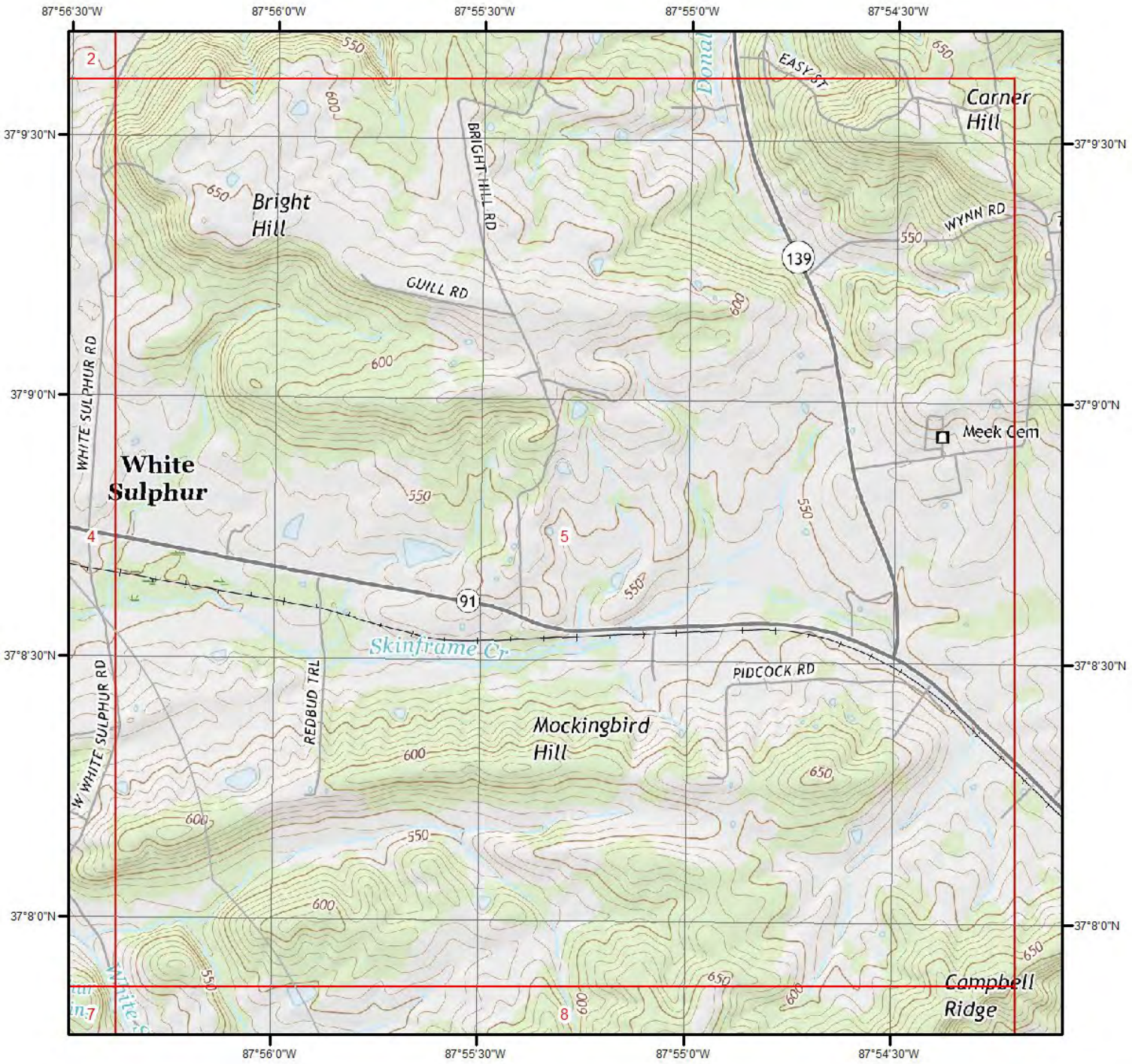
0 0.2 0.4 0.8 Miles

N

Quadrangle(s): Crider,KY

Source: USGS 7.5 Minute Topographic Map

Topographic Information



Current USGS Topo - Page 5

0 0.2 0.4 0.8 Miles

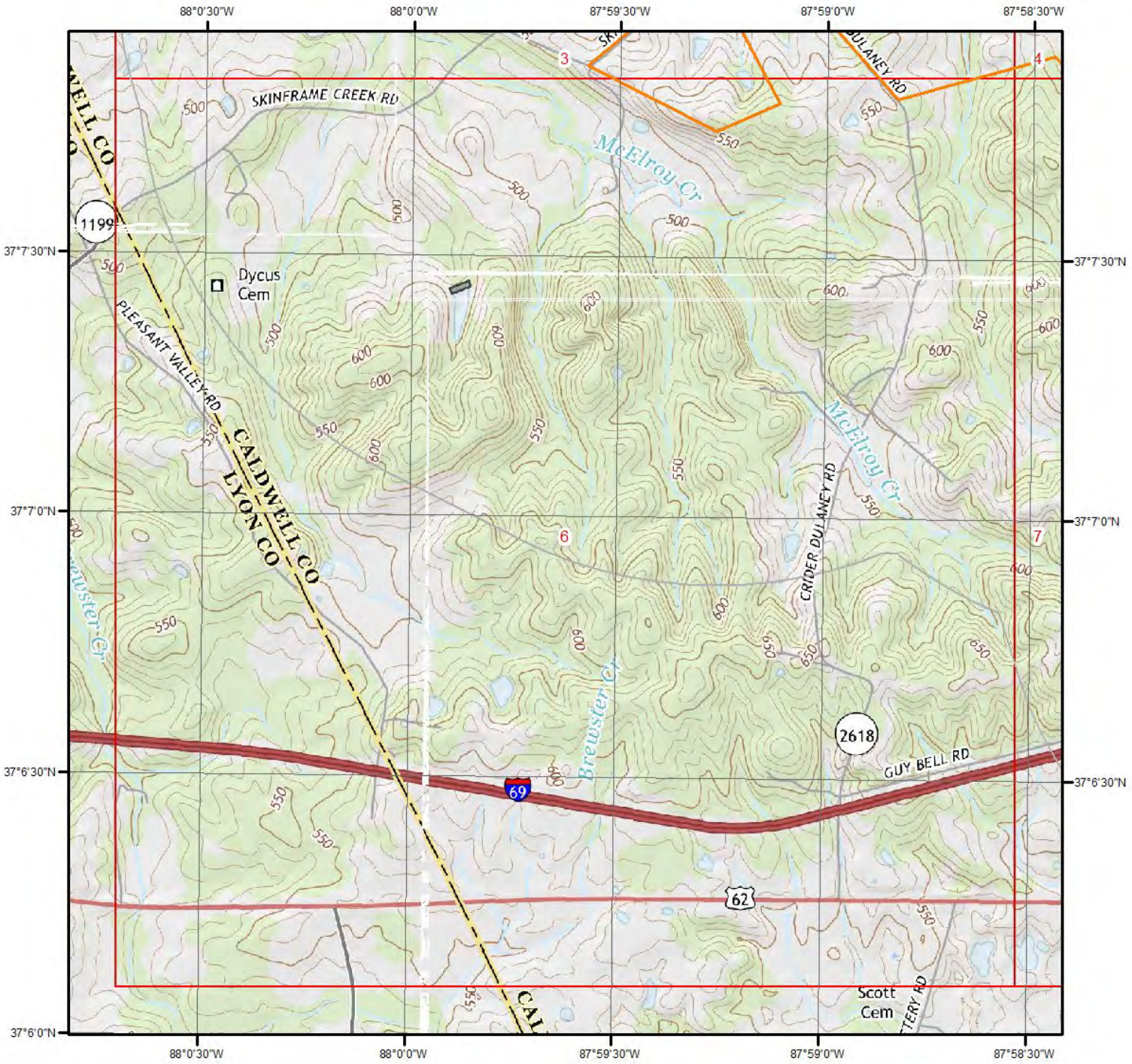
N

Quadrangle(s): Crider,KY

Source: USGS 7.5 Minute Topographic Map

ERIS

Topographic Information



Current USGS Topo - Page 6

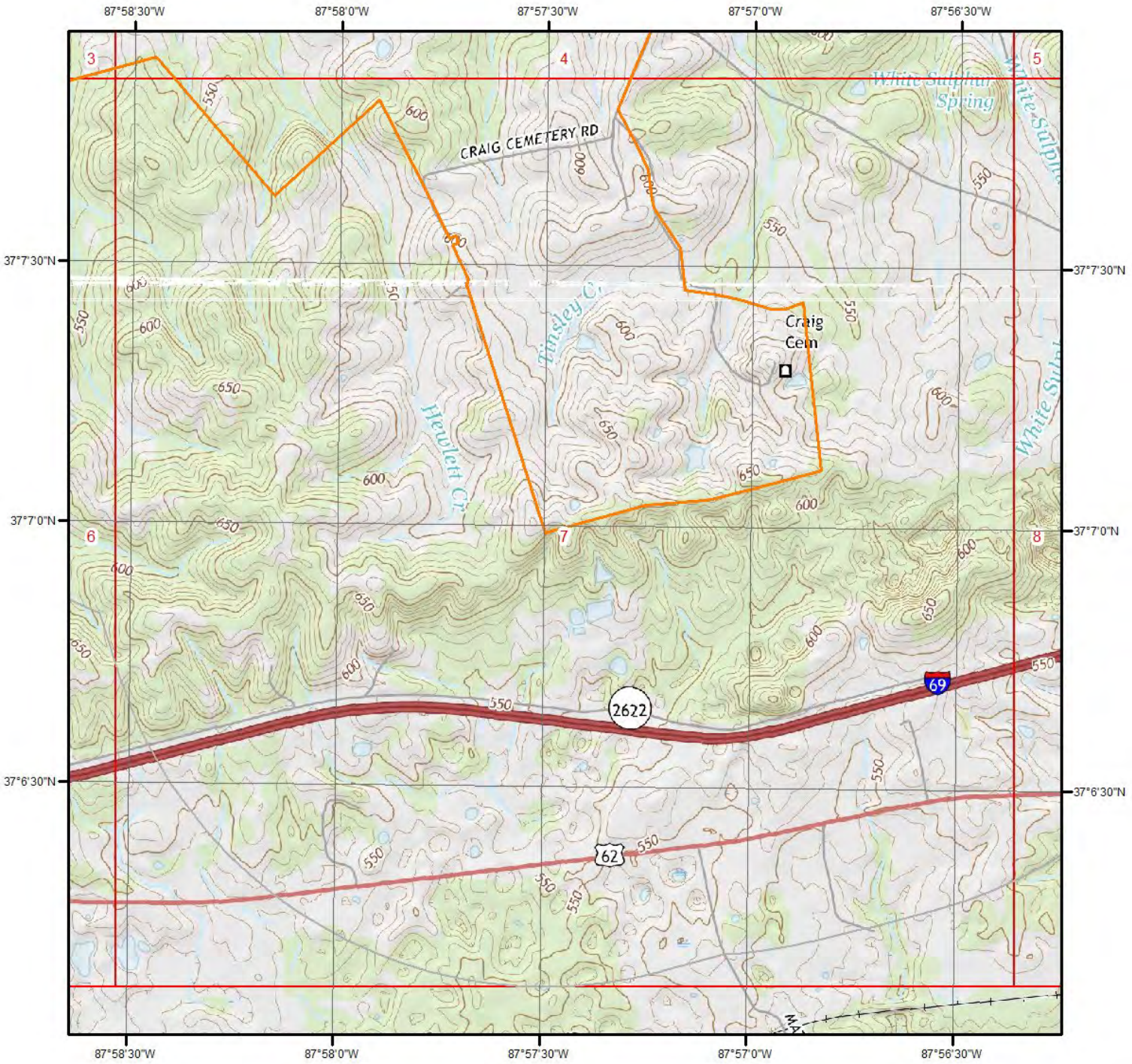
0 0.2 0.4 0.8 Miles

N

Quadrangle(s): Crider,KY; Eddyville,KY; Fredonia,KY; Princeton West,KY

Source: USGS 7.5 Minute Topographic Map

Topographic Information



Current USGS Topo - Page 7

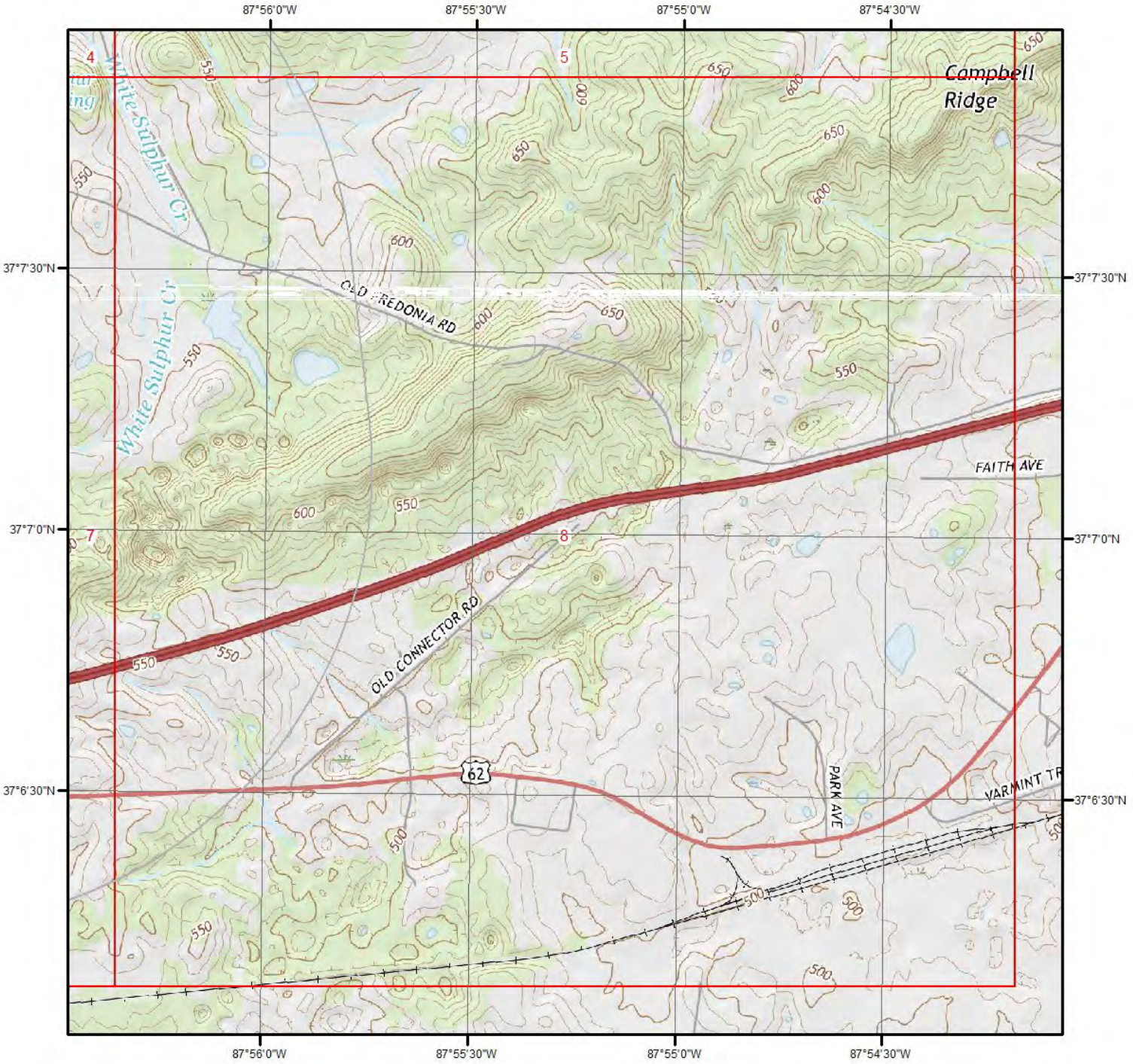
0 0.2 0.4 0.8 Miles

N

Quadrangle(s): Crider,KY; Princeton West,KY

Source: USGS 7.5 Minute Topographic Map

Topographic Information



Current USGS Topo - Page 8

0 0.2 0.4 0.8 Miles

N

Quadrangle(s): Crider,KY; Princeton West,KY

Source: USGS 7.5 Minute Topographic Map

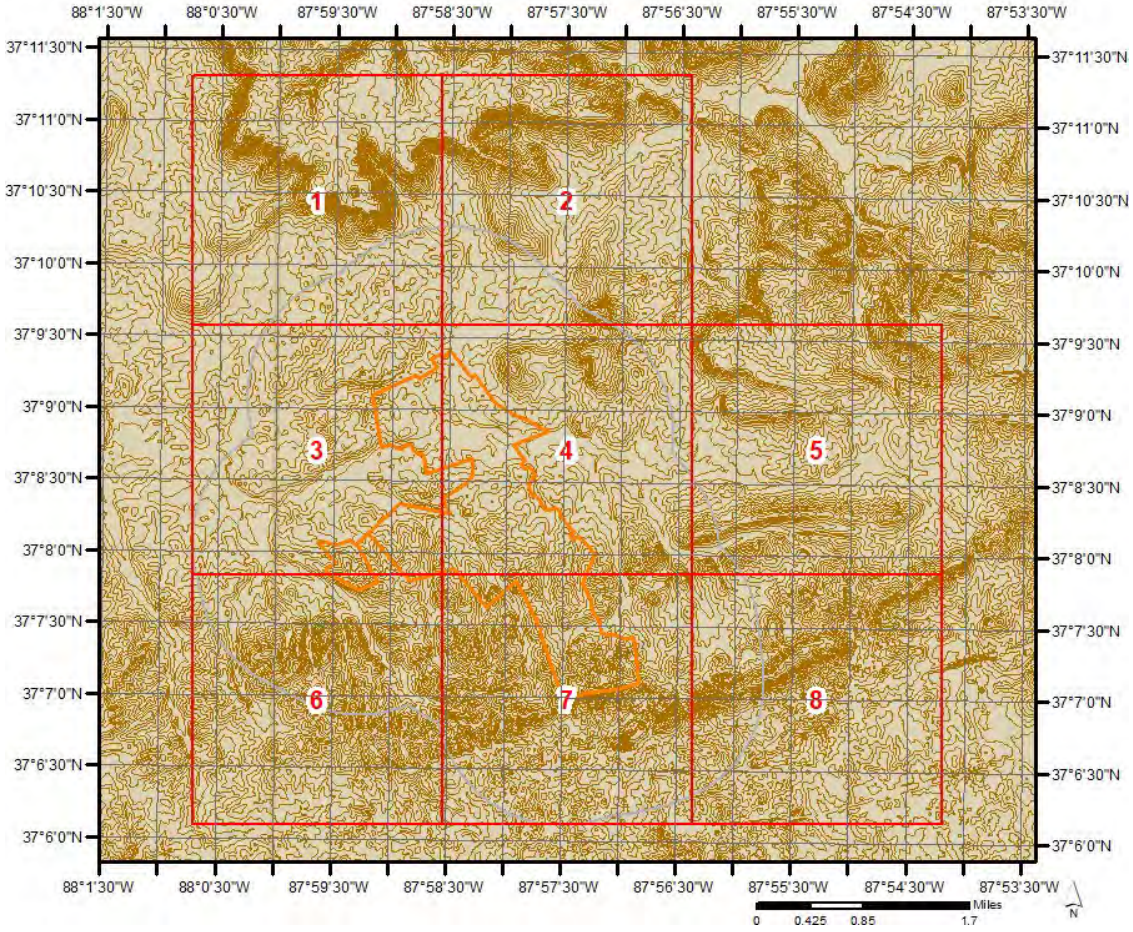
ERIS

Topographic Information

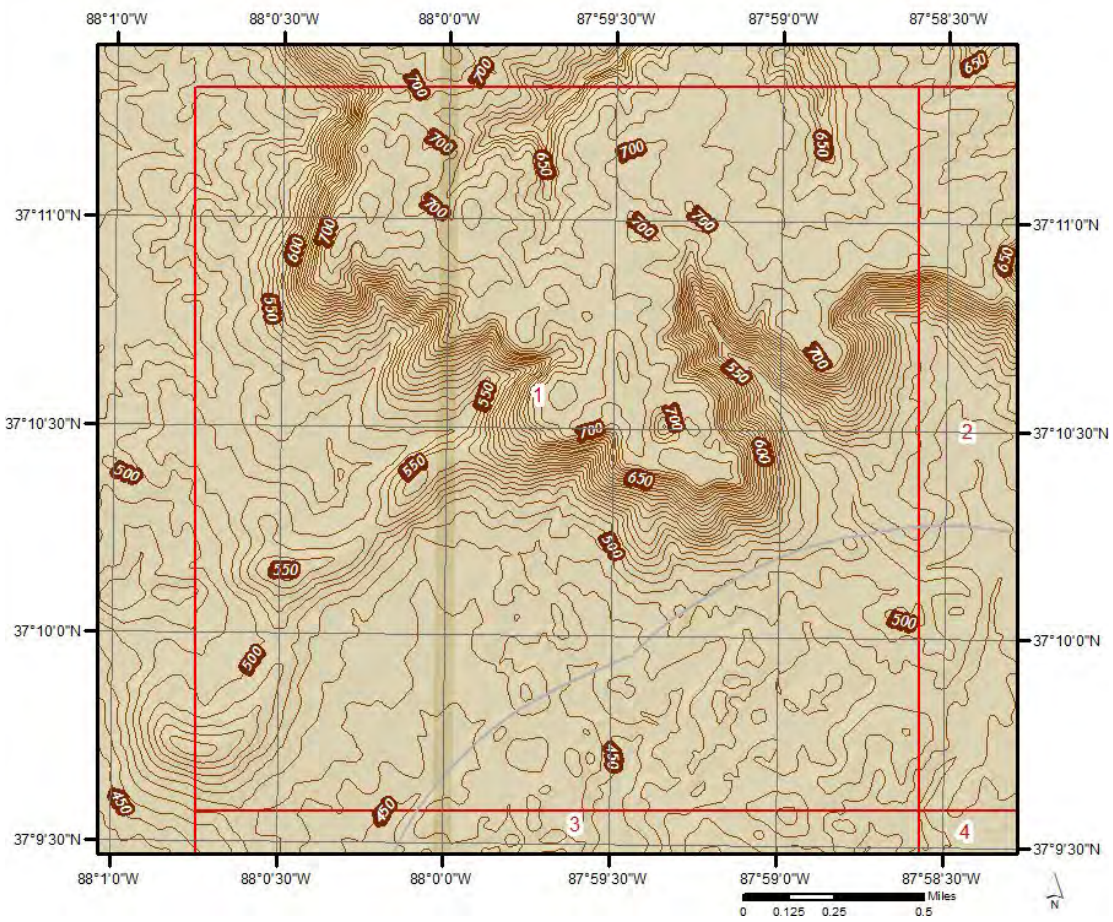
The previous topographic map(s) are created by seamlessly merging and cutting current USGS topographic data. Below are shaded relief map(s), derived from USGS elevation data to show surrounding topography in further detail.

Topographic information at project property:

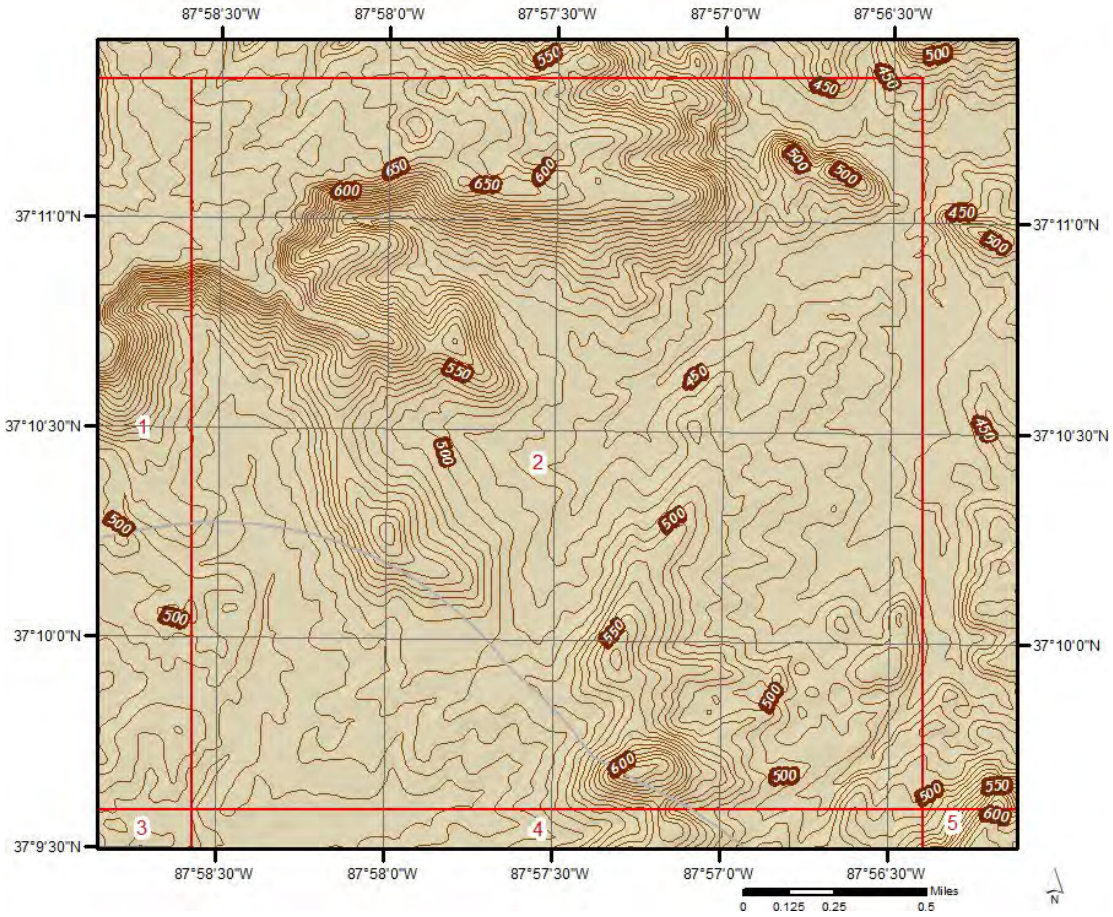
Elevation:	540.75 ft
Slope Direction:	WSW



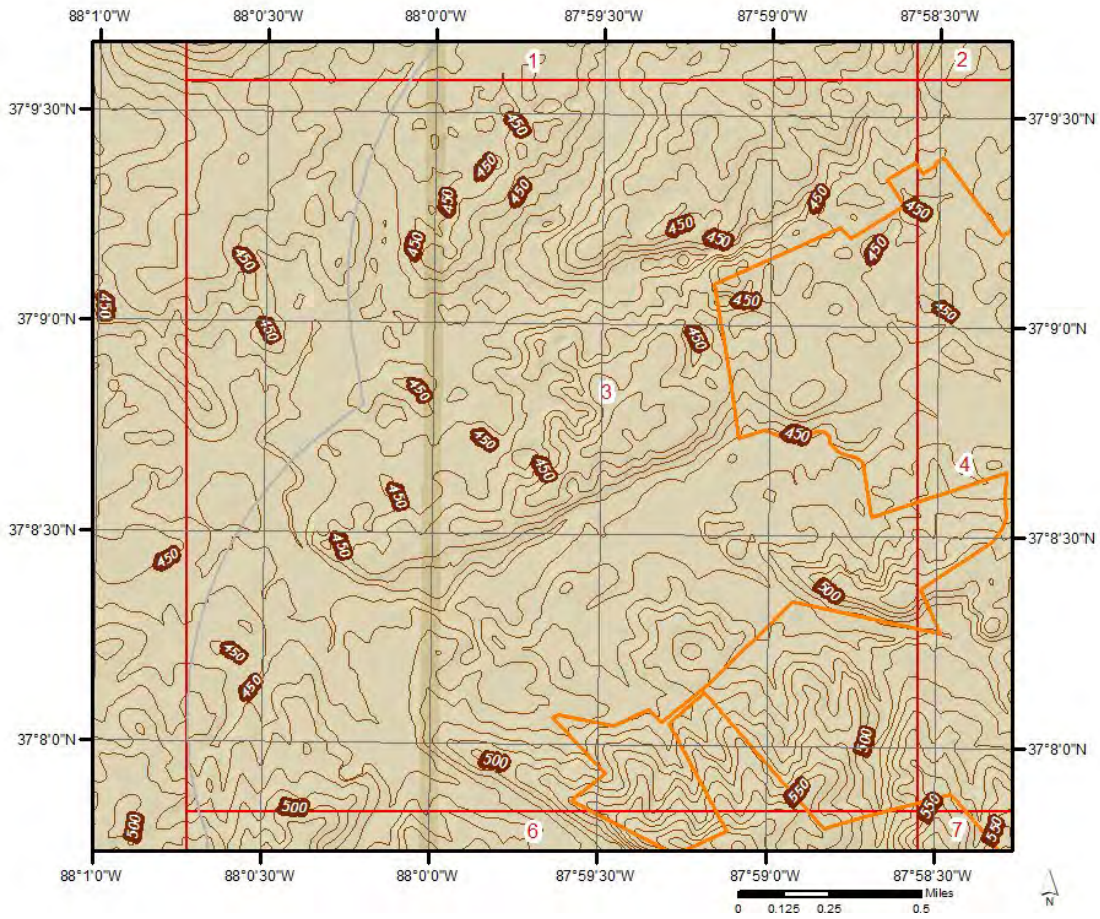
Topographic Information



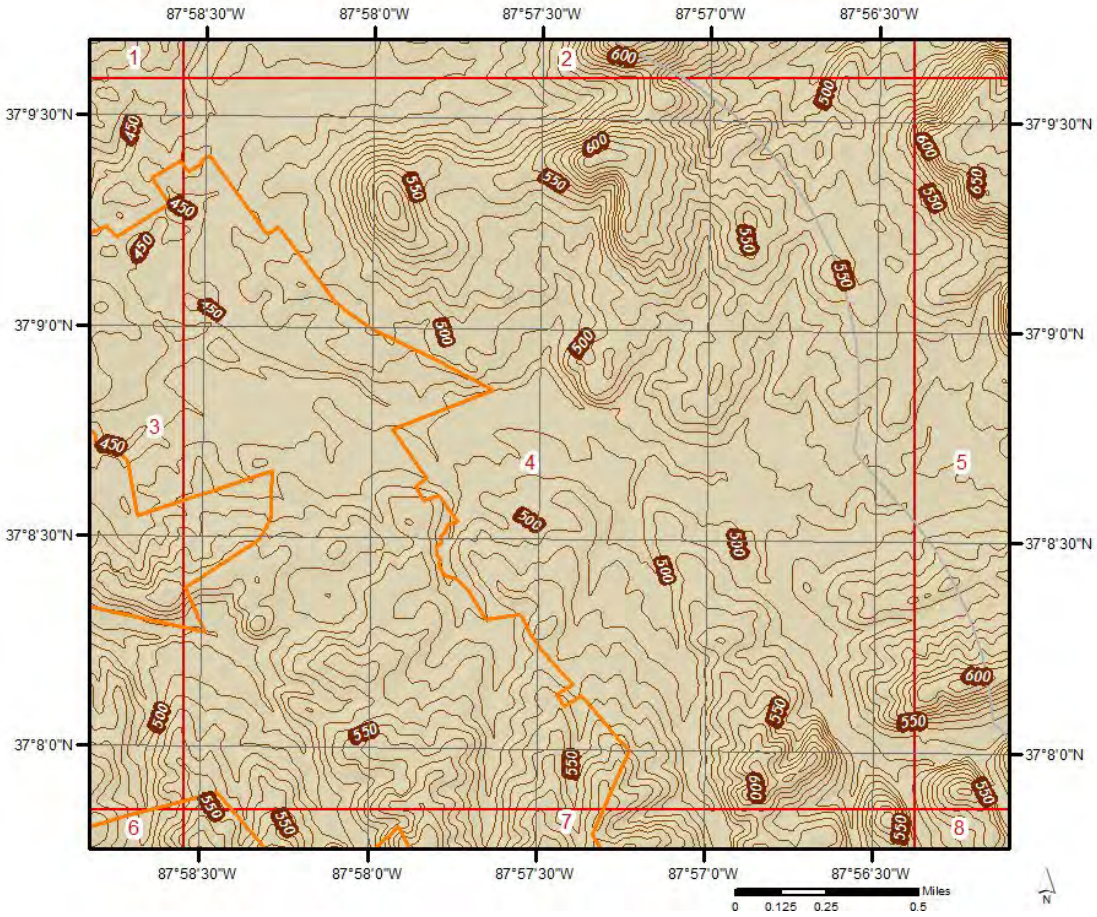
Topographic Information



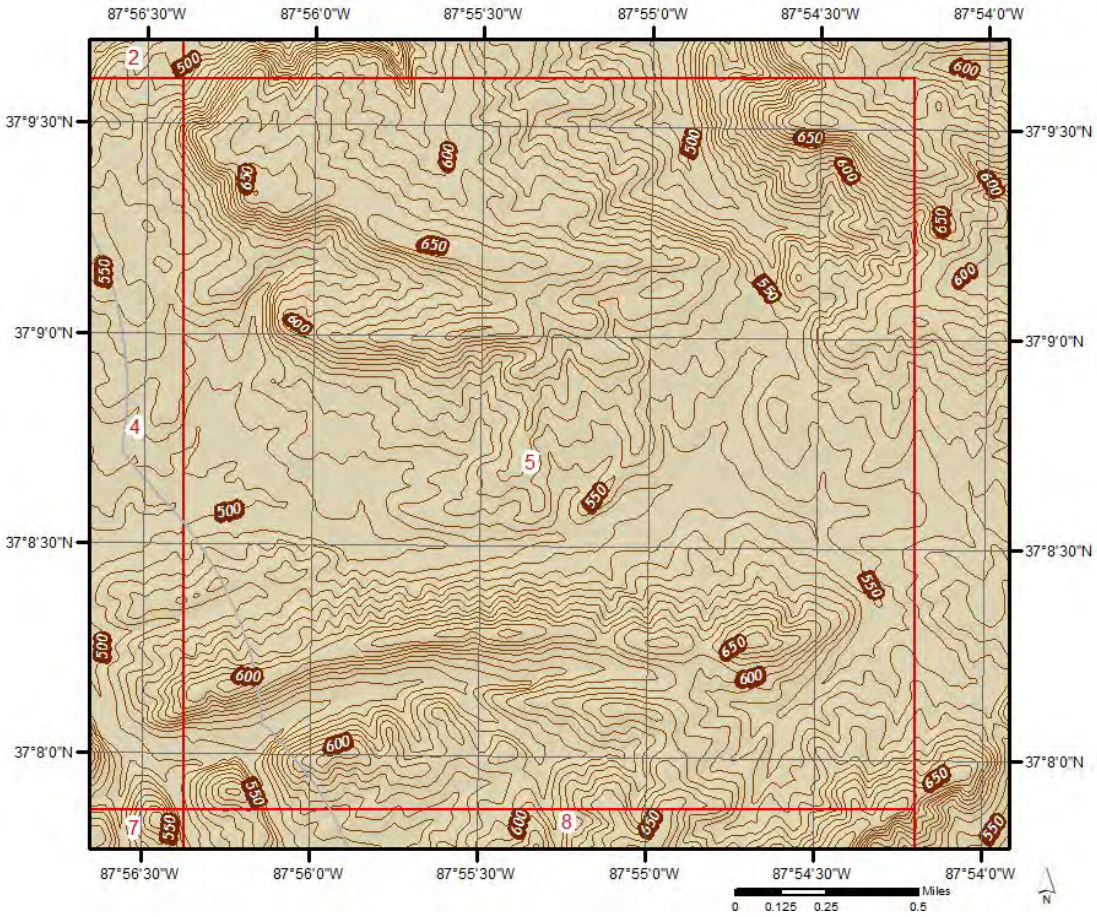
Topographic Information



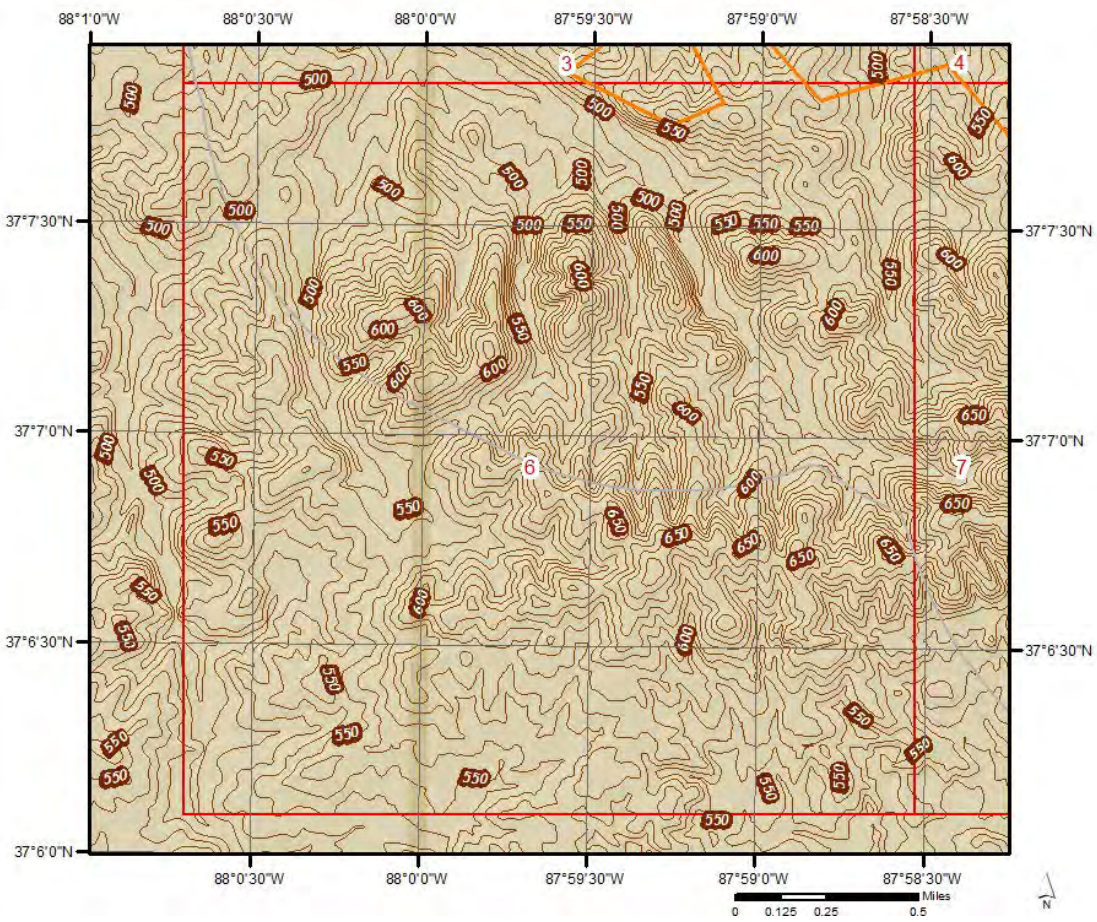
Topographic Information



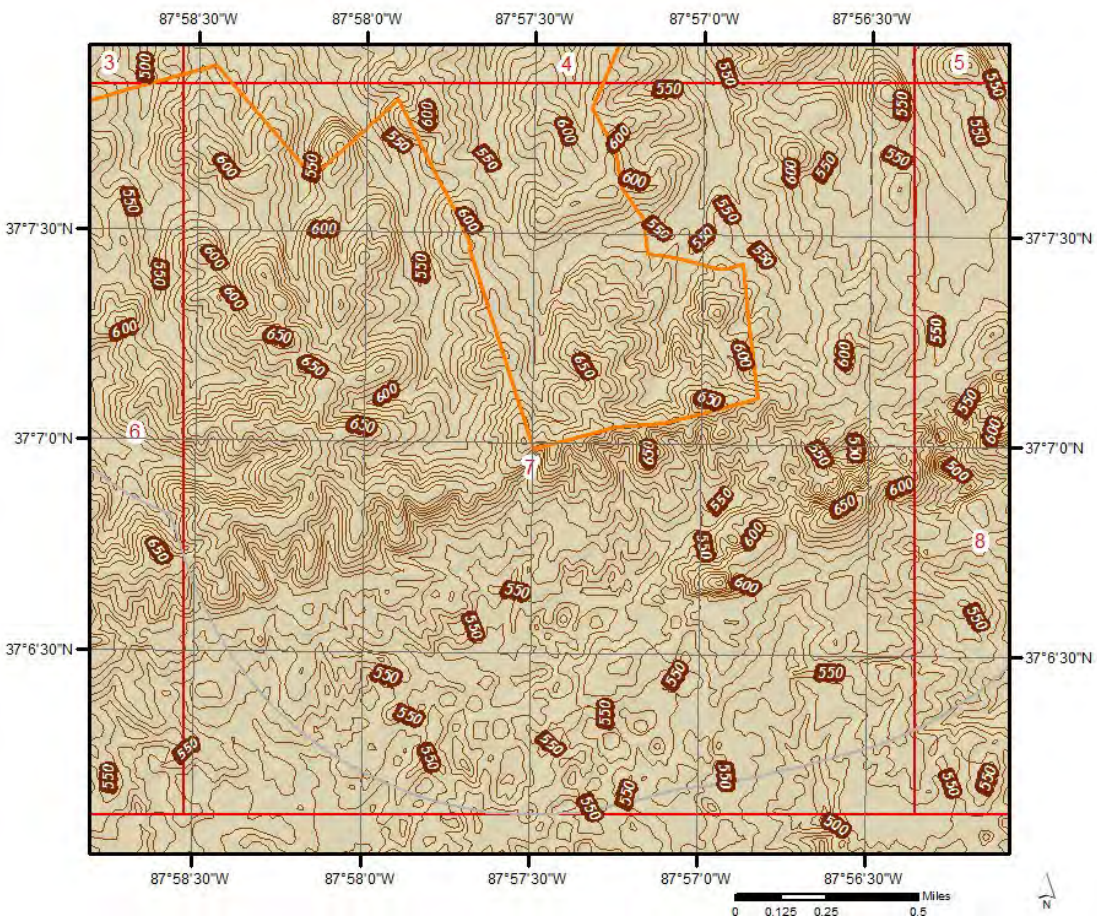
Topographic Information



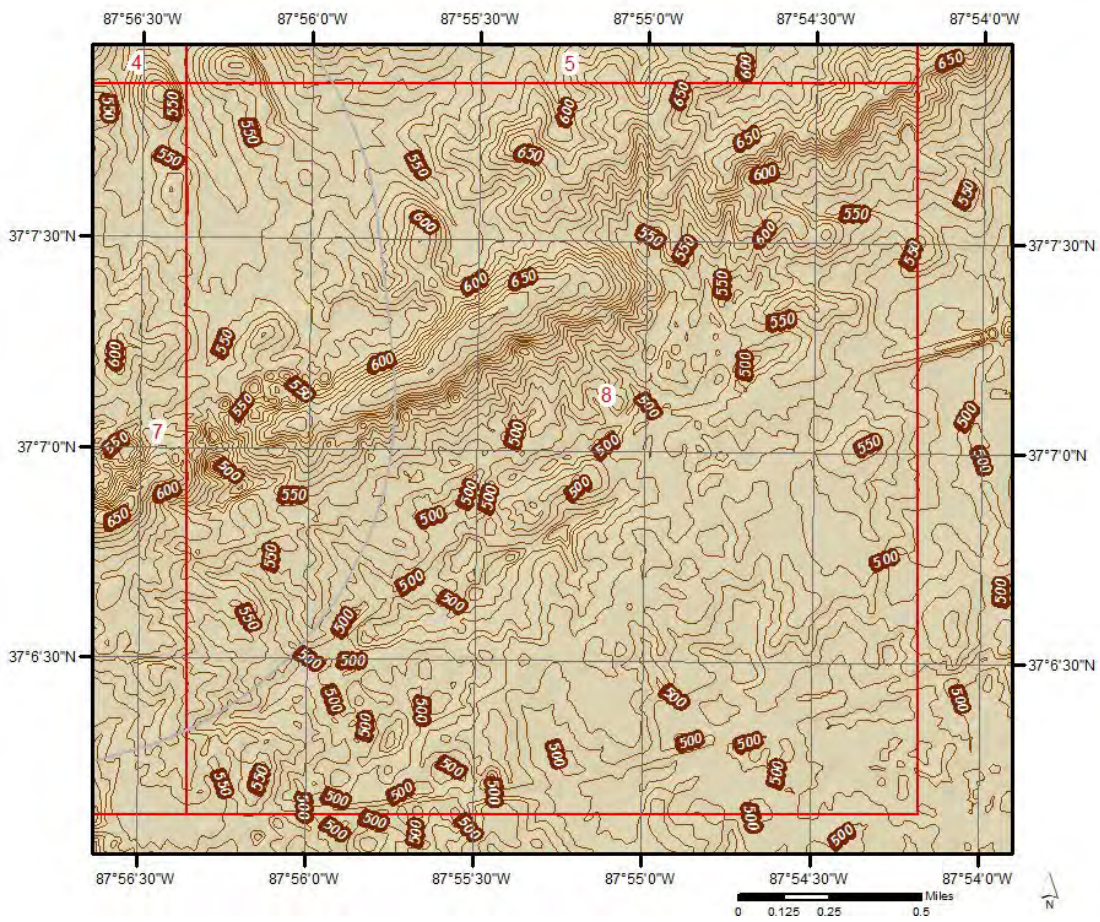
Topographic Information



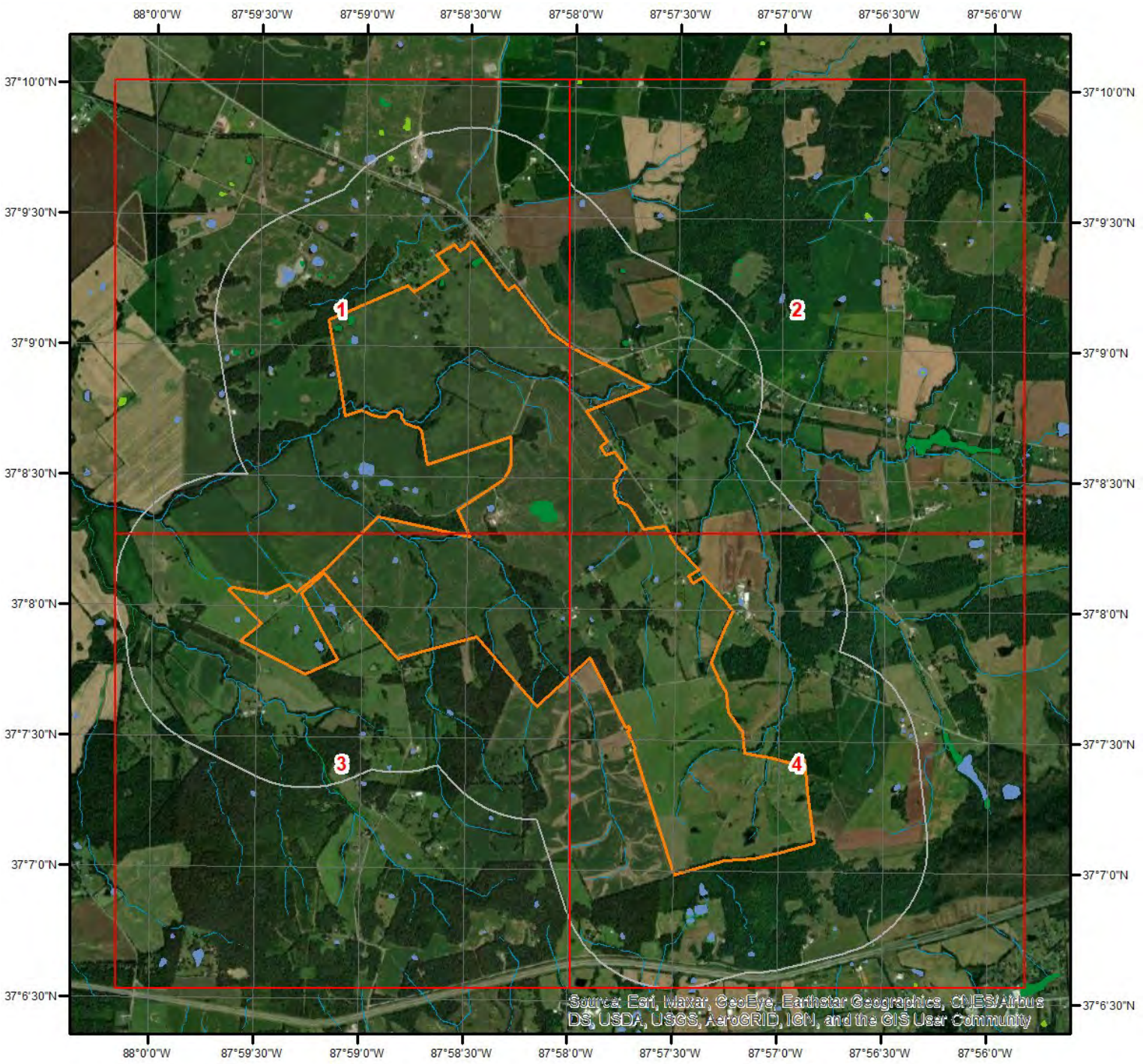
Topographic Information



Topographic Information



Hydrologic Information



Wetland

0 0.275 0.55 1.1 Miles

N

This map shows wetland existence using data from US Fish & Wildlife.
Data coverage is shown to the right. Gray indicates no data available in the area.

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

ERIS

Hydrologic Information

Wetland Type - Page 1

0 0.125 0.25 0.5 Miles

N

This map shows wetland existence using data from US Fish & Wildlife.
Data coverage is shown to the right. Gray indicates no data available in the area.

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

ERIS

Hydrologic Information

Wetland Type - Page 2

Miles
0 0.125 0.25 0.5

N

This map shows wetland existence using data from US Fish & Wildlife.
Data coverage is shown to the right. Gray indicates no data available in the area.

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

ERIS

Hydrologic Information

Wetland Type - Page 3

Miles
0 0.125 0.25 0.5

N

This map shows wetland existence using data from US Fish & Wildlife.
Data coverage is shown to the right. Gray indicates no data available in the area.

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

ERIS

Hydrologic Information

Wetland Type - Page 4

0 0.125 0.25 0.5 Miles

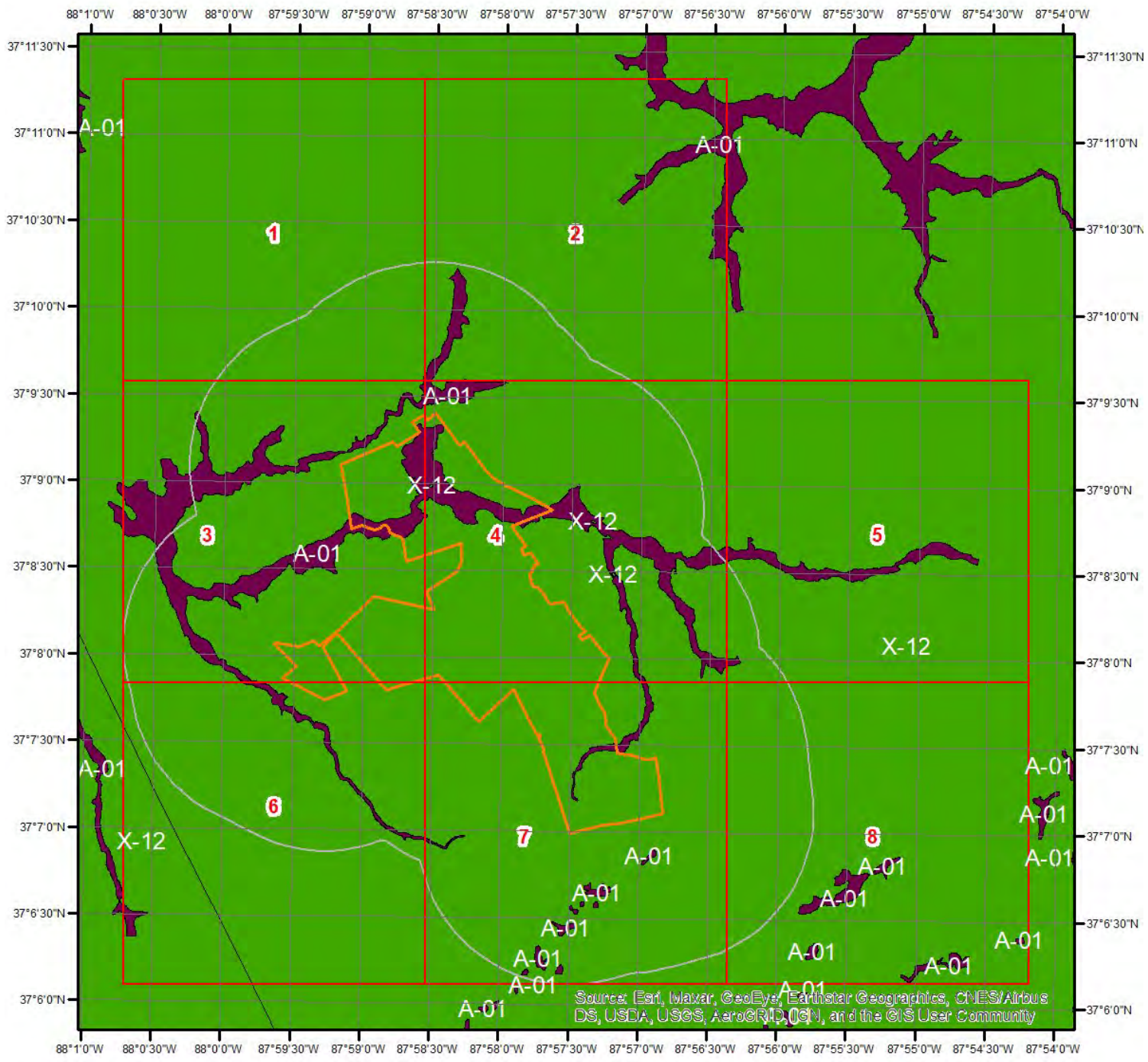
N

This map shows wetland existence using data from US Fish & Wildlife.
Data coverage is shown to the right. Gray indicates no data available in the area.

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

ERIS

Hydrologic Information



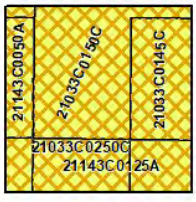
Flood Hazard Zones

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

Miles
0 0.2 0.4 0.8 1.2

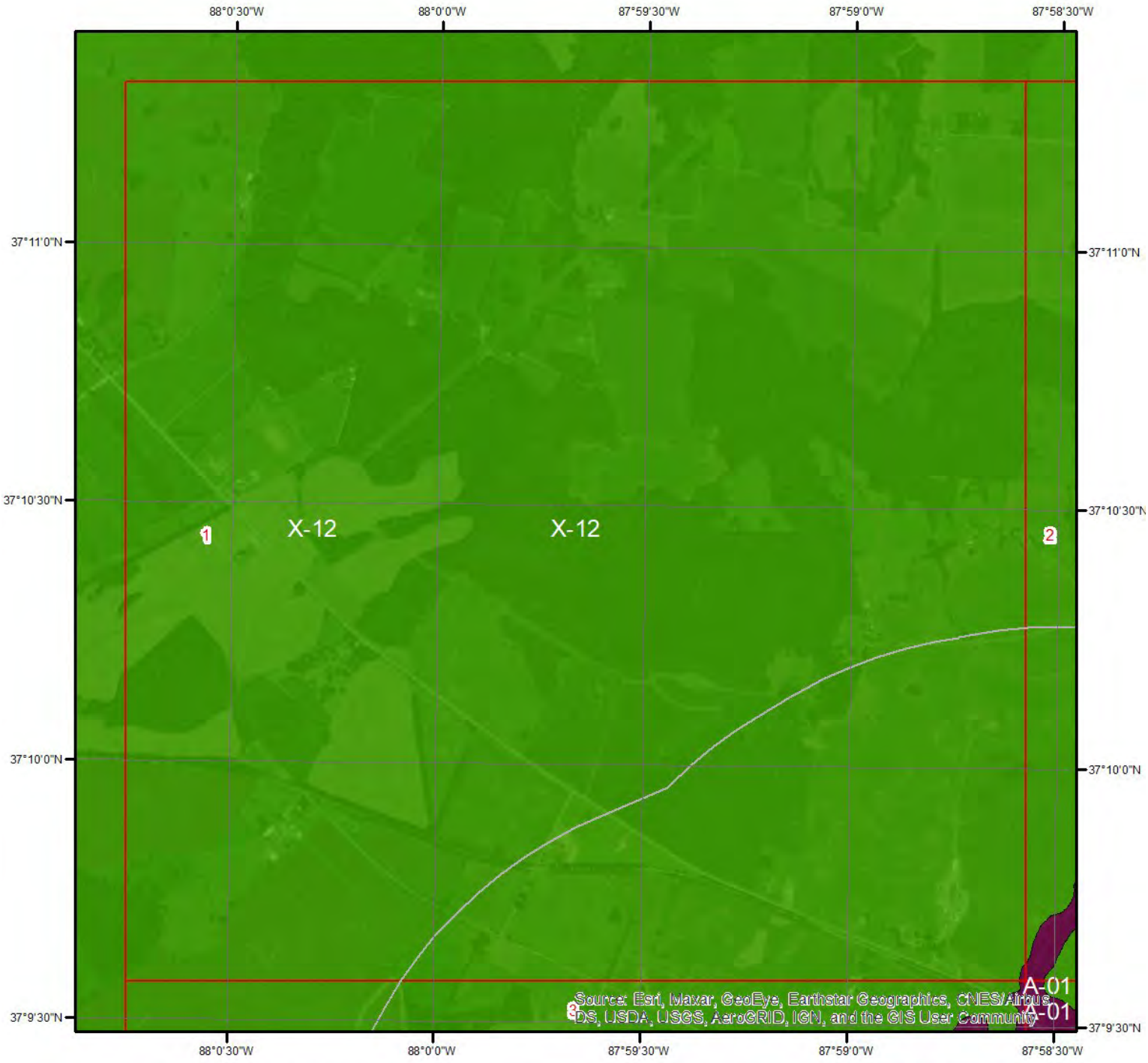
A	AO	X
A99	V	OPEN WATER
AE	VE	NOT POPULATED
AH	D	AREA NOT INCLUDED

N



ERIS

Hydrologic Information



Flood Hazard Zones - Page 1

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

Miles
0 0.2 0.4

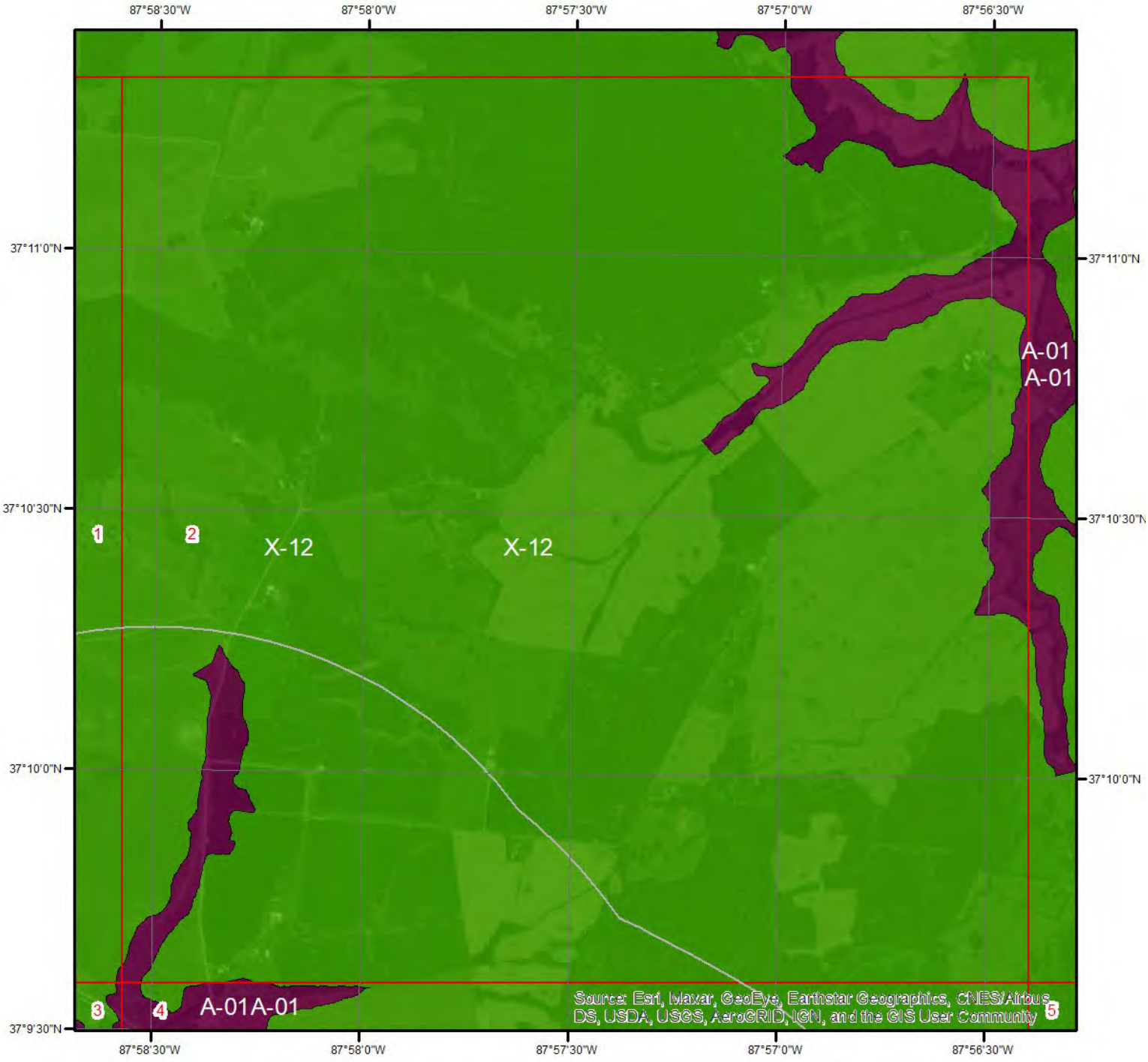
N

21143C0050A
21033C0150C

A	AO	X
A99	V	OPEN WATER
AE	VE	NOT POPULATED
AH	D	AREA NOT INCLUDED

ERIS

Hydrologic Information



Flood Hazard Zones - Page 2

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

A	AO	X
A99	V	OPEN WATER
AE	VE	NOT POPULATED
AH	D	AREA NOT INCLUDED

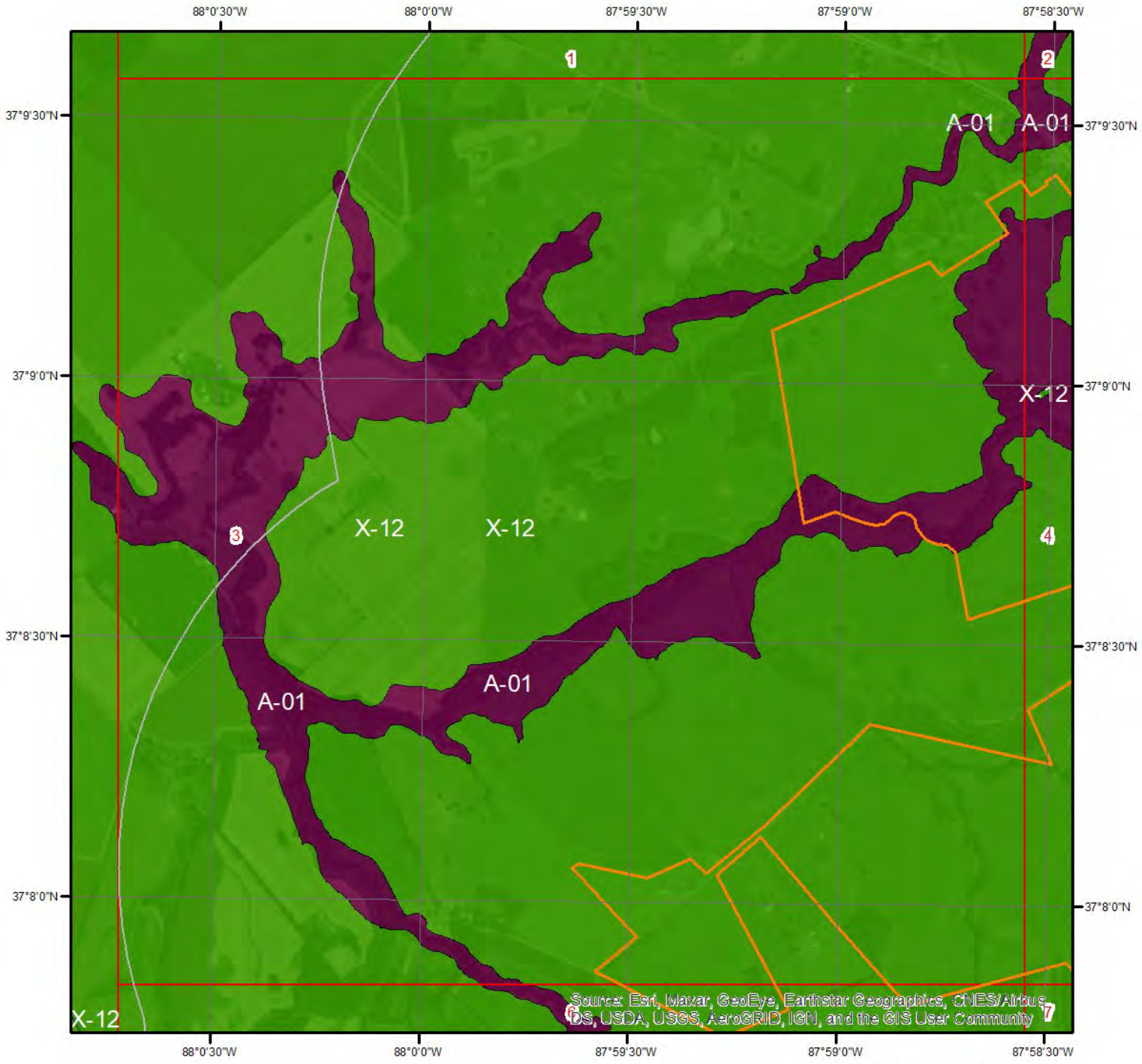
0 0.2 0.4 Miles

N

21033C0150C

ERIS

Hydrologic Information



Flood Hazard Zones - Page 3

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

A	AO	X
A99	V	OPEN WATER
AE	VE	NOT POPULATED
AH	D	AREA NOT INCLUDED

0 0.2 0.4 Miles

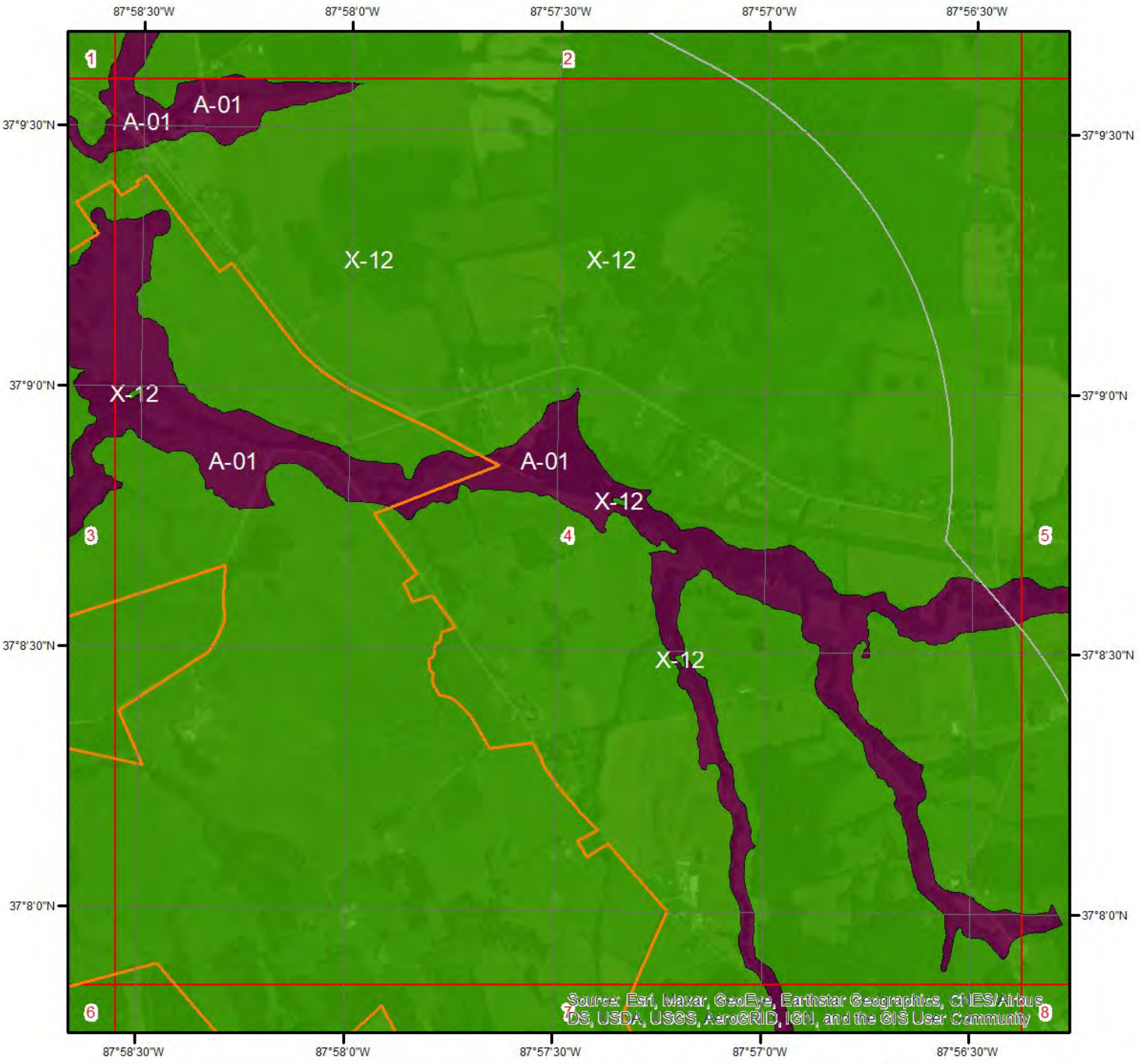
N

21143C0050A

21033C0150C

ERIS

Hydrologic Information



Flood Hazard Zones - Page 4

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

Miles
0 0.2 0.4

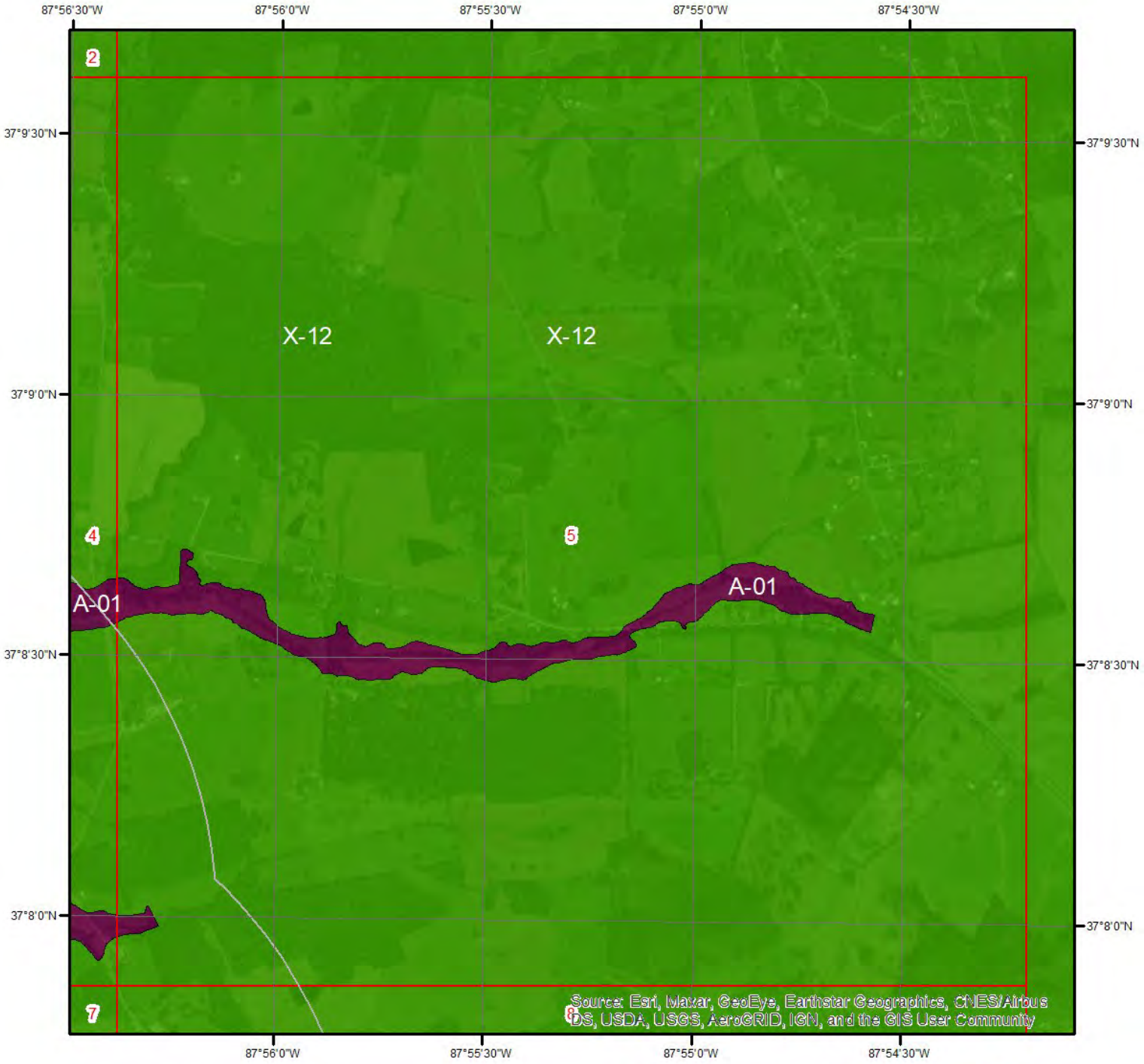
N

21033C0150C

A	AO	X
A99	V	OPEN WATER
AE	VE	NOT POPULATED
AH	D	AREA NOT INCLUDED

ERIS

Hydrologic Information



Flood Hazard Zones - Page 5

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

A	AO	X
A99	V	OPEN WATER
AE	VE	NOT POPULATED
AH	D	AREA NOT INCLUDED

0 0.2 0.4 Miles

N

21033C0145C

ERIS

Hydrologic Information

Flood Hazard Zones - Page 6

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

A	AO	X
A99	V	OPEN WATER
AE	VE	NOT POPULATED
AH	D	AREA NOT INCLUDED

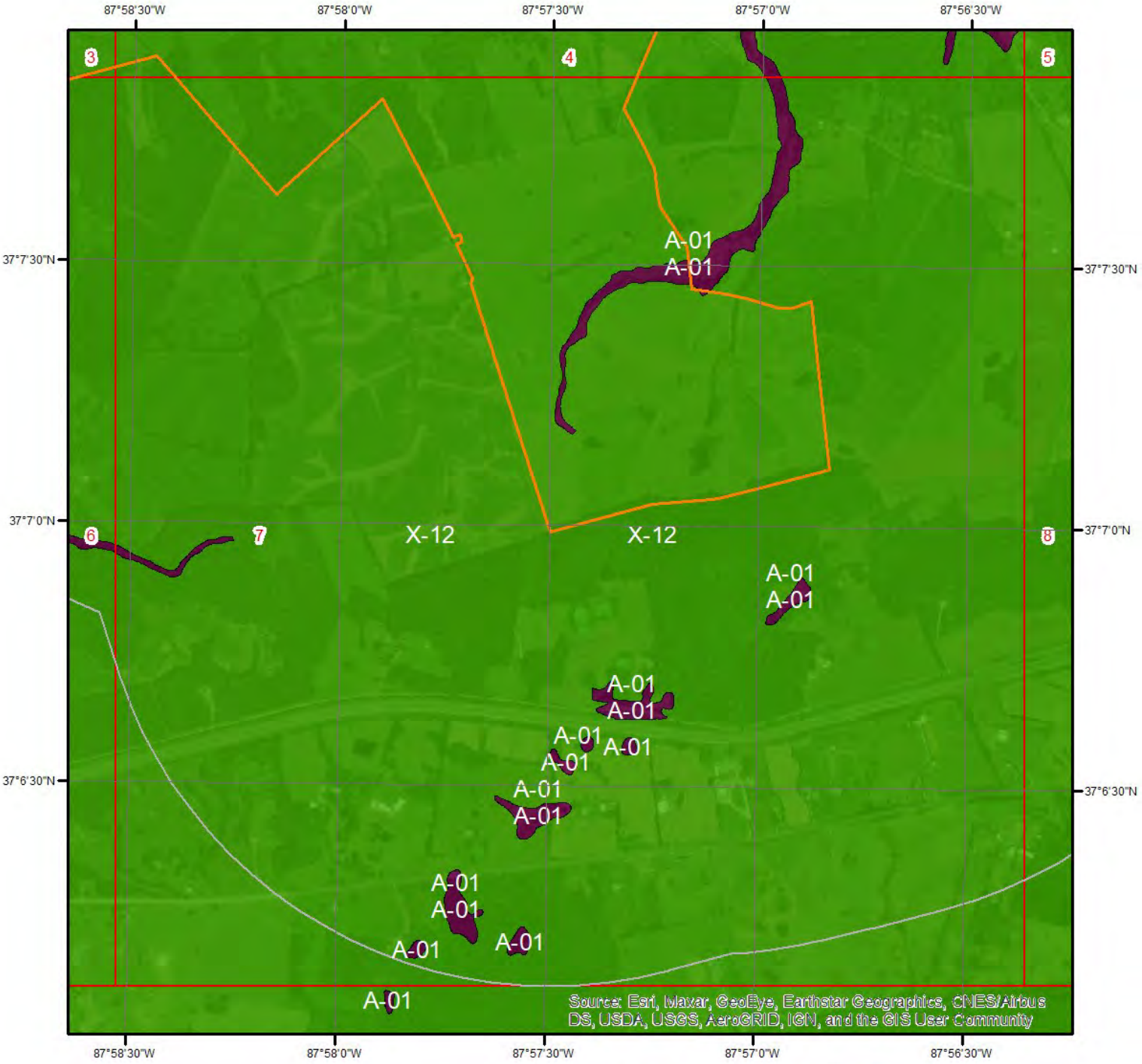
Miles
0 0.2 0.4

N

21033C0150C
21143C0085A
21143C0125A
21033C0250C

ERIS

Hydrologic Information



Flood Hazard Zones - Page 7

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

Miles
0 0.2 0.4

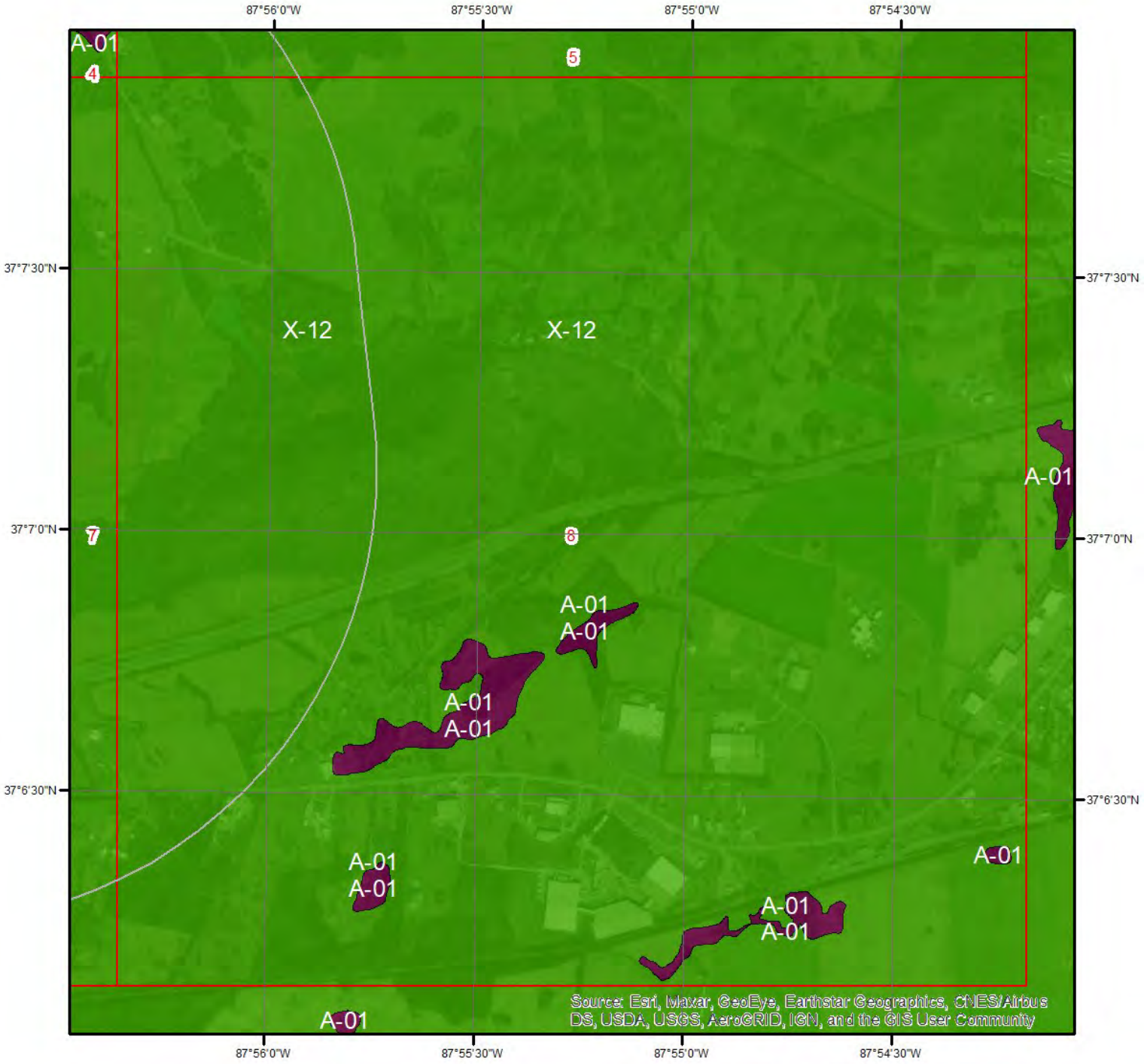
N

21033C0150C
21033C0250C
21143C0125A

A	AO	X
A99	V	OPEN WATER
AE	VE	NOT POPULATED
AH	D	AREA NOT INCLUDED

ERIS

Hydrologic Information



Flood Hazard Zones - Page 8

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

Miles
0 0.2 0.4

N

21033C0145C
21033C0235C
21143C0125A

A	AO	X
A99	V	OPEN WATER
AE	VE	NOT POPULATED
AH	D	AREA NOT INCLUDED

ERIS

Hydrologic Information

The Wetland Type map shows wetland existence overlaid on an aerial imagery. The Flood Hazard Zones map shows FEMA flood hazard zones overlaid on an aerial imagery. Relevant FIRM panels and detailed zone information is provided below.

Available FIRM Panels in area:	21033C0225C(effective:2009-10-16) 21033C0150C(effective:2009-10-16) 21033C0235C(effective:2009-10-16) 21033C0250C(effective:2009-10-16) 21033C0125C(effective:2009-10-16) 21033C0145C(effective:2009-10-16) 21143C0085A(effective:2012-08-16) 21143C0050A(effective:2012-08-16) 21143C0125A(effective:2012-08-16) 21033C0250C(effective:2009-10-16) 21033C0125C(effective:2009-10-16) 21033C0145C(effective:2009-10-16) 21033C0225C(effective:2009-10-16) 21033C0150C(effective:2009-10-16) 21033C0235C(effective:2009-10-16) 21055C0350C(effective:2009-06-16) 21055C0350C(effective:2009-06-16)

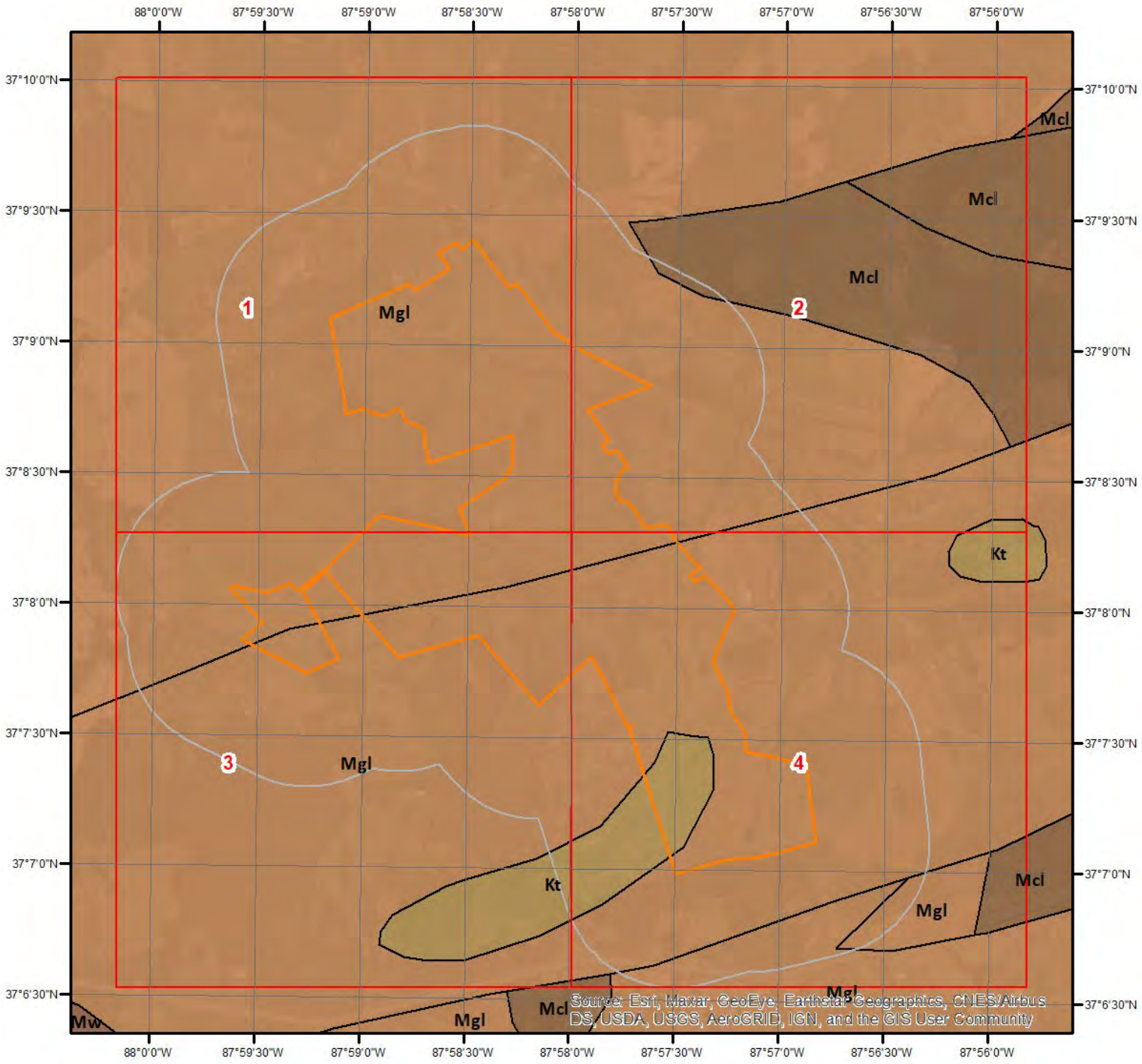
Flood Zone A-01

Zone:	A
Zone subtype:	

Flood Zone X-12

Zone:	X
Zone subtype:	AREA OF MINIMAL FLOOD HAZARD

Geologic Information



0 0.2 0.4 0.8 1.2 Miles

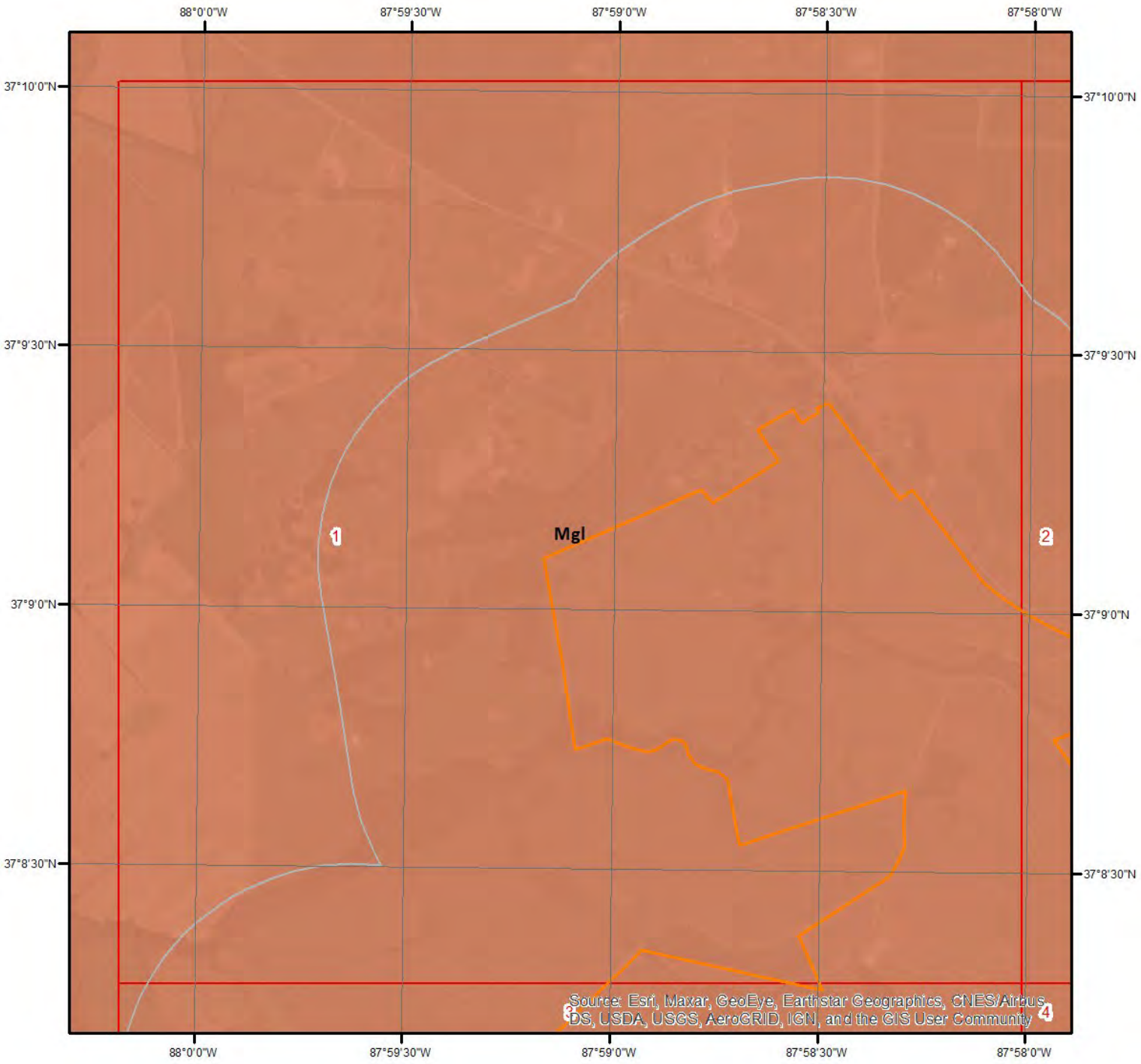
N

Geologic Units

This maps shows geologic units in the area. Please refer to the report for detailed descriptions.

ERIS

Geologic Information

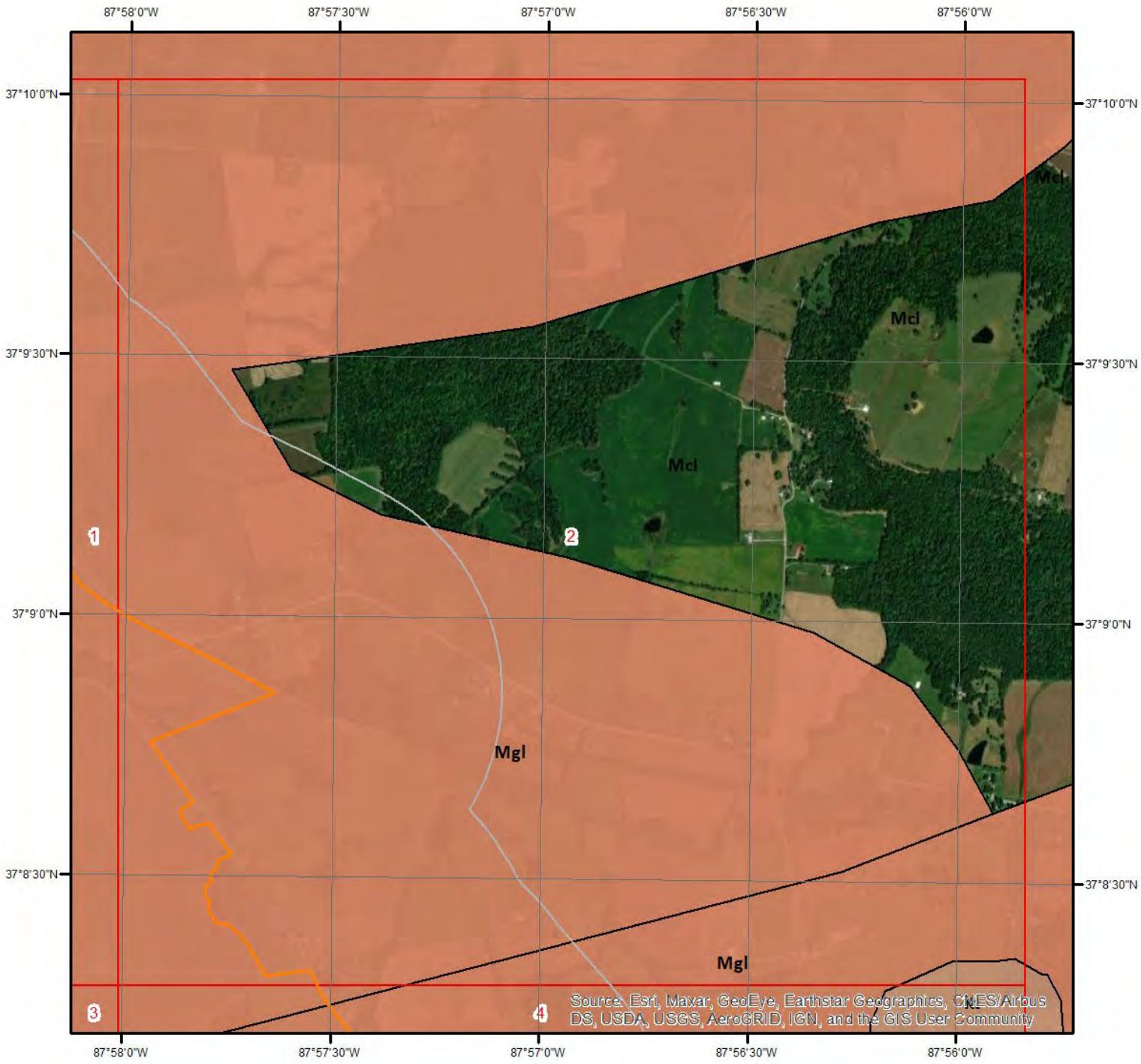


Geologic Units - Page 1

This maps shows geologic units in the area. Please refer to the report for detailed descriptions.

ERIS

Geologic Information

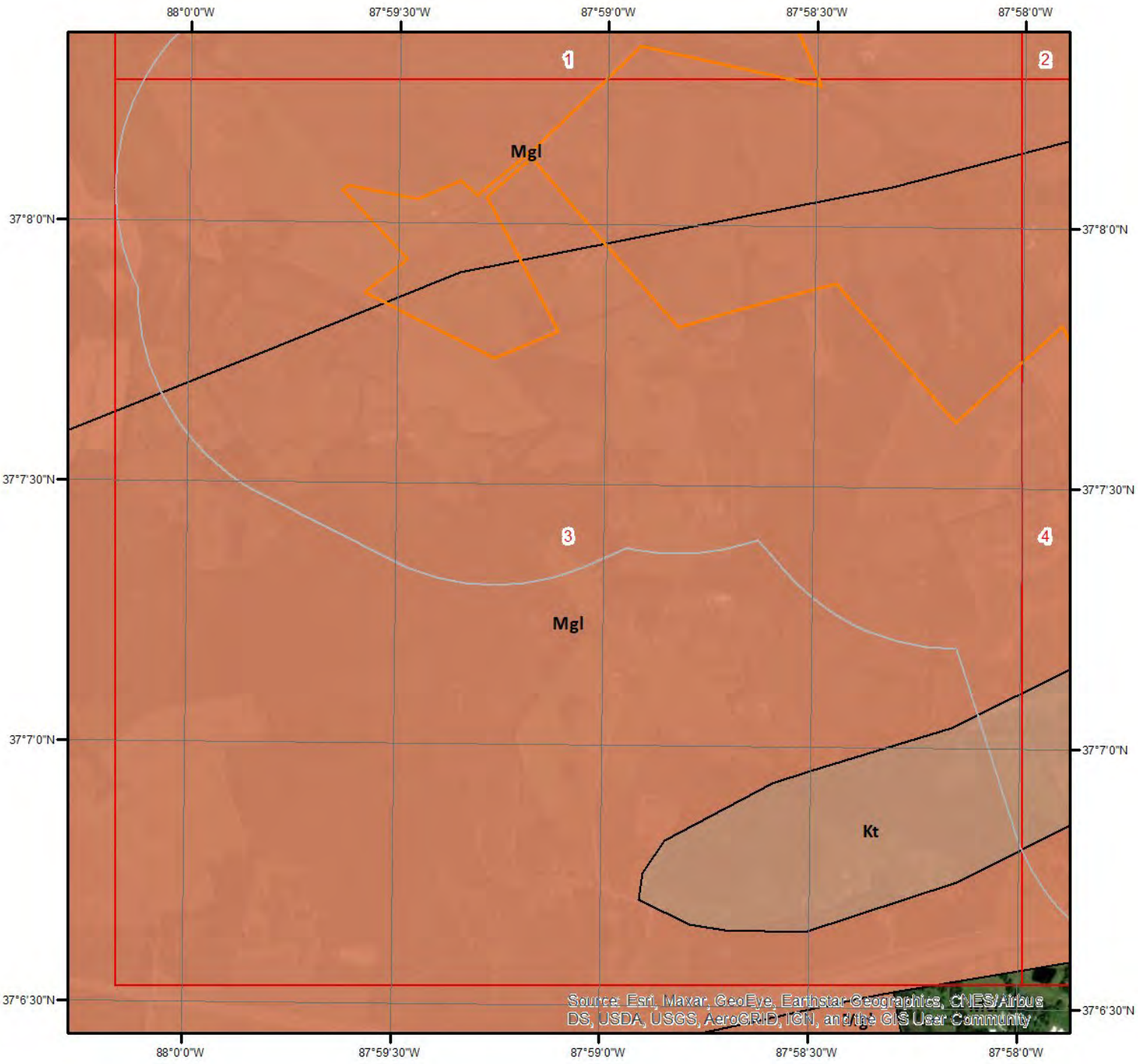


Geologic Units - Page 2

This maps shows geologic units in the area. Please refer to the report for detailed descriptions.

ERIS

Geologic Information



Miles
0 0.2 0.4

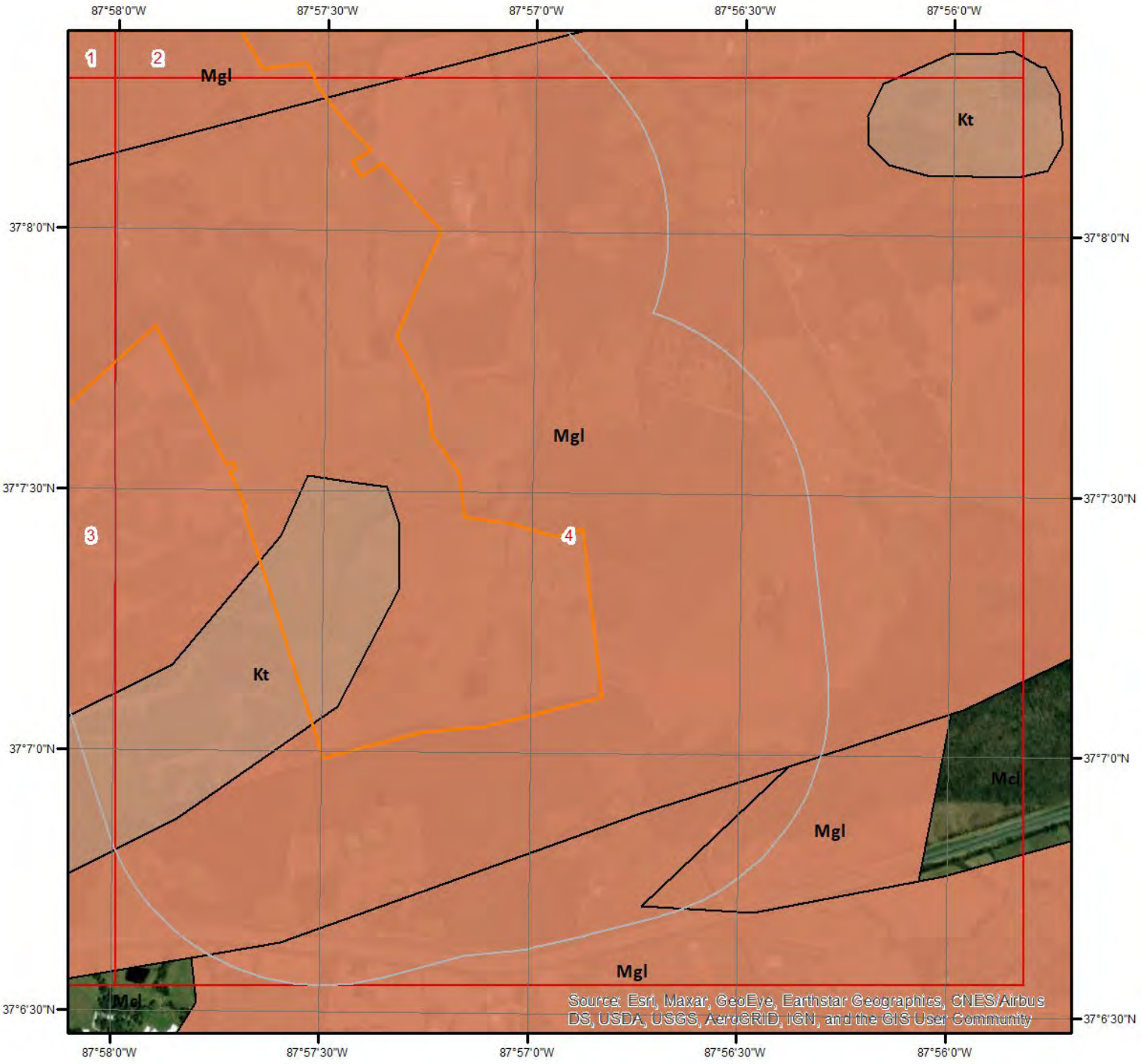
N

Geologic Units - Page 3

This maps shows geologic units in the area. Please refer to the report for detailed descriptions.

ERIS

Geologic Information



Miles
0 0.2 0.4

N

Geologic Units - Page 4

This maps shows geologic units in the area. Please refer to the report for detailed descriptions.

ERIS

Geologic Information

The previous page shows USGS geology information. Detailed information about each unit is provided below.

Geologic Unit Mgl

Unit Name:	Ste. Genevieve and St. Louis Limestones, undivided
Unit Age:	Mississippian
Primary Rock Type:	limestone
Secondary Rock Type:	dolostone (dolomite)
Unit Description:	Ste. Genevieve and St. Louis Limestones, undivided; includes Salem Limestone west of Christian County

Geologic Unit Mcl

Unit Name:	Rocks of Chesterian age, lower part
Unit Age:	Upper Mississippian
Primary Rock Type:	limestone
Secondary Rock Type:	sandstone
Unit Description:	Rocks of Chesterian age, lower part

Geologic Unit Mgl

Unit Name:	Ste. Genevieve and St. Louis Limestones, undivided
Unit Age:	Mississippian
Primary Rock Type:	limestone
Secondary Rock Type:	dolostone (dolomite)
Unit Description:	Ste. Genevieve and St. Louis Limestones, undivided; includes Salem Limestone west of Christian County

Geologic Unit Kt

Unit Name:	Tuscaloosa Formation
Unit Age:	Upper Cretaceous
Primary Rock Type:	conglomerate
Secondary Rock Type:	gravel
Unit Description:	Tuscaloosa Formation

Geologic Unit Mgl

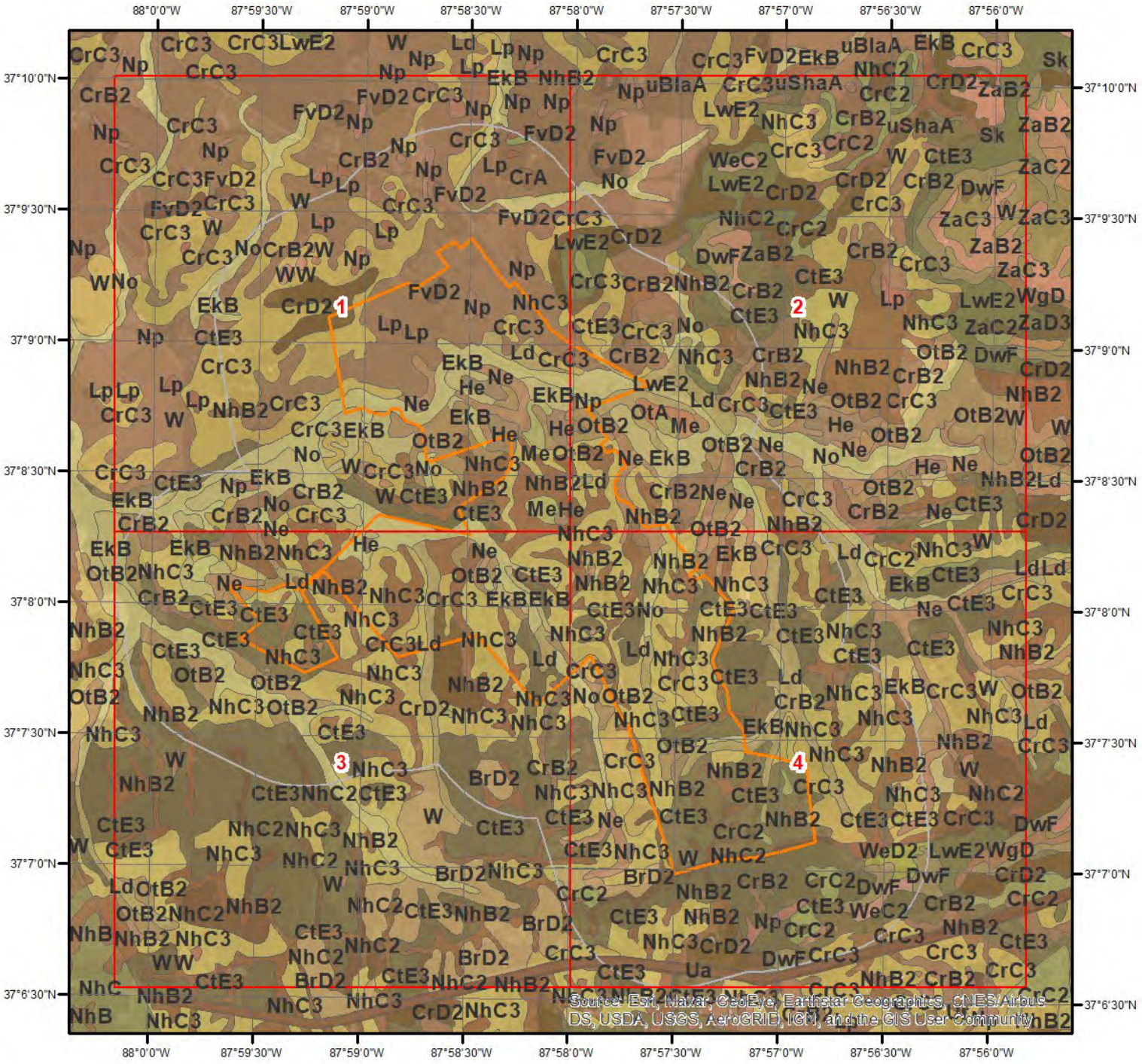
Unit Name:	Ste. Genevieve and St. Louis Limestones, undivided
Unit Age:	Mississippian
Primary Rock Type:	limestone
Secondary Rock Type:	dolostone (dolomite)
Unit Description:	Ste. Genevieve and St. Louis Limestones, undivided; includes Salem Limestone west of Christian County

Geologic Information

Geologic Unit Mgl

Unit Name:	Ste. Genevieve and St. Louis Limestones, undivided
Unit Age:	Mississippian
Primary Rock Type:	limestone
Secondary Rock Type:	dolostone (dolomite)
Unit Description:	Ste. Genevieve and St. Louis Limestones, undivided; includes Salem Limestone west of Christian County

Soil Information



SSURGO Soils

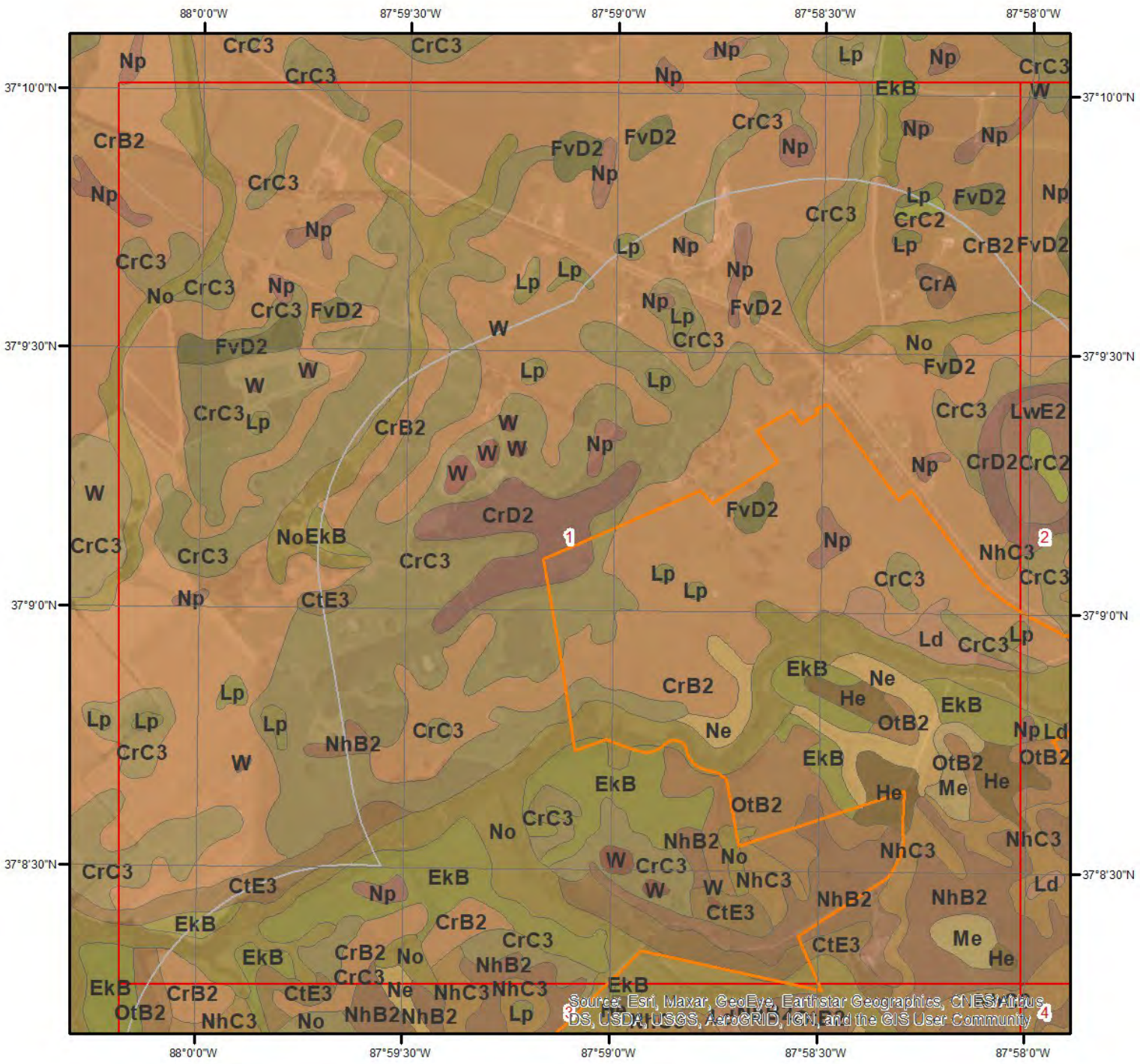
0 0.2 0.4 0.8 1.2 Miles

N

This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.

ERIS

Soil Information



SSURGO Soils - Page 1

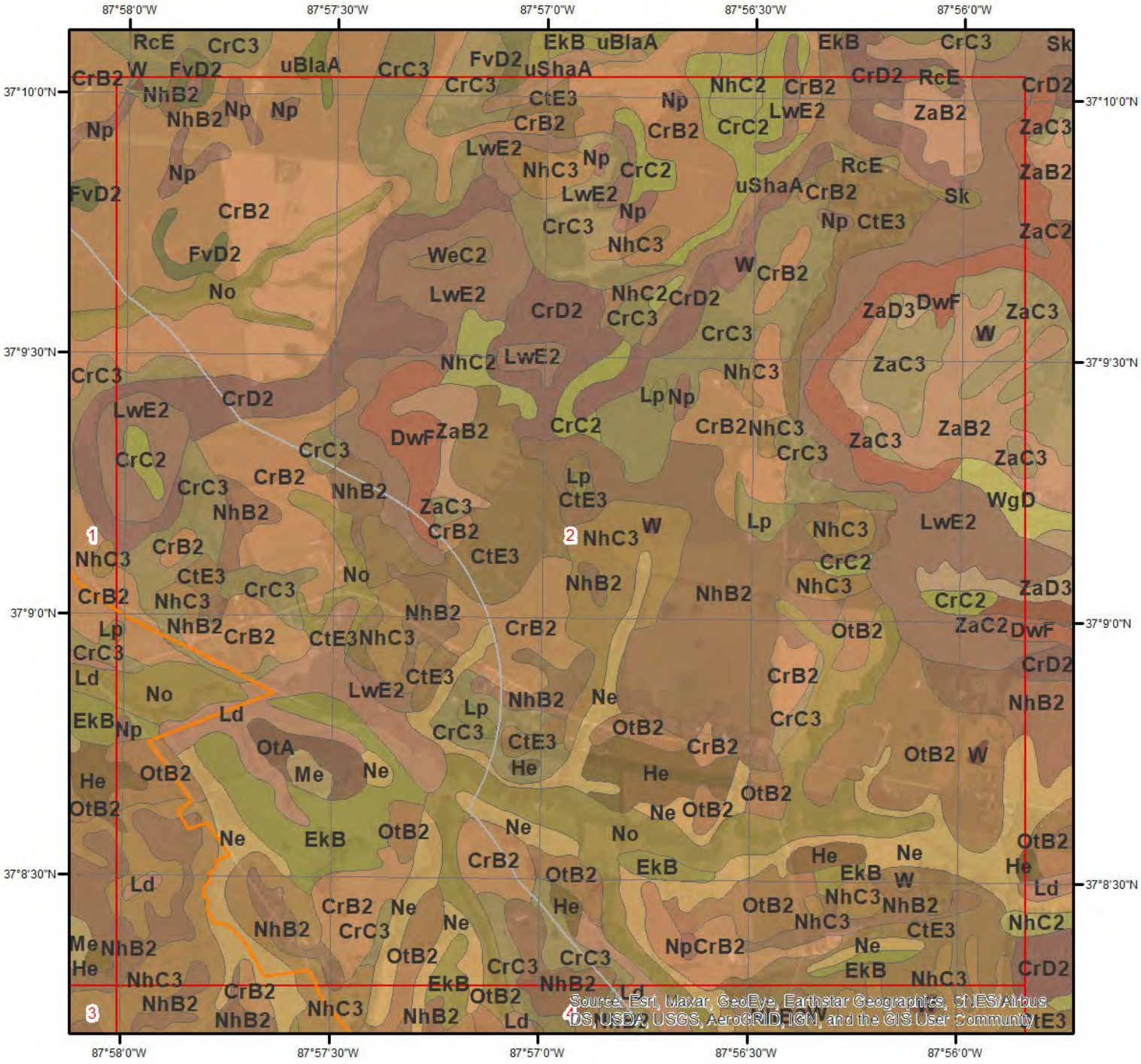
Miles
0 0.2 0.4

N

This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.

ERIS

Soil Information



SSURGO Soils - Page 2

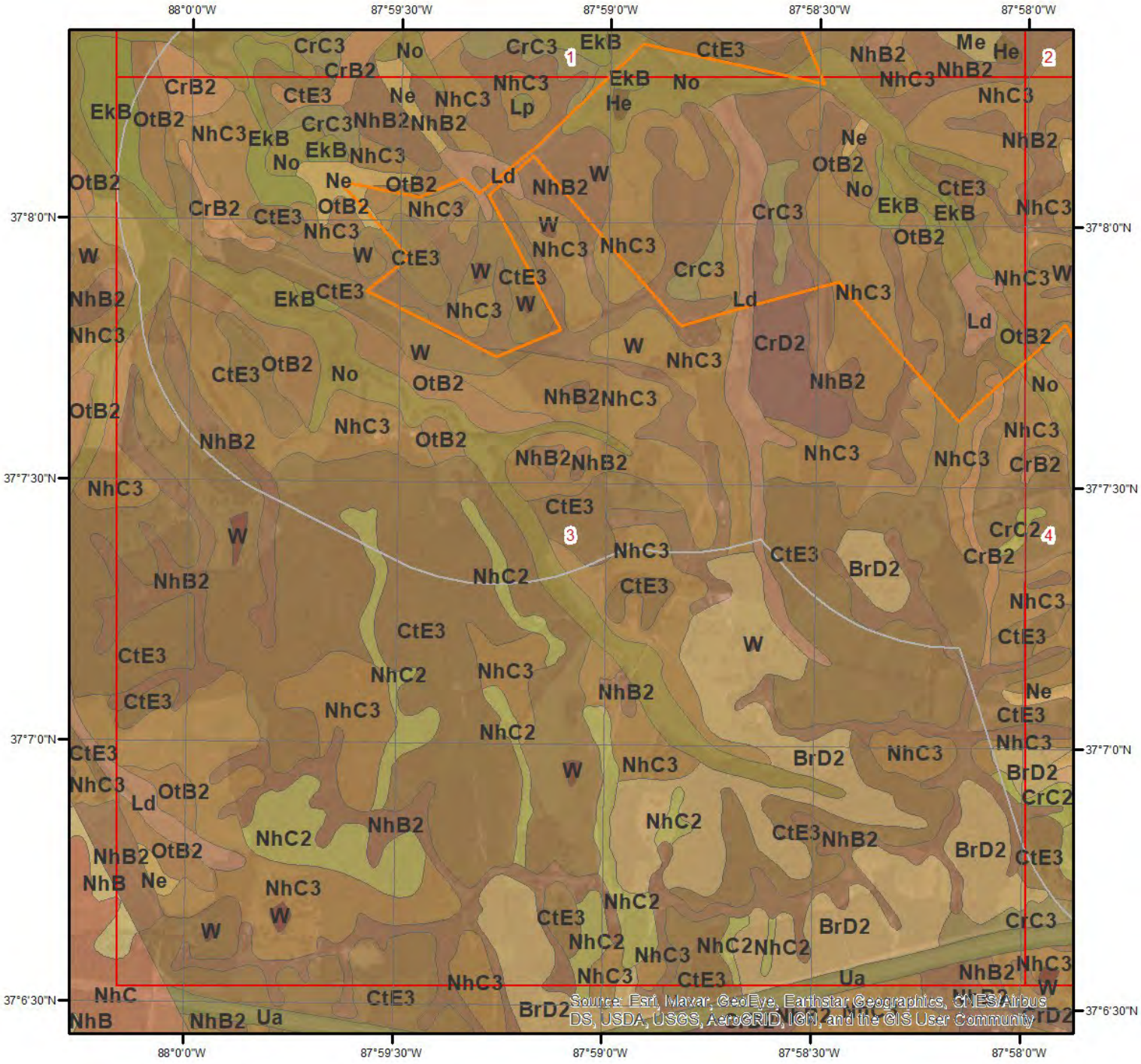
Miles
0 0.2 0.4

N

This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.

ERIS

Soil Information



SSURGO Soils - Page 3

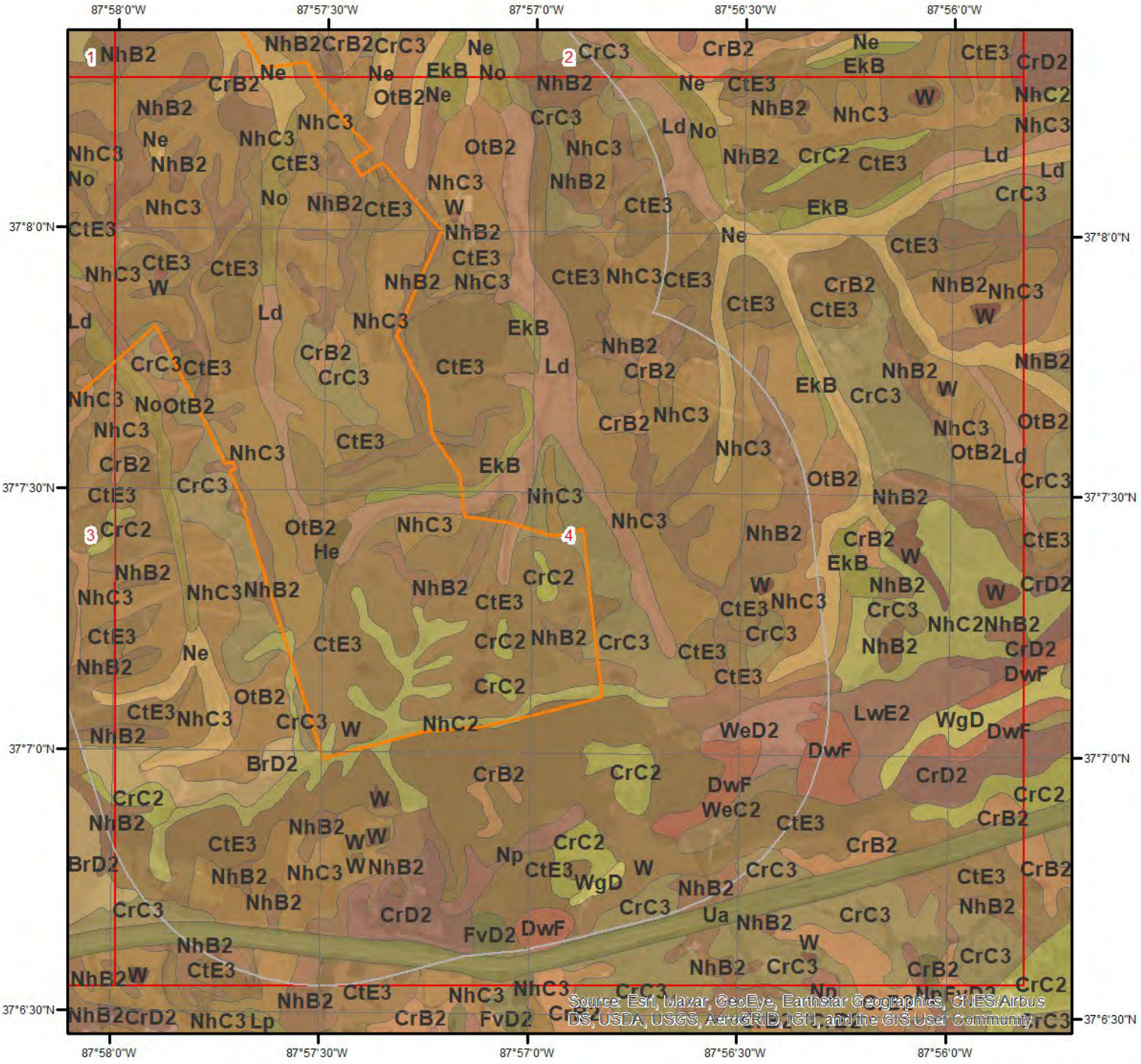
Miles
0 0.2 0.4

N

This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.

ERIS

Soil Information



SSURGO Soils - Page 4

Miles
0 0.2 0.4

N

This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.

ERIS

Soil Information

The previous page shows a soil map using SSURGO data from USDA Natural Resources Conservation Service. Detailed information about each unit is provided below.

Map Unit BrD2 (0.36%)

Map Unit Name:	Brandon silt loam, 12 to 20 percent slopes, eroded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Brandon(80%)

horizon H1(0cm to 18cm)	Silt loam
horizon H2(18cm to 53cm)	Silty clay loam
horizon H3(53cm to 165cm)	Very gravelly silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: BrD2 - Brandon silt loam, 12 to 20 percent slopes, eroded

Component: Brandon (80%)
The Brandon component makes up 80 percent of the map unit. Slopes are 12 to 20 percent. This component is on hills on uplands. The parent material consists of fine-silty noncalcareous loess over gravelly loamy fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Lax (7%)
Generated brief soil descriptions are created for major components. The Lax soil is a minor component.

Component: Saffell (5%)
Generated brief soil descriptions are created for major components. The Saffell soil is a minor component.

Component: Skidmore (5%)
Generated brief soil descriptions are created for major components. The Skidmore soil is a minor component.

Component: Nolin (3%)
Generated brief soil descriptions are created for major components. The Nolin soil is a minor component.

Map Unit CrA (0.04%)

Map Unit Name:	Crider silt loam, 0 to 2 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Crider(95%)

horizon H1(0cm to 25cm)	Silt loam
horizon H2(25cm to 63cm)	Silt loam

Soil Information

horizon H3(63cm to 132cm)	Silty clay loam
horizon H4(132cm to 178cm)	Silty clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: CrA - Crider silt loam, 0 to 2 percent slopes

Component: Crider (92%)
The Crider component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on broad ridges on karst uplands. The parent material consists of thin fine-silty noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 59 to 157 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Component: Bedford (4%)
Generated brief soil descriptions are created for major soil components. The Bedford soil is a minor component.

Component: Pembroke (3%)
Generated brief soil descriptions are created for major soil components. The Pembroke soil is a minor component.

Component: Nolin (1%)
Generated brief soil descriptions are created for major soil components. The Nolin, occasionally flooded soil is a minor component.

Map Unit CrB2 (24.38%)

Map Unit Name:	Crider silt loam, 2 to 6 percent slopes, eroded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Crider(85%)

horizon H1(0cm to 13cm)	Silt loam
horizon H2(13cm to 61cm)	Silt loam
horizon H3(61cm to 155cm)	Silty clay loam
horizon H4(155cm to 196cm)	Silty clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: CrB2 - Crider silt loam, 2 to 6 percent slopes, eroded

Component: Crider (88%)
The Crider component makes up 88 percent of the map unit. Slopes are 2 to 6 percent. This component is on broad ridges on karst uplands. The parent material consists of thin fine-silty noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 59 to 157 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Baxter (7%)
Generated brief soil descriptions are created for major soil components. The Baxter soil is a minor component.

Component: Bedford (4%)

Soil Information

Generated brief soil descriptions are created for major soil components. The Bedford soil is a minor component.

Component: Pembroke (1%)
Generated brief soil descriptions are created for major soil components. The Pembroke soil is a minor component.

Map Unit CrC2 (0.44%)

Map Unit Name:	Crider silt loam, 6 to 12 percent slopes, eroded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Crider(90%)

horizon H1(0cm to 13cm)	Silt loam
horizon H2(13cm to 61cm)	Silt loam
horizon H3(61cm to 155cm)	Silty clay loam
horizon H4(155cm to 196cm)	Silty clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: CrC2 - Crider silt loam, 6 to 12 percent slopes, eroded

Component: Crider (85%)
The Crider component makes up 85 percent of the map unit. Slopes are 6 to 12 percent. This component is on broad ridges on karst uplands. The parent material consists of thin fine-silty noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 59 to 157 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Baxter (7%)
Generated brief soil descriptions are created for major soil components. The Baxter soil is a minor component.

Component: Bedford (3%)
Generated brief soil descriptions are created for major soil components. The Bedford soil is a minor component.

Component: Pembroke (3%)
Generated brief soil descriptions are created for major soil components. The Pembroke soil is a minor component.

Component: Nolin (2%)
Generated brief soil descriptions are created for major soil components. The Nolin, occasionally flooded soil is a minor component.

Map Unit CrC3 (8.17%)

Map Unit Name:	Crider silt loam, 6 to 12 percent slopes, severely eroded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Crider(85%)

horizon H1(0cm to 8cm)	Silt loam

Soil Information

horizon H2(8cm to 56cm)	Silty clay loam
horizon H3(56cm to 188cm)	Silty clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: CrC3 - Crider silt loam, 6 to 12 percent slopes, severely eroded

Component: Crider (85%)
The Crider, severely eroded component makes up 85 percent of the map unit. Slopes are 6 to 12 percent. This component is on ridges on karst uplands. The parent material consists of fine-silty noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Nolin (5%)
Generated brief soil descriptions are created for major components. The Nolin soil is a minor component.

Component: Fredonia (4%)
Generated brief soil descriptions are created for major components. The Fredonia soil is a minor component.

Component: Baxter (3%)
Generated brief soil descriptions are created for major components. The Baxter soil is a minor component.

Component: Vertrees (3%)
Generated brief soil descriptions are created for major components. The Vertrees soil is a minor component.

Map Unit CrD2 (1.97%)

Map Unit Name:	Crider silt loam, 12 to 20 percent slopes, eroded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Crider(90%)

horizon H1(0cm to 13cm)	Silt loam
horizon H2(13cm to 61cm)	Silt loam
horizon H3(61cm to 155cm)	Silty clay loam
horizon H4(155cm to 196cm)	Silty clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: CrD2 - Crider silt loam, 12 to 20 percent slopes, eroded

Component: Crider (90%)
The Crider component makes up 90 percent of the map unit. Slopes are 12 to 20 percent. This component is on hills on karst uplands. The parent material consists of fine-silty noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Nolin (5%)
Generated brief soil descriptions are created for major components. The Nolin soil is a minor component.

Soil Information

Component: Newark (3%)
Generated brief soil descriptions are created for major components. The Newark soil is a minor component.

Component: Lindside (2%)
Generated brief soil descriptions are created for major components. The Lindside soil is a minor component.

Map Unit CtE3 (15.41%)

Map Unit Name:	Crider-Baxter complex, 12 to 30 percent slopes, severely eroded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Crider(50%)	
horizon H1(0cm to 8cm)	Silt loam
horizon H2(8cm to 56cm)	Silty clay loam
horizon H3(56cm to 188cm)	Silty clay
Baxter(30%)	
horizon H1(0cm to 13cm)	Gravelly silt loam
horizon H2(13cm to 30cm)	Gravelly silty clay loam
horizon H3(30cm to 155cm)	Gravelly clay
horizon H4(155cm to 206cm)	Very gravelly clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: CtE3 - Crider-Baxter complex, 12 to 30 percent slopes, severely eroded

Component: Crider (50%)
The Crider, severely eroded component makes up 50 percent of the map unit. Slopes are 12 to 30 percent. This component is on closed depressions on sinkhole karst. The parent material consists of fine-silty noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Component: Baxter (30%)
The Baxter, severely eroded component makes up 30 percent of the map unit. Slopes are 12 to 30 percent. This component is on hills on karst uplands. The parent material consists of clayey residuum weathered from cherty limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This soil does not meet hydric criteria.

Component: Vertrees (5%)
Generated brief soil descriptions are created for major components. The Vertrees soil is a minor component.

Component: Fredonia (5%)
Generated brief soil descriptions are created for major components. The Fredonia soil is a minor component.

Component: Nolin (4%)
Generated brief soil descriptions are created for major components. The Nolin soil is a minor component.

Component: Lindside (4%)
Generated brief soil descriptions are created for major components. The Lindside soil is a minor component.

Component: Nicholson (2%)

Soil Information

Generated brief soil descriptions are created for major components. The Nicholson soil is a minor component.

Map Unit DwF (0.62%)

Map Unit Name:	Dekalb-Westmoreland-Gilpin complex, 20 to 60 percent slopes, very stony
Bedrock Depth - Min:	86cm
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Dekalb(40%)	
horizon H1(0cm to 10cm)	Channery silt loam
horizon H2(10cm to 30cm)	Very cobbly loam
horizon H3(30cm to 86cm)	Very cobbly sandy loam
horizon R(86cm to 111cm)	Unweathered bedrock
Westmoreland(30%)	
horizon H1(0cm to 10cm)	Silt loam
horizon H2(10cm to 23cm)	Channery silt loam
horizon H3(23cm to 97cm)	Channery silty clay loam
horizon H4(97cm to 165cm)	Very channery silty clay loam
horizon R(165cm to 190cm)	Unweathered bedrock
Gilpin(25%)	
horizon H1(0cm to 3cm)	Loam
horizon H2(3cm to 38cm)	Loam
horizon H3(38cm to 79cm)	Channery silt loam
horizon H4(79cm to 97cm)	Channery silt loam
horizon Cr(97cm to 122cm)	Weathered bedrock

Component Description:

Minor map unit components are excluded from this report.

Map Unit: DwF - Dekalb-Westmoreland-Gilpin complex, 20 to 60 percent slopes, very stony

Component: Dekalb (40%)
The Dekalb, very stony component makes up 40 percent of the map unit. Slopes are 20 to 60 percent. This component is on hills on uplands. The parent material consists of coarse-loamy residuum weathered from sandstone and shale. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria.

Component: Westmoreland (30%)
The Westmoreland, very stony component makes up 30 percent of the map unit. Slopes are 20 to 60 percent. This component is on hills on uplands. The parent material consists of fine-loamy colluvium derived from sandstone and siltstone over fine-loamy residuum weathered from siltstone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 80 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This soil does not meet hydric criteria.

Component: Gilpin (25%)
The Gilpin, very stony component makes up 25 percent of the map unit. Slopes are 20 to 60 percent. This component is on hills on uplands. The parent material consists of fine-loamy residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, paralithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This soil does not meet hydric criteria.

Soil Information

Component: Ramsey (4%)
Generated brief soil descriptions are created for major components. The Ramsey soil is a minor component.

Component: Rock outcrop (1%)
Generated brief soil descriptions are created for major components. The Rock outcrop soil is a minor component.

Map Unit EkB (2.8%)

Map Unit Name:	Elk silt loam, 1 to 4 percent slopes, rarely flooded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Elk(90%)

horizon H1(0cm to 20cm)	Silt loam
horizon H2(20cm to 38cm)	Silt loam
horizon H3(38cm to 180cm)	Silt loam
horizon H4(180cm to 206cm)	Silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: EkB - Elk silt loam, 1 to 4 percent slopes, rarely flooded

Component: Elk (90%)
The Elk, rarely flooded component makes up 90 percent of the map unit. Slopes are 1 to 4 percent. This component is on stream terraces on valleys. The parent material consists of mixed fine-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Otwood (4%)
Generated brief soil descriptions are created for major components. The Otwood soil is a minor component.

Component: Newark (2%)
Generated brief soil descriptions are created for major components. The Newark soil is a minor component.

Component: Nolin (2%)
Generated brief soil descriptions are created for major components. The Nolin soil is a minor component.

Component: Lindside (2%)
Generated brief soil descriptions are created for major components. The Lindside soil is a minor component.

Map Unit FvD2 (0.13%)

Map Unit Name:	Fredonia-Vertrees complex, 12 to 20 percent slopes, eroded, rocky
Bedrock Depth - Min:	79cm
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	D - Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.

Major components are printed below

Fredonia(47%)

horizon H1(0cm to 10cm)	Silt loam

Soil Information

horizon H2(10cm to 69cm)	Silty clay
horizon H3(69cm to 79cm)	Clay
horizon R(79cm to 104cm)	Bedrock
Vertrees(40%)	
horizon H1(0cm to 8cm)	Silt loam
horizon H2(8cm to 38cm)	Silty clay
horizon H3(38cm to 203cm)	Clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: FvD2 - Fredonia-Vertrees complex, 12 to 20 percent slopes, eroded, rocky

Component: Fredonia (47%)
The Fredonia component makes up 47 percent of the map unit. Slopes are 12 to 20 percent. This component is on hills on karst uplands. The parent material consists of clayey residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Component: Vertrees (40%)
The Vertrees component makes up 40 percent of the map unit. Slopes are 12 to 20 percent. This component is on hills on karst uplands. The parent material consists of clayey residuum weathered from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Baxter (11%)
Generated brief soil descriptions are created for major components. The Baxter soil is a minor component.

Component: Rock outcrop (2%)
Generated brief soil descriptions are created for major components. The Rock outcrop soil is a minor component.

Map Unit He (0.4%)

Map Unit Name:	Henshaw silt loam
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	40cm
Drainage Class - Dominant:	Somewhat poorly drained
Hydrologic Group - Dominant:	C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.
Major components are printed below	
Henshaw(85%)	
horizon H1(0cm to 22cm)	Silt loam
horizon H2(23cm to 104cm)	Silty clay loam
horizon H3(104cm to 208cm)	Silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: He - Henshaw silt loam, 0 to 2 percent slopes, rarely flooded

Component: Henshaw (90%)
The Henshaw, rarely flooded component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on stream terraces on river valleys. The parent material consists of fine-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is rarely flooded. It is

Soil Information

not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Uniontown (5%)
Generated brief soil descriptions are created for major soil components. The Uniontown, rarely flooded soil is a minor component.

Component: Weinbach (2%)
Generated brief soil descriptions are created for major soil components. The Weinbach, rarely flooded soil is a minor component.

Component: McGary (2%)
Generated brief soil descriptions are created for major soil components. The McGary, rarely flooded soil is a minor component.

Component: Melvin (1%)
Generated brief soil descriptions are created for major soil components. The Melvin, rarely flooded soil is a minor component.

Map Unit Ld (2.42%)

Map Unit Name:	Lindside silt loam, occasionally flooded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	61cm
Drainage Class - Dominant:	Moderately well drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Lindside(90%)

horizon H1(0cm to 20cm)	Silt loam
horizon H2(20cm to 91cm)	Silt loam
horizon H3(91cm to 152cm)	Silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: Ld - Lindside silt loam, occasionally flooded

Component: Lindside (90%)
The Lindside, occasionally flooded component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on river valleys. The parent material consists of mixed fine-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Nolin (3%)
Generated brief soil descriptions are created for major components. The Nolin soil is a minor component.

Component: Wilbur (3%)
Generated brief soil descriptions are created for major components. The Wilbur soil is a minor component.

Component: Newark (2%)
Generated brief soil descriptions are created for major components. The Newark soil is a minor component.

Component: Wakeland (2%)
Generated brief soil descriptions are created for major components. The Wakeland soil is a minor component.

Map Unit Lp (0.21%)

Map Unit Name:	Lindside silt loam, ponded

Soil Information

Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	61cm
Drainage Class - Dominant:	Moderately well drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Lindside(90%)

horizon H1(0cm to 20cm)	Silt loam
horizon H2(20cm to 91cm)	Silt loam
horizon H3(91cm to 152cm)	Silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: Lp - Lindside silt loam, ponded

Component: Lindside (90%)
The Lindside, ponded component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on basin in closed depressions on karst uplands. The parent material consists of mixed fine-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Component: Newark (10%)
Generated brief soil descriptions are created for major components. The Newark soil is a minor component.

Map Unit LwE2 (1.28%)

Map Unit Name:	Lowell-Faywood complex, 12 to 30 percent slopes, eroded, very stony
Bedrock Depth - Min:	76cm
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Lowell(45%)

horizon H1(0cm to 15cm)	Silt loam
horizon H2(15cm to 107cm)	Clay
horizon H3(107cm to 132cm)	Clay
horizon R(132cm to 157cm)	Bedrock

Faywood(30%)

horizon H1(0cm to 15cm)	Silty clay loam
horizon H2(15cm to 76cm)	Clay
horizon R(76cm to 101cm)	Bedrock

Component Description:

Minor map unit components are excluded from this report.

Map Unit: LwE2 - Lowell-Faywood complex, 12 to 30 percent slopes, eroded, very stony

Component: Lowell (45%)
The Lowell, very stony component makes up 45 percent of the map unit. Slopes are 12 to 30 percent. This component is on hills on uplands. The parent material consists of clayey residuum weathered from limestone and shale. Depth to a root restrictive layer, bedrock, lithic, is 50 to 80 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low.

Soil Information

Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Component: Faywood (30%)
The Faywood, very stony component makes up 30 percent of the map unit. Slopes are 12 to 30 percent. This component is on hills on uplands. The parent material consists of clayey residuum weathered from limestone and shale. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Component: Colbert (14%)
Generated brief soil descriptions are created for major components. The Colbert soil is a minor component.

Component: Caneyville (6%)
Generated brief soil descriptions are created for major components. The Caneyville soil is a minor component.

Component: Vertrees (5%)
Generated brief soil descriptions are created for major components. The Vertrees soil is a minor component.

Map Unit Me (0.24%)

Map Unit Name:	Melvin silt loam, occasionally flooded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	15cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	B/D - These soils have moderately low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Melvin(92%)

horizon H1(0cm to 15cm)	Silt loam
horizon H2(15cm to 53cm)	Silt loam
horizon H3(53cm to 157cm)	Silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: Me - Melvin silt loam, occasionally flooded

Component: Melvin (92%)
The Melvin, occasionally flooded component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on river valleys. The parent material consists of mixed fine-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria.

Component: Newark (3%)
Generated brief soil descriptions are created for major components. The Newark soil is a minor component.

Component: Wakeland (3%)
Generated brief soil descriptions are created for major components. The Wakeland soil is a minor component.

Component: Lindside (2%)
Generated brief soil descriptions are created for major components. The Lindside soil is a minor component.

Map Unit Ne (2.78%)

Soil Information

Map Unit Name:	Newark silt loam, occasionally flooded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	40cm
Drainage Class - Dominant:	Somewhat poorly drained
Hydrologic Group - Dominant:	B/D - These soils have moderately low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Newark(90%)

horizon H1(0cm to 15cm)	Silt loam
horizon H2(15cm to 91cm)	Silt loam
horizon H3(91cm to 152cm)	Silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: Ne - Newark silt loam, occasionally flooded

Component: Newark (90%)
The Newark, occasionally flooded component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on river valleys. The parent material consists of mixed fine-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 16 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Melvin (4%)
Generated brief soil descriptions are created for major components. The Melvin soil is a minor component.

Component: Wakeland (3%)
Generated brief soil descriptions are created for major components. The Wakeland soil is a minor component.

Component: Lindside (3%)
Generated brief soil descriptions are created for major components. The Lindside soil is a minor component.

Map Unit NhB2 (8.35%)

Map Unit Name:	Nicholson silt loam, 2 to 6 percent slopes, eroded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	51cm
Drainage Class - Dominant:	Moderately well drained
Hydrologic Group - Dominant:	C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Nicholson(85%)

horizon H1(0cm to 20cm)	Silt loam
horizon H2(20cm to 63cm)	Silt loam
horizon H3(63cm to 164cm)	Silt loam
horizon H4(164cm to 183cm)	Silty clay loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: NhB2 - Nicholson silt loam, 2 to 6 percent slopes, eroded

Component: Nicholson (85%)
The Nicholson component makes up 85 percent of the map unit. Slopes are 2 to 6 percent. This component is on broad ridges on

Soil Information

karst uplands. The parent material consists of fine-silty noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer, fragipan, is 18 to 30 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Lawrence (7%)
Generated brief soil descriptions are created for major components. The Lawrence soil is a minor component.

Component: Hammack (5%)
Generated brief soil descriptions are created for major components. The Hammack soil is a minor component.

Component: Crider (3%)
Generated brief soil descriptions are created for major components. The Crider soil is a minor component.

Map Unit NhC2 (0.82%)

Map Unit Name:	Nicholson silt loam, 6 to 12 percent slopes, eroded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	51cm
Drainage Class - Dominant:	Moderately well drained
Hydrologic Group - Dominant:	C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Nicholson(85%)

horizon H1(0cm to 20cm)	Silt loam
horizon H2(20cm to 63cm)	Silt loam
horizon H3(63cm to 164cm)	Silt loam
horizon H4(164cm to 183cm)	Silty clay loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: NhC2 - Nicholson silt loam, 6 to 12 percent slopes, eroded

Component: Nicholson (85%)
The Nicholson component makes up 85 percent of the map unit. Slopes are 6 to 12 percent. This component is on ridges on karst uplands. The parent material consists of fine-silty noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer, fragipan, is 18 to 30 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Hammack (6%)
Generated brief soil descriptions are created for major components. The Hammack soil is a minor component.

Component: Baxter (5%)
Generated brief soil descriptions are created for major components. The Baxter soil is a minor component.

Component: Lawrence (4%)
Generated brief soil descriptions are created for major components. The Lawrence soil is a minor component.

Map Unit NhC3 (12.43%)

Map Unit Name:	Nicholson silt loam, 6 to 12 percent slopes, severely eroded
Bedrock Depth - Min:	null

Soil Information

Watertable Depth - Annual Min:	46cm
Drainage Class - Dominant:	Moderately well drained
Hydrologic Group - Dominant:	D - Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.

Major components are printed below

Nicholson(85%)

horizon H1(0cm to 5cm)	Silt loam
horizon H2(5cm to 41cm)	Silt loam
horizon H3(41cm to 127cm)	Silt loam
horizon H4(127cm to 183cm)	Silty clay loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: NhC3 - Nicholson silt loam, 6 to 12 percent slopes, severely eroded

Component: Nicholson (85%)
The Nicholson, severely eroded component makes up 85 percent of the map unit. Slopes are 6 to 12 percent. This component is on ridges on karst uplands. The parent material consists of fine-silty noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer, fragipan, is 16 to 20 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Hammack (5%)
Generated brief soil descriptions are created for major components. The Hammack soil is a minor component.

Component: Baxter (4%)
Generated brief soil descriptions are created for major components. The Baxter soil is a minor component.

Component: Lawrence (4%)
Generated brief soil descriptions are created for major components. The Lawrence soil is a minor component.

Component: Lindside (2%)
Generated brief soil descriptions are created for major components. The Lindside soil is a minor component.

Map Unit No (8.29%)

Map Unit Name:	Nolin silt loam, occasionally flooded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Nolin(92%)

horizon H1(0cm to 20cm)	Silt loam
horizon H2(20cm to 152cm)	Silt loam
horizon H3(152cm to 203cm)	Loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: No - Nolin silt loam, occasionally flooded

Component: Nolin (92%)
The Nolin, occasionally flooded component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on

Soil Information

flood plains on river valleys. The parent material consists of mixed fine-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Newark (3%)
Generated brief soil descriptions are created for major components. The Newark soil is a minor component.

Component: Lindside (3%)
Generated brief soil descriptions are created for major components. The Lindside soil is a minor component.

Component: Wilbur (2%)
Generated brief soil descriptions are created for major components. The Wilbur soil is a minor component.

Map Unit Np (0.32%)

Map Unit Name:	Nolin silt loam, ponded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Nolin(90%)

horizon H1(0cm to 20cm)	Silt loam
horizon H2(20cm to 152cm)	Silt loam
horizon H3(152cm to 203cm)	Loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: Np - Nolin silt loam, ponded

Component: Nolin (90%)
The Nolin, ponded component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on basin in closed depressions on karst uplands. The parent material consists of mixed fine-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Component: Newark (8%)
Generated brief soil descriptions are created for major components. The Newark soil is a minor component.

Component: Lindside (2%)
Generated brief soil descriptions are created for major components. The Lindside soil is a minor component.

Map Unit OtA (0.14%)

Map Unit Name:	Otwood silt loam, 0 to 2 percent slopes, rarely flooded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	51cm
Drainage Class - Dominant:	Moderately well drained
Hydrologic Group - Dominant:	C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Soil Information

Otwood(92%)

horizon H1(0cm to 18cm)	Silt loam
horizon H2(18cm to 64cm)	Silt loam
horizon H3(64cm to 168cm)	Silt loam
horizon H4(168cm to 198cm)	Silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: OtA - Otwood silt loam, 0 to 2 percent slopes, rarely flooded

Component: Otwood (90%)
The Otwood, rarely flooded component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on stream terraces on river valleys. The parent material consists of mixed fine-silty alluvium. Depth to a root restrictive layer, fragipan, is 23 to 35 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Newark (5%)
Generated brief soil descriptions are created for major soil components. The Newark, occasionally flooded soil is a minor component.

Component: Elk (2%)
Generated brief soil descriptions are created for major soil components. The Elk, rarely flooded soil is a minor component.

Component: Weinbach (2%)
Generated brief soil descriptions are created for major soil components. The Weinbach, rarely flooded soil is a minor component.

Component: Otwood (1%)
Generated brief soil descriptions are created for major soil components. The Otwood, frequently flooded soil is a minor component.

Map Unit OtB2 (2.27%)

Map Unit Name:	Otwood silt loam, 2 to 6 percent slopes, eroded
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	51cm
Drainage Class - Dominant:	Moderately well drained
Hydrologic Group - Dominant:	D - Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.

Major components are printed below

Otwood(95%)

horizon H1(0cm to 13cm)	Silt loam
horizon H2(13cm to 51cm)	Silt loam
horizon H3(51cm to 168cm)	Silt loam
horizon H4(168cm to 198cm)	Silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: OtB2 - Otwood silt loam, 2 to 6 percent slopes, eroded

Component: Otwood (95%)
The Otwood component makes up 95 percent of the map unit. Slopes are 2 to 6 percent. This component is on stream terraces on river valleys. The parent material consists of mixed fine-silty alluvium. Depth to a root restrictive layer, fragipan, is 18 to 30 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Soil Information

Component: Lindside (3%)
Generated brief soil descriptions are created for major components. The Lindside soil is a minor component.

Component: Newark (2%)
Generated brief soil descriptions are created for major components. The Newark soil is a minor component.

Map Unit Ua (5.21%)

Map Unit Name: Udarents, loamy

No more attributes available for this map unit

Component Description:

Minor map unit components are excluded from this report.

Map Unit: Ua - Udarents, loamy

Component: Udarents (90%)
The Udarents, loamy (Highway embankments & overpasses) component makes up 90 percent of the map unit. Slopes are Depth to a root restrictive layer is greater than 60 inches. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

Component: Urban land (10%)
Generated brief soil descriptions are created for major components. The Urban land soil is a minor component.

Map Unit W (0.19%)

Map Unit Name: Water

No more attributes available for this map unit

Component Description:

Minor map unit components are excluded from this report.

Map Unit: W - Water

Component: Water (100%)
Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Map Unit WeC2 (0.1%)

Map Unit Name:	Wellston silt loam, 6 to 12 percent slopes, eroded
Bedrock Depth - Min:	165cm
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Wellston(89%)

horizon H1(0cm to 13cm)	Silt loam
horizon H2(13cm to 99cm)	Silt loam
horizon H3(99cm to 165cm)	Channery loam
horizon R(165cm to 190cm)	Unweathered bedrock

Component Description:

Minor map unit components are excluded from this report.

Soil Information

Map Unit: WeC2 - Wellston silt loam, 6 to 12 percent slopes, eroded

Component: Wellston (85%)
The Wellston, eroded component makes up 85 percent of the map unit. Slopes are 6 to 12 percent. This component is on ridges on uplands. The parent material consists of thin fine-silty noncalcareous loess over loamy residuum weathered from sandstone and shale. Depth to a root restrictive layer, bedrock, lithic, is 40 to 64 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Sadler (5%)
Generated brief soil descriptions are created for major soil components. The Sadler soil is a minor component.

Component: Lenberg (5%)
Generated brief soil descriptions are created for major soil components. The Lenberg soil is a minor component.

Component: Rosine (5%)
Generated brief soil descriptions are created for major soil components. The Rosine soil is a minor component.

Map Unit WeD2 (0.16%)

Map Unit Name:	Wellston silt loam, 12 to 20 percent slopes, eroded
Bedrock Depth - Min:	165cm
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Wellston(94%)

horizon H1(0cm to 13cm)	Silt loam
horizon H2(13cm to 99cm)	Silt loam
horizon H3(99cm to 165cm)	Channery loam
horizon R(165cm to 190cm)	Unweathered bedrock

Component Description:

Minor map unit components are excluded from this report.

Map Unit: WeD2 - Wellston silt loam, 12 to 20 percent slopes, eroded

Component: Wellston (94%)
The Wellston component makes up 94 percent of the map unit. Slopes are 12 to 20 percent. This component is on hills on uplands. The parent material consists of fine-silty noncalcareous loess over loamy residuum weathered from sandstone and/or siltstone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 80 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Dekalb (3%)
Generated brief soil descriptions are created for major components. The Dekalb soil is a minor component.

Component: Zanesville (2%)
Generated brief soil descriptions are created for major components. The Zanesville soil is a minor component.

Component: Ramsey (1%)
Generated brief soil descriptions are created for major components. The Ramsey soil is a minor component.

Map Unit WgD (0.03%)

Soil Information

Map Unit Name:	Westmoreland-Dekalb-Gilpin complex, 12 to 20 percent slopes, very stony
Bedrock Depth - Min:	86cm
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Westmoreland(45%)	
horizon H1(0cm to 10cm)	Silt loam
horizon H2(10cm to 23cm)	Channery silt loam
horizon H3(23cm to 97cm)	Channery silty clay loam
horizon H4(97cm to 165cm)	Very channery silty clay loam
horizon R(165cm to 190cm)	Unweathered bedrock
Dekalb(25%)	
horizon H1(0cm to 10cm)	Channery silt loam
horizon H2(10cm to 30cm)	Very cobbly loam
horizon H3(30cm to 86cm)	Very cobbly sandy loam
horizon R(86cm to 111cm)	Unweathered bedrock
Gilpin(22%)	
horizon H1(0cm to 3cm)	Loam
horizon H2(3cm to 38cm)	Loam
horizon H3(38cm to 79cm)	Channery silt loam
horizon H4(79cm to 97cm)	Channery silt loam
horizon Cr(97cm to 122cm)	Weathered bedrock

Component Description:

Minor map unit components are excluded from this report.

Map Unit: WgD - Westmoreland-Dekalb-Gilpin complex, 12 to 20 percent slopes, very stony

Component: Westmoreland (45%)
The Westmoreland, very stony component makes up 45 percent of the map unit. Slopes are 12 to 20 percent. This component is on hills on uplands. The parent material consists of fine-loamy colluvium derived from sandstone and siltstone over fine-loamy residuum weathered from siltstone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 80 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

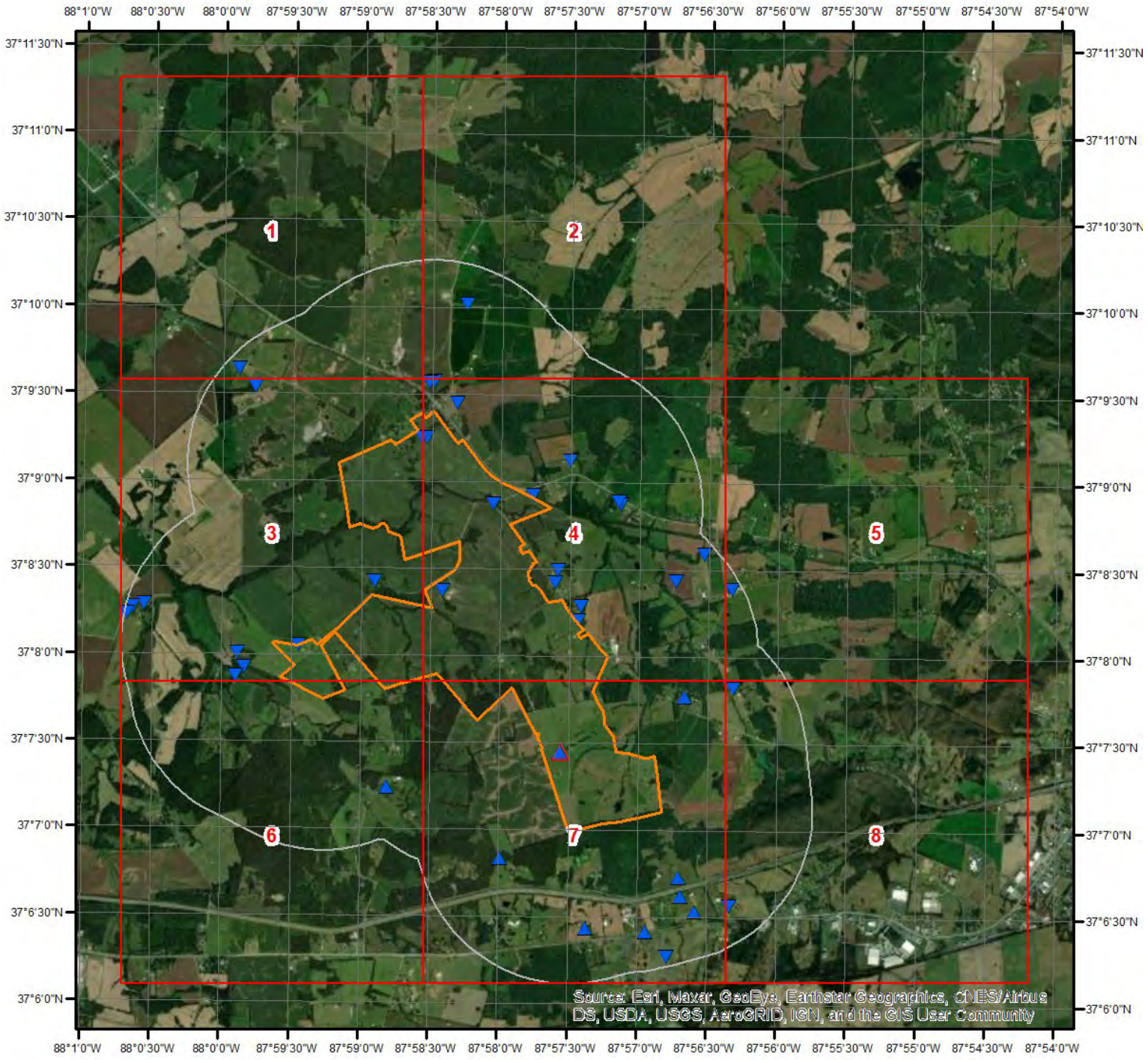
Component: Dekalb (25%)
The Dekalb, very stony component makes up 25 percent of the map unit. Slopes are 12 to 20 percent. This component is on hills on uplands. The parent material consists of loamy colluvium derived from sandstone and siltstone over loamy residuum weathered from sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This soil does not meet hydric criteria.

Component: Gilpin (22%)
The Gilpin, very stony component makes up 22 percent of the map unit. Slopes are 12 to 20 percent. This component is on hills on uplands. The parent material consists of fine-loamy residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, paralithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This soil does not meet hydric criteria.

Component: Ramsey (7%)
Generated brief soil descriptions are created for major components. The Ramsey soil is a minor component.

Component: Rock outcrop (1%)
Generated brief soil descriptions are created for major components. The Rock outcrop soil is a minor component.

Wells and Additional Sources



Wells & Additional Sources

N

0 0.45 0.9 1.8 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources

Wells & Additional Sources - Page 1

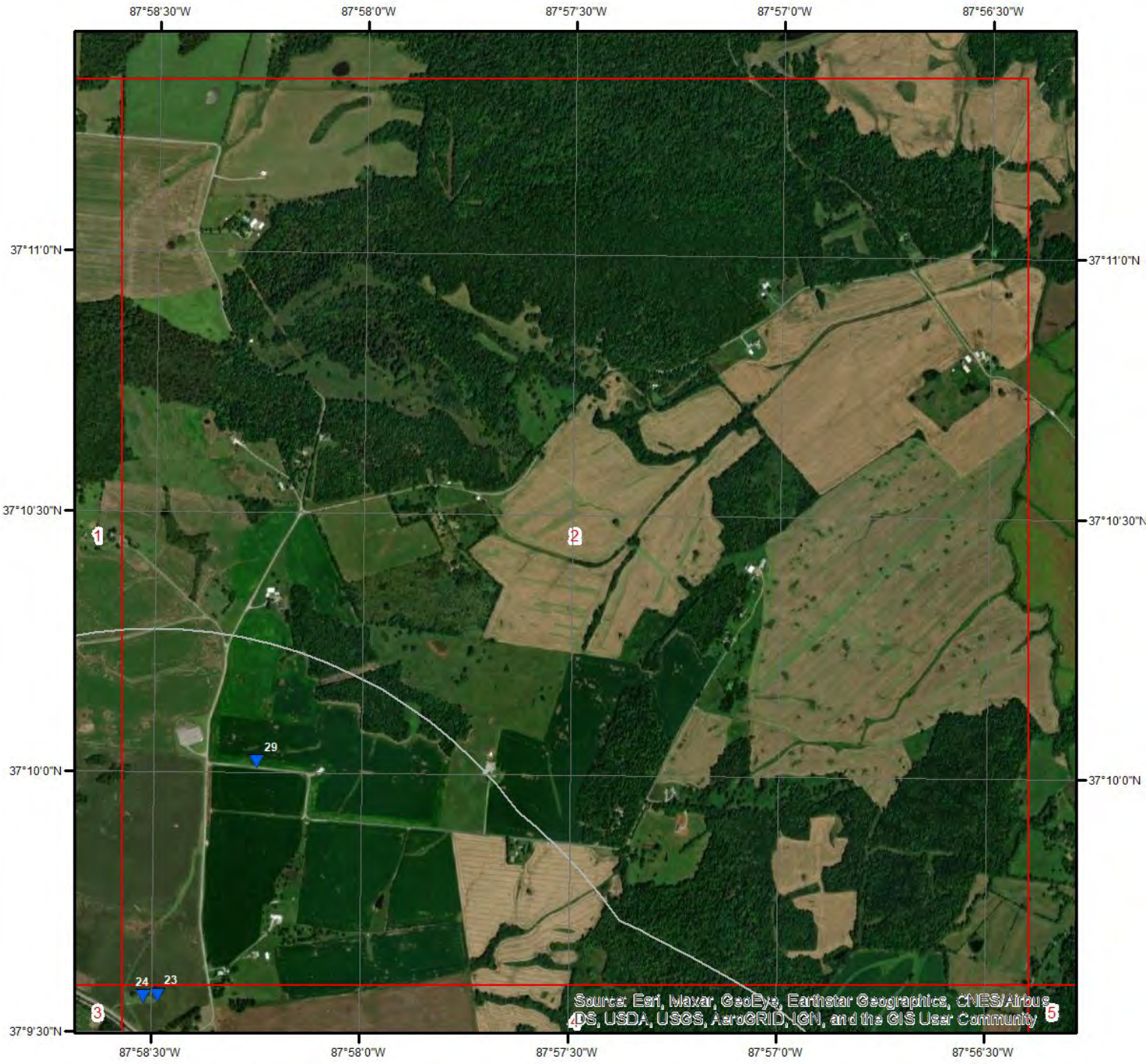
N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources



Wells & Additional Sources - Page 2

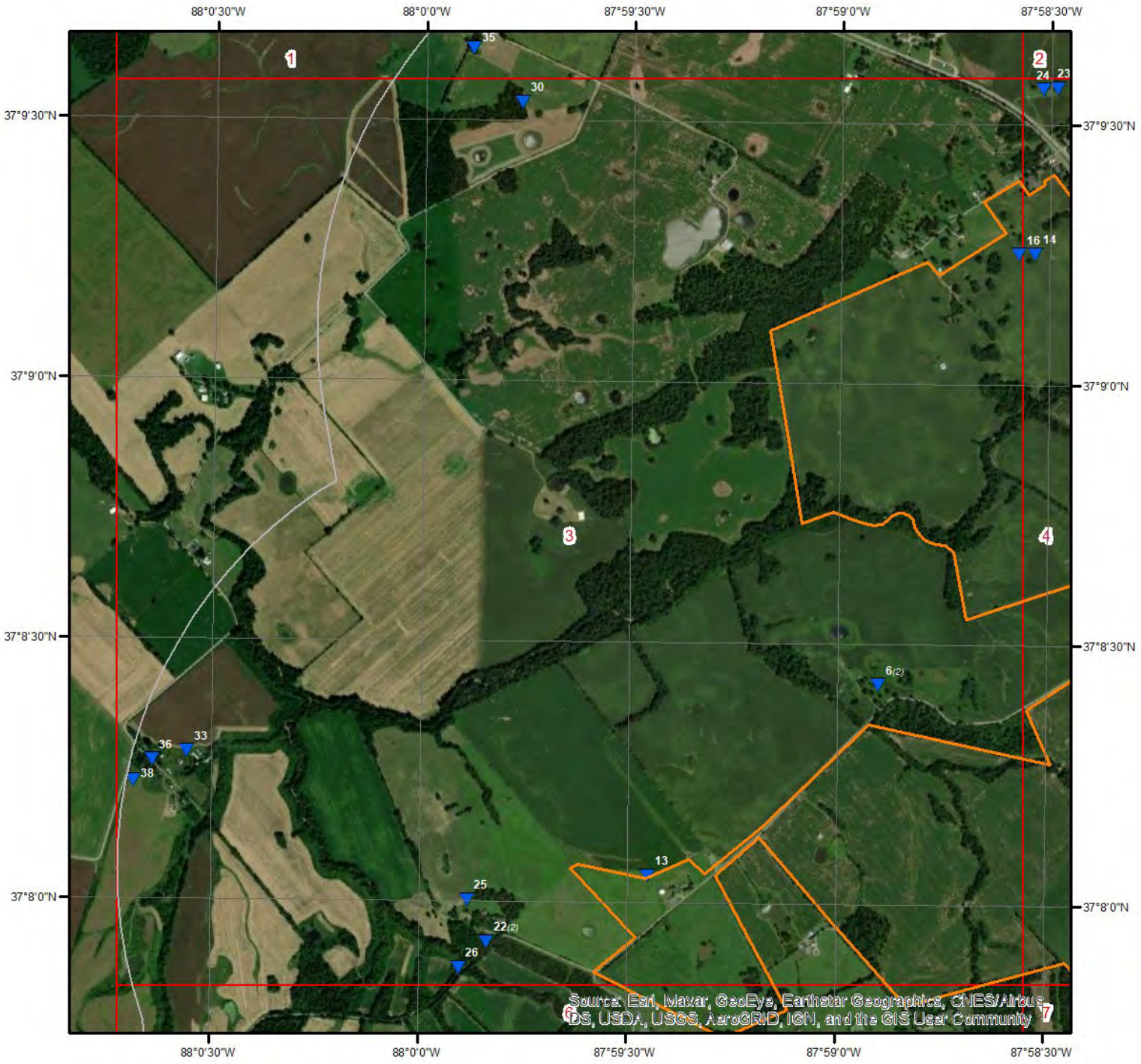
N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources



Wells & Additional Sources - Page 3

N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources

Wells & Additional Sources - Page 4

N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources

Wells & Additional Sources - Page 5

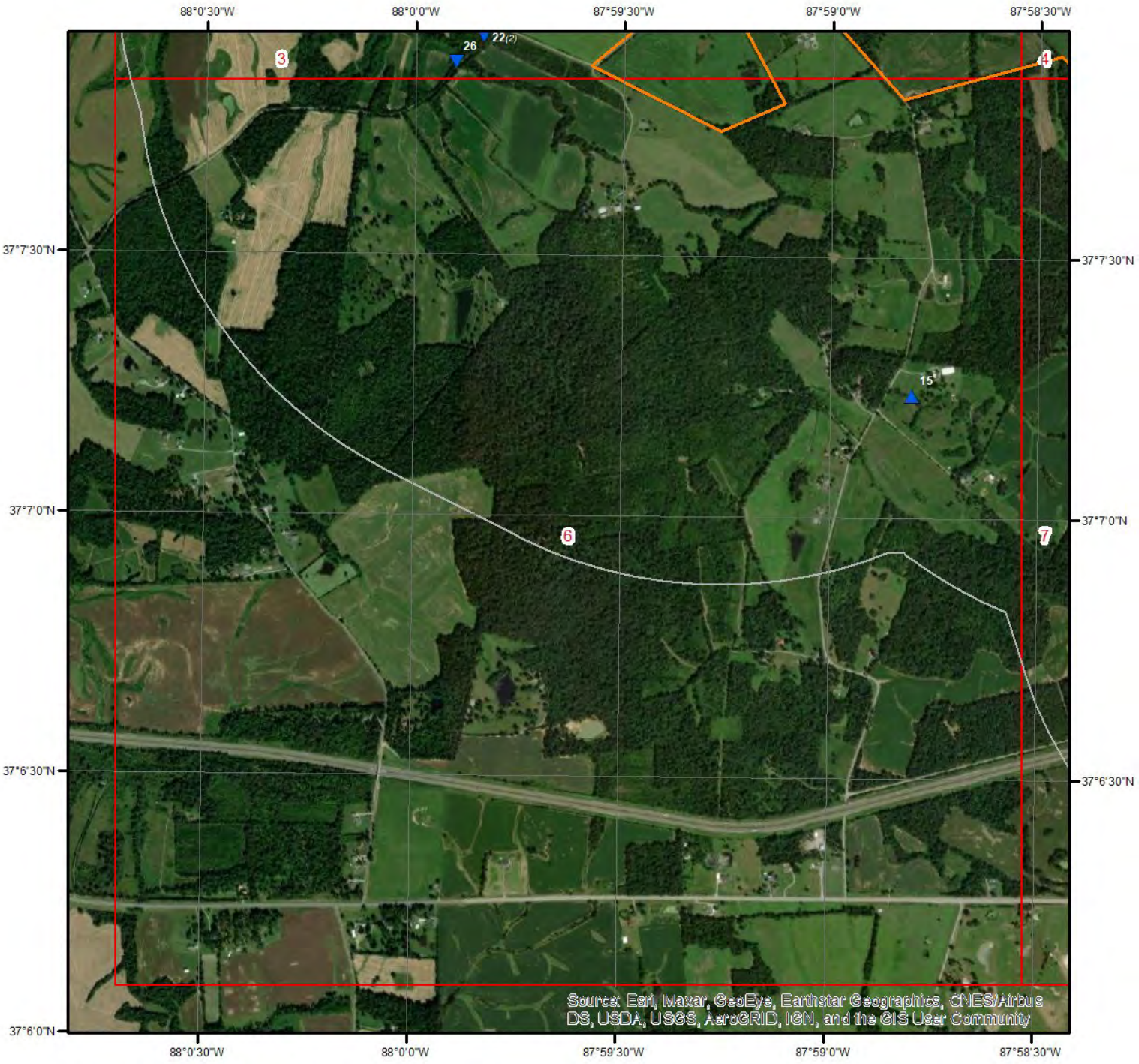
N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources



Wells & Additional Sources - Page 6

Miles
0 0.15 0.3 0.6

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources

Wells & Additional Sources - Page 7

N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources

Wells & Additional Sources - Page 8

N

0 0.15 0.3 0.6 Miles

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- OGW Sites with Higher Elevation
- OGW Sites with Same Elevation
- OGW Sites with Lower Elevation
- OGW Sites with Unknown Elevation

ERIS

Wells and Additional Sources Summary

Federal Sources

Public Water Systems Violations and Enforcement Data

Map Key	ID	Distance (ft)	Direction
	No records found		

Safe Drinking Water Information System (SDWIS)

Map Key	ID	Distance (ft)	Direction
	No records found		

USGS National Water Information System

Map Key	Monitoring Loc Identifier	Distance (ft)	Direction
1	USGS-370822087582501	0	-
2	USGS-370825087573601	570.224013229346	ENE
4	USGS-370812087572601	62.588444872453	E
5	USGS-370817087572501	455.3468542239	E
6	USGS-370825087585401	468.685188912167	WNW
7	USGS-370852087580300	0	-
8	USGS-370855087574601	69.900505256282	NNE
12	USGS-370907087573001	1743.545170724653	NNE
15	USGS-370714087584801	3448.215952414029	SSW
18	USGS-370746087564001	2286.481097313689	ESE
20	USGS-370835087563200	4873.330522618302	ENE
22	USGS-370755087595001	1285.250497402995	W
23	USGS-370934087582901	1002.835858775516	N
26	USGS-370752087595400	1565.248962930091	WSW
27	USGS-370823087562001	4917.899827539384	E
28	USGS-370749087561901	3593.693922754654	ESE
29	USGS-371001087581501	3907.996964977806	N
35	USGS-370938087595301	4762.977331509819	NW

State Sources

Kentucky Groundwater Data Repository

Map Key	AKGWA No	Distance (ft)	Direction
3	30007293	821.812152119416	ENE
6	40004596	468.685188912167	WNW
10	40002636	2452.834046627328	NE
11	50001186	2379.116356834316	NE
13	60002072	11.723216867932	W
14	60001941	0	-
16	30007306	0	-
17	30006849	3519.45165904104	E
18	40002190	2286.481097313689	ESE
19	60002031	835.461531850333	N
21	60001945	2545.277358123021	S
22	40002034	1285.250497402995	W
24	60002032	992.611105520964	NNW
25	60002029	1262.763208728545	W

Wells and Additional Sources Summary

30	60002063	3918.475723442331	NW
31	00045256	2368.413890623728	SE
32	00002043	3410.50441757166	SSE
33	00067013	4671.851810414383	W
34	40007088	3053.246892687918	SE
36	00067012	5033.31509499299	W
37	40001676	3926.118653757261	SSE
38	30007530	5187.977711724655	W
39	40001677	3676.493196441987	SE
40	60002037	4081.808367109657	SE
41	40002723	4982.378964579808	SSE

Oil and Gas Wells

Map Key	API	Distance (ft)	Direction
9	16033000500000	0	-

Public Water Supply Wells

Map Key	ID	Distance (ft)	Direction
	No records found		

Wells and Additional Sources Detail Report

USGS National Water Information System

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
1	-	0.00	0.00	509.30	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	250	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	250	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:	1969	Latitude:	37.1394954
Source Map Scale:	24000	Longitude:	-87.9736293
Monitoring Loc Name:	I08A0021		
Monitoring Loc Identifier:	USGS-370822087582501		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	510		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
2	ENE	0.11	570.22	513.68	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	109	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	109	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL

Wells and Additional Sources Detail Report

Construction Date:	1966	Latitude:	37.1403285
Source Map Scale:	24000	Longitude:	-87.9600177
Monitoring Loc Name:	I08A0030		
Monitoring Loc Identifier:	USGS-370825087573601		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	518		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
4	E	0.01	62.59	521.01	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	75	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	75	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:	1973	Latitude:	37.1367173
Source Map Scale:	24000	Longitude:	-87.9572398
Monitoring Loc Name:	I08A0028		
Monitoring Loc Identifier:	USGS-370812087572601		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		

Wells and Additional Sources Detail Report

Horizontal Collection Mthd:	Interpolated from MAP.
Horiz Coord Refer System:	NAD83
Vertical Measure:	525
Vertical Measure Unit:	feet
Vertical Accuracy:	5
Vertical Accuracy Unit:	feet
Vertical Collection Mthd:	Interpolated from topographic map.
Vert Coord Refer System:	NGVD29

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
5	E	0.09	455.35	519.87	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	150	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	150	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:	1968	Latitude:	37.1381062
Source Map Scale:	24000	Longitude:	-87.956962
Monitoring Loc Name:	I08A0029		
Monitoring Loc Identifier:	USGS-370817087572501		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	540		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
6	WNW	0.09	468.69	491.99	FED USGS

Wells and Additional Sources Detail Report

Organiz Identifier:	USGS-KY	Formation Type:	Ste. Genevieve-St Louis Limestones, Undifferentiated
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	240	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	240	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:	1969	Latitude:	37.1403289
Source Map Scale:	24000	Longitude:	-87.9816851
Monitoring Loc Name:	I08A0018		
Monitoring Loc Identifier:	USGS-370825087585401		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	495		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
7	-	0.00	0.00	459.99	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:		Aquifer Type:	
Well Depth Unit:		Country Code:	US
Well Hole Depth:		Provider Name:	NWIS
W Hole Depth Unit:		County:	CALDWELL
Construction Date:		Latitude:	37.1478286
Source Map Scale:		Longitude:	-87.9675179
Monitoring Loc Name:	SKINFRAME CREEK NEAR CRIDER, KY		
Monitoring Loc Identifier:	USGS-370852087580300		
Monitoring Loc Type:	Stream		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		

Wells and Additional Sources Detail Report

Drainage Area:
Drainage Area Unit:
Contrib Drainage Area:
Contrib Drainage Area Unit:
Horizontal Accuracy: Unknown
Horizontal Accuracy Unit: Unknown
Horizontal Collection Mthd: Interpolated from MAP.
Horiz Coord Refer System: NAD83
Vertical Measure:
Vertical Measure Unit:
Vertical Accuracy:
Vertical Accuracy Unit:
Vertical Collection Mthd:
Vert Coord Refer System:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
8	NNE	0.01	69.90	491.09	FED USGS

Organiz Identifier: USGS-KY
Organiz Name: USGS Kentucky Water Science Center
Well Depth: 76
Well Depth Unit: ft
Well Hole Depth: 76
W Hole Depth Unit: ft
Construction Date: 1964
Source Map Scale: 24000
Monitoring Loc Name: I08A0016
Monitoring Loc Identifier: USGS-370855087574601
Monitoring Loc Type: Well
Monitoring Loc Desc:
HUC Eight Digit Code: 05130205
Drainage Area:
Drainage Area Unit:
Contrib Drainage Area:
Contrib Drainage Area Unit:
Horizontal Accuracy: 1
Horizontal Accuracy Unit: seconds
Horizontal Collection Mthd: Interpolated from MAP.
Horiz Coord Refer System: NAD83
Vertical Measure: 492
Vertical Measure Unit: feet
Vertical Accuracy: 5
Vertical Accuracy Unit: feet

Formation Type:
Aquifer Name:
Aquifer Type:
Country Code: US
Provider Name: NWIS
County: CALDWELL
Latitude: 37.1486618
Longitude: -87.9627955

Wells and Additional Sources Detail Report

Vertical Collection Mthd:	Interpolated from topographic map.
Vert Coord Refer System:	NGVD29

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
12	NNE	0.33	1,743.55	500.63	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	100	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	100	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:		Latitude:	37.1519951
Source Map Scale:	24000	Longitude:	-87.9583508
Monitoring Loc Name:	I08A0034		
Monitoring Loc Identifier:	USGS-370907087573001		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	502		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
15	SSW	0.65	3,448.22	595.32	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	100	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	100	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL

Wells and Additional Sources Detail Report

Construction Date:		Latitude:	37.1206067
Source Map Scale:	24000	Longitude:	-87.9800186
Monitoring Loc Name:	I08C0047		
Monitoring Loc Identifier:	USGS-370714087584801		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	602		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
18	ESE	0.43	2,286.48	567.36	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	90	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	90	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:	1966	Latitude:	37.1294949
Source Map Scale:	24000	Longitude:	-87.9444617
Monitoring Loc Name:	I08A0027		
Monitoring Loc Identifier:	USGS-370746087564001		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		

Wells and Additional Sources Detail Report

Horizontal Collection Mthd:	Interpolated from MAP.
Horiz Coord Refer System:	NAD83
Vertical Measure:	567
Vertical Measure Unit:	feet
Vertical Accuracy:	5
Vertical Accuracy Unit:	feet
Vertical Collection Mthd:	Interpolated from topographic map.
Vert Coord Refer System:	NGVD29

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
20	ENE	0.92	4,873.33	490.73	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:		Aquifer Type:	
Well Depth Unit:		Country Code:	US
Well Hole Depth:		Provider Name:	NWIS
W Hole Depth Unit:		County:	CALDWELL
Construction Date:		Latitude:	37.1431059
Source Map Scale:		Longitude:	-87.9422392
Monitoring Loc Name:	SKINFRAME CREEK NEAR WHITE SULPHUR, KY		
Monitoring Loc Identifier:	USGS-370835087563200		
Monitoring Loc Type:	Stream		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	Unknown		
Horizontal Accuracy Unit:	Unknown		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:			
Vertical Measure Unit:			
Vertical Accuracy:			
Vertical Accuracy Unit:			
Vertical Collection Mthd:			
Vert Coord Refer System:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
22	W	0.24	1,285.25	484.09	FED USGS

Wells and Additional Sources Detail Report

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	90	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	90	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:	1963	Latitude:	37.1319959
Source Map Scale:	24000	Longitude:	-87.9972414
Monitoring Loc Name:	I08A0019		
Monitoring Loc Identifier:	USGS-370755087595001		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	485		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
23	N	0.19	1,002.84	470.25	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	32	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	32	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:	1948	Latitude:	37.1594953
Source Map Scale:	24000	Longitude:	-87.9747402
Monitoring Loc Name:	I08A0004		
Monitoring Loc Identifier:	USGS-370934087582901		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		

Wells and Additional Sources Detail Report

Drainage Area:	
Drainage Area Unit:	
Contrib Drainage Area:	
Contrib Drainage Area Unit:	
Horizontal Accuracy:	1
Horizontal Accuracy Unit:	seconds
Horizontal Collection Mthd:	Interpolated from MAP.
Horiz Coord Refer System:	NAD83
Vertical Measure:	460
Vertical Measure Unit:	feet
Vertical Accuracy:	5
Vertical Accuracy Unit:	feet
Vertical Collection Mthd:	Interpolated from topographic map.
Vert Coord Refer System:	NGVD29

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
26	WSW	0.30	1,565.25	462.01	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:		Aquifer Type:	
Well Depth Unit:		Country Code:	US
Well Hole Depth:		Provider Name:	NWIS
W Hole Depth Unit:		County:	CALDWELL
Construction Date:		Latitude:	37.1311626
Source Map Scale:		Longitude:	-87.9983525
Monitoring Loc Name:	MCELROY CREEK		
Monitoring Loc Identifier:	USGS-370752087595400		
Monitoring Loc Type:	Stream		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	Unknown		
Horizontal Accuracy Unit:	Unknown		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:			
Vertical Measure Unit:			
Vertical Accuracy:			
Vertical Accuracy Unit:			

Wells and Additional Sources Detail Report

Vertical Collection Mthd:
Vert Coord Refer System:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
27	E	0.93	4,917.90	537.39	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	75	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	75	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:	1969	Latitude:	37.1397726
Source Map Scale:	24000	Longitude:	-87.9389058
Monitoring Loc Name:	I08A0031		
Monitoring Loc Identifier:	USGS-370823087562001		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	540		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
28	ESE	0.68	3,593.69	527.94	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	66	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	66	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL

Wells and Additional Sources Detail Report

Construction Date:	1960	Latitude:	37.1303282
Source Map Scale:	24000	Longitude:	-87.9386281
Monitoring Loc Name:	I08A0026		
Monitoring Loc Identifier:	USGS-370749087561901		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	522		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
29	N	0.74	3,908.00	477.20	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	210	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	210	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:		Latitude:	37.1669952
Source Map Scale:	24000	Longitude:	-87.9708511
Monitoring Loc Name:	I08A0036		
Monitoring Loc Identifier:	USGS-371001087581501		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		

Wells and Additional Sources Detail Report

Horizontal Collection Mthd:	Interpolated from MAP.
Horiz Coord Refer System:	NAD83
Vertical Measure:	477
Vertical Measure Unit:	feet
Vertical Accuracy:	5
Vertical Accuracy Unit:	feet
Vertical Collection Mthd:	Interpolated from topographic map.
Vert Coord Refer System:	NGVD29

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
35	NW	0.90	4,762.98	460.42	FED USGS

Organiz Identifier:	USGS-KY	Formation Type:	
Organiz Name:	USGS Kentucky Water Science Center	Aquifer Name:	
Well Depth:	200	Aquifer Type:	
Well Depth Unit:	ft	Country Code:	US
Well Hole Depth:	200	Provider Name:	NWIS
W Hole Depth Unit:	ft	County:	CALDWELL
Construction Date:		Latitude:	37.1606068
Source Map Scale:	24000	Longitude:	-87.9980744
Monitoring Loc Name:	I08A0037		
Monitoring Loc Identifier:	USGS-370938087595301		
Monitoring Loc Type:	Well		
Monitoring Loc Desc:			
HUC Eight Digit Code:	05130205		
Drainage Area:			
Drainage Area Unit:			
Contrib Drainage Area:			
Contrib Drainage Area Unit:			
Horizontal Accuracy:	1		
Horizontal Accuracy Unit:	seconds		
Horizontal Collection Mthd:	Interpolated from MAP.		
Horiz Coord Refer System:	NAD83		
Vertical Measure:	430		
Vertical Measure Unit:	feet		
Vertical Accuracy:	5		
Vertical Accuracy Unit:	feet		
Vertical Collection Mthd:	Interpolated from topographic map.		
Vert Coord Refer System:	NGVD29		

Kentucky Groundwater Data Repository

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
3	ENE	0.16	821.81	496.56	WATER WELLS

Wells and Additional Sources Detail Report

AKGWA No:	30007293	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.141548
Physiograph Region:	Western Pennyroyal	Longitude:	-87.959717
Site Name:		Lat Long Method:	UNKN

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
6	WNW	0.09	468.69	491.99	WATER WELLS

AKGWA No:	40004596	Surface Elev:	495
ALT ID:	370825087585401	County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	UNKNOWN	Latitude:	37.140328
Physiograph Region:	Western Pennyroyal	Longitude:	-87.981684
Site Name:		Lat Long Method:	TOPO

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
10	NE	0.46	2,452.83	511.75	WATER WELLS

AKGWA No:	40002636	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.147827
Physiograph Region:	Western Pennyroyal	Longitude:	-87.95224
Site Name:		Lat Long Method:	UNKN

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
11	NE	0.45	2,379.12	504.23	WATER WELLS

AKGWA No:	50001186	Surface Elev:	505
ALT ID:	3708530875709	County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.148106
Physiograph Region:	Western Pennyroyal	Longitude:	-87.952515
Site Name:		Lat Long Method:	TOPO

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
13	W	0.00	11.72	476.59	WATER WELLS

AKGWA No:	60002072	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider

Wells and Additional Sources Detail Report

Usage:	Domestic - Single Household	Latitude:	37.134167
Physiograph Region:		Longitude:	-87.990833
Site Name:		Lat Long Method:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
14	-	0.00	0.00	454.82	WATER WELLS

AKGWA No:	60001941	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.154167
Physiograph Region:		Longitude:	-87.975556
Site Name:		Lat Long Method:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
16	-	0.00	0.00	457.49	WATER WELLS

AKGWA No:	30007306	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.154148
Physiograph Region:	Western Pennyroyal	Longitude:	-87.976212
Site Name:		Lat Long Method:	UNKN

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
17	E	0.67	3,519.45	501.04	WATER WELLS

AKGWA No:	30006849	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.140549
Physiograph Region:	Western Pennyroyal	Longitude:	-87.945618
Site Name:		Lat Long Method:	UNKN

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
18	ESE	0.43	2,286.48	567.36	WATER WELLS

AKGWA No:	40002190	Surface Elev:	567
ALT ID:	370746087564001	County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.129494
Physiograph Region:	Western Pennyroyal	Longitude:	-87.944458
Site Name:		Lat Long Method:	UNKN

Wells and Additional Sources Detail Report

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
19	N	0.16	835.46	463.45	WATER WELLS

AKGWA No:	60002031	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.1575
Physiograph Region:		Longitude:	-87.971944
Site Name:		Lat Long Method:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
21	S	0.48	2,545.28	649.04	WATER WELLS

AKGWA No:	60001945	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Princeton West
Usage:	Domestic - Single Household	Latitude:	37.113889
Physiograph Region:		Longitude:	-87.966389
Site Name:		Lat Long Method:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
22	W	0.24	1,285.25	484.09	WATER WELLS

AKGWA No:	40002034	Surface Elev:	485
ALT ID:	370755087595001	County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.131992
Physiograph Region:	Western Pennyroyal	Longitude:	-87.997246
Site Name:		Lat Long Method:	UNKN

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
24	NNW	0.19	992.61	464.50	WATER WELLS

AKGWA No:	60002032	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.159444
Physiograph Region:		Longitude:	-87.975278
Site Name:		Lat Long Method:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
25	W	0.24	1,262.76	490.35	WATER WELLS

Wells and Additional Sources Detail Report

AKGWA No:	60002029	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.133333
Physiograph Region:		Longitude:	-87.998056
Site Name:		Lat Long Method:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
30	NW	0.74	3,918.48	466.69	WATER WELLS

AKGWA No:	60002063	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Crider
Usage:	Domestic - Single Household	Latitude:	37.158889
Physiograph Region:		Longitude:	-87.996111
Site Name:		Lat Long Method:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
31	SE	0.45	2,368.41	582.25	WATER WELLS

AKGWA No:	00045256	Surface Elev:	580
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Princeton West
Usage:	Domestic - Single Household	Latitude:	37.112222
Physiograph Region:	Mississippian Plateau	Longitude:	-87.945
Site Name:	Residence - Jimmy Winters	Lat Long Method:	Paper or Internet Map Interpolation

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
32	SSE	0.65	3,410.50	547.60	WATER WELLS

AKGWA No:	00002043	Surface Elev:	550
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Princeton West
Usage:	Domestic - Single Household	Latitude:	37.107222
Physiograph Region:	Mississippian Plateau	Longitude:	-87.956111
Site Name:	Residence - Ed Young	Lat Long Method:	Paper or Internet Map Interpolation

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
33	W	0.88	4,671.85	460.83	WATER WELLS

AKGWA No:	00067013	Surface Elev:	460
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Fredonia
Usage:	Unused	Latitude:	37.13802

Wells and Additional Sources Detail Report

Physiograph Region:	Mississippian Plateau	Longitude:	-88.00931
Site Name:	Sammy Williams Property	Lat Long Method:	GIS Generated - Aerial Photograph (DOQ)

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
34	SE	0.58	3,053.25	564.50	WATER WELLS

AKGWA No:	40007088	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Princeton West
Usage:	Domestic - Single Household	Latitude:	37.110329
Physiograph Region:	Western Pennyroyal	Longitude:	-87.94474
Site Name:		Lat Long Method:	UNKN

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
36	W	0.95	5,033.32	455.16	WATER WELLS

AKGWA No:	00067012	Surface Elev:	475
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Fredonia
Usage:	Unused	Latitude:	37.13774
Physiograph Region:	Mississippian Plateau	Longitude:	-88.01069
Site Name:	Sammy Williams Property	Lat Long Method:	GIS Generated - Aerial Photograph (DOQ)

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
37	SSE	0.74	3,926.12	560.34	WATER WELLS

AKGWA No:	40001676	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Princeton West
Usage:	Domestic - Single Household	Latitude:	37.106995
Physiograph Region:	Western Pennyroyal	Longitude:	-87.948906
Site Name:		Lat Long Method:	UNKN

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
38	W	0.98	5,187.98	451.66	WATER WELLS

AKGWA No:	30007530	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Fredonia
Usage:	Domestic - Single Household	Latitude:	37.137054
Physiograph Region:	Western Pennyroyal	Longitude:	-88.011421
Site Name:		Lat Long Method:	UNKN

Wells and Additional Sources Detail Report

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
39	SE	0.70	3,676.49	577.29	WATER WELLS

AKGWA No:	40001677	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Princeton West
Usage:	Domestic - Single Household	Latitude:	37.10894
Physiograph Region:	Western Pennyroyal	Longitude:	-87.943069
Site Name:		Lat Long Method:	UNKN

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
40	SE	0.77	4,081.81	533.35	WATER WELLS

AKGWA No:	60002037	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Princeton West
Usage:	Domestic - Single Household	Latitude:	37.109444
Physiograph Region:		Longitude:	-87.938889
Site Name:		Lat Long Method:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
41	SSE	0.94	4,982.38	535.61	WATER WELLS

AKGWA No:	40002723	Surface Elev:	
ALT ID:		County:	Caldwell
Type:	W	Quad Name:	Princeton West
Usage:	Domestic - Single Household	Latitude:	37.104492
Physiograph Region:	Western Pennyroyal	Longitude:	-87.946404
Site Name:		Lat Long Method:	UNKN

Oil and Gas Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
9	-	0.00	0.00	578.68	OGW

KGS Rec No:	120151	FNS:	2680
KGS Permit:	90183	NS:	S
API:	16033000500000	FEW:	2150
ORG Well No:	1	EW:	W
Bore Type:	V	Latitude:	37.124078
No:	19	Longitude:	-87.95931
Section:	13	Rec Lat NAD1927:	37.124027
Surface Elevation:	580	Rec Lon NAD1927:	-87.959293
County:	CALDWELL	ELOG:	ELOG
USGS Quad:	PRINCETON WEST	Letter:	H

Wells and Additional Sources Detail Report

ORG Operator:	VOGLER, JOHN F
ORG Farm:	JONES, WILLIAM
Bore Type Desc:	Conventional vertical well bore (not intentionally deviated)
Images:	https://kgs.uky.edu/kygeode/services/oilgas/wellReport.asp?id=120151

Radon Information

This section lists any relevant radon information found for the target property.

Federal EPA Radon Zone for *CALDWELL* County: **2**

Zone 1: Counties with predicted average indoor radon screening levels greater than 4 pCi/L
Zone 2: Counties with predicted average indoor radon screening levels from 2 to 4 pCi/L
Zone 3: Counties with predicted average indoor radon screening levels less than 2 pCi/L

Federal Area Radon Information for *CALDWELL* County

No Measures/Homes:	5
Geometric Mean:	1.1
Arithmetic Mean:	1.3
Median:	1.3
Standard Deviation:	0.6
Maximum:	2
% >4 pCi/L:	0
% >20 pCi/L:	0
Notes on Data Table:	TABLE 1. Screening indoor radon data from the EPA/State Residential Radon Survey of Kentucky conducted during 1986-87. Data represent 2-7 day charcoal canister measurements from the lowest level of each home tested.

Appendix

Federal Sources

FEMA National Flood Hazard Layer — **FEMA FLOOD**

The National Flood Hazard Layer (NFHL) data incorporates Flood Insurance Rate Map (FIRM) databases published by the Federal Emergency Management Agency (FEMA), and any Letters Of Map Revision (LOMRs) that have been issued against those databases since their publication date. The FIRM Database is the digital, geospatial version of the flood hazard information shown on the published paper FIRMs. The FIRM Database depicts flood risk information and supporting data used to develop the risk data. The FIRM Database is derived from Flood Insurance Studies (FISs), previously published FIRMs, flood hazard analyses performed in support of the FISs and FIRMs, and new mapping data, where available.

Indoor Radon Data — **INDOOR RADON**

Indoor radon measurements tracked by the Environmental Protection Agency(EPA) and the State Residential Radon Survey.

Public Water Systems Violations and Enforcement Data — **PWSV**

List of drinking water violations and enforcement actions from the Safe Drinking Water Information System (SDWIS) made available by the Drinking Water Protection Division of the US EPA's Office of Groundwater and Drinking Water. Enforcement sensitive actions are not included in the data released by the EPA. Address information provided in SWDIS may correspond either with the physical location of the water system, or with a contact address.

Radon Zone Level — **RADON ZONE**

Areas showing the level of Radon Zones (level 1, 2 or 3) by county. This data is maintained by the Environmental Protection Agency (EPA).

Safe Drinking Water Information System (SDWIS) — **SDWIS**

The Safe Drinking Water Information System (SDWIS) contains information about public water systems as reported to US Environmental Protection Agency (EPA) by the states. Addresses may correspond with the location of the water system, or with a contact address.

Soil Survey Geographic database — **SSURGO**

The Soil Survey Geographic database (SSURGO) contains information about soil as collected by the National Cooperative Soil Survey at the Natural Resources Conservation Service (NRCS). Soil maps outline areas called map units. The map units are linked to soil properties in a database. Each map unit may contain one to three major components and some minor components.

U.S. Fish & Wildlife Service Wetland Data — **US WETLAND**

The U.S. Fish & Wildlife Service Wetland layer represents the approximate location and type of wetlands and deepwater habitats in the United States.

USGS Current Topo — **US TOPO**

US Topo topographic maps are produced by the National Geospatial Program of the U.S. Geological Survey (USGS). The project was launched in late 2009, and the term "US Topo" refers specifically to quadrangle topographic maps published in 2009 and later.

USGS Geology — **US GEOLOGY**

Seamless maps depicting geological information provided by the United States Geological Survey (USGS).

USGS National Water Information System — **FED USGS**

The U.S. Geological Survey (USGS)'s National Water Information System (NWIS) is the nation's principal repository of water resources data. This database includes comprehensive information of well-construction details, time-series data for gage height, streamflow, groundwater level, and precipitation and water use data.

State Sources

Kentucky Groundwater Data Repository — **WATER WELLS**

List of records in the Kentucky Geological Survey's Water Well & Spring Recrods database. The Kentucky

Appendix

Groundwater Data Repository was initiated in 1990 by the Kentucky Geological Survey under mandate from the Kentucky legislature (KRS 151:035). The repository was established to archive and disseminate groundwater data collected by State agencies, other organizations, and independent researchers.

Oil and Gas Wells **OGW**

Oil and Gas Wells Data made available by the Kentucky Geological Survey.

Public Water Supply Wells **PWSW**

The Public Water Supply Wells (PWSW) data consist of community water supply wells in Kentucky. This data was made available by Kentucky Department for Environmental Protection, Division of Water.

Liability Notice

Reliance on information in Report: The Physical Setting Report (PSR) DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as a review of environmental databases and physical characteristics for the site or adjacent properties.

License for use of information in Report: No page of this report can be used without this cover page, this notice and the project property identifier. The information in Report(s) may not be modified or re-sold.

Your Liability for misuse: Using this Service and/or its reports in a manner contrary to this Notice or your agreement will be in breach of copyright and contract and ERIS may obtain damages for such mis-use, including damages caused to third parties, and gives ERIS the right to terminate your account, rescind your license to any previous reports and to bar you from future use of the Service.

No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by ERIS Information Inc. ("ERIS") using various sources of information, including information provided by Federal and State government departments. The report applies only to the address and up to the date specified on the cover of this report, and any alterations or deviation from this description will require a new report. This report and the data contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein and does not constitute a legal opinion nor medical advice. Although ERIS has endeavored to present you with information that is accurate, ERIS Information Inc. disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.

Trademark and Copyright: You may not use the ERIS trademarks or attribute any work to ERIS other than as outlined above. This Service and Report(s) are protected by copyright owned by ERIS Information Inc. Copyright in data used in the Service or Report(s) (the "Data") is owned by ERIS or its licensors. The Service, Report(s) and Data may not be copied or reproduced in whole or in any substantial part without prior written consent of ERIS.

Phase I ESA
Caldwell Solar Site Additional Area
Fredonia, Kentucky

C

SITE PHOTOGRAPHS

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Date: July 13, 2021 **Description:** Wheat stubble field with newly planted soy beans located on the north side of the Site, southwest of Crider Road (facing southwest).	**Photo 1** 
Date: July 13, 2021 **Description:** Dilapidated and overgrown barn located on the north side of the Site, south of Crider Road (facing southwest).	**Photo 2** 

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Photo 3

Date:
July 13, 2021

Description:
Wheat stubble field with newly planted soy beans located on the northeast side of the Site, south of Crider Road and north of Skinframe Creek (facing north).

Photo 4

Date:
July 13, 2021

Description:
Location of historical truck accident (H.T. Hackney on April 28, 2017) at the intersection of Marion and Skinframe Creek Roads, on the northeast side of the Site (facing east).

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Photo 5

Date:
July 13, 2021

Description:
Railroad crossing at Skinframe Creek Road on northeast side of Site (facing south). Wheat stubble field with newly planted soybeans is located south of the railroad track. Skinframe Creek is in the treed area in the background.

Photo 6

Date:
July 13, 2021

Description:
Cemetery located in woods north of Skinframe Creek and west of Skinframe Creek Road on the northeast side of Site (facing southwest).

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Photo 7

Date:
July 13, 2021

Description:
Wheat stubble field with newly planted soy beans west of Old Fredonia Road and south of Skinframe Creek on northwest side of Site (facing west).

Photo 8

Date:
July 13, 2021

Description:
Wheat stubble field with newly planted soy beans southeast of Old Fredonia Road on east side of Site (facing south).

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Photo 9

Date:
July 13, 2021

Description:
Wheat stubble field with newly planted soy beans south of Old Fredonia Road in central area of Site, between Skinframe and Hewlett Creeks (facing southwest).

Photo 10

Date:
July 13, 2021

Description:
Silos and sheds around a concrete feedlot located at Jones Farm Complex – East, located south of Old Fredonia Road (facing north).

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Date: July 13, 2021 **Description:** Woodpile and dirt pile located at Jones Farm Complex – East, located south of Old Fredonia Road (facing south).	**Photo 11** 
Date: April 14, 2020 **Description:** Wheat stubble field with newly planted soy beans in central area of Site, south of Old Fredonia Road, west of Jones Farm Complex – East and east of Hewlett Creek (facing south-southeast).	**Photo 12** 

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Photo 13

Date:
July 13, 2021

Description:
Hewlett Creek at Old Fredonia Road on northwest side of Site (facing southeast).

Photo 14

Date:
July 13, 2021

Description:
Barn and pond across Wheat stubble field with newly planted soy beans northeast of Crider Dulaney Road and southeast of Old Fredonia Road, on west side of Site (facing east-northeast).

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Photo 15

Date:
July 13, 2021

Description:
Wheat stubble field with newly planted soybeans east of Crider Dulaney Spur Road (facing east).

Photo 16

Date:
July 13, 2021

Description:
Stressed grass at off-site minor fertilizer spill next to silos and equipment shed on north side of Old Fredonia Road (facing northwest).

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Photo 17

Date:
July 13, 2021

Description:
House and sheds at Jones Farm Complex – West (6858 Old Fredonia Road). Farm implements, empty trailer mounted polyethylene AST and liquid propane gas AST are located north of Old Fredonia Road (facing southeast).

Photo 18

Date:
July 13, 2021

Description:
Approximately 250-gallon off-road diesel AST next to shed at 6858 Old Fredonia Road (facing southeast).

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Date: July 13, 2021 **Description:** Grass field on west side of Site, south of Old Fredonia Road (facing north-northeast).	**Photo 19** 
Date: July 14, 2021 **Description:** Organic cornfield located east side of Site, south of Bobby Gill Road (facing southwest).	**Photo 20** 

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Date: July 14, 2021 **Description:** Overgrown dilapidated house at Gill Farm Complex located at west end of Bobby Gill Road (facing west).	**Photo 21**

Date: July 14, 2021 **Description:** Goat pasture and pond on west side of Gill Farm Complex at west end of Bobby Gill Road (facing southwest).	**Photo 22**

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Date: July 14, 2021 **Description:** Barn/equipment shed on northeast side of Gill Farm Complex at west end of Bobby Gill Road (facing northeast).	**Photo 23** 
Date: July 14, 2021 **Description:** Empty, approximately 500-gallon steel AST located north of barn/equipment shed on northeast side of Gill Farm Complex at west end of Bobby Gill Road (facing northeast).	**Photo 24** 

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Photo 25

Date:
July 14, 2021

Description: 55-gallon hydraulic fluid and motor oil drums and other containers in barn/equipment shed on northeast side of Gill Farm Complex located at west end of Bobby Gill Road (facing west).

Photo 26

Date:
July 14, 2021

Description:
Oily, debris covered floor in mechanical shed on northeast side of Gill Farm Complex located at west end of Bobby Gill Road (facing east)

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Date: July 14, 2021 **Description:** Old equipment, metal, plastic and wood debris, empty herbicide containers, empty gasoline can at Gill Farm Complex located at west end of Bobby Gill Road.	**Photo 27** 
Date: July 14, 2021 **Description:** Approximately 300-gallon off-road diesel AST, discarded gasoline can and other debris around office/storage shed at Gill Farm Complex located at west end of Bobby Gill Road. Compressor appears stored on porch.	**Photo 28** 

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Date: July 14, 2021 **Description:** Organic cornfield southeast of Gill Farm Complex at west end of Bobby Gill Road (facing southeast).	**Photo 29** 
Date: July 14, 2021 **Description:** Idle field and pond on east side of Site, north of Craig Cemetery Road.	**Photo 30** 

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Photo 31

Date:
July 14, 2021

Description:
Hay bales on north side of Craig Cemetery Road (facing north).

Photo 32

Date:
July 14, 2021

Description:
Discarded, overgrown disc in woods on north side of Craig Cemetery Road.

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

Date: July 14, 2021 **Description:** Grass field south of Craig Cemetery Road on south side of Site (facing south).	**Photo 33** 
Date: July 14, 2021 **Description:** Approximately 300-gallon off-road diesel AST at south end of Craig Cemetery Road.	**Photo 34** 

Client: Caldwell Solar, LLC	**Site Location:** Fredonia, Kentucky
Site Name: Caldwell Solar Site Additional Area	**Project Number:** E320201000

	Photo 35
Date: July 14, 2021 **Description:** Grass fields on south side of Site (facing southeast from southwest Site boundary.	
	Photo 36
Date: July 14, 2021 **Description:** Approximate location of abandoned oil/gas well, William Jones No. 1 (facing east).	

Phase I ESA
Caldwell Solar Site Additional Area
Fredonia, Kentucky

D

RESUME OF ENVIRONMENTAL PROFESSIONAL (EP)

George A. Robertson

Current Position
Senior Project Manager
Senior Geologist

Profession
Geologist

Years' Experience
35

Joined Cardno
2008

Education
MS – Fluvial Geomorphology, Louisiana State University, Baton Rouge, Louisiana

BS – Geology, James Madison University, Harrisonburg, Virginia

Professional Registrations

PG – VA, KY, NC

LRS – WV

Certified Monitoring Well Driller - WV

Class B UST Certification - WV

OSHA 40-hour Health & Safety

OSHA 8 Hour Management & Supervisory

E-Rail Safe

Power Safe

Affiliations
National Groundwater Association Member

Summary of Experience

Mr. Robertson serves as a senior consultant and senior geologist for Cardno. His experience includes working with federal, state, municipal, and private sector clients in Virginia and the surrounding states. Mr. Robertson is a licensed professional geologist with extensive project level management and field experience. Mr. Robertson has managed a wide range of environmental projects including soil and groundwater remediation, subsurface investigations, waste characterization and disposal, underground storage tank closures, air source emissions monitoring, Phase I and II site assessments, and environmental permitting. Additionally, Mr. Robertson is an experienced safety and quality control professional.

Specifically, he has:

> Planned and conducted Phase I and II environmental assessments at commercial and industrial sites.
> Planned remedial efforts providing cost effective solutions to environmental problems and achieve regulatory closure.
> Coordinated staff, procured equipment and materials, directed subcontractors, and managed budgets to achieve successful environmental site closures and ultimate client satisfaction.
> Composed and reviewed numerous technical documents including work plans, site assessments, remedial action work plans, risk assessments, and final reports for regulatory compliance.
> Effectively served as liaison to negotiate land use covenants with regulatory agencies achieving and sustaining environmental closures.

Significant Projects

> **Project Manager for West Virginia Department of Environmental Protection (WVDEP) Voluntary Remediation Program (VRP) Sites:** Planning and oversight of assessments, remediation, and risk assessments for large petroleum bulk storage facilities in Charleston and Huntington and an abandoned railroad property in Bramwell. Negotiated institutional controls for complex environmental problems including land use covenants and city ordinances for institutional control of environmental risks to human health in sensitive areas. Achieved certificate of completion for these sites.
> **Project Scientist for Phase I and II Site Assessments, Norton Industrial Authority Tipple and Railroad Tracks:** Planned and conducted field inspections and soil, groundwater and surface water assessments focusing on a railroad bed and wetland at an abandoned coal mine. Prepared reports in accordance with ASTM E 1527-13 and ASTM Standard Practice for Environmental Due Diligence: Transaction Screen Process, Designation: E1528-06.

- **Project Scientist for Phase I and II Site Assessments, City of Bluefield, West Virginia:** Assisted with team planning, conducting field inspections and investigating soil, groundwater and surface water assessments, and preparing reports focusing on abandoned commercial and industrial properties including large multi-story buildings in accordance with ASTM E 1527-13 and ASTM Standard Practice for Environmental Due Diligence: Transaction Screen Process, Designation: E1528-06
- **Project Scientist for Phase I and II Site Assessments, Town of Bluefield, Virginia:** Assisted with team planning and conducting field inspections and soil, groundwater and surface water assessments focusing on abandoned commercial and industrial properties including a large industrial scrap yard involving VOCs, SVOCs, PCBs and metals. Reporting was in accordance with ASTM E 1527-13 and ASTM Standard Practice for Environmental Due Diligence: Transaction Screen Process, Designation: E1528-06.
- **Project Scientist for Phase I and II Site Assessment, Virginia Department of Environmental Quality:** Assisted with team planning and conducting field inspections and records research focusing on abandoned commercial and industrial properties including a large furniture factory, textile mills, a hotel, a theater, an office building. Planning and conducting soil, groundwater and surface water assessments for former phosphate and hydrazine plants, former service stations and a former campground. Reports were in accordance with ASTM E 1527-13 and ASTM Standard Practice for Environmental Due Diligence: Transaction Screen Process, Designation: E1528-06.
- **Project Scientist for Phase I and Phase II Brownfields Sites in West Virginia and Virginia:** Planned and conducted Phase I and II Site Assessments for former commercial and industrial facilities for reuse as commercial/industrial, public and recreational use facilities. Reports were prepared in accordance with ASTM E 1527-13 and ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process, Designation: E1528-06.
- **Project Scientist for Phase I Coal Mines in West Virginia and Pennsylvania:** Conducted Phase I Site Assessments for former surface and subsurface mining facilities. Prepared reports in accordance with ASTM E 1527-13 and ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process, Designation: E1528-06.
- **Project Manager for WVDEP Uniform Environmental Covenant Act (UECA) Sites:** Managed environmental assessment, remediation (including oversight of soil excavation and off-site disposal/recycling) and risk assessment at four petroleum facilities in Bluewell, Marlinton, and Princeton achieving risk-based closure and no further action status.
- **Project Manager for Phase I and II ESAs for Large Petroleum Bulk Storage Facility in Charleston, West Virginia:** Planned, conducted and reported Phase I and II Site Assessments for a petroleum bulk storage facility in accordance with ASTM E 1527-13.
- **VDOT, Explore Park Voluntary Remediation Program, Roanoke, Virginia.** Senior scientist for design and implementation of a cost-effective remedial action with in-house personnel for VDOT at a soil waste dump slope right-of-way site. Accomplishments included a quantitative risk assessment, remedial plan design with permit approvals, corrective action, such as solid waste removal and a cover placement, post-implementation monitoring, and preparation of Voluntary Remediation Program Certification of Satisfactory Completion of Remediation, including the Declaration of Restrictive Covenants.

- **Route 1/123 and Route 277 Environmental Site Assessments, Woodbridge, Virginia.** Senior scientist for Phase I and Phase II environmental site assessments for a road/utility corridor improvement project. Tasks included non-intrusive determinations of recognized environmental conditions on the 1.5 mile corridor, intrusive subsurface investigations to sample/test soil, groundwater, and vapors at over 20 sites, including a dry cleaner voluntary remediation program release, and preparing specifications for managing contaminated media. Additional tasks included removing underground storage tanks and asbestos monitoring services.
- **Transmodal Facility, Harrisburg, Pennsylvania.** Mr. Robertson served as hydrogeologist and project manager for the successful closure of a former locomotive fueling facility impacted with petroleum LNAPL, dissolved- and adsorbed-phases within PADEP's Act 2 Program. Closure was achieved using a combination of risk assessment, product mobility assessment, and short-term active remediation.
- **Construction Debris Landfill, Roanoke, Virginia.** Senior Scientist for a Construction Debris Landfill at a railroad facility planning and reporting groundwater monitoring and facility maintenance. Conducted groundwater modeling and statistical analysis to meet regulatory requirements for CDL closure.
- **Pipeline, Northern West Virginia.** Mr. Robertson planned, managed, and supervised Phase I and Phase II environmental assessments for pumping stations and storage facilities along the Eureka Pipeline in West Virginia. He also supervised initial abatement actions for spills at two locations. Membrane interface probe technology was utilized to expedite Phase II assessments at two pumping and bulk storage stations. He prepared work plans and assessment reports. The primary project activities included comprehensive studies of previous site activities, preparation of site-specific health and safety plans, site visits with regulatory agents, delineation of source areas, preparation of sampling and remediation work plans, quality assurance/quality control planning, and reporting and liaison with the WVDEP.
- **Petroleum Bulk Storage Terminal on Elk River, Charleston, West Virginia.** Mr. Robertson served as licensed remediation specialist, hydrogeologist, and project manager entering the facility into the West Virginia Voluntary remediation program (VRP). Prepared VRP applications and agreements. Planned and oversaw implementation of site assessments, risk assessment, soil and groundwater remediation, and report preparation. Project tasks included comprehensive studies of previous site activities, delineation of source areas, identification of contaminants of potential concern and contaminants of concern, evaluation of data gaps, preparation of sampling and remediation work plans, quality assurance/quality control planning and reporting, preparation of human health and ecological risk assessments, groundwater modeling, preparation of information for public notice, and liaison with the regulatory agency. Certificate-of-completion was achieved.
- **Electrical Power Generation Plants, North Carolina.** Senior Scientist assisting team in stormwater permit compliance planning, stormwater sampling, outfall inspections, corrective action planning, data management and reporting. Assisted in developing matrices for tracking permit compliance.
- **Metal Fabrication Facility, Princeton, West Virginia.** Senior Scientist and Project Manager for stormwater, Tier II and TRI planning and management. Researched, planned and prepared Storm Water Pollution Prevention Plan and Groundwater Protection Plan, and prepared NPDES Permit application. Managed storm water sampling and reporting. Researched, prepared and submitted Tier II and Toxic Release Inventory annual reports.

Phase I ESA
Caldwell Solar Site Additional Area
Fredonia, Kentucky

E

OTHER INFORMATION

CARDNO, INC.
534 INDUSTRIAL PARK ROAD
BLUEFIELD, VIRGINIA 24605
304 809-0629

PHASE I ENVIRONMENTAL SITE ASSESSMENT
RECORD OF COMMUNICATION

CONTACT: William "Eddie" Jones

AGENCY/COMPANY: Owner (South area - south of Craig Cemetery Rd.)

DATE: 7/14/21 TIME: 0950 EDT 0850 CDT

CONTACT METHOD: ~~personal~~ (in person) contact

TELEPHONE/E-MAIL: —

DETAILS: Mr. Jones (Eddie) said he had an ~300 gal AST owned by Southern States located on the far side of the property (see map location — already observed in weeds off of Craig Colemans Rd.). He mentioned the AST was empty & not used for over a year. Elec. had been turned off. He plans to have SS remove from the property.

NAME: [signature] DATE: 7/14/21

CARDNO, INC.
534 INDUSTRIAL PARK ROAD
BLUEFIELD, VIRGINIA 24605
304 809-0629

PHASE I ENVIRONMENTAL SITE ASSESSMENT
RECORD OF COMMUNICATION

CONTACT: Bill "Phelps" Jones

AGENCY/COMPANY: Owner 6858 Old Fredonia Rd.

DATE: 7-13-21 TIME: 1550 EDT 1450 CDT

CONTACT METHOD: in person

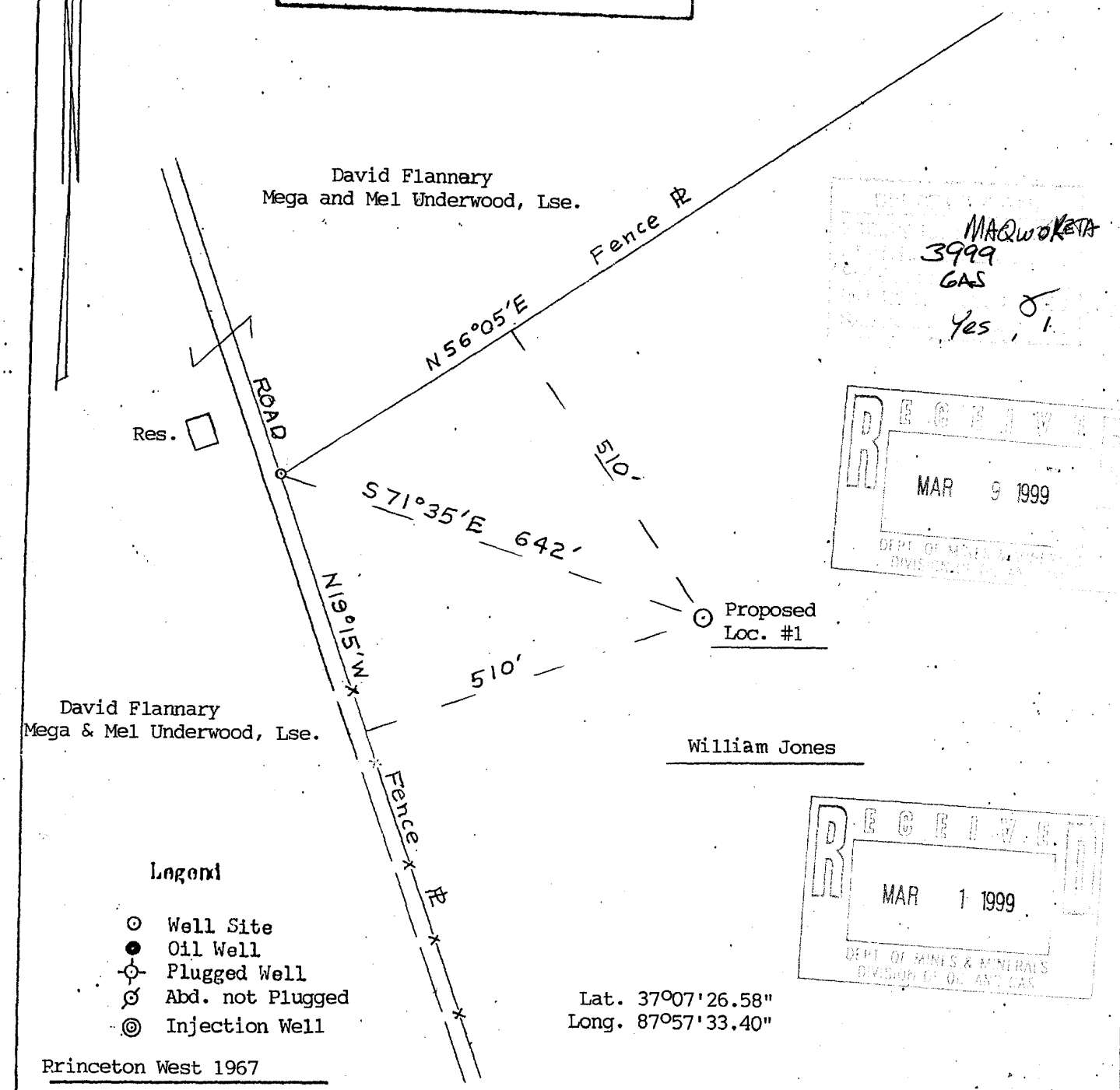
TELEPHONE/E-MAIL:

DETAILS: mentioned liquid fertilizer spill (minor size) no action was taken
This is an offsite location near 2 large silos/grain bins. Photographed during visit. Bill helped with directions as to access for ISRAMM areas

NAME: [signature] DATE: 7/13/21

PERMIT NO. 90183
LOCATION
ELEVATION
ADDED BY KENTUCKY GEOLOGICAL SURVEY PERSONNEL

0120151001



MAQwoKETA
3999
GAS
Yes, 0, 1.

RECEIVED
MAR 9 1999
DEPT. OF MINES & MINERALS
DIVISION OF OIL AND GAS

RECEIVED
MAR 1 1999
DEPT. OF MINES & MINERALS
DIVISION OF OIL AND GAS

Legend

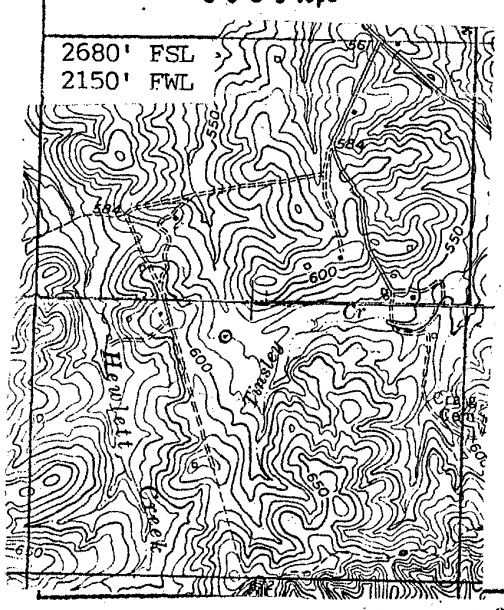
- Well Site
- Oil Well
- Plugged Well
- Abd. not Plugged
- Injection Well

Princeton West 1967

CARTER COORDINATE
13-H-19
Scale 1" = 2000'

U S G S Topo

2680' FSL
2150' FWL



Lat. 37°07'26.58"
Long. 87°57'33.40"

Operator John F. Vogler
Farm William Jones
Well No. 1 Elevation 580'
County Caldwell Kentucky
Date January 6, 1999 Scale 1" = 200'

I hereby certify that the above plat is accurate and correct and satisfies the requirements of 805 KAR 1:030 to the best of my knowledge and belief.

STATE OF KENTUCKY
JOHN G. BEARD
4720
REGISTERED
LAND SURVEYOR

John G. Beard

ROBERT L. HALL LS 1565
5050 MEADOWLARK DRIVE
OWENSBORO, KENTUCKY 42301
PHONE 502 683 4264

I hereby certify that the above plat is correct to the best of my knowledge and belief.

STATE OF KENTUCKY

Robert L. Hall

1565
REGISTERED
LAND SURVEYOR

Filed per 3-30-2022 ESB Order
Response to Post-Hearing ESB 03

4

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF MINES AND MINERALS
OIL AND GAS DIVISION
P.O. BOX 14090
LEXINGTON, KENTUCKY 40512-4090

AFFIDAVIT OF WELL LOG AND COMPLETION REPORT
AS REQUIRED BY LAW
PHONE: 606-254-0367

TYPE OR PRINT

OPERATOR'S PHONE: _____

WELL IDENTIFICATION

Permit No. 90183

Operator John F. Vogler

Farm Name William Jones Well No. 1

TYPE OPERATION

Twin ☐
Re-open ☐
New Well ☑
Workover ☐
Deepening ☐

LOCATION

County CALDWELL

Sec. 13, Letter H, Number 19

2680 FNL (FSL) 2150 FEL (FWL)

ELEVATION 580 (ground) _____ (D.F.) (K.B.)

OPERATIONAL DATES

Commenced 5/3/99 Completed _____

Placed in Operation _____

Plugged 6/21/99 Shut In _____

DRILLING CONTRACTOR

Name John Vogler Drilling

Address Box 319

Greenville KY 42345

WATER ENCOUNTERED

(Fresh, salt, sulfur)

Type	From	To
FRESH	470	500

RECEIVED
JAN 25 2000
DEPARTMENT OF MINES & MINERALS
MADISONVILLE, KY

Comments _____

GEOPHYSICAL LOGS RUN (As required by KRS 353.550(2)

(Electrical, induction, sonic, gamma ray, neutron, density, etc.)

Type	From	To
GAMMA RAY		
Density	0	2936
Induction	580	2936

TOTAL DEPTH DRILLED 2943
(As required by KRS 353.570)

CASING DATA

Casing Outside Diameter	Hole Diameter	Depth	Cement No. Sks.	Pulled Yes/No
13 5/8	14"	22'	10 sks	NO
9 5/8	12 3/4	108	100	NO
7"	8 3/4	597	130	NO

Cement yeild in cubic feet/sack = 1.8

Comments _____

TYPE OF COMPLETION (Check One)

Dry Hole ☑ Domestic Gas ☐
Oil ☐
Gas ☐ (Shut-in or Producing)

ENHANCED RECOVERY:

Water Injection ☐
Gas Injection ☐

SERVICE WELL:

Water Supply ☐
Salt Water Disposal ☐
Observation ☐

GAS STORAGE:

Injection-Extraction ☐
Other ☐

Other Describe _____

WELL TREATMENT
Type of Frac.

SHOT

Type Shot _____

Shot Interval NONE

Shot Amount _____

COMPLETION INTERVAL PERFORATIONS OR OPEN HOLE INTERVAL

Formation _____ Interval _____

Formation _____ Interval _____

TREATMENT

Type Treatment _____

Acid Amount _____ BBls. _____ BBls. (2nd Stage)

Total Fluid _____ BBls. _____ BBls. (2nd Stage)

Total Nitrogen _____ SCF

Total Sand _____ lbs.

ADDITIONAL CEMENTING

Squeeze Cement NONE Sks. _____ Top _____ Interval

Plug Back _____ Sks. _____ Top _____ Interval

INITIAL TEST VOLUMES

Oil: Natural _____ B/D _____ Date
After Treatment _____ B/D _____ Date
Gas: Natural NONE MCF _____ Date
Against Backpressure of _____ PSI
Shut-In Pressure _____ after _____ hours
After Treatment _____ MCF _____ Date
Against Backpressure of _____ PSI
Shut-In Pressure _____ after _____ hours

LIST DST'S, CORES, FILL-UP TESTS AND OTHER SPECIALIZED TESTS

Formation Name	Interval
NONE	

This form must be completed and filed for every permit immediately after completion of the well. Re-opened wells need not include a Driller's Log, however, the front side of this form must be completed. Incomplete forms will be rejected.

Revised 3-90 ALL PREVIOUS FORMS ARE OBSOLETE

FORM OOG-3

0120151002

OVER

FORMATION RECORD

From	To	Rock Type (describe rock types and other materials penetrated and record occurrences of oil, gas and water from surface to total depth)	From	To	Rock Type (describe rock types and other materials penetrated and rock occurrences of oil, gas and water from surface to total depth)
0	44	WARSAW			
44	285	FORT Payne			
285	900	FORT Payne			
900	1190	BLACK SHALE			
1190	2943	LIME			

0120151003

RECEIVED
JAN 25 2000

AFFIDAVIT

John F. Vogler, operator of the well captioned as Permit Number 90183 does hereby swear that the depth of the well is accurate and correct and does not exceed the permitted depth of 3999.

Signature of Operator John F. Vogler — Title — Date

Sworn to and subscribed before me this 24 day of JAN, 19 2000

Linda Miller
Notary Public

My Commission Expires: June 8th 2003

4

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF MINES & MINERALS
DIVISION OF OIL AND GAS
P. O. BOX 14090
LEXINGTON, KENTUCKY 40512-4090

AFFIDAVIT TO TIME AND MANNER OF PLUGGING AND FILLING WELL AS REQUIRED BY LAW

(TYPE OR PRINT IN INK)

John F. Vogler Box 319 Greenville Ky 42345
NAME AND ADDRESS OF LAST OPERATOR

NAME AND ADDRESS OF ORIGINAL OPERATOR

NAME AND ADDRESS OF COAL OPERATOR

PERMIT NO. 90183, ELEVATION 580, COUNTY Caldwell, TOTAL DEPTH 2943

CARTER COORDINATES 2680 (FNL/FSL) 2150 (FEL/FWL), SEC. 13, LETTER H, NUMBER 19

FARM OWNER (LESSOR) William Jones WELL NUMBER 1

AFFIDAVIT TO BE MADE IN TRIPLICATE, ONE COPY TO BE MAILED TO THE DEPARTMENT OF MINES AND MINERALS, ONE COPY TO BE RETAINED BY THE WELL OPERATOR AND THE THIRD TO BE MAILED BY REGISTERED MAIL TO EACH COAL OPERATOR NAMED AT THEIR RESPECTIVE ADDRESSES.

RECEIVED JAN 25 2000

AFFIDAVIT

STATE OF KENTUCKY,

COUNTY OF Muhlenberg } SS:

John F. Vogler, OPERATOR OF THE ABOVE CAPTIONED WELL DOES HEREBY SWEAR THAT THE PLUGGING OF SAID WELL WAS COMPLETED ACCORDING TO INSTRUCTIONS FROM THE OIL AND GAS INSPECTOR AND ACCORDING TO CHAPTER 353 OF THE KENTUCKY REVISED STATUTES ON 6/21, 19 99, RECORD OF WHICH IS LISTED BELOW OR SHOWN ON THE BACK OF THIS FORM.

(PLUG DESCRIPTION)

PLUGGED: FROM 0 TO 601 WITH 120 SKS.

FROM ____ TO ____ WITH ____

FROM ____ TO ____ WITH ____

FROM ____ TO ____ WITH ____

FROM ____ TO ____ WITH ____

FROM ____ TO ____ WITH ____

FROM ____ TO ____ WITH ____

INDICATE BELOW THE SIZE AND INTERVAL OF ALL CASING LEFT IN THE WELL AND IF AND WHERE IT WAS SHOT OFF.

CASING SIZE 13 5/8, INTERVAL 0-22, SHOT OFF AT ____ BOTTOM OF CASING AT ____

CASING SIZE 9 5/8, INTERVAL 0-108, SHOT OFF AT ____ BOTTOM OF CASING AT ____

CASING SIZE 7", INTERVAL 0-597, SHOT OFF AT ____ BOTTOM OF CASING AT ____

IF CASING WAS NOT LEFT IN THE WELL, INDICATE THE BORE HOLE SIZE AND INTERVAL.

BORE HOLE SIZE ____ INTERVAL ____

BORE HOLE SIZE ____ INTERVAL ____

STATE WHETHER OR NOT OTHER STEEL OR JUNK WAS LEFT IN THE WELL AND DESCRIBE: NONE

(OPTIONAL) SIGNATURE OF CONTRACTOR RESPONSIBLE FOR ABOVE PLUGGING TITLE

John F. Vogler

(REQUIRED) SIGNATURE OF OPERATOR RESPONSIBLE FOR ABOVE PLUGGING TITLE

SWORN TO AND SUBSCRIBED BEFORE ME THIS 24 DAY OF JAN, 19 2000

Linda Miller
NOTARY PUBLIC

MY COMMISSION EXPIRES: June 8th 2003

OVER

ALL BLANKS MUST BE COMPLETED. INCOMPLETE AFFIDAVITS WILL BE REJECTED.
REVISED 2-84

FORM #ED-38

0120151004