



## Initial Site Report

Vertical Landfill Expansion  
Adams County Sanitary Landfill  
FID 701040560, License No. 3150

Prepared for:

Adams County Solid Waste Department  
Adams County, Wisconsin

August 2022

## **Initial Site Report**

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Adams County Sanitary Landfill  
FID 701040560, License No. 3150**



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expansion\\isi,isi\\adams county lf - vertical isr final.docx

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## Certifications

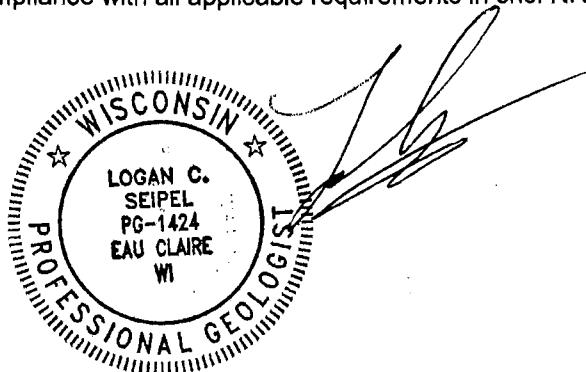
"I, Lisa A. Fleming, hereby certify that I am a licensed professional engineer in the State of Wisconsin in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 500 to 538, Wis. Adm. Code."



*L. Fleming*

August 10, 2022

"I, Logan Seipel, hereby certify that I am licensed professional geologist in the State of Wisconsin, in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code; that the preparation of this document has not involved any unprofessional conduct as detailed in ch. GHSS 5, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 500 to 538, Wis. Adm. Code."



August 10, 2022

## Introduction

The purpose of this Initial Site Report (ISR) is to satisfy the permitting requirements for locational and performance criteria for a proposed vertical landfill expansion of the existing municipal solid waste (MSW) landfill (FID #701040560, License #3150) owned by Adams County, Wisconsin (County), as outlined in Wisconsin Administrative Code (WAC) chapter NR 509. To assist the Department of Natural Resources (Department) staff, an "Initial Site Report Completeness Checklist" has been completed for this ISR and is included in Appendix A.

## General Project Description

The County is intending to complete a vertical landfill expansion of the existing Adams County Sanitary Landfill, located in the Town of Strong Prairie, Wisconsin. The physical mailing address of the facility is 1420 State Highway 21, Friendship, Wisconsin 53934. The existing landfill began operations in 1989 and is currently filling in phase 5, phase 6 has not been constructed yet. The vertical landfill expansion will not impact waste limits of the existing landfill's 21.9 acres. The expansion will extend the 4H:1V side slopes to a crest of 1073.5' on the top of the landfill. The vertical expansion proposes approximately 224,000 cubic yards (CY) of additional airspace to the existing permitted design capacity of 1,248,200 CY for a total capacity of 1,472,200 CY. The proposed expansion will overlay its waste onto the phases 2 through 5. The vertical expansion enhances the minimized landfill footprint.

Previously, the County submitted an Initial Site Inspection (ISI) request to the Department on June 1, 2022. The ISI was conducted by the Department on June 29, 2022. The Department issued its preliminary opinion of the suitability of the landfill expansion site location on July 27, 2022. Their opinion indicated the site location "has potential" and there are "no apparent conflicts with the locational criteria contained in s. NR 504.04(3), Wis. Adm Code, or the performance standards contained in s. NR 504.04(4), Wis. Adm. Code". The original ISI request and Department's ISI response are included in Appendix B for reference.

It should be noted an ISI request for an onsite clay soil borrow source was submitted to the Department in June 1, 2022. A soil borrow investigation will be performed and a report summarizing the results will be submitted to the Department.

## Facility Information – NR 509.05(3)

The following sections present pertinent information regarding the proposed vertical landfill expansion at the Adams County Sanitary Landfill.

### Project Title

Vertical Landfill Expansion  
Adams County Sanitary Landfill  
Adams County, Wisconsin

### Landfill Property Owner, Operator, and Primary Contact

Adams County, Wisconsin  
Mr. Charlie Kuhn - Director  
Adams County Solid Waste Department  
1420 State Highway 21  
Friendship, WI 53934  
608.339.9178, ext. 3  
Charlie.kuhn@co.adams.wi.us

Consultant and Primary Contact

Ayres Associates Inc

Lisa Fleming, PE – Manager  
3433 Oakwood Hills Pkwy  
Eau Claire, WI 54701  
715.831.7677  
FlemingL@AyresAssociates.com

Present Property Owner and Operator

Adams County, Wisconsin

Proposed Landfill Vertical Expansion Location

Legal Location: SW ¼, NE ¼, Section 13, T18N, R5E, Town of Strong Prairie  
Physical Location: 1420 State Highway 21, Friendship, WI 53934

Total Facility Property Area

581 Acres

Total Proposed Landfill Vertical Expansion Limits of Waste Area

21.9 acres

Proposed Landfill Vertical Expansion Lifespan

4 years

Proposed Landfill Vertical Expansion Volume

224,000 CY

Municipalities Served

Entire geographical boundary of Adams County and the municipalities located within it. These municipalities include:

**17 County Townships:**

Rome	Strong Prairie	Adams	Springville
Leola	Preston	Lincoln	Jackson
Monroe	Richfield	Easton	Dell Prairie
Big Flats	Quincy	New Chester	New Haven
Colburn			

**County Municipalities:**

Village of Friendship  
City of Adams  
City of Wisconsin Dells (portion of)

Additional waste may originate from areas outside Adams County including, but not limited to, the surrounding counties of Columbia, Juneau, Marquette, Sauk, Waushara, and Wood.

Industries Served

The landfill typically receives only small quantities of light industrial and commercial waste.

### Anticipated Waste Types and Characteristics

The landfill expansion is anticipated to primarily accept wastes that are categorized as municipal solid waste (MSW) (WDNR Category No. 1) from residential and commercial sources. The landfill expansion will potentially accept other approved waste types, which may include limited quantities of construction and demolition debris, industrial wastes, and special wastes. These other waste types, on an individual case basis, are anticipated to comprise less than 5% of the overall design capacity of the proposed landfill expansion. Special waste acceptance will be documented in accordance with the facility's Special Waste Acceptance Plan and NR506.09.

### Anticipated Volumes of Waste

Total tonnage disposed at the landfill was approximately 44,000 tons in 2021. These quantities are anticipated to be sustained and grow over time with an estimated average annual acceptance of 46,000 tons of MSW over the 4-year lifespan of the proposed landfill expansion. Utilizing a 1,400 lbs/CY waste density (without daily cover assessed in the airspace calculations), this equates to an average annual waste volume of approximately 41,200 CY. Approximately 48,000 cubic yards/year (combined) of MSW, C&D waste, industrial waste, and special waste(s) are received.

### Seasonal Fluctuations of Waste

The waste intake changes seasonally with the months of December through March seeing a 25% to 50% reduction in tonnages. January and February are the lowest tonnage months, whereas July through September has often seen the greatest tonnage intake. The amount of waste received fluctuates as a result of seasonal construction and outdoor work activities.

### Cover Frequency

Daily.

### Mode of Operation

Area fill methods.

### Anticipated Grades

Estimated Range in Base Elevations: 1014 to 1070 feet above median sea level (msl).  
Estimated Range in Final Surface Elevations: 966 to 1,073.5 feet above msl.

Design elevations will be further defined in the Feasibility Report, in accordance with NR 512, WAC.

## Land Use Information – NR 509.06

### NR 500 Locational Criteria

The site meets the locational criteria of NR 504.04, WAC, as indicated in the ISI Request dated June 1, 2022, and as confirmed in the ISI response from the WDNR dated, July 27, 2022, and presented opinion.

### Land Use Information

The vertical landfill expansion would include lands currently owned by Adams County that are comprised of existing perimeter support areas containing the landfill perimeter access road and landfill environmental monitoring components, infiltration ponds, and undeveloped woodlands beyond the landfill support areas. Present land uses immediately adjacent to and within a 1-mile radius of the site consist of private woodlands and agricultural fields. Perimeter infrastructure including stormwater management,

access roads, and environmental monitoring systems will have the same impacts as current operations. An analysis of infrastructure will be conducted to see if additional equipment needs to be provided but the perimeter area of the permitted landfill impacted will be minimal. The size and location of potential stormwater detention features will be determined in subsequent stages of the horizontal expansion permitting process. Proposed vertical expansion land use is the same area and function as the current permitted land use. Any impact to groundwater quality, perimeter areas and current suitability of property for waste disposal will be minimal as all activity will be within existing limits of waste.

## Adjacent Landowners

Adams County owns 581 acres of land at this location, including the existing landfill site which occupies approximately 21.9 acres and the vertical expansion proposed utilizes the existing landfill acreage for vertical airspace consumption. Land use adjacent to the County-owned property generally includes private woodlands and agricultural fields, which are either in production or fallow. Land areas immediately south of the landfill include the County's waste hauling services operation and the recycling center. Within 2 miles of the landfill there are also single family and agricultural residences. There are no residence housing within 1,200 feet of the anticipated limits of waste of the existing landfill. There are twelve (12) parcels with four (4) owners located within 1,200 feet of the limits of waste of the landfill and expansion. Eight of the 12 parcels are owned by Adams County and include the landfill. Three landowners own the remaining four (4) parcels located within 1,200 feet of the limits of waste. These parcels are shown on Figure 3.

Figure 3 also shows the landowners whose parcels are adjacent to the Adams County property. The proposed landfill expansion is not anticipated to introduce any new adverse impacts to area properties as a result of construction or continued operation of the landfill. All construction and operations are anticipated to occur on property that is owned by the County and intended/planned to support County landfill operations.

## Land-Use Zoning

In accordance with Wisconsin Law, Adams County established zoning rules to regulate land-use associated with conservancy, shoreland, wetland, and floodplain areas in the County. The Adams County Landfill parcels that include the existing landfill and proposed vertical landfill expansion do not include these regulated features. The Adams County property is located within the Township of Strong Prairie and, therefore, the Township regulates development through its zoning ordinance. The landfill and its 507-acre contiguous property is industrial zoned by Strong Prairie, and the landfill is an approved use. The area around the County parcels includes lands that are zoned as industrial, agricultural, with some scattered single-family homes present on smaller land parcels zoned single family residential.

## Initial FAA Communications

Federal Aviation Administration's (FAA) response in a 2015 letter indicate the previously identified private airstrip (Zanadu Airport, #WS04, Arkdale, Wisconsin) located approximately 0.93 miles west of the existing Adams County Sanitary Landfill, is no longer in operation. Another small, public-owned (Adams County), public-use airport (Adams County Legion Field, #63C, Friendship, Wisconsin) is located approximately 5.1 miles south-southeast of the eastern edge of the landfill is beyond the 5,000-foot separation distance required per FAA Advisory Circular 150/5200-33A.

## Transportation and Access

The Adams County Sanitary Landfill is located in a rural area in west-central Adams County, approximately 5 miles north-northwest from the primary County municipalities of Adams and Friendship. Access to the site is via State Highway 21, from which the gated facility access road extends north into the County property and landfill area. State Highway 21 runs generally east-to-west near the solid waste

facility. The facility entrance is approximately 1.5 miles west of State Highway 13 intersection. Access to U.S. Interstate Highway 39 is approximately 16 miles east of the site entrance.

State Highways 21 and 13 are not typically included in the springtime posted roads restrictions imposed by the Wisconsin Department of Transportation (WIDOT). When WIDOT frozen road declarations are in effect, vehicle weight limits are restricted to 80,000 pounds. Adams County has no local weight restrictions applied to the County highways. Temporary road restrictions, if imposed by the State or County, have not and will not significantly restrict landfill access by haulers.

## Proposed Activity Impacts

The proposed landfill expansion is not anticipated to introduce any new adverse impacts to area properties as a result of construction or continued operation of the landfill. All construction and operations are anticipated to occur on property that is owned by the County, zoned for industrial use, and intended/planned to support County landfill operations. There are no known recreational areas, state or local natural areas, or county forest lands within 1-mile of the existing landfill or proposed expansion. Big Roche a Cri Creek is located approximately 4,000 feet from the northwest corner of the limits of waste of the existing landfill. This section of the Creek is not designated as a trout stream.

Refer to Figure 4 for a figure identifying land use and zoning within 1-mile of the existing waste limits.

As part of the Initial Site Inspection (ISI), the County requested an Endangered Resources Review (ERR) from the Department in regard to this proposed project. We received the ERR response from the Department on March 13, 2022, which indicated one (1) species with required actions, one (1) species with recommended actions, and three (3) species with no follow-up actions. Ayres Associates performed a vegetation survey that satisfied the one required action. No instances of the vegetation were identified in the project area. A copy of the vegetation survey is included as Appendix A of the ISI.

As part of the ISI submittal, Ayres performed a historical and archeological search at the Wisconsin Historical Society using the Wisconsin Archeological Site Inventory (ASI) and the Architectural Historical Inventory (AHI) databases in Madison, WI. The review concluded that no historic or archaeological properties would be affected by the proposed project. Refer to Appendix B of the ISI for a copy of the Archaeological and Architectural review.

The proposed project will be conducted entirely on property owned by Adams County, none of which is currently rented or utilized for agricultural use. No additional farmland outside of Adams County property is currently planned for acquisition to facilitate the vertical landfill expansion. Criteria developed by the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) for preparation of an Agricultural Impact Statement (AIS) indicate that an AIS will not be required for the proposed project.

A modification for the existing air pollution construction and operation permit will be submitted in accordance with applicable requirements to account for the 224,000 CY vertical landfill expansion.

## Regional Geotechnical Information – NR 509.07

### Topography

Regional land surface elevations range from approximately 930 feet above median sea level (msl), along the Big Roche-a-Cri Creek, to 1,050 feet above msl near the landfill. The landfill is located adjacent to a topographic high area known as Cottonville Rocks, although the topography on-site is relatively flat with elevations that slope slightly from northwest to southwest. The maximum elevation on the site is approximately 980 feet above msl and the minimum elevation is approximately 960 feet above msl.

## Hydrology

The Big Roche-a-Cri Creek flows through the region in a meandering pattern from northeast to southwest. The site lies within the Central Wisconsin watershed and is associated with the Big Roche-a-Cri Creek drainage. The Big Roche-a-Cri Creek is approximately 4,000 feet west of the site at an elevation of approximately 930 feet above msl. No other surface water features exist on or near the landfill site. The nearest water supply well is located on the south side of the landfill office. The distance from limits of waste to the well is 1,395 feet, outside of the required 1,200-foot set-back distance. Figure 5 shows an accurate depiction of the location of the water well associated with the landfill office relative to the limits of waste and required set-back distance.

## Geology

### Bedrock

Cambrian age sandstone is found approximately 0 to 100 feet below the ground surface (bgs) in Adams County. Overlying the Precambrian rock is approximately 280 feet of Cambrian age sandstone, including (from oldest to youngest) the Elk Mound Group consisting of the Mt. Simon, Eau Claire, and Wonewoc formations. Cambrian age sandstone outcrops in many areas of Adams County with the closest occurrence being the Cottonville Rocks outcrop located adjacent to and northeast of the landfill property. The sandstone was deposited as near-shore sands which, over time, solidified and cemented to form sandstone. In some places in Adams County, sandstone is just below the surface soil. Refer to Figure 7 for the Wisconsin bedrock map. A water supply well drilled near the site in 1988 indicated that sandstone bedrock was encountered at 115 feet below ground surface (bgs).

### Unconsolidated Glacial Material

The glacial sediment in Adams County consists of glacial, stream, lake, and windblown sediment. The Pleistocene Geologic Map, Adams County, Wisconsin, indicates that the site is overlain by windblown sand over Pleistocene off-shore sediment. During the majority of the last glaciation, the site was covered by what is referred to as Glacial Lake Wisconsin. The outlet to meltwater streams became clogged with debris and sediment near the Devils Lake area, which blocked the drainage thus allowing the lake to form. The lake drained and as a result cut and formed the sandstone outcrops near the Wisconsin Dells. As the lake sediment dried out, it became windblown sediment.

### Soils

According to the United States Department of Agriculture (USDA) Web Soil Survey, the majority of the soils do not provide prime farmland and 62.7% of the soils on site are mapped as Plainfield sands (PfA, PfB, PfC, and PfD), with the Brems loamy sand (BrA) comprising 18% of the soils. The remaining soils are classified as sands from many different soil units. Soil types PfA and PfB have 0% to 6% slopes and are present on terraces. The parent material of these soils is sandy outwash (i.e., unconsolidated Pleistocene sediments). The Plainfield sand is excessively well-drained, and runoff is low. The Brems loamy sand is somewhat poorly-drained but runoff is also low.

The landfill and the proposed vertical expansion cover approximately 4.3% of the surface area of the County property (21.9 landfill acres of the 507 property acres). Soil units within the landfill area consist of roughly 80% Plainfield sand (PfC) and the remainder of the site, 20%, is Plainfield sand (PfB). The Plainfield sand is very deep sand formed on outwash plains, valleys, glacial lake basins, stream terraces, and moraines. It has rapid to very rapid permeability and is excessively well-drained. The sand is over 100 feet thick on site.

Previous investigations indicate approximately 10 to 20 feet of fine silty sand or sandy silt are followed by approximately 11 feet of laminated clay deposits with fine to silty sand. According to the Unified Soil Classification System (USCS) both units would be classified as ML/CL, which is silt/low-plasticity clay (lean clay) by the Unified Soil Classification System.

## Hydrogeology

The groundwater table is located approximately 23 to 37 feet bgs at the landfill site. Historically, groundwater has varied in depth from 16 feet bgs to 40 feet bgs. Generally, groundwater elevations are highest in spring when the frost melts and lowest in late winter when the ground is frozen.

The landfill is located west of a topographic high area which has been identified as a recharge zone in the hydrogeologic system. In the immediate landfill area, groundwater flows westerly toward the Big Roche-a-Cri Creek. The aquifer is located in the unconsolidated material. The deeper sandstone formation is also a suitable aquifer but is not utilized for private water supplies because of the greater depths.

## Water Quality

Groundwater in the region is generally good, located in the southern portion of the Central Wisconsin River basin. The water quality in the sand and gravel is soft ranging from 0-60 mg/L in hardness and increases in hardness in the sandstone aquifer. Similarly, low iron and manganese concentrations are measured in the sand and gravel and increase in concentration in the sandstone aquifer. The City of Adams abandoned a sandstone well because of high iron and manganese and installed a shallower sand and gravel well with lower iron and manganese. High nitrates are found in the shallower wells due to historic agricultural activities in the region, some exceeding the health advisory limits of 10 mg/L. Productivity in both the sandstone and sand and gravel well is good: both aquifers sometimes exceeding 1,000 gallons per minute (gpm).

The majority of the water supply wells in the vicinity of the landfill draw their water from the sand and gravel aquifer located 10 to 39 feet below ground surface (bgs), with the exception of the landfill office well. This well is terminated in the sandstone located 115 feet bgs and groundwater is located 41 feet bgs. The monitoring wells are also terminated in the shallow sand and gravel aquifer. The inorganic parameters trend lower in the on-site monitoring wells than what is regionally detected, although the specific conductivity in some of the wells are higher than regionally detected.

High concentrations of inorganics such as iron, manganese, and chlorides can be found locally. While these compounds are not considered a health hazard, they can affect the aesthetics of the water. According to the United States Geological Survey (USGS), more than 91% of wells in Adams County meet the health-based drinking water standard of 10 parts per million (ppm) for nitrates. At the landfill site, the sandstone bedrock is located more than 100 feet bgs, and therefore, the groundwater in this area has only a moderate vulnerability to bacteria and nitrate contamination.

A groundwater monitoring program has been in place at the landfill site since 1986. Currently, the monitoring wells and piezometers are sampled semiannually for indicator parameters and volatile organic compounds (VOCs). In general, groundwater quality in the landfill area is good. Minimal VOCs have been detected on a sporadic basis.

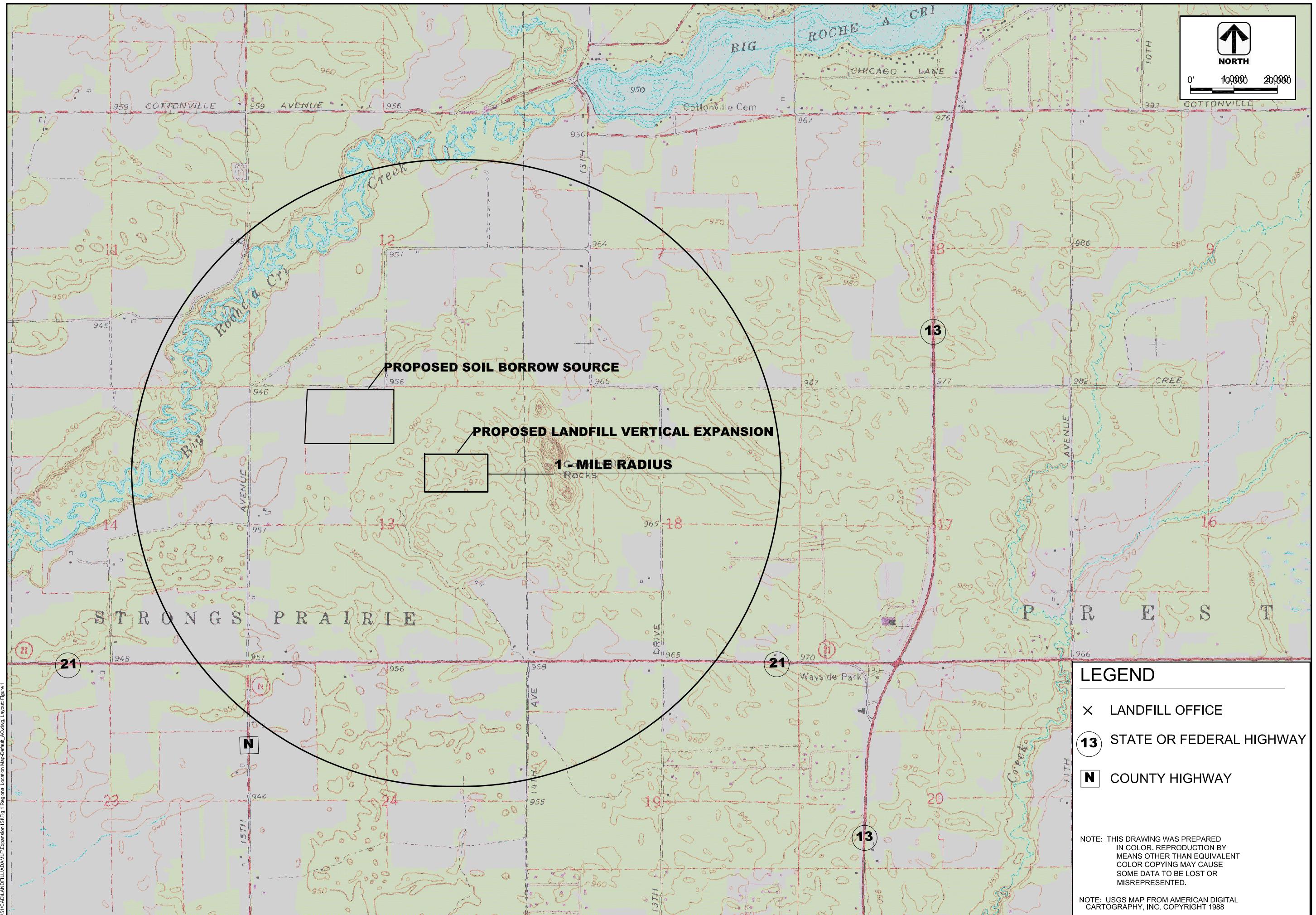
## ISI Correspondence

The Department issued its preliminary opinion of the suitability of the landfill expansion site location on July 27, 2022. Their opinion indicated the site location "has potential" and there are "no apparent conflicts with the locational criteria contained in s. NR 504.04(3), Wis. Adm. Code, or the performance standards contained in s. NR 504.04(4), Wis. Adm. Code". No locational criteria of NR 504.04(3) were identified as requiring specific attention in the Department's ISI preliminary opinion. The original ISI request and Department's ISI response are included in Appendix B for reference.

## Conclusion and Recommendations

Based on the data evaluated as part of this ISR, and from the past performance of the Adams County Sanitary Landfill, we believe the proposed area of the site has the potential to be developed as a vertical landfill expansion. We recommend that the Department provide positive determination for this ISR to allow the County to proceed with the preparation and submittal of a Feasibility Report for the vertical landfill expansion to the existing Adams County Sanitary Landfill.

**Figure 1**  
**Regional Location Map**



**REGIONAL LOCATION MAP**  
**FEASIBILITY REPORT**  
**ADAMS COUNTY SOLID WASTE & RECYCLING**

Adams County Sanitary Landfill, 1420 State HWY 21, Friendship, WI 53934

Designed By: MGL  
Checked By: MGL

---

REVISIONS		
MARK	DATE	DESCRIPTION

Project Number: 52-0755.51  
Set Type: NOT FOR CONSTRUCTION  
Issue Date: MAY 11, 2023

## FIGURE

1

## LEGEND

X LANDFILL OFFICE

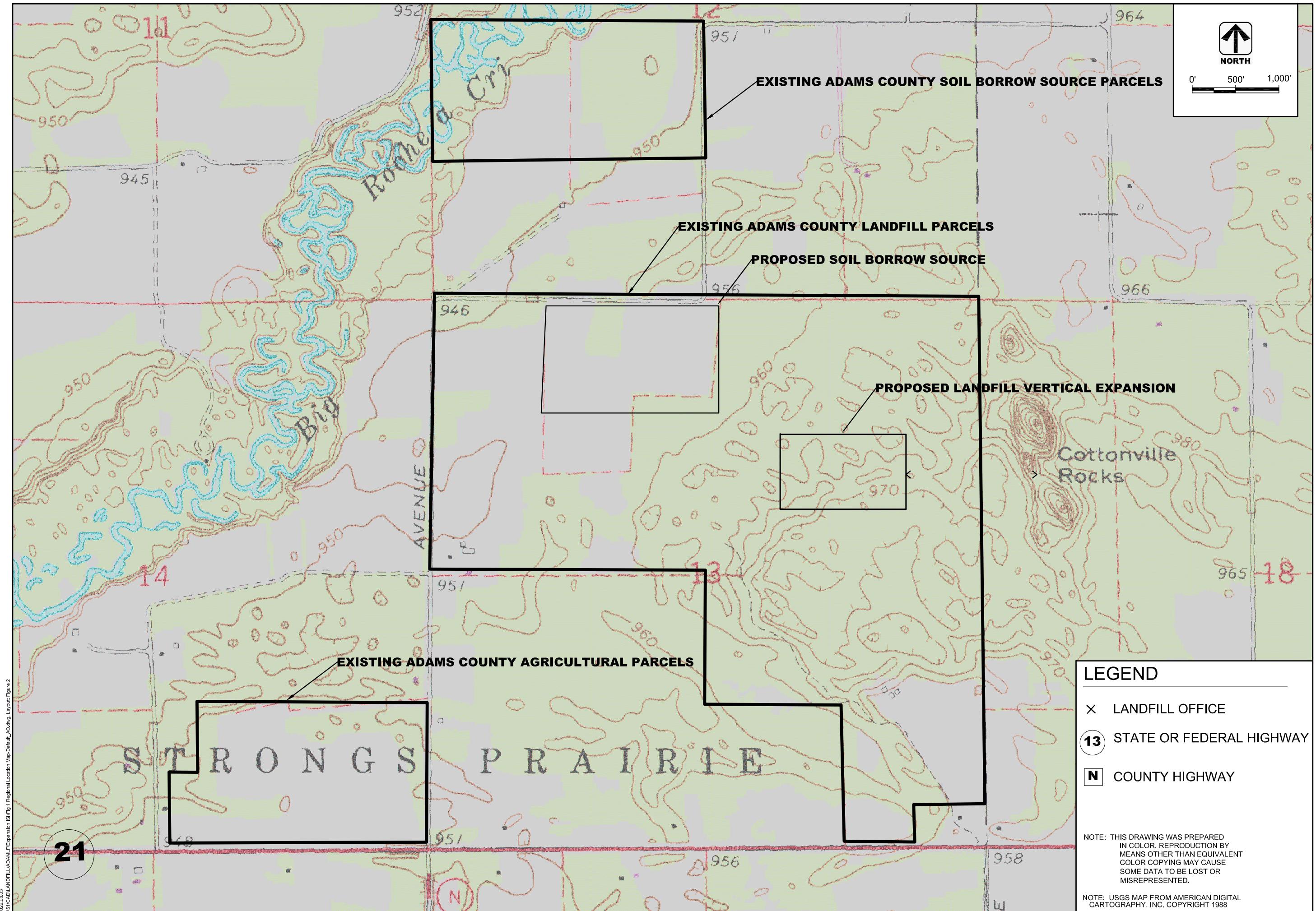
## 13 STATE OR FEDERAL HIGHWAY

**N COUNTY HIGHWAY**

NOTE: THIS DRAWING WAS PREPARED  
IN COLOR. REPRODUCTION BY  
MEANS OTHER THAN EQUIVALENT  
COLOR COPYING MAY CAUSE  
SOME DATA TO BE LOST OR  
MISREPRESENTED.

NOTE: USGS MAP FROM AMERICAN DIGITAL  
CARTOGRAPHY INC. COPYRIGHT 1988

**Figure 2**  
**Project Location Map**



**PROJECT LOCATION MAP  
FEASIBILITY REPORT  
ADAMS COUNTY SOLID WASTE & RECYCLING**

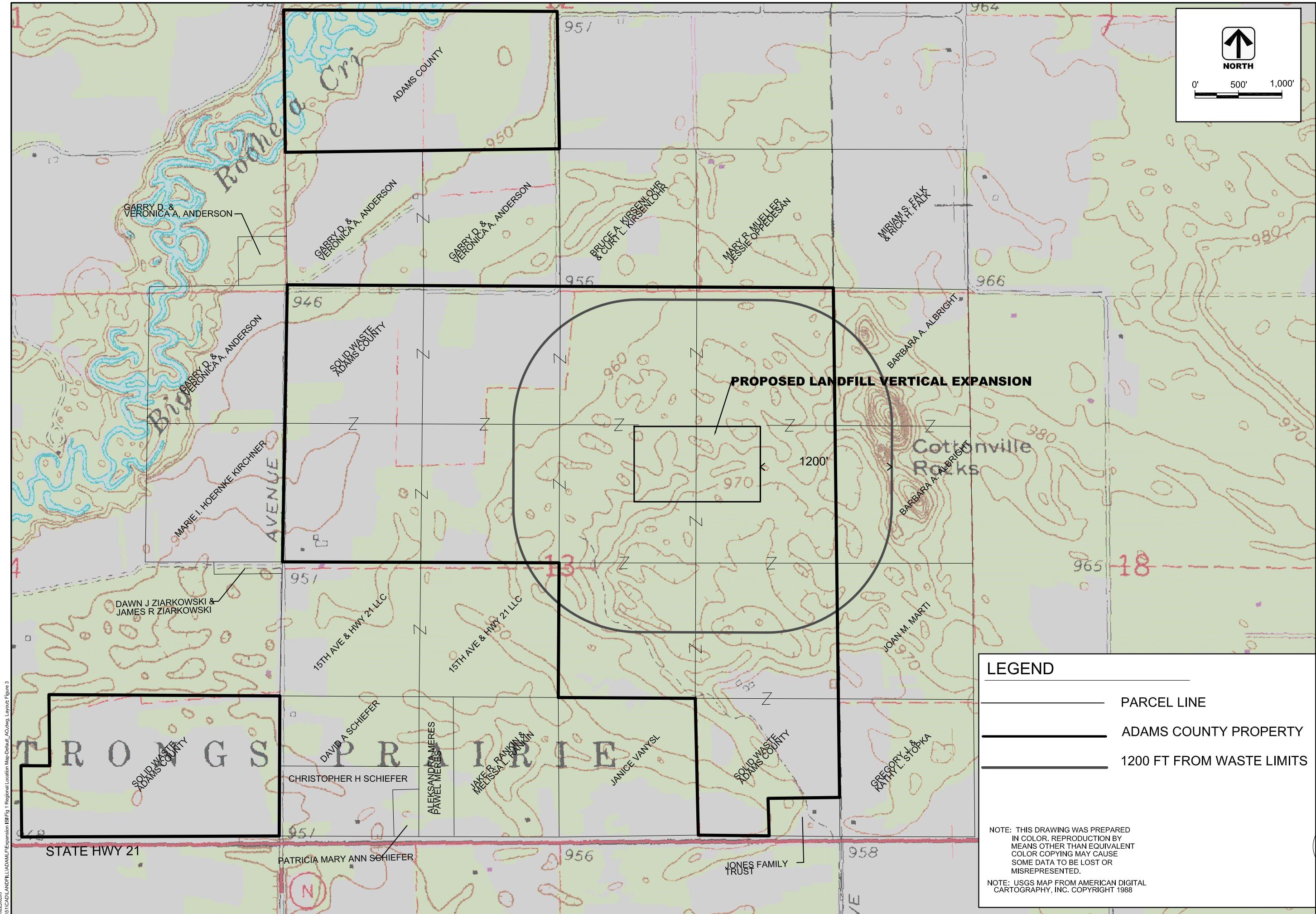
Adams County Sanitary Landfill, 1420 State Hwy 21, Friendship, WI 53934

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REVISIONS		
MARK	DATE	DESCRIPTION

Project Number:	52-0755.51
Set:	NOT FOR CONSTRUCTION
Type:	
Issue Date:	MAY 11, 2022

FIGURE

**Figure 3**  
**Adjacent Landowners Map**



**ADJACENT LAND OWNERS MAP  
FEASIBILITY REPORT  
ADAMS COUNTY SOLID WASTE & RECYCLING**

Adams County Sanitary Landfill, 1420 State Hwy 21, Friendship, WI 53934

Designed By:	MGL
Checked By:	MGL
REVISIONS	
MARK	DATE

Project Number: 52-0755.51  
Set: NOT FOR CONSTRUCTION  
Type: Issue Date: MAY 11, 2022

FIGURE

**Figure 4**  
**Land Use Zonings**

## LAND USE ZONING FEASIBILITY REPORT

ADAMS COUNTY SOLID WASTE & RECYCLING

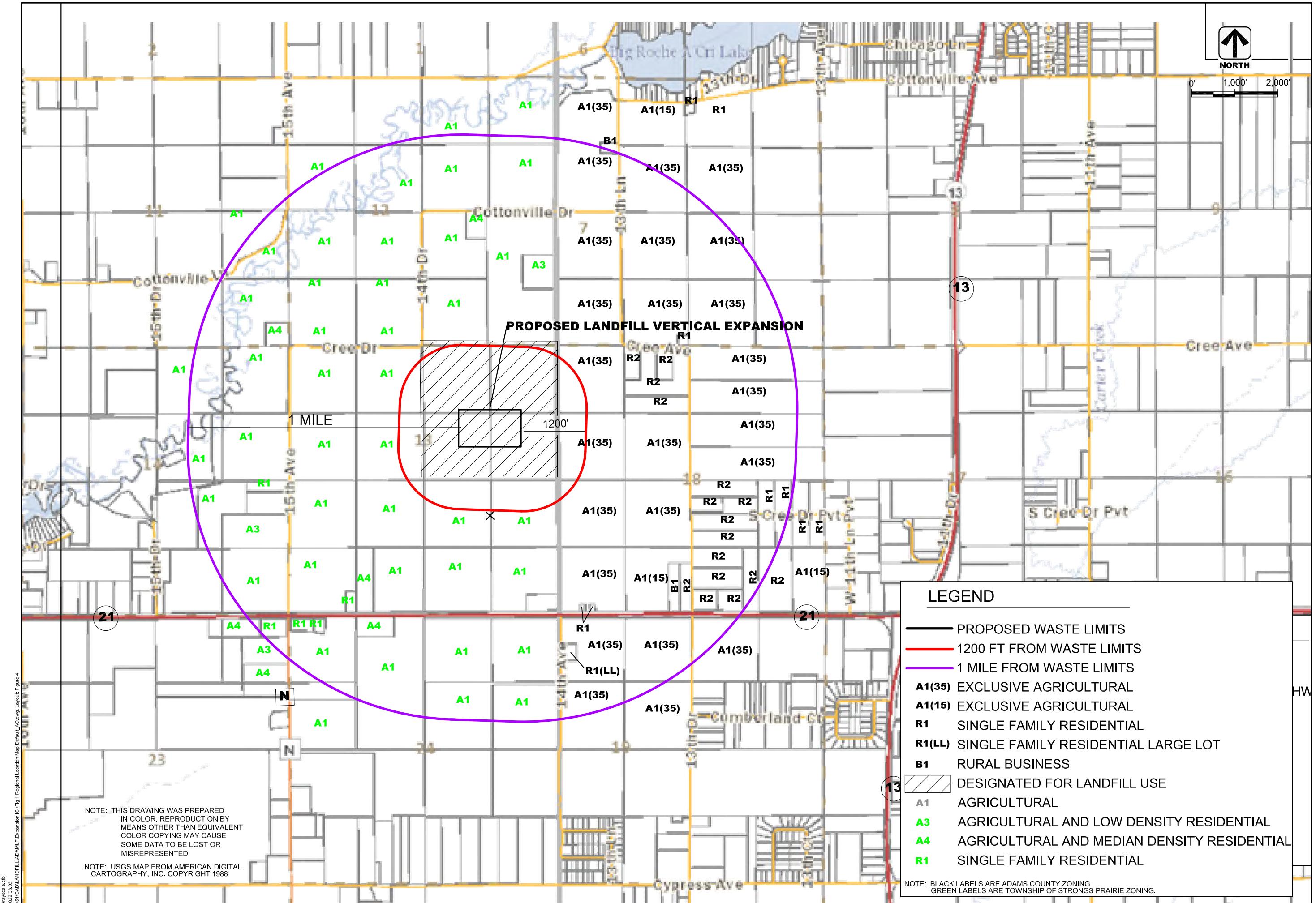
Adams County Sanitary Landfill, 1420 State Hwy 21, Friendship, WI 53934

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FIGURE

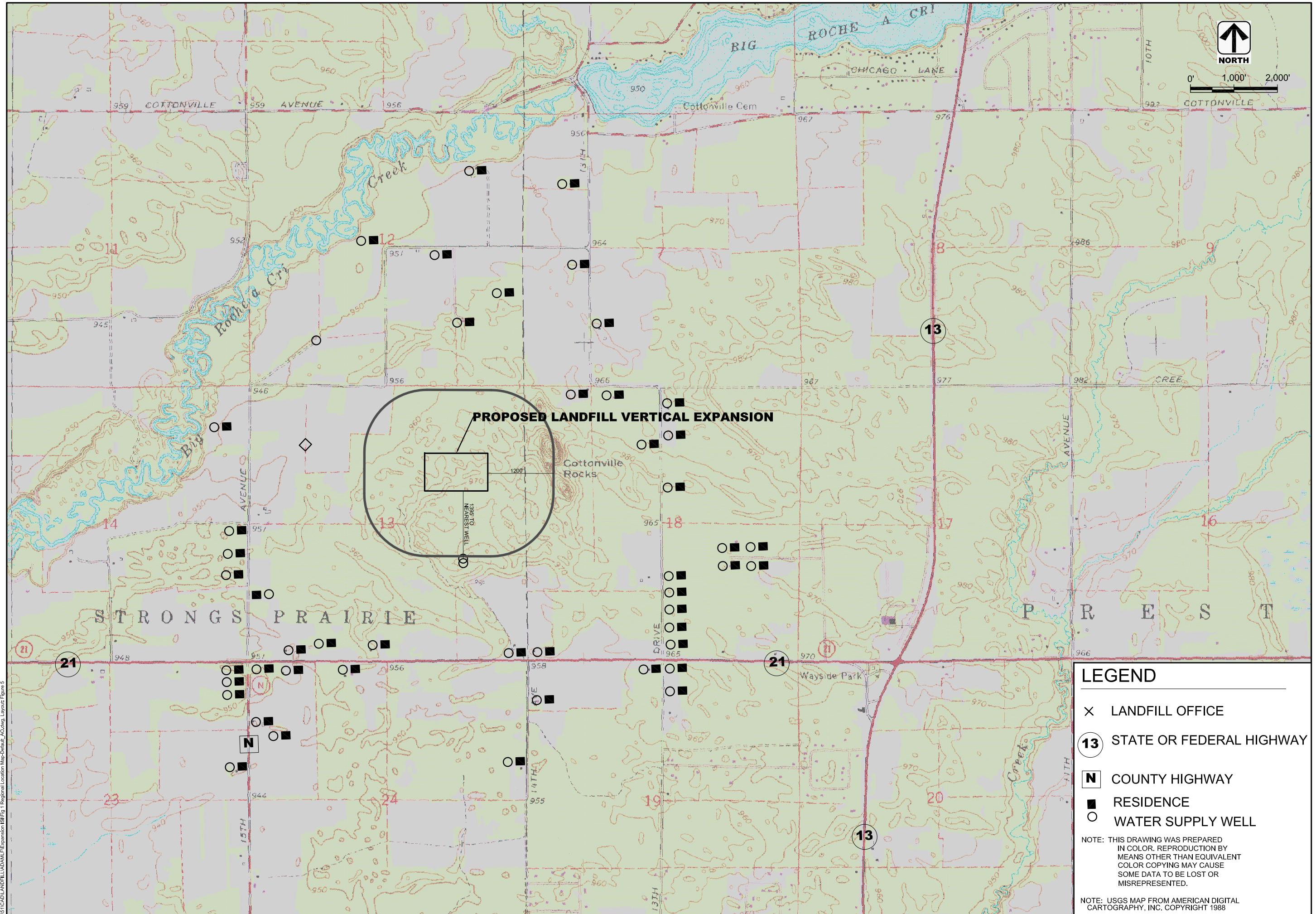
4



**Figure 5**  
**Well Locations**

**WELL LOCATIONS  
FEASIBILITY REPORT  
ADAMS COUNTY SOLID WASTE & RECYCLING**

ADAMS COUNTY SANITARY LANDFILL, 1420 STATE HWY 21, FRIENDSHIP, WI 53934

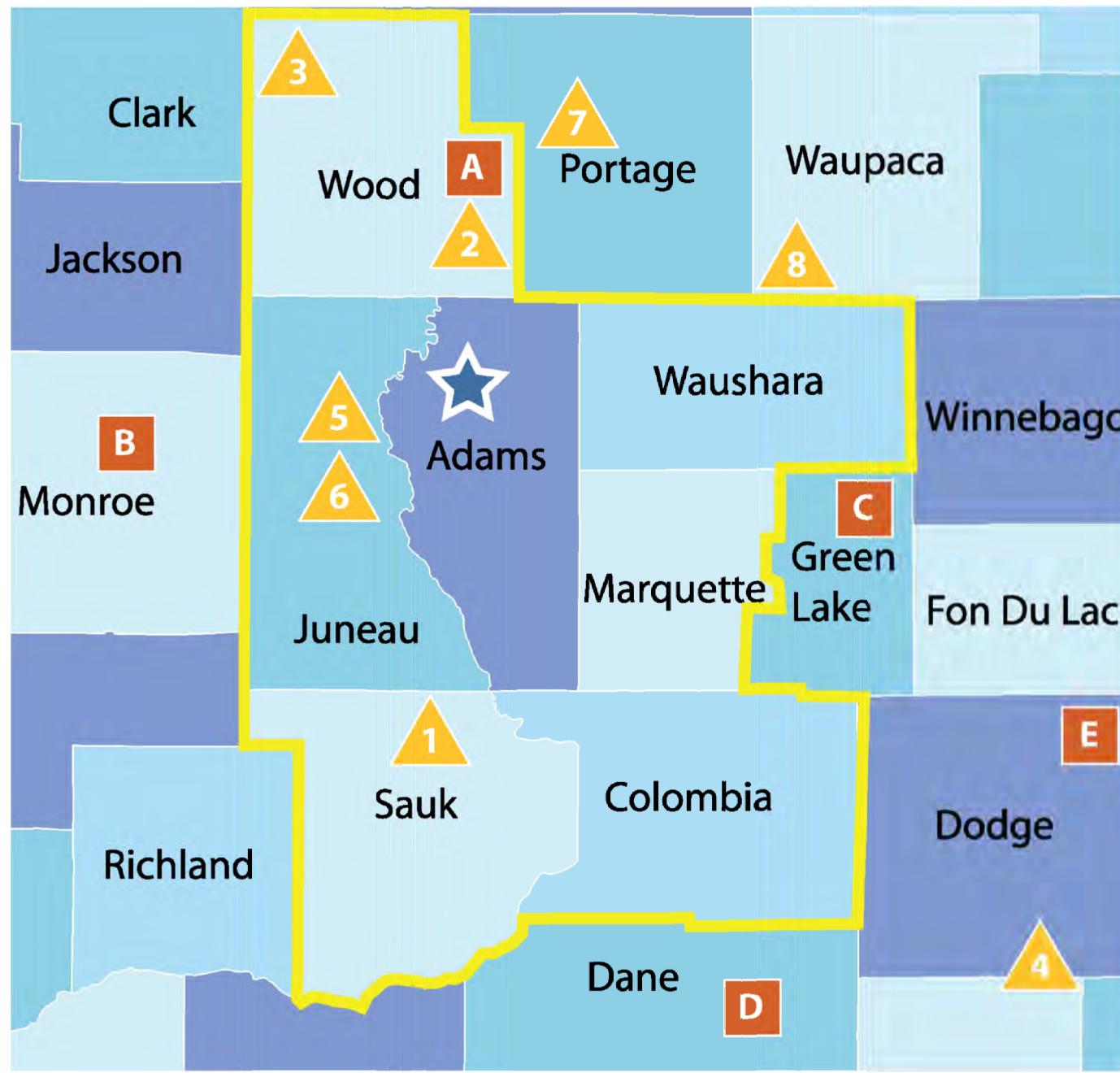


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Checked By:	MGL
REVISIONS	
MARK	DATE

Project Number: 52-0755.51  
Set: NOT FOR CONSTRUCTION  
Type: CONSTRUCTION  
Issue Date: MAY. 11. 2022

FIGURE

**Figure 6**  
**Adams County Service Area**



★ Adams County Landfill

— Adams County Landfill Service Area

## Landfills

- A Advanced Disposal, Cranberry Creek
- B Monroe County
- C Waste Management, Valley Trail
- D Dane County Rodefeld
- E Advance Disposal, Glacier Ridge

## Transfer Stations

- 1 Lake Delton
- 2 Advanced Disposal, Cranberry Creek
- 3 Advanced Disposal, Marshfield
- 4 American Disposal, Watertown
- 5 Clark Disposal, Mauston
- 6 Lenroud Disposal, Mauston
- 7 Portage County, Plover
- 8 Waupaca County, Waupaca

**ADAMS COUNTY SERVICE AREA  
FEASIBILITY REPORT**  
ADAMS COUNTY SOLID WASTE & RECYCLING  
Adams County Sanitary Landfill, 1420 State Hwy 21, Friendship, WI 53934

Designed By:	MGL	
Checked By:	MGL	
REVISIONS		
MARK	DATE	DESCRIPTION

Project Number:	52-0755.51
Set	NOT FOR CONSTRUCTION
Type	
Issue Date:	MAY 11, 2022

FIGURE

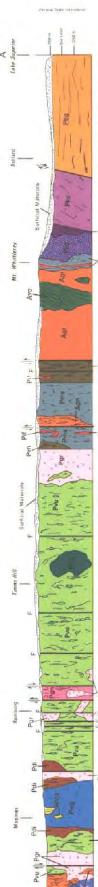
**Figure 7**  
**Wisconsin Bedrock Map**

# BEDROCK GEOLOGIC MAP OF WISCONSIN

by  
M.G. Mudrey, Jr., B.A. Brown and J.K. Greenberg

UNIVERSITY OF WISCONSIN- EXTENSION  
GEOLOGICAL AND NATURAL HISTORY SURVEY  
Meredith E. Ostrom, Director and State Geologist

1982



Vertical scale exaggerated 16 to 1

A

B

C

D

E

F

G

H

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J

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L

M

N

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**Appendix A**  
**Initial Site Report Procedures**  
**and Completeness Checklist**

# Initial Site Report Completeness Checklist

## Chapter NR 509, Wis. Adm. Code



Revised January 2018

**Waste & Materials Management**  
P.O. Box 7921  
Madison, WI 53707-7921

Instructions: This checklist is intended for use by department staff for the review of landfill initial site reports to determine completeness. The checklist may also be used by applicants and submitted with a landfill initial site report to facilitate department review. Refer to applicable statutes and codes for exact requirements.

### General Information

Facility Name: Adams County Sanitary Landfill

Facility Type: MSW Landfill

Initial Submittal: Date Received: \_\_\_\_/\_\_\_\_/\_\_\_\_ Completeness Due: \_\_\_\_/\_\_\_\_/\_\_\_\_ DNR Response: \_\_\_\_/\_\_\_\_/\_\_\_\_ (Complete:    yes    no)

Addendum #    Date Received: \_\_\_\_/\_\_\_\_/\_\_\_\_ Completeness Due: \_\_\_\_/\_\_\_\_/\_\_\_\_ DNR Response: \_\_\_\_/\_\_\_\_/\_\_\_\_ (Complete:    yes    no)

Addendum #    Date Received: \_\_\_\_/\_\_\_\_/\_\_\_\_ Completeness Due: \_\_\_\_/\_\_\_\_/\_\_\_\_ DNR Response: \_\_\_\_/\_\_\_\_/\_\_\_\_ (Complete:    yes    no)

Proposed Waste Types: Municipal Solid Waste (WDNR Category No. 1)

Proposed Total Design Capacity: 224,000 CY (including daily and intermediate covers)

<u>Y</u>	<u>N</u>	Have office and work copies been designated?
<u>Y</u>	<u>N</u>	Has each copy been stamped with the date received?
<u>Y</u>	<u>N</u>	Has the initial submittal been entered into the FIST database?
<u>Y</u>	<u>N</u>	Have all additional information submittals been entered into FIST database?
<u>Y</u>	<u>N</u>	Have the acknowledgment letter and invoice been sent to the applicant? (if yes, date sent: ____/____/____)
<u>Y</u>	<u>N</u>	Has the invoiced plan review fee been paid? (if yes, date received: ____/____/____)

Facility Name: \_\_\_\_\_

COMPLETENESS REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
<b>NR 509.04 INITIAL INSPECTION</b>					
Has the department completed an initial site inspection? Date of inspection: ____/____/____ 06/29/2022 Date of ISI letter: ____/____/____ 07/27/2022	X			page 2	
<b>NR 509.05 GENERAL SUBMITTAL REQUIREMENTS</b>					
(1) Has the review fee specified in s. 520.04 been submitted? Note: The department sends an invoice for the plan review fee to the applicant upon receipt of the report. The applicant must send payment to the department within 30 days after receipt of the invoice.		X			Fee to be submitted following receipt of Department invoice
(2) Has a cover letter detailing desired action been submitted?	X				
(3) Have 3 paper copies been submitted to the regional office (and 1 additional paper and electronic copy submitted to the bureau office, unless otherwise specified by the department)?					
(4) Are the report and plan sheets submitted under seal of P.E. and P.G.?	X				
<b>Note: Subsections (5), (6), (7), and (8) below are typically not applicable unless information from ch. NR 510 is included in the ISR.</b>					
<b>(5) TECHNICAL PROCEDURES:</b>					
Were all test procedures specified in the report?		X			
Were all technical procedures used to investigate the facility considered current standard procedures (ASTM, USGS, etc.)? ____ yes      ____ no		X			
If no, was explanation and reasoning provided for any deviation from a standard method? ____ yes      ____ no		X			
<b>(6) VISUALS:</b> Do all maps, plan sheets, drawings, isometrics, cross-sections, and aerial photographs meet the following requirements:					
(a) No larger than 24 inches by 36 inches and no smaller than 8-1/2 x 11 inches?	X				
(b) Appropriate scale to show required detail?	X				
(c) Do the visuals meet the following requirements? ____ numbered      ____ legends for all symbols ____ referenced in the narrative      ____ horizontal/vertical scales ____ titled      ____ drafting or origination dates	X				
(d) Were uniform scales used?	X				
(e) Were north arrows provided?	X				
(f) Was a USGS datum used as a basis for all elevations?	X				
(g) Do visuals contain a survey grid based on monuments established in the field that are referenced to state plane coordinates?		X			

Facility Name: \_\_\_\_\_

COMPLETENESS REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(h) Are the original topography and a grid system contained on the plan sheets that show construction, operation or closure topography?			X		
(i) Do the cross-sections meet the following requirements? ____ show survey grid locations ____ reference major plan sheets ____ provide a reduced diagram of a cross-section location map (plan view)			X		
(7) Was a table of contents provided listing all sections of the submittal?	X				
(8) Was an appendix provided listing names of all references, all raw data, testing and sampling procedures and calculations?			X		
<b>NR 509.05(2)</b> Is the department's initial site inspection evaluation and all pertinent information submitted for the initial site inspection included in the report?					
<b>NR 509.05(3)</b> Content - The ISR shall identify the following:					
(a) Project title	X			page 2	
(b) Name, address & phone number of primary contacts, including the landfill's owner, operator and any consultants	X			page 3	
(c) Present property owner	X			page 3	
(d) Proposed facility owner & operator	X			page 3	
(e) Proposed landfill location (by 1/4-1/4 section)	X			page 3	
(f) Total acreage of property and anticipated limits of filling	X			page 3	
(g) Proposed landfill life and design capacity	X			page 3	
(h) Municipalities and industries to be served	X			page 3	
(i) Anticipated waste types and characteristics:	X			page 4	
(j) Anticipated volumes of each major waste stream and any seasonal fluctuations taking into account waste reduction, reuse, recycling, composting and the recovery of energy from solid waste	X			page 4	
(k) Anticipated cover frequency	X			page 4	
(l) Mode of operation	X			page 4	
(m) Anticipated sub-base, base and final grades	X			page 4	
<b>NR 509.06 LAND USE INFORMATION</b> - At a minimum, the land uses in the area within one mile of the anticipated limits of filling must be discussed in the report.					
Must discuss: ____ land uses which may have an impact on the suitability of the property for waste disposal ____ land uses which may have an impact on groundwater quality ____ address all areas where land use may affect or be affected by the proposed landfill	X			page 5	

Facility Name: \_\_\_\_\_

COMPLETENESS REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(1) Does the report locate and identify all adjacent landowners whose property is contiguous to the proposed landfill's property boundaries and all residences within 1,200 feet of the anticipated limits of filling (may be presented on a plat map if it clearly and accurately shows current land ownership conditions).	X			page 5 Figure 1	
(2) Does the report include a discussion of land use zoning. Note areas zoned as floodplain, conservancy, shoreland, or wetland.	X			page 6	
Are zoning variances required? <u>      </u> yes <span style="background-color: pink; border-radius: 50%; width: 15px; height: 15px; display: inline-block; vertical-align: middle;"></span> no			X		
If required, has an agricultural impact statement (AIS) been completed? <u>      </u> yes <u>      </u> no Note: An AIS is required if a municipality or utility will need agricultural lands and have not yet purchased or obtained an option to purchase the land.			X		
(3) Does the report include a description of present land uses including known recreational, historical, archaeological, critical habitat areas, county forest lands and state or local natural areas.	X			page 5/6	
(4) Does the report include all initial communications from FAA concerning any airports within five miles of the anticipated limits of filling if landfill owner proposes to accept municipal solid waste or other putrescible waste.	X			page 6	
(4) Does the report discuss existing or proposed transportation routes and access roads (including any weight restrictions).	X			page 6	
<b>NR 509.07 REGIONAL GEOTECHNICAL INFORMATION</b> - Information may be limited to available publications. At a minimum, the regional setting within one mile of the anticipated limits of filling must be discussed, and when available, supplemented with maps of regional bedrock and glacial geology, along with USGS topographical maps, NRCS soil maps and regional water table maps.					
(1) Topography (the existing topography including predominant topographic features)	X			page 7	
(2) Hydrology (surface water drainage patterns and significant hydrologic features, including surface waters, springs, surface water drainage basins, divides, and wetlands)	X			page 7	
(3) Geology (origin, nature and distribution of bedrock; origin, texture, thickness and distribution of the unconsolidated units; and texture and classification of surficial soils)	X			page 8	
(4) Hydrogeology: <u>      </u> depth to groundwater <u>      </u> aquifer(s) <u>      </u> groundwater flow directions <u>      </u> principal aquifers used by water supply wells <u>      </u> groundwater divides	X			page 9	
(5) Water quality (information on groundwater and surface water quality available from the USGS, WSGNHS, DNR, UW-Extension, and regional planning commissions)	X			page 9	

Facility Name: \_\_\_\_\_

Legal Note: This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

**Appendix B**  
**Initial Site Inspection Documents**



July 27, 2022

File Ref: FID #701040560

Adams County  
SW Approvals

Mr. Charlie Kuhn  
Adams County Landfill  
1420 State Highway 21  
Friendship, Wisconsin 53934

Subject: Initial Site Inspection of Proposed Vertical Landfill Expansion, Adams County Landfill  
License #3150

Dear Mr. Kuhn:

This letter documents the initial site inspection (ISI) performed by the Department of Natural Resources (department) on June 29, 2022, for the proposed vertical expansion of the Adams County Landfill, and the department's preliminary opinion regarding the suitability of the site location. Department staff conducted the inspection with staff from Adams County (county) and a representative from Ayres Associates (Ayres), the county's consultant. The purpose of the inspection was to identify any potential conflicts the proposed expansion might have with the location and performance standards in s. NR 504.04, Wis. Adm. Code.

As part of the inspection, the department evaluated the information in Ayres' May 31, 2022 ISI request letter submitted on behalf of the county. According to the letter, the proposed expansion consists of a vertical expansion over Phases 2 through 5 of the existing municipal solid waste (MSW) landfill located in the SW ¼ and the SE ¼ of the NE ¼ of Section 13, Township 18N, Range 5E, Town of Strong Prairie, Adams County, Wisconsin.

Based on the review of the May 31, 2022 ISI request and observations from the ISI, the department's preliminary opinion regarding the suitability of site location is that the site location has potential. No apparent conflicts with the locational criteria contained in s. NR 504.04(3), Wis. Adm. Code, or the performance standards contained in s. NR 504.04(4), Wis. Adm. Code, were noted. However, a more detailed evaluation of the locational criteria should be provided in the Initial Site Report (ISR). If there are conflicts that cannot be satisfactorily addressed in accordance with applicable requirements, the conflicts would be constraints to site development.

**Summary of Locational Criteria:** As described in s. NR 504.04(3)(a) to (i), Wis. Adm. Code, there are several locational criteria that apply to the proposed landfill expansion. The proposed limits of filling may not be located within:

- (a) *1,000 feet of any navigable lake, pond or flowage.* According to the ISI request, the proposed limits of waste are not located within 1,000 feet of a navigable lake, pond or flowage. The department's Surface Water Data Viewer (SWDV) does not indicate the presence of any navigable lake, pond or flowage within 1,000 feet of the proposed expansion.
- (b) *300 feet of any navigable river or stream.* According to the ISI request, no navigable rivers or streams are located within 300 feet of the proposed site. According to the SWDV, Big Roche A Cri Creek is located over 4,000 feet from the proposed limits of waste. Additional information regarding the nearest navigable river or stream to the site should be provided in the ISR.
- (c) *A floodplain.* According to the ISI request, the proposed expansion is not within a floodplain. The SWDV also indicates this area is not in a floodplain.

- (d) *1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or the boundary of any public park or state natural area, unless the landfill is screened.* According to the ISI request, the proposed expansion is not within 1,000 feet of any highway, public park or state natural area. The closest highway is State Highway 21, located approximately 3,000 feet south of the proposed expansion. Additional information regarding the nearest highways and public parks to the site should be provided in the ISR.
- (e) *An area where the design or operation of the landfill would pose a significant bird hazard to aircraft.* The ISI request states that there are no airports designed or planned within 5,000 feet of the proposed limits of waste. Additional information regarding the nearest airports to the site should be provided in the ISR.
- (f) *1,200 feet of any public or private water supply well.* The ISI request states that no public or private wells are located within 1,200 feet of the proposed expansion boundary. The distance from the proposed expansion to the private well that supplies water to the landfill should be specified in the ISR. Further discussion regarding public and private wells in the area would also be addressed in the feasibility report.
- (g) *200 feet of a fault that has had displacement in Holocene time.* The ISI request states that the proposed expansion is not within 200 feet of a fault that has had displacement since Holocene time. This assessment will be completed during the ISR and feasibility reviews.
- (h) *Seismic impact zone.* The ISI request concludes that the site is not in a seismic impact zone. This assessment will be completed during the ISR and feasibility reviews.
- (i) *Unstable areas.* The ISI request states there is no evidence of unstable conditions at the site. This assessment will be completed during the ISR and feasibility reviews.

It appears that the site meets, or could be constructed and operated to meet, the performance standards in s. NR 504.04(4), Wis. Adm. Code.

- (a) Wetland Areas –Based on a review of the department’s SWDV, adverse impacts to wetlands are not anticipated from the proposed expansion.
- (b) Critical Habitat Areas - Based on a review of the Natural Heritage Inventory (NHI), it appears unlikely that there would be any significant adverse impact on critical habitat areas or endangered or threatened species due to the proposed landfill expansion. Additionally, a vertical landfill expansion is covered by the No/Low Impact List for All Species at All Times of the Year category under the department’s Broad Incidental Take Permit/Authorization, as provided for under s. 29.604 Wis. Stats. Further review for endangered resources is not anticipated for the proposed project.
- (c) Archaeological Resources: According to the ISI request, Ayres conducted a historical and archaeological search at the Wisconsin Historical Society using the Wisconsin Archaeological Site Inventory and the Architectural Historical Inventory databases in Madison, Wisconsin. No known historic or archaeological findings were identified within the proposed project area.

Archaeological issues and historical structures for the site were cleared by Richard Kubicek, Departmental Archaeologist/Departmental Historic Preservation Officer, on June 6, 2022.

The performance criteria outlined in s. NR 504.04(4)(c) through (f), Wis. Adm. Code, include evaluation of surface water, groundwater, gas migration and air contaminant impacts. These performance criteria would be evaluated during the department's review of a feasibility report for the proposed expansion.

Please remember that s. NR 509.04(4)(d), Wis. Adm. Code, requires submittal of a 7.5 Minute USGS map or equivalent with a minimum scale of 1 inch=500 feet. The ISI request included a 1 inch=10,000 feet scale topographic map; however, a 1 inch=500 feet scale map will be required in the ISR submittal. Several maps at this scale may be needed to show all items listed in this code section, which include the depiction of contour intervals to sufficiently show relief, surface waters, floodplains, existing land use conditions including the location of public parks, and all water supply wells and residences located within one mile of the property boundaries of the proposed landfill.

To assist the department's review of documents, please follow the general submittal requirements in s. NR 500.05, Wis. Adm. Code, and ensure that all visuals show the proposed expansion boundaries, relevant radii around the site (e.g., 1,000 feet, 1,200 feet, one mile) depending on the information portrayed on the figure, and follow the requirements listed in s. NR 500.05(6), Wis. Adm. Code.

The locational and performance criteria will be evaluated again as the department reviews the ISR and feasibility report. Please keep in mind that as the department continues its review of the proposed expansion and as new information is presented, the department may have additional questions, concerns or requests for further information before a feasibility determination is made.

Please do not hesitate to contact me at 608-931-9387 or by email at [carolyn.cooper@wisconsin.gov](mailto:carolyn.cooper@wisconsin.gov) with any questions about this letter.

Sincerely,

*Carolyn Cooper*  
Carolyn Cooper  
Hydrogeologist  
South Central Region

cc: Michael Leopold, Ayres (e-copy)  
Bridget Kelly, DNR-WA (e-copy)  
Colin Maus, DNR-WA (e-copy)  
Joe Lourigan, DNR-WA (e-copy)  
Valerie Joosten, DNR-WA (e-copy)

May 31, 2022

Mr. Colin Maus  
Wisconsin Department of Natural Resources  
3911 Fish Hatchery Road  
Fitchburg, WI 53711-5367

Re: Initial Site Inspection Request  
Adams County Landfill  
Adams County, Wisconsin  
License #3150

Dear Mr. Maus,

On the behalf of the Adams County Solid Waste Department (County), Ayres Associates is submitting this Initial Site Inspection (ISI) request for potential expansion of the existing municipal solid waste (MSW) landfill, License #3150. The estimated remaining life of the MSW landfill and the timeframe to permit the expansion of the landfill dictates that the expansion process needs to start at this time. This ISI request incorporates the requirements for an ISI for a MSW landfill and soil borrow source (NR 509.04).

NR 509.04 (4)(a) – Applicant and Authorized Contact

Mr. Charlie Kuhn, Director  
Adams County Solid Waste Department  
1420 State Highway 21  
Friendship, WI 53934  
(608)339-9178 Ext.304

NR 509.04 (4)(a) – Type of Landfill

MSW Landfill

NR 509.04 (4)(a) – Proposed Operation

Proposed Vertical Expansion – Adams County Landfill, License #3150  
Soil Borrow Source for construction of future horizontal expansions

NR 509.04 (4)(a) – Current Property Ownership

Adams County Solid Waste Department

NR 509.04 (4)(a) – Property Location

*Physical Address*  
1420 State Highway 21  
Friendship, WI 53934

*Legal Description*

Landfill Expansion – SW ¼, NE ¼ of Section 13 & SE ¼, NE ¼ of Section 13  
Soil Borrow Source – SE ¼, NW ¼ of Section 13 & NE ¼, NW ¼ of Section 13  
Town of Strong Prairie  
Township – 18N, Range – R5E

NR 509.04 (4)(a) – Present Land Use

MSW Landfill #3150, Closed C&D Landfill, Recycling Material Recovery Facility, Composting Facility, MSW collection facility, office and maintenance building, agriculture, and vacant land (woodland).

NR 509.04 (4)(b) – Known impacts to Endangered and Threatened Species or Historical, Scientific, or Archeological Areas

*Endangered and Threatened Species*

Ayres Associates requested an Endangered Resources Review for both the vertical expansion and the soil borrow source. Ayres received the ERR review verification from the Department on January 19, 2022, which indicated the proposed vertical expansion of the landfill is covered by Activity 1-A12, vertical landfill expansion. A determination of no/low impact will be made to endangered and threatened species in the state.

We also received an Endangered Resources Review (ERR, Log #22-157) from the Department in regard to this proposed project on March 13, 2022, in regard to the soil borrow source. The review indicated one endangered (1) specie of required action, one endangered (1) specie of recommended action, and three endangered (3) species of No Follow-up action to be taken. Ayres Associates performed the Level 1 vegetation survey that satisfied the required action. No instances of the vegetation were identified in the project area. Please refer to Appendix A for the ERR Verification and survey results.

*Historic and Archaeological Sites*

Ayres Associates conducted a historical and archeological search at the Wisconsin Historical Society using the Wisconsin Archeological Site Inventory (ASI) and the Architectural Historical Inventory (AHI) databases in Madison, WI. There are no known historic or archeological findings within the proposed project area. See Appendix B for search results regarding historical and archeological findings.

NR 509.04 (4)(d) – Site Map

Refer to Figure 1 for the regional location of the proposed vertical expansion and soil borrow source. Figure 2 is a Solid Waste Adams County ownership map.

NR 509.04 (4)(e) – Potential Conflicts with Locational Criteria

Evaluation of potential conflicts with locational criteria related to the proposed landfill expansion and proposed clay borrow source are summarized in Table 1. A wetlands map attached in Figure 3 and a national flood plain is attached in Figure 4. There are no wetlands or flood hazard zones located within the project site boundaries. In addition, there are no surface waters located on the property as shown in figures.

**Table 1 - Landfill Expansion – Evaluation of Locational Criteria [NR 504.04(3)]**

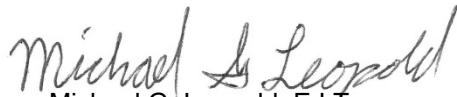
Locational Criteria	Potential Conflict?
Within 1,000 feet to the nearest navigable lake, pond, or flowage	No
Within 300 feet to the nearest navigable river or stream	No
Within a floodplain	No
Within 1,000 feet to the edge of right-of-way to a state or federal highway	No
Within 5,000 feet to the end of runway for piston airplanes	No
Within 10,000 feet to the end of runway for turbojet airplanes	No
Within 1,200 feet of a water supply well	No
Within 200 feet of a fault line	No
Within a seismic impact zone	No
Within an unstable area	No
Anticipated to have a detrimental effect on any surface water	No

Feel free to contact myself or Logan Seipel at (715) 831-7685 or [Seipell@ayresassociates.com](mailto:Seipell@ayresassociates.com) if you have any questions regarding this ISI request. Please invoice Adams County directly for the ISI site visit. To schedule the ISI, visit please contact Mr. Charlie Kuhn at (608) 339-9178, Ext. 3.

Mr. Maus  
May 31, 2022  
Page 3 of 3

Sincerely,

Ayres Associates Inc



Michael G. Leopold, E.I.T  
Environmental Engineering Staff  
Direct: 715.831.7534  
Office: 715.834.3161  
[LeopoldM@AyresAssociates.com](mailto:LeopoldM@AyresAssociates.com)

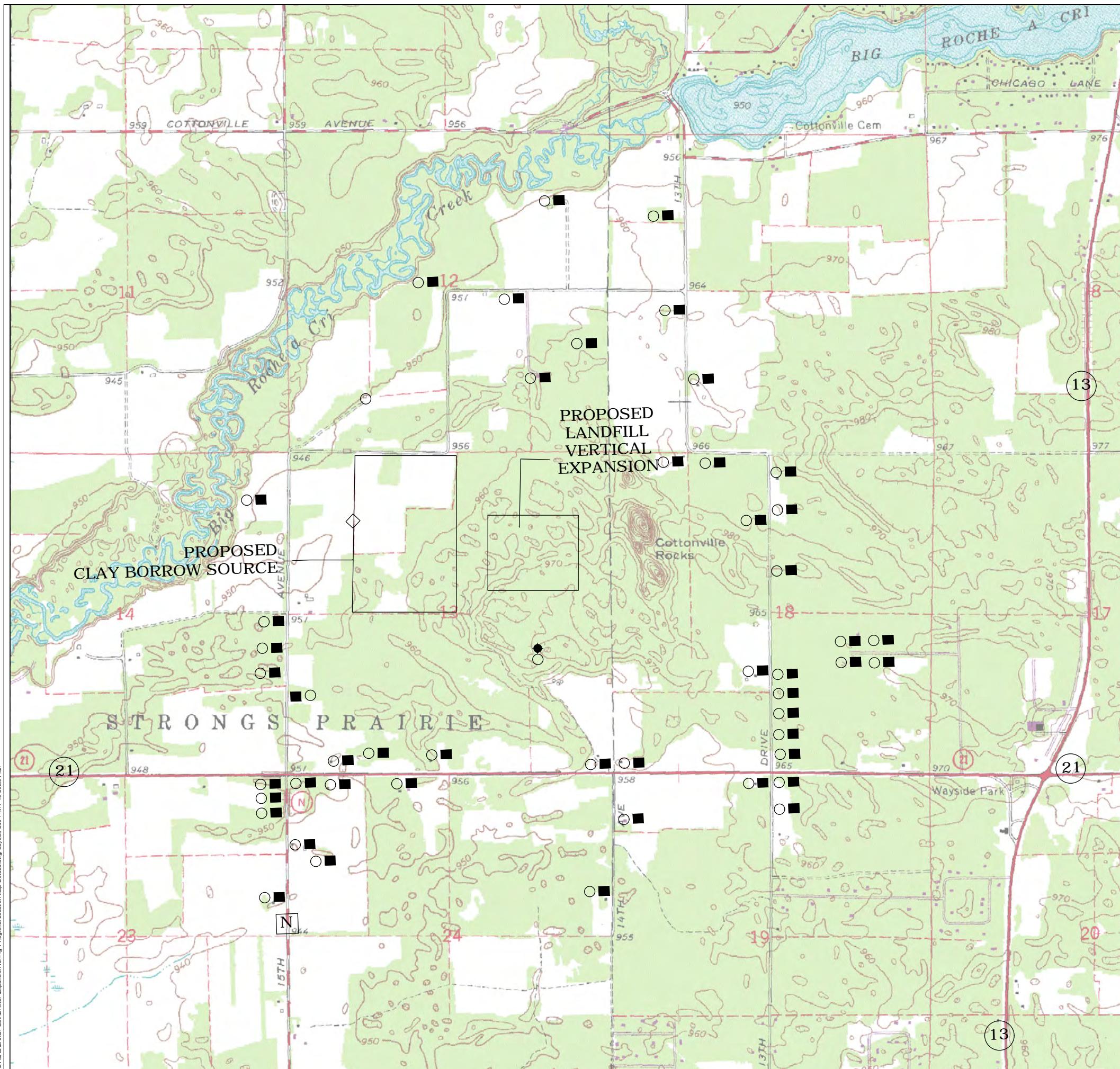
ML:ac

Enclosure – Figure 1 – Regional Location Map  
Figure 2 – Property Ownership Map  
Figure 3 – Wetlands and Surface Water Bodies  
Figure 4 – National Flood Hazard Map  
Appendix A – Endangered Resources Verification and Survey Assessment  
Appendix B – Historical and Archeological Review Results

cc: Mr. Charlie Kuhn – Adams County Solid Waste Department  
Mr. Michael Leopold – Ayres Associates

## **Figure 1**

Regional Location Map



### LEGEND

- RESIDENCE
- WATER SUPPLY WELL
- LANDFILL OFFICE
- ◊ IRRIGATION WELL
- 13 STATE OR FEDERAL HIGHWAY
- N COUNTY HIGHWAY

NOTE: THIS DRAWING WAS PREPARED  
IN COLOR. REPRODUCTION BY  
MEANS OTHER THAN EQUIVALENT  
COLOR COPYING MAY CAUSE  
SOME DATA TO BE LOST OR  
MISREPRESENTED.

NOTE: USGS MAP FROM AMERICAN DIGITAL  
CARTOGRAPHY, INC. COPYRIGHT 1988  
NOTE: AERIAL IMAGE VIEWED IN GIS COORDINATE SYSTEM:  
WISCONSIN COUNTY STEM: ADAMS COUNTY NAVD 83

**FIGURE 1 - REGIONAL LOCATION MAP**  
**INITIAL SITE INSPECTION**  
**ADAMS COUNTY SOLID WASTE & RECYCLING**

Adams County Sanitary Landfill, 1420 State Hwy 21, Friendship, WI 53934

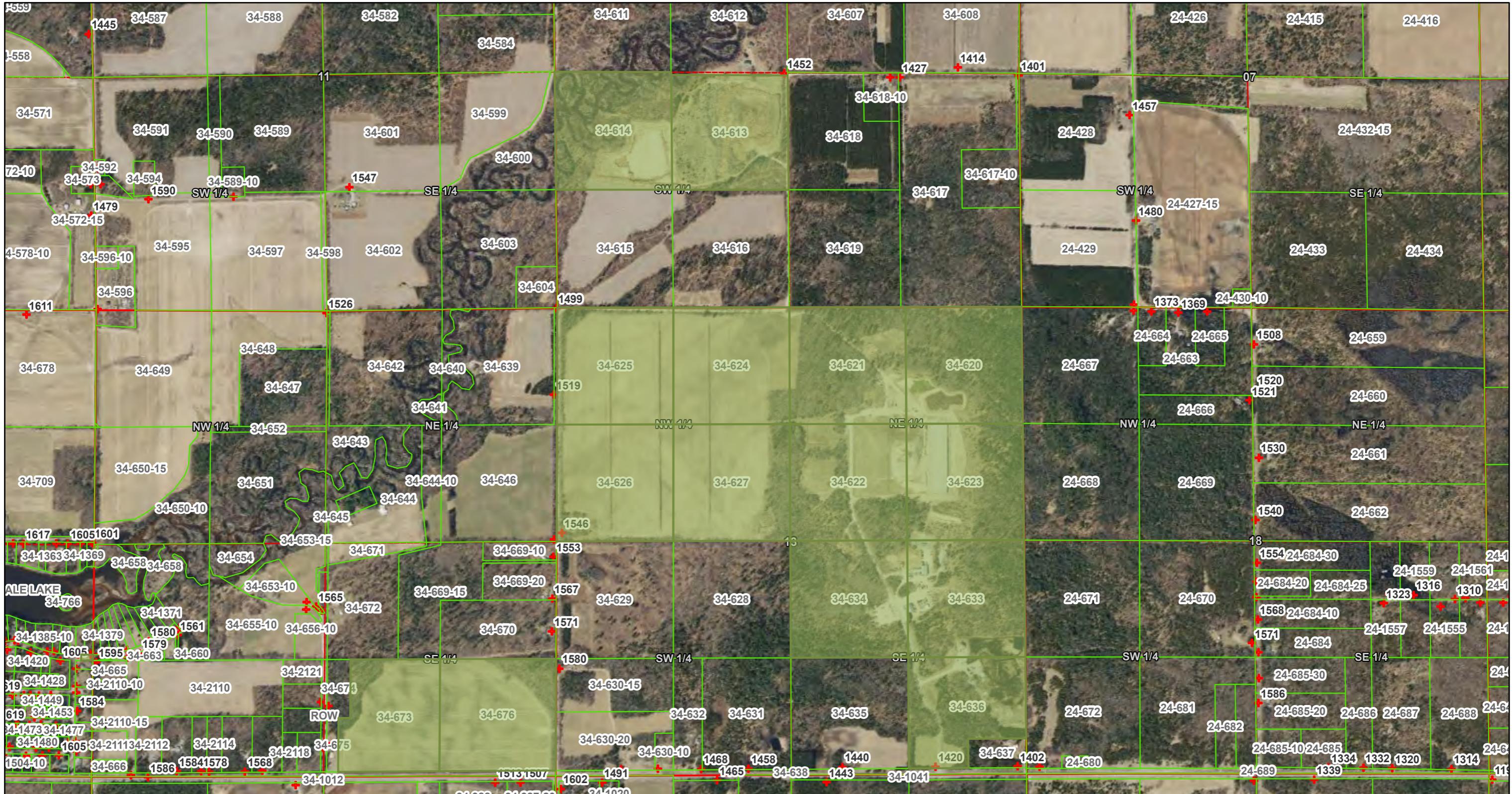
Designed By: Name Here
Checked By: Name Here
REVISIONS
MARK DATE DESCRIPTION
Project Number: 51-0235.22
Set NOT FOR
Type: CONSTRUCTION
Issue Date: JAN. 18. 2022

Project Number: 51-0235.22  
Set NOT FOR  
Type: CONSTRUCTION  
Issue Date: JAN. 18. 2022

## **Figure 2**

Property Ownership Map

# Solid Waste Adams County Ownership Map



3/21/2022, 11:46:35 AM

1:18,056

Municipal Boundary

Property Addresses

Search Property by Name \_Query result

PLSS Section

Parcels

Quarter Sections

0 0.15 0.3 0.6 mi  
0 0.25 0.5 1 km

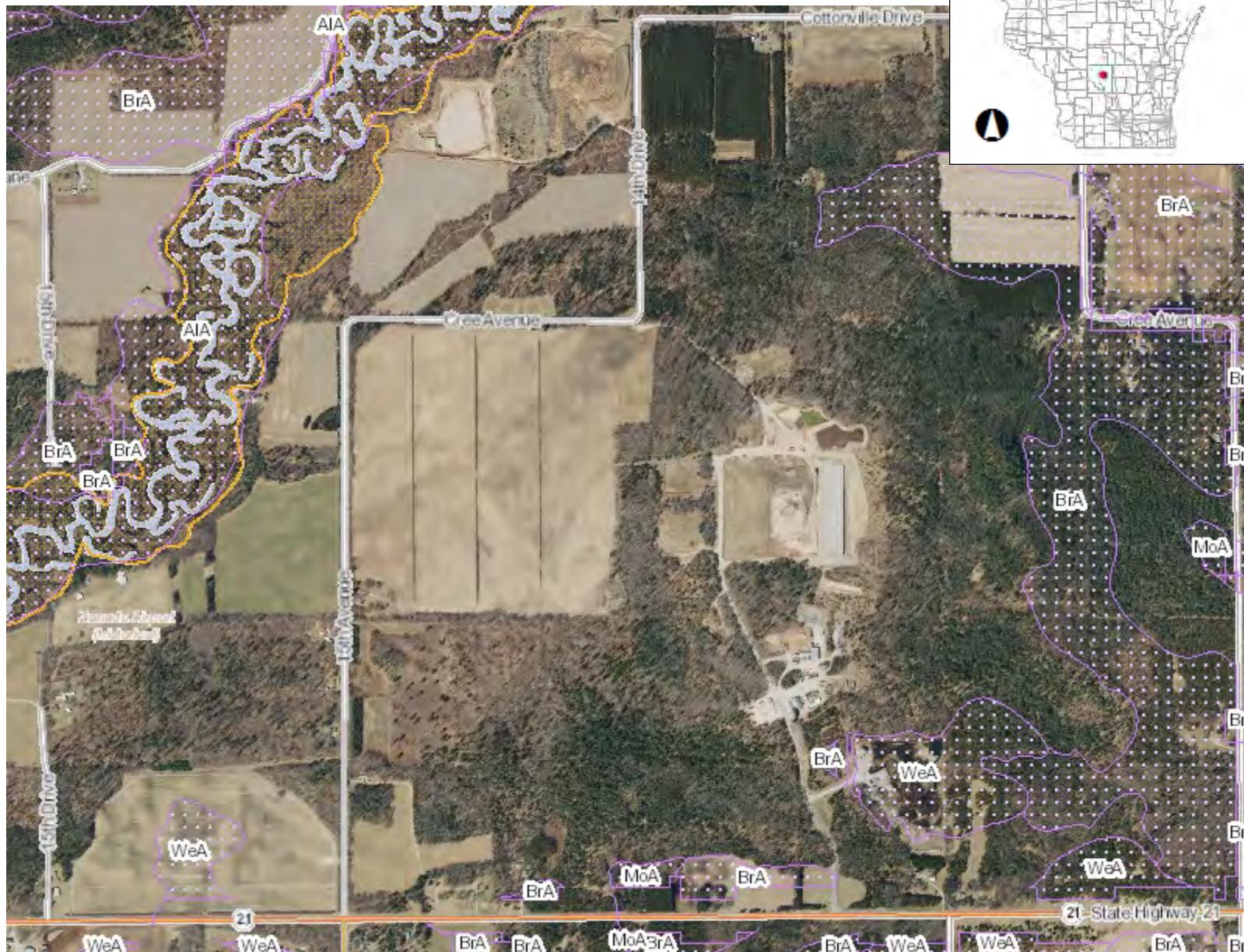
Ayres Associates, Esri Canada, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, METI/NASA, EPA, USDA

### **Figure 3**

Wetlands and Surface Water Bodies



# Surface Water Data Viewer Map



0.5      0      0.25      0.5 Miles

NAD\_1983\_HARN\_Wisconsin\_TM

1: 15,840

**DISCLAIMER:** The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>

## Legend

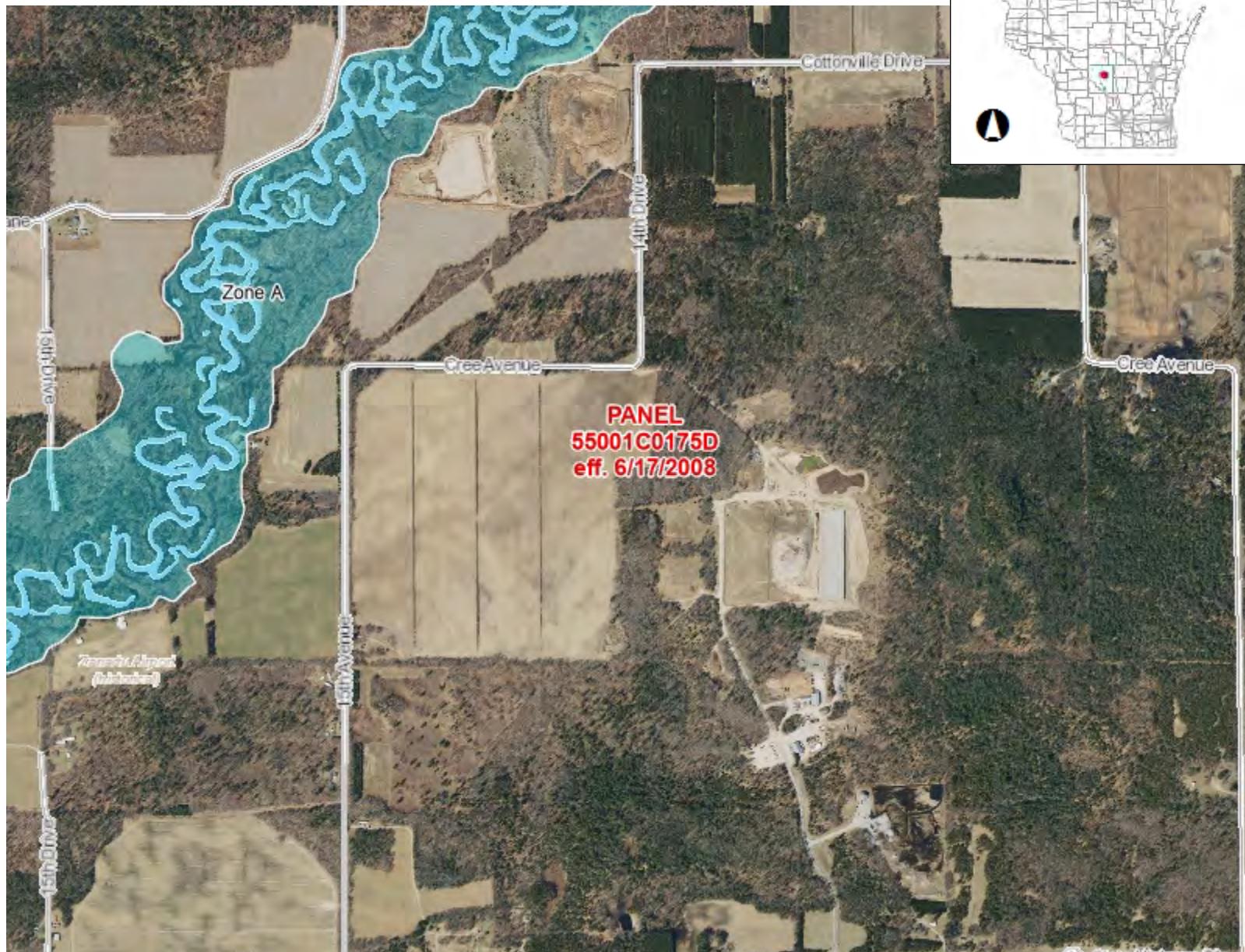
- Wetland Indicators
- Wetland Class Areas
- Wetland Class Points
- Dammed pond
- Excavated pond
- Filled/drained wetland
- Wetland too small to delineate
- Filled excavated pond
- Filled Points
- Wetland Class Areas
- Filled Areas
- Wetland Class Areas
- Wetland Class Points
- Dammed pond
- Excavated pond
- Filled/drained wetland
- Wetland too small to delineate
- Filled excavated pond
- Filled Points
- Wetland Class Areas
- Filled Areas
- Wetland Identifications and Confirmations
- NRCS Wetspots
- Critical Habitat Areas
- Other Public Rights Feature
- Sensitive Area Designation
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
- Interstate Highway
- State Highway
- US Highway
- County and Local Roads

## Notes

**Figure 4**  
National Flood Hazards Map



# National Flood Hazard Map



0.5

0

0.25

0.5 Miles

NAD\_1983\_HARN\_Wisconsin\_TM

1: 15,840

**DISCLAIMER:** The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>



## Legend

2D Water Surface Elevation Grid

High : 937.446

Low : 855.125

### Dams

Yellow: Dams with FERC License

Red: Dams

### Record Flood Levels

### Analysis Lines

Other

Flood Insurance Study

Letter of Map Revision

Case By Case Analysis

Bridge

### Analysis Points

Other

Flood Insurance Study

Letter of Map Revision

Case By Case Analysis

Bridge

### Analysis Catchments

### Floodplain Storage

### Cross Sections

### Floodplains

Flood Fringe

Floodway

### FERC Project Area Boundaries

### DOT Bridges

### Statewide Paper FIRM Index

### FIRM Panels

### Cross-Sections

### Flood Hazard Boundaries

Limit Lines

## Notes

## **Appendix A**

Endangered Resources Verification and Survey Assessment

**Endangered Resources (ER) Review Verification**  
**Broad Incidental Take Permit/Authorization**  
**for No/Low Impact Activities**  
Form 1700-079 (R 1/20)

**Notice:** This form is authorized by s. 29.604, Wis. Stats. This completed signed form, once submitted to DNRERRReview@wi.gov using the Submit by Email button at the bottom of the form, fulfills the requirement of an Endangered Resources Review and should be attached to other permits requiring an ER Review to show that Endangered Resources requirements have been met. Personal information collected on this form will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.].

**Instructions:** Complete this form if your project is covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities and therefore does not require an Endangered Resources Review.

**Section 1: Applicant and Project Information**

Requester Name Haley Jahnel	Organization or Agency Name Ayres Associates			
Project Name Adams County Landfill Vertical Expansion	County Adams	Township 18 N	Range 5	Section 13
Telephone Number (608) 443-1200	Email Address jahnelh@ayresassociates.com			

Project Description

Vertical expansion of an existing landfill.

Indicate who you are completing this form as:

DNR Staff  
 Certified Reviewer  
 Other: \_\_\_\_\_

**Section 2: Broad Incidental Take Permit/Authorization Coverage Information**

How is your project covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities?

It is included in the list of activities in Table 1 – No/Low Impact Table for All Species at All Times of the Year.  
 It is included in the list of activities in Table 2 – No/Low Impact Table by Taxa Group for DNR Staff and ER Certified Reviewers Only and the Taxa groups for the species of concern are covered.  
 It is included in the list of activities in Table 2 – No/Low Impact Table by Taxa Group for DNR Staff ER Certified Reviewers Only and the species of concern are covered by the Avoidance Measures document.

Activity Number(s)

1-A12, Vertical landfill expansion

**Section 3: Applicant Certification**

By my signature below, I certify that to the best of my knowledge, the information stated above is complete and accurate.

**NOTE:** If submitting this verification electronically, please type your name on the signature line. Your typed name, along with the email message generated from electronic submittal of this form, will be used as an electronic signature which is the legal equivalent to an actual signature.

Melissa Tumbleson  
Signature

1/19/2022  
Date Signed

Melissa Tumbleson  
Requester/Submitter Name (please print)



## State of Wisconsin / DEPARTMENT OF NATURAL RESOURCES

Tony Evers, Governor  
Preston D. Cole, Secretary  
Telephone 608-266-2621  
Toll Free 1-888-936-7463  
TTY Access via relay - 711

101 S. Webster St.  
Box 7921  
Madison, WI 53707-7921

March 13, 2022

Michael Leopold  
Ayres Associates  
3433 Oakwood Hills Parkway  
Eau Claire, WI 54701

**SUBJECT:** Endangered Resources Review (ERR Log # 22-157)  
Proposed Adams County Landfill Clay Borrow, Adams County, WI (T18N R05E S12, T18N R05E S13)

Dear Michael Leopold,

The Bureau of Natural Heritage Conservation has reviewed the proposed project described in the Endangered Resources (ER) Review Request received February 28, 2022. The complete ER Review for this proposed project is attached and follow-up actions are summarized below:

Required Actions: 1 species

Recommended Actions: 1 species

No Follow-Up Actions: 3 species

Additional Recommendations Specified: No

This ER Review may contain Natural Heritage Inventory data (<http://dnr.wi.gov/topic/NHI>), including specific locations of endangered resources, which are considered sensitive and are not subject to Wisconsin's Open Records Law. Information contained in this ER Review may be shared with individuals who need this information in order to carry out specific roles in the planning, permitting, and implementation of the proposed project. **Specific locations of endangered resources may not be released or reproduced in any publicly disseminated documents.**

The attached ER Review is for informational purposes and only addresses endangered resources issues. **This ER Review does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.** Please contact the ER Review Program whenever the project plans change, new details become available, or more than a year has passed to confirm if results of this ER Review are still valid.

Please contact me at 608-264-8968 or via email at anna.rossler@wi.gov if you have any questions about this ER Review.

Sincerely,

*Anna Rossler*  
Endangered Resources Review Program

CC:

**Endangered Resources Review for the Proposed Adams County Landfill Clay Borrow, Adams County  
(ER Log # 22-157)**

**Section A. Location and brief description of the proposed project**

Based on information provided by the ER Review Request form and attached materials, the proposed project consists of the following:

<b>Location</b>	Adams County - T18N R05E S12, T18N R05E S13
<b>Project Description</b>	The site for clay borrow source is a proposed project along with a vertical expansion of the landfill that received ERR verification. The request is part of the DNR Solid Waste permitting, initial site inspection for a clay borrow source. Work associated with the clay borrow source includes clearing, grubbing, access roads, excavation of overburden and clay and hauling. The clay borrow source is approximately 92 acres.
<b>Project Timing</b>	TBD
<b>Current Habitat</b>	The site for clay borrow source consists of 92 acres. 80% is currently used as a agricultural land for the leased farming practices. The remaining 20% is forested areas in between the proposed borrow site and the existing closed C&D landfill and infiltration basin.
<b>Impacts to Wetlands or Waterbodies</b>	Big Roche-A-Cri Creek is approximately 0.3 miles northwest of the proposed projects. No suspected impacts. No discharge anticipated.
<b>Property Type</b>	Private
<b>Federal Nexus</b>	Unknown

*It is best to request ER Reviews early in the project planning process. However, some important project details may not be known at that time. Details related to project location, design, and timing of disturbance are important for determining both the endangered resources that may be impacted by the project and any necessary follow-up actions. Please contact the ER Review Program whenever the project plans change, new details become available, or more than a year has passed to confirm if results of this ER Review are still valid.*

**Section B. Endangered resources recorded from within the project area and surrounding area**

	Group	State Status	Federal Status
A Riffle Beetle ( <i>Stenelmis antennalis</i> )	Beetle~	SC/N	
Floodplain Forest ( <i>Floodplain forest</i> )	Community~	NA	
Sioux (Sand) Snaketail ( <i>Ophiogomphus smithi</i> )	Dragonfly~	SC/N	
Karner Blue Butterfly High Potential Range	Other	NA	HPR
Brittle Prickly-pear ( <i>Opuntia fragilis</i> )	Plant	THR	

For additional information on the rare species, high-quality natural communities, and other endangered resources listed above, please visit our Biodiversity (<http://dnr.wi.gov/topic/EndangeredResources/biodiversity.html>) page. For further definitions of state and federal statuses (END=Endangered, THR=Threatened, SC=Special Concern), please refer to the Natural Heritage Inventory (NHI) Working List (<http://dnr.wi.gov/topic/nhi/wlist.html>).

**Section C. Follow-up actions**

**Actions that need to be taken to comply with state and/or federal endangered species laws:**

- Karner Blue Butterfly High Potential Range - Other

State Status: NA Federal Status: HPR

<b>Impact Type</b>	Impact possible
<b>Required Measures</b>	Surveys
<b>Description of</b>	While the agricultural area is not considered suitable habitat, portions of the north, east and southern borders, particularly the wooded

<b>Required Measures</b>	<p>areas, are located within the Karner Blue Butterfly (KBB) High Potential Range (HPR). To see where the project falls within the HPR downloaded the layer here: <a href="https://www.arcgis.com/home/item.html?id=1383d5610dc8486f92ffda60d2c43510">https://www.arcgis.com/home/item.html?id=1383d5610dc8486f92ffda60d2c43510</a> or find the interactive map here: <a href="https://dnr.wisconsin.gov/topic/endangeredresources/karner/range.html">https://dnr.wisconsin.gov/topic/endangeredresources/karner/range.html</a></p> <p>The wild lupine (<i>Lupinus perennis</i>) is the host plant for this species and suitable habitat may be present at the project site. Therefore, the following surveys need to be conducted in areas within the HPR:</p> <p>1) Wild lupine surveys will need to be conducted by a certified surveyor, (<a href="http://wiatri.net/er/nhitraining/docs/KBBSurveyors.pdf">http://wiatri.net/er/nhitraining/docs/KBBSurveyors.pdf</a>) from green-up to July 31 and prior to any ground disturbance at the site. If lupine is not present on the site, then no further action for the butterfly is necessary. Lupine survey forms can be found at the WDNR KBB HCP website (<a href="https://dnr.wi.gov/topic/endangeredresources/karner/access.html">https://dnr.wi.gov/topic/endangeredresources/karner/access.html</a>). To see if you qualify to take they training to become a surveyor, please visit the website.</p> <p>2) If lupine is identified at the project site, additional surveys will be required to determine the presence of the Karner Blue Butterfly. These surveys must be conducted by a certified surveyor (<a href="http://wiatri.net/er/nhitraining/docs/KBBSurveyors.pdf">http://wiatri.net/er/nhitraining/docs/KBBSurveyors.pdf</a>) during the two peak flight periods (roughly late May - late June and mid July - late August). If KBBs are not present on site, then no further action for the butterfly is necessary. Both wild lupine and KBB survey results should be submitted to the Endangered Resources Review Program.</p> <p>If the Karner Blue Butterfly is present on or near the site, please coordinate with the U.S. Fish and Wildlife Service (952-252-0092) or the WDNR HCP Coordinator (Rebecca.Roth@wisconsin.gov) on measures to avoid impacts to the butterfly. If avoidance of all occupied habitat is not possible and the project may result in take of the butterfly, the applicant can become a partner to the Wisconsin Statewide KBB Habitat Conservation Plan (HCP).</p> <p>If the project is already an HCP partner, please follow the specific management protocols.</p>
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#### **Actions recommended to help conserve Wisconsin's Endangered Resources:**

##### **• Brittle Prickly-pear (*Opuntia fragilis*) - Plant**

**State Status:** THR

Impact Type	Impact possible
Recommended Measures	Surveys, Other
Description of Recommended Measures	<p>While the agricultural areas or any maintained areas would not be suitable, suitable habitat for the Brittle Prickly-pear may be present in other portions of the project site. Although not required because plants are not legally protected on private property, we recommend that you avoid or minimize take of the Brittle Prickly-pear. Avoidance and minimization efforts may include site surveys to confirm presence/absence of species and fencing off areas of occupied habitat. Survey results should be submitted to the Endangered Resources Review Program.</p> <p>Brittle Prickly-pear (<i>Opuntia fragilis</i>), a Wisconsin Threatened plant, is found in thin, dry soil over rock, as well as sand prairies. Blooming occurs early June through late July; fruiting occurs early July through late August. This species can be identified year-round.</p>

Remember that although these actions are not required by state or federal endangered species laws, they may be required by other laws, permits, granting programs, or policies of this or another agency. Examples include the federal Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, State Natural Areas law, DNR Chapter 30 Wetland and Waterway permits, DNR Stormwater permits, and Forest Certification.

##### **No actions are required or recommended for the following endangered resources:**

##### **• A Riffle Beetle (*Stenelmis antennifer*) - Beetle**

**State Status:** SC/N

Impact Type	No impact or no/low broad ITP/A
Reason	Lack of Suitable Habitat within Project Boundary
Justification	<p>No suitable habitat is present at or adjacent to the project site. No impacts are anticipated.</p> <p>A Riffle Beetle (<i>Stenelmis antennifer</i>), a State Special Concern species, has been found in submerged wood in large sandy rivers.</p>

##### **• Floodplain Forest - Community~**

**State Status:** NA

Impact Type	No impact or no/low broad ITP/A
Reason	Lack of Suitable Habitat within Project Boundary
Justification	No Floodplain Forest is present at or adjacent to the project site. No impacts are anticipated.

##### **• Sioux (Sand) Snaketail (*Ophiogomphus smithi*) - Dragonfly~**

**State Status:** SC/N

<b>Impact Type</b>	No impact or no/low broad ITP/A
<b>Reason</b>	Lack of Suitable Habitat within Project Boundary
<b>Justification</b>	<p>No suitable habitat is present at or adjacent to the project site. No impacts are anticipated.</p> <p>Sioux (Sand) Snaketail (<i>Ophiogomphus smithi</i>), a State Special Concern dragonfly, has been found in small to medium clean, fast-flowing sandy warm streams. The flight period extends from late May through mid June.</p>

## Section D. Next Steps

- Evaluate whether the '**Location and brief description of the proposed project**' is still accurate. All recommendations in this ER Review are based on the information supplied in the ER Review Request. If the proposed project has changed or more than a year has passed and you would like your letter renewed, please contact the ER Review Program to determine if the information in this ER Review is still valid.
- Determine whether the project can incorporate and implement the '**Follow-up actions**' identified above:
  - 'Actions that need to be taken to comply with state and/or federal endangered species laws' represent the Department's best available guidance for complying with state and federal endangered species laws based on the project information that you provided and the endangered resources information and data available to us. If the proposed project has not changed from the description that you provided us and you are able to implement all of the 'Actions that need to be taken to comply with state and/or federal endangered species laws', your project should comply with state and federal endangered species laws. Please remember that if a violation occurs, the person responsible for the taking is the liable party. Generally this is the landowner or project proponent. For questions or concerns about individual responsibilities related to Wisconsin's Endangered Species Law, please contact the ER Review Program.
  - If the project is unable to incorporate and implement one or more of the 'Actions that need to be taken to comply with state and/or federal endangered species laws' identified above, the project may potentially violate one or more of these laws. Please contact the ER Review Program immediately to assist in identifying potential options that may allow the project to proceed in compliance with state and federal endangered species laws.
  - 'Actions recommended to help conserve Wisconsin's Endangered Resources' may be required by another law, a policy of this or another Department, agency or program; or as part of another permitting, approval or granting process. Please make sure to carefully read all permits and approvals for the project to determine whether these or other measures may be required. Even if these actions are not required by another program or entity for the proposed project to proceed, the Department strongly encourages the implementation of these conservation measures on a voluntary basis to help prevent future listings and protect Wisconsin's biodiversity for future generations.
- If federally-protected species or habitats are involved and the project involves federal funds, technical assistance or authorization (e.g., permit) and there are likely to be any impacts (positive or negative) to them, consultation with USFWS will need to occur prior to the project being able to proceed. If no federal funding, assistance or authorization is involved with the project and there are likely to be adverse impacts to the species, contact the USFWS Twin Cities Ecological Services Field Office at 612-725-3548 (x2201) for further information and guidance.

## Section E. Standard Information to help you better understand this ER Review

**Endangered Resources (ER) Reviews** are conducted according to the protocols in the guidance document **Conducting Proposed Endangered Resources Reviews: A Step-by-Step Guide for Wisconsin DNR Staff**.

**How endangered resources searches are conducted for the proposed project area:** An endangered resources search is performed as part of all ER Reviews. A search consists of querying the Wisconsin Natural Heritage Inventory (NHI) database for endangered resources records for the proposed project area. The project area evaluated consists of both the specific project site and a buffer area surrounding the site. A 1 mile buffer is considered for terrestrial and wetland species, and a 2 mile buffer for aquatic species. Endangered resources records from the buffer area are considered because most lands and waters in the state, especially private lands, have not been surveyed. Considering records from the entire project area (also sometimes referred to as the search area) provides the best picture of species and communities that may be present on your specific site if suitable habitat for those species or communities is present.

**Categories of endangered resources considered in ER Reviews and protections for each:** Endangered resources records from the NHI database fall into one of the following categories:

- Federally-protected species include those federally listed as Endangered or Threatened and Designated Critical Habitats. Federally-protected animals are protected on all lands; federally-protected plants are protected only on federal lands and in the course of projects that include federal funding (see Federal Endangered Species Act of 1973 as amended).
- Animals (vertebrate and invertebrate) listed as Endangered or Threatened in Wisconsin are protected by Wisconsin's Endangered Species Law on all lands and waters of the state (s. 29.604, Wis. Stats.).

- Plants listed as Endangered or Threatened in Wisconsin are protected by Wisconsin's Endangered Species Law on public lands and on land that the person does not own or lease, except in the course of forestry, agriculture, utility, or bulk sampling actions (s. 29.604, Wis. Stats.).
- Special Concern species, high-quality examples of natural communities (sometimes called High Conservation Value areas), and natural features (e.g., caves and animal aggregation sites) are also included in the NHI database. These endangered resources are not legally protected by state or federal endangered species laws. However, other laws, policies (e.g., related to Forest Certification), or granting/permitting processes may require or strongly encourage protection of these resources. The main purpose of the Special Concern classification is to focus attention on species about which some problem of abundance or distribution is suspected before they become endangered or threatened.
- State Natural Areas (SNAs) are also included in the NHI database. SNAs protect outstanding examples of Wisconsin's native landscape of natural communities, significant geological formations, and archeological sites. Endangered species are often found within SNAs. SNAs are protected by law from any use that is inconsistent with or injurious to their natural values (s. 23.28, Wis. Stats.).

**Please remember** the following:

1. This ER Review is provided as information to comply with state and federal endangered species laws. By following the protocols and methodologies described above, the best information currently available about endangered resources that may be present in the proposed project area has been provided. However, the NHI database is not all inclusive; systematic surveys of most public lands have not been conducted, and the majority of private lands have not been surveyed. As a result, NHI data for the project area may be incomplete. Occurrences of endangered resources are only in the NHI database if the site has been previously surveyed for that species or group during the appropriate season, and an observation was reported to and entered into the NHI database. As such, absence of a record in the NHI database for a specific area should not be used to infer that no endangered resources are present in that area. Similarly, the presence of one species does not imply that surveys have been conducted for other species. Evaluations of the possible presence of rare species on the project site should always be based on whether suitable habitat exists on site for that species.
2. This ER Review provides an assessment of endangered resources that may be impacted by the project and measures that can be taken to avoid negatively impacting those resources based on the information that has been provided to ER Review Program at this time. Incomplete information, changes in the project, or subsequent survey results may affect our assessment and indicate the need for additional or different measures to avoid impacts to endangered resources.
3. This ER Review does not exempt the project from actions that may be required by Department permits or approvals for the project. Information contained in this ER Review may be shared with individuals who need this information in order to carry out specific roles in the planning, permitting, and implementation of the proposed project.

## MEMORANDUM

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To: Michael Leopold

---

From: Rob Wayne

---

Date: May 25, 2022 Project No.: 52-0755.50

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Re: Adams County Landfill Clay Borrow Sites – Karner Blue Butterfly/Lupine Level 1 Survey

---

On May 24, 2022 Rob Wayne, Environmental Scientist with Ayres, performed Karner Blue Butterfly and Lupine Level 1 Survey at the Adams County Landfill Clay Borrow Sites. The sites are located in Sections 12 & 13 of Township 18 North, Range 5 East. See attached map for specific site locations.

The Karner blue assessment involved a Level 1 Lupine Presence/Absence survey, as prescribed by the Wisconsin DNR's Habitat Conservation Plan. Wild lupine (*Lupinus perennis*), which is the host plant for the Karner blue. Wild lupine was surveyed for in areas of suitable habitat—generally dry, open areas where the herb layer receives plentiful sunlight—via transects which allowed all vegetation to be observed. Wild lupine was not present at the site, and a Level 2 Karner Blue Butterfly Presence/Absence survey was unnecessary. Due to the lack of wild lupine and agricultural disturbance, the Karner blue is assumed to be absent from the site. See the attached Level 1 survey form for further details.

See the attached vegetation inventory for a list of the species observed during the survey

# Wisconsin Karner Blue Butterfly Habitat Conservation Plan

## Survey Report Form

2022

Enter year of survey

### Lupine Presence/Absence

#### Purpose

Native lupine is the obligate host plant for the federally endangered Karner blue butterfly (KBB). The purpose of the lupine presence/absence survey is to determine if sufficient lupine is present on the site to support KBB, and if present, to map its location.

#### General Instructions

Report on this form results of lupine presence/absence surveys conducted by certified surveyors. Collecting complete and accurate data will minimize potential project delays. Surveys are valid for 5 years for that particular site, and July 31<sup>st</sup> is the last day to survey. If it is a drought year, the last day to survey may be earlier. This information will be posted on the WDNR KBB website and communicated by the KBB Habitat Conservation Plan (HCP) coordinator.

Submit a copy of the completed survey via email to [Rebecca.Roth@wisconsin.gov](mailto:Rebecca.Roth@wisconsin.gov), or by mail to: HCP Coordinator, 101 S. Webster St., Madison, WI 53703

**Keep a copy of this completed form for your records.** Contact KBB HCP staff at the Wisconsin Department of Natural Resources with questions, or refer to the [WDNR website](#) (keyword: Karner Blue).

#### Partner/Company & Surveyor Information

Date of survey: 05/24/2022

HCP Partner or Non-partner project (select one)?  HCP Partner  Non-HCP Partner

HCP Partner or Company Name: N/A

Any DNR permit or review number associated with this survey: \_\_\_\_\_

Surveyor(s) (Last name, First name): Wayne, Robert

What is the most recent year you took the survey training provided by the WDNR: 2018

#### Site Location & Description

Site/project name or comp/stand (or other descriptive name):

Adams County Landfill Clay Borrow Areas - Endangered Resource Survey

Site size (select unit): 92  acres or  linear miles

GPS Coordinates: Lat: 44.035988 Long: -89.853147

Provide latitude and longitude for the approximate center of the site or habitat surveyed. Site locations are needed for all reports. For sites that are large or that are along a right-of-way, mark the surveyed area and lupine observations on the site map.

#### Lupine Observations

1. Lupine survey method (select one):

transects covering entire site  transects covering portion of site  random walk

2. Is lupine present on the site?

Yes Continue to next question.

No Stop here and submit survey.

3. Is the lupine density at least 50 lupine plants/acre, or 25 lupine plants/200 meters for linear (e.g. right-of-way) sites?

**Yes** Lupine is sufficient to support Karner blue butterflies. Complete KBB surveys.

**No** Stop here and submit survey.

## Site Map

### Mapping Options:

**OPTION 1.** Use the DNR's location finder tool to create a map.

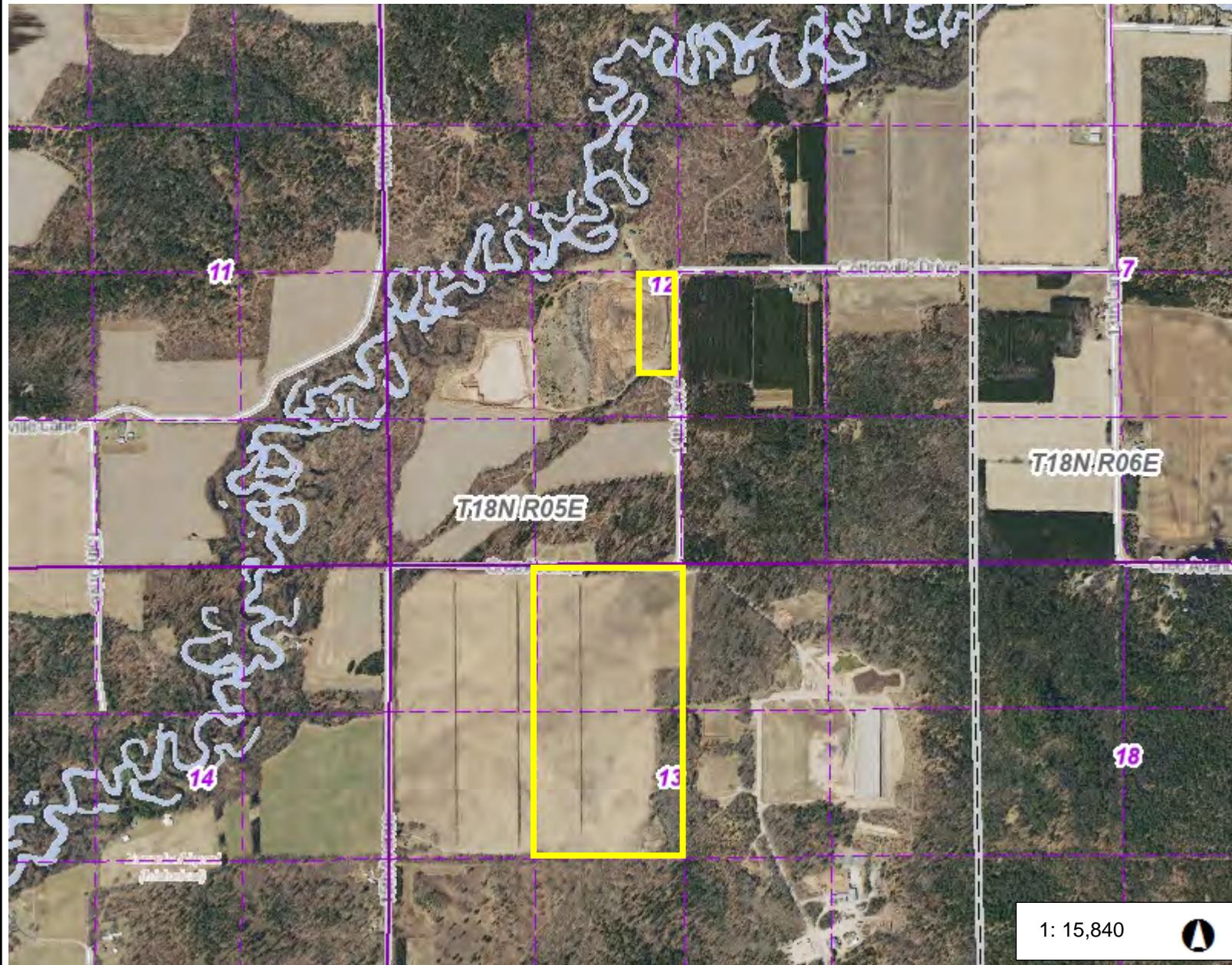
- a. <https://dnr.wisconsin.gov/maps/AppList>
- b. Select the General tab, then select Location Finder Viewer
- c. Accept the Terms and Conditions
- d. Zoom to the survey area. Use the "Search By" tool to zoom to an area by coordinates, city name, town-range section, etc.
- e. Hit the "Get lat/long" button and click on the map where Karners or lupine are found. Numbered markers with the coordinates will appear for each location you click on the map. You can delete and edit these markers by clicking on the 3 dots to the right of each coordinate.
- f. Once you are done, hit "Print". Change the output to "Pdf", change the map scale to 1:3960, add a title, and indicate in the notes what your markers represent. To reposition the print area, zoom in/out or pan to over and then hit "print" again at the top of the webpage.
- g. Hit "Print" below the notes section and then "Open File" to view and download your map.
- h. **Save a copy of the PDF map.** Attach map to this survey form.

**OPTION 2.** Photo copy a USGS topo map, or print a satellite or aerial photo with hand-drawn locations (perhaps this is the map that was brought into the field for the survey).

- a. Make sure that road names, town-range-section information is included and legible
- b. Zoomed to 24,000m at minimum and 2,000m at maximum
- c. Indicate on map the karner and lupine observations (discretely hand-drawn patches or points) **with coordinates**
- d. Attach map to this survey form.



# Adams Co Landfill Clay Borrow Sites



0.5      0      0.25      0.5 Miles

NAD\_1983\_HARN\_Wisconsin\_TM  
© Latitude Geographics Group Ltd.

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>

1: 15,840



Notes



**Legend**

- PLSS Town & Range
- PLSS Sections
- PLSS Quarter-quarter Sections
- County Boundary
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Open Water

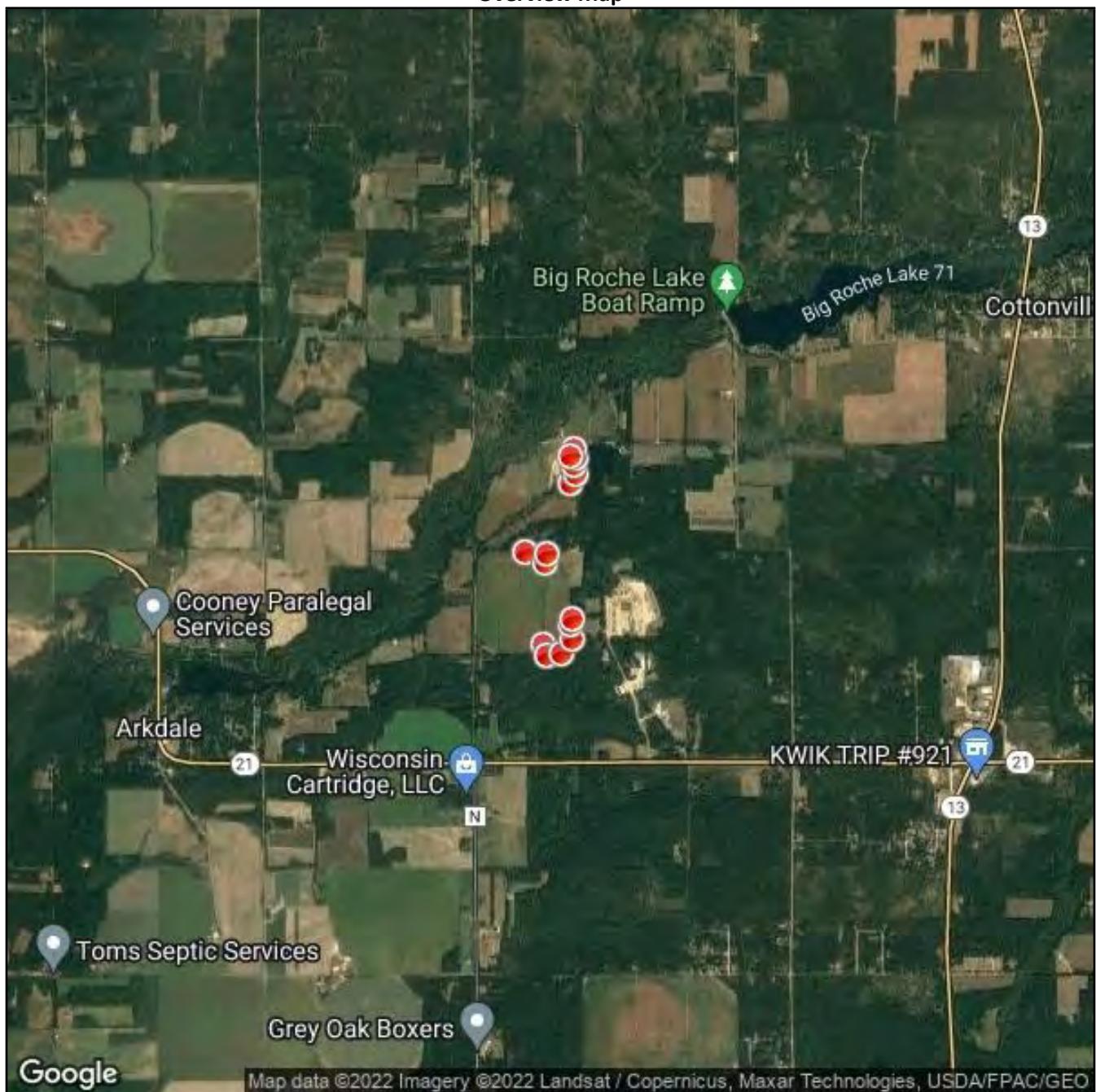
## Observed Plant Species

	<u>Scientific Name</u>	<u>Common Name</u>	<u>Status</u>
Tree Stratum	<i>Acer saccharum</i>	Sugar maple	Native
	<i>Fraxinus americana</i>	White ash	Native
	<i>Pinus strobus</i>	White pine	Native
	<i>Populus deltoides</i>	Cottonwood	Native
	<i>Populus tremuloides</i>	Aspen	Native
	<i>Prunus serotina</i>	Wild black cherry	Native
	<i>Quercus alba</i>	White oak	Native
	<i>Quercus rubra</i>	Red oak	Native
	<i>Quercus velutina</i>	Black oak	Native
	<i>Ulmus americana</i>	American elm	Native
Shrub Stratum	<i>Cornus sericea</i>	Red osier dogwood	Native
	<i>Crataegus douglasii</i>	Black hawthorn	Native
	<i>Frangula alnus</i>	Buckthorn	Invasive
	<i>Lonicera tatarica</i>	Tatarian honeysuckle	Invasive
	<i>Lonicera xylosteum</i>	Dwarf honeysuckle	Native
	<i>Pinus strobus</i>	White pine	Native
	<i>Prunus serotina</i>	Wild black cherry	Native
	<i>Quercus rubra</i>	Red oak	Native
	<i>Quercus velutina</i>	Black oak	Native
	<i>Rhus glabra</i>	Smooth sumac	Native
	<i>Rubus idaeus</i>	Red raspberry	Native
	<i>Rubus occidentalis</i>	Black-cap	Native
	<i>Sambucus racemosa</i>	Red elderberry	Native
	<i>Zanthoxylum americanum</i>	Prickly ash	Native
Herb Stratum	<i>Alliaria petiolata</i>	Garlic mustard	Invasive
	<i>Ambrosia artemisiifolia</i>	Common ragweed	Introduced - naturalized
	<i>Asclepias syriaca</i>	Common milkweed	Native
	<i>Asclepias verticillata</i>	Whorled milkweed	Native
	<i>Athyrium filix-femina</i>	Ladyfern	Native
	<i>Barbarea vulgaris</i>	Yellow rocket	Introduced - naturalized
	<i>Berteroa incana</i>	Hoary alyssum	Introduced - naturalized
	<i>Bromus inermis</i>	Smooth brome	Invasive
	<i>Bromus tectorum</i>	Cheat grass	Introduced - naturalized; potentially invasive
	<i>Carex pensylvanica</i>	Pennsylvania sedge	Native
	<i>Centaurea biebersteinii</i>	Spotted knapweed	Invasive
	<i>Chenopodium album</i>	Lamb's-quarters	Native
	<i>Conyza canadensis</i>	Canadian horseweed	Native
	<i>Corylus cornuta</i>	Beaked hazelnut	Native
	<i>Elymus repens</i>	Quackgrass	Invasive
	<i>Equisetum arvense</i>	Field horsetail	Native
	<i>Euthamia graminifolia</i>	Grass-leaved goldenrod	Native

<i>Fallopia convolvulus</i>	Black-bindweed	Introduced - naturalized; potentially invasive
<i>Fragaria virginiana</i>	Wild strawberry	Native
<i>Galium aparine</i>	Sticky willy	Native
<i>Hordeum jubatum</i>	Foxtail barley	Introduced - naturalized
<i>Impatiens capensis</i>	Jewelweed	Native
<i>Lespedeza capitata</i>	Round-headed bushclover	Native
<i>Lotus corniculatus</i>	Bird's-foot trefoil	Invasive
<i>Maianthemum canadense</i>	Canada mayflower	Native
<i>Mollugo verticillata</i>	Carpetweed	Introduced - naturalized
<i>Monarda punctata</i>	Horsemint	Native
<i>Onoclea sensibilis</i>	Sensitive fern	Native
<i>Plantago major</i>	Plantain	Native
<i>Poa pratensis</i>	Kentucky blue grass	Introduced - naturalized
<i>Polygonatum biflorum</i>	Soloman's Seal	Native
<i>Potentilla recta</i>	Rough-fruited cinquefoil	Introduced - naturalized
<i>Rumex crispus</i>	Curly dock	Introduced - naturalized; potentially invasive
<i>Saponaria ocymoides</i>	Soapwort	Introduced - naturalized
<i>Setaria viridis</i>	Green foxtail	Introduced - naturalized
<i>Silene latifolia</i>	Bladder campion	Introduced - naturalized
<i>Solidago canadensis</i>	Canada goldenrod	Native
<i>Sonchus arvensis</i>	Field sow-thistle	Introduced - naturalized
<i>Taraxacum officinale</i>	Common dandelion	Introduced - naturalized
<i>Tephrosia virginiana</i>	Goat's-rue	Native
<i>Thlaspi arvense</i>	Common penny-cress	Introduced - naturalized
<i>Trifolium arvense</i>	Rabbit-foot clover	Introduced - naturalized
<i>Trifolium pratense</i>	Red clover	Introduced - naturalized
<i>Urtica dioica</i>	Stinging nettle	Native
<i>Verbascum thapsus</i>	Common mullein	Introduced - naturalized; potentially invasive
<i>Veronica arvensis</i>	Corn speedwell	Introduced - naturalized
<i>Vitis riparia</i>	Riverbank grape	Native

## Adams Co Landfill

### Overview Map



**Photo 1**

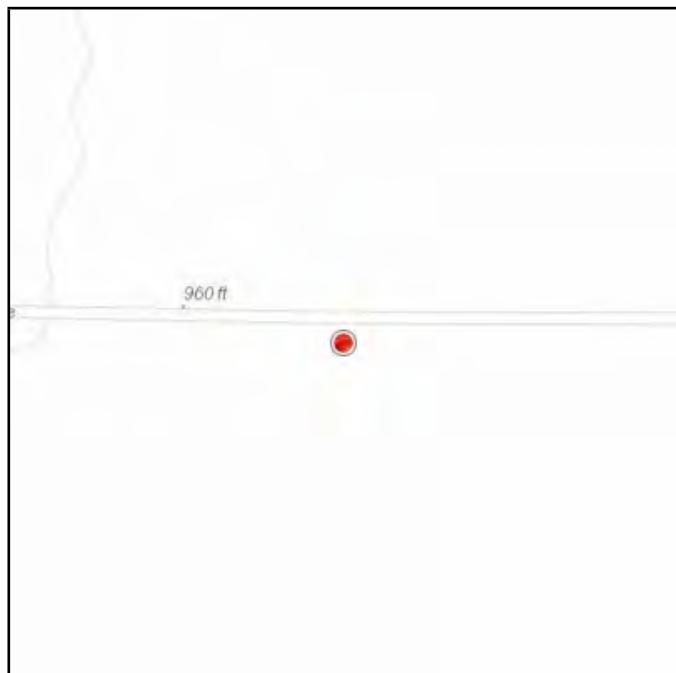


Photo 2



5/24/2022

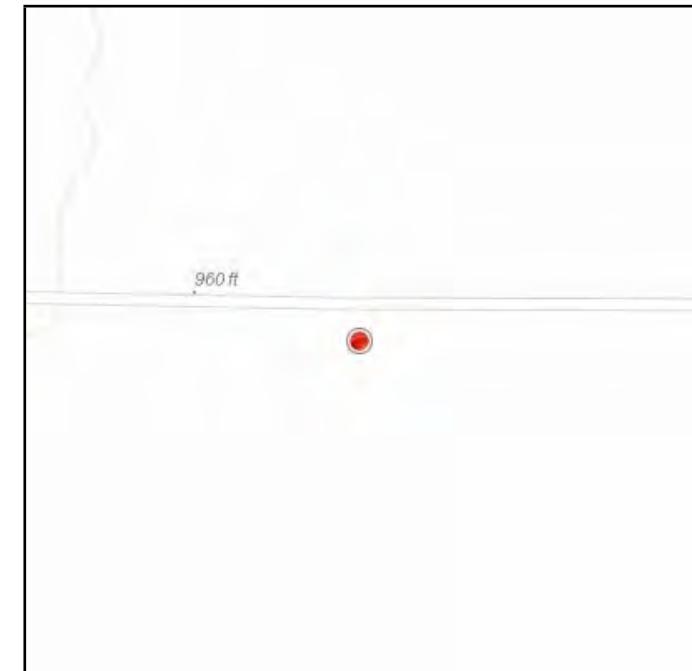


Photo 3

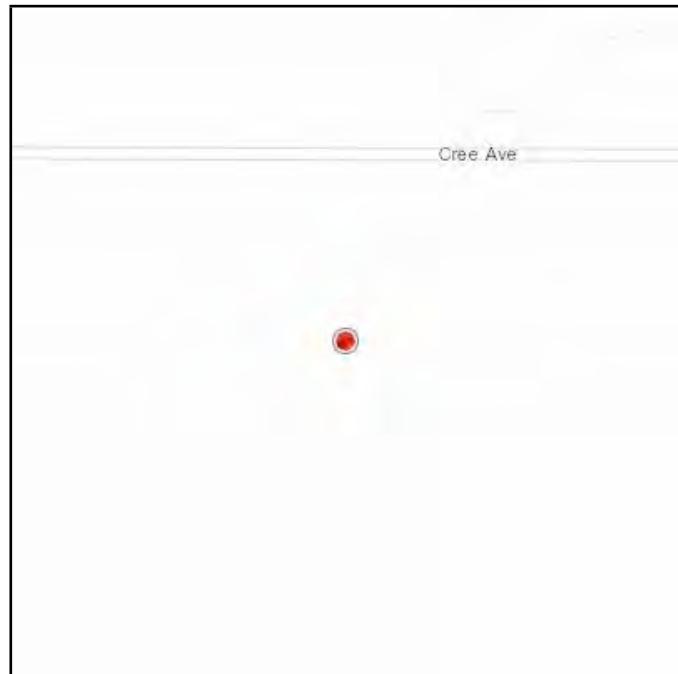


Photo 4



Photo 5



N 44° 01' 55.84"  
W 89° 51' 03.87"

5/24/2022



Google data ©2022 Imagery ©2022 Maxar Technologies, USDA/FPAC/GEO

960 ft



**Photo 6**



960 ft



Photo 7



N 44° 01' 56.15"  
W 89° 50' 58.43"

5/24/2022



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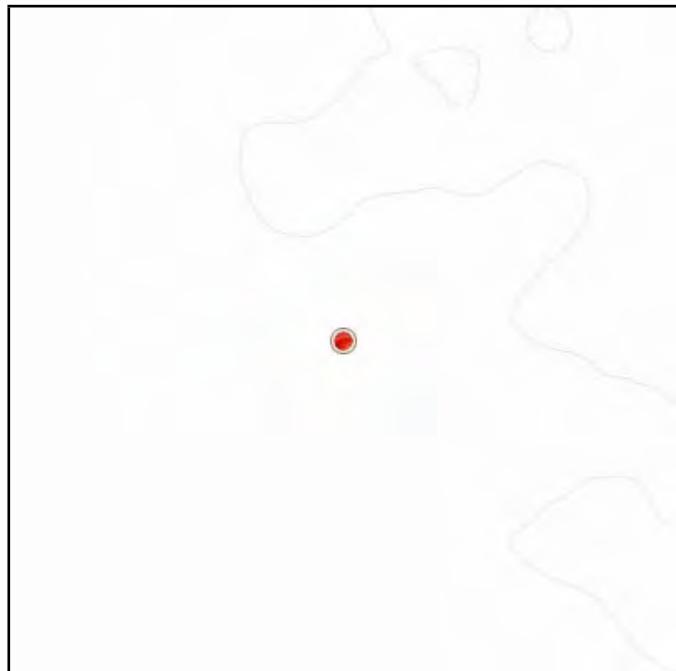
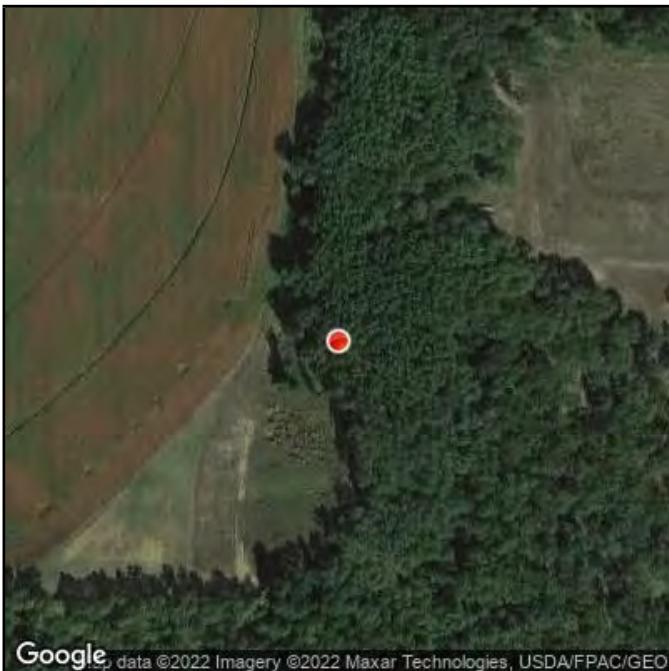


Photo 8



N 44° 01' 59.96"  
W 89° 50' 54.69"

5/24/2022



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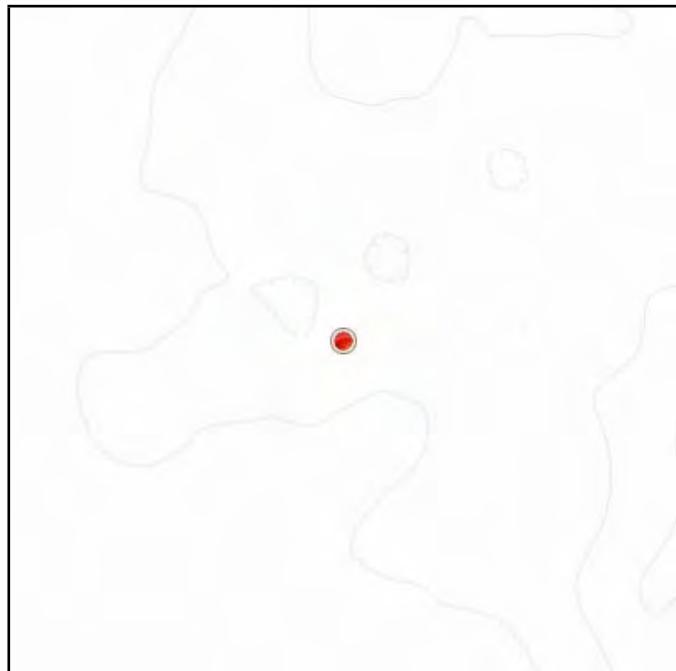


Photo 9



N 44° 02' 03.45"  
W 89° 50' 55.38"

5/24/2022

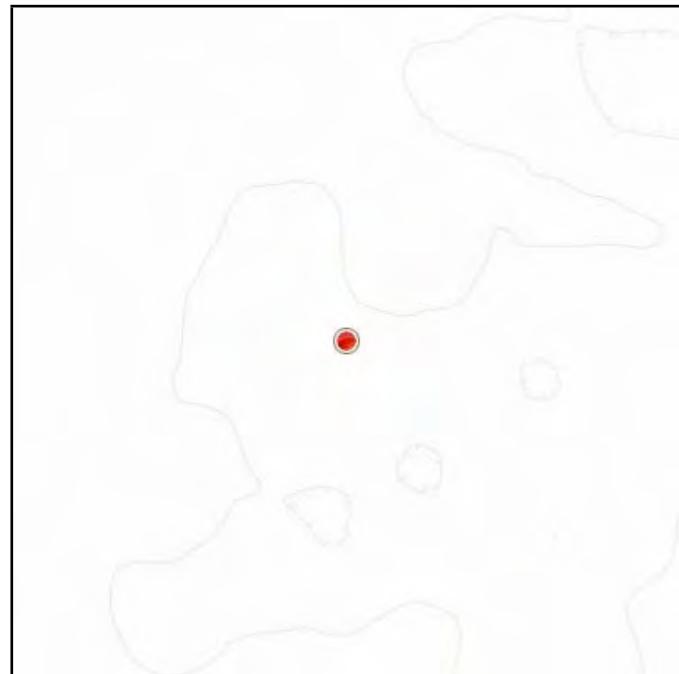
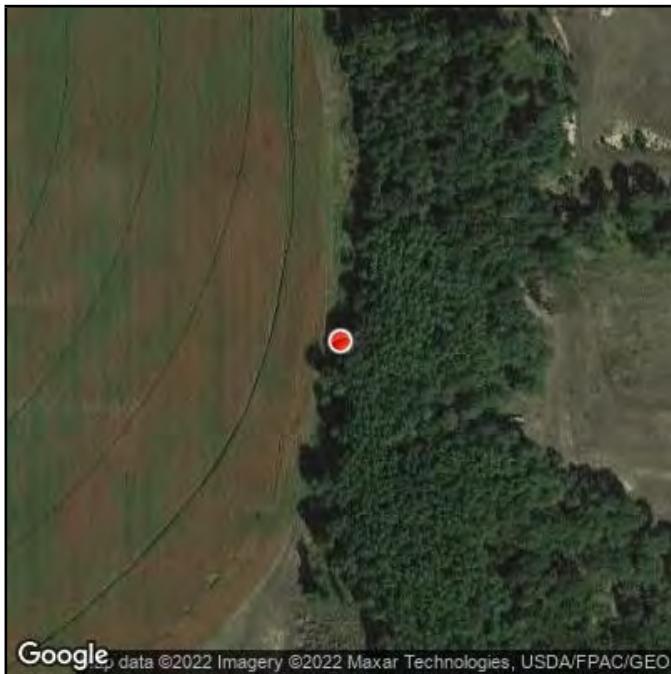
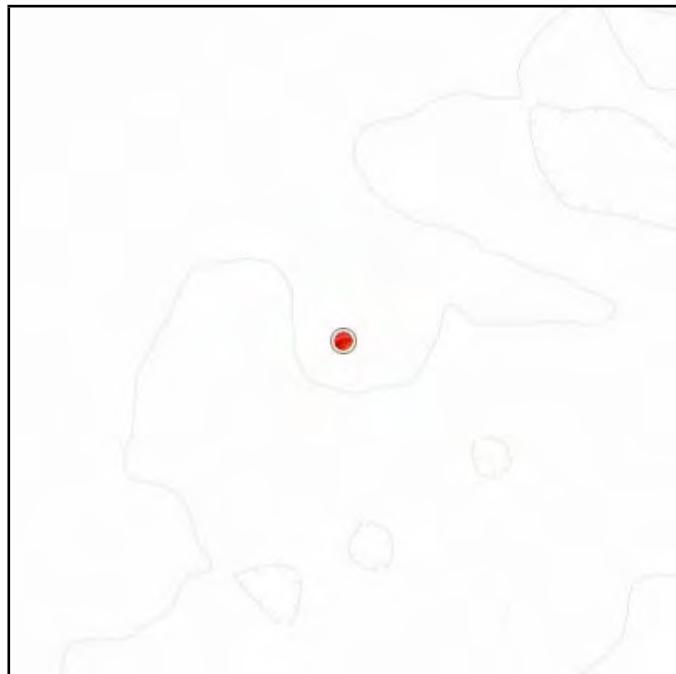


Photo 10



**Photo 11**

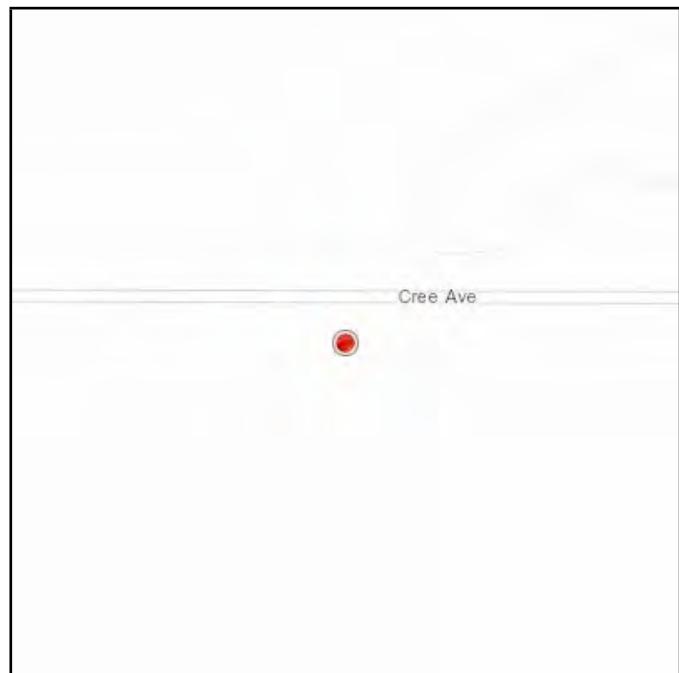


N 44° 02' 20.76"  
W 89° 51' 03.78"

5/24/2022



Google, data ©2022 Imagery ©2022 Maxar Technologies, USDA/FPAC/GEO



**Photo 12**

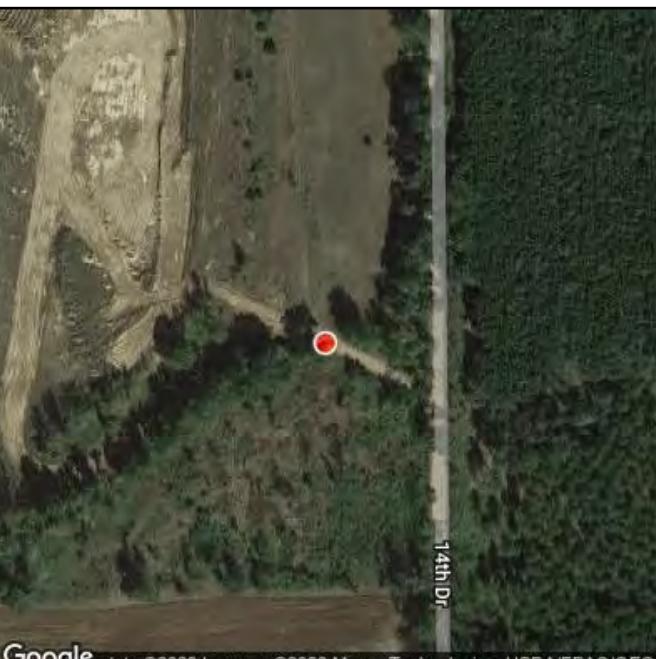


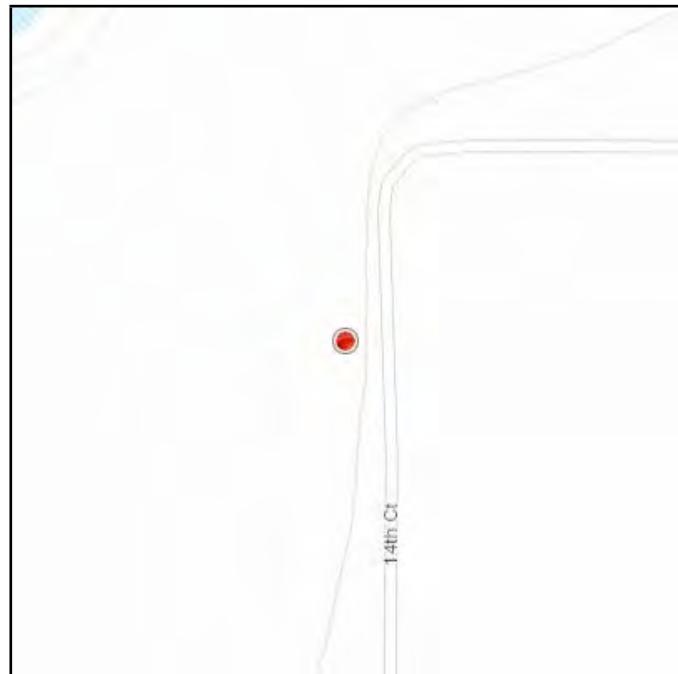
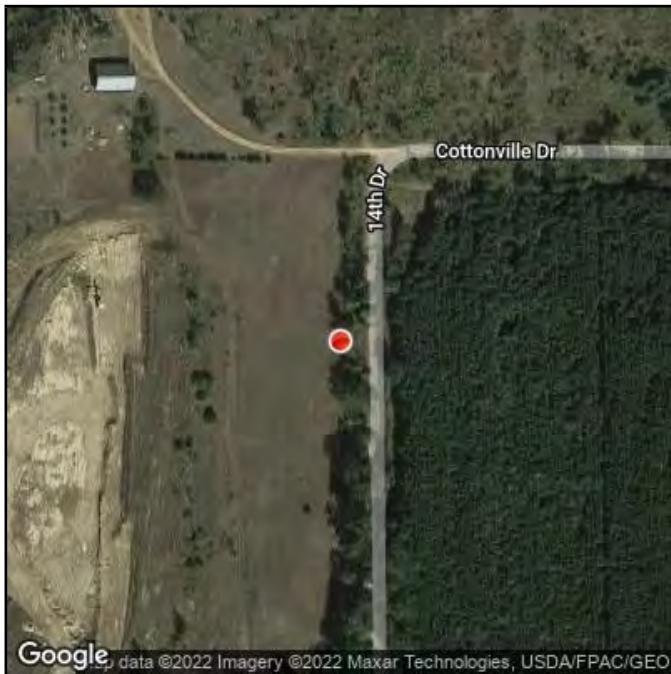
Photo 13



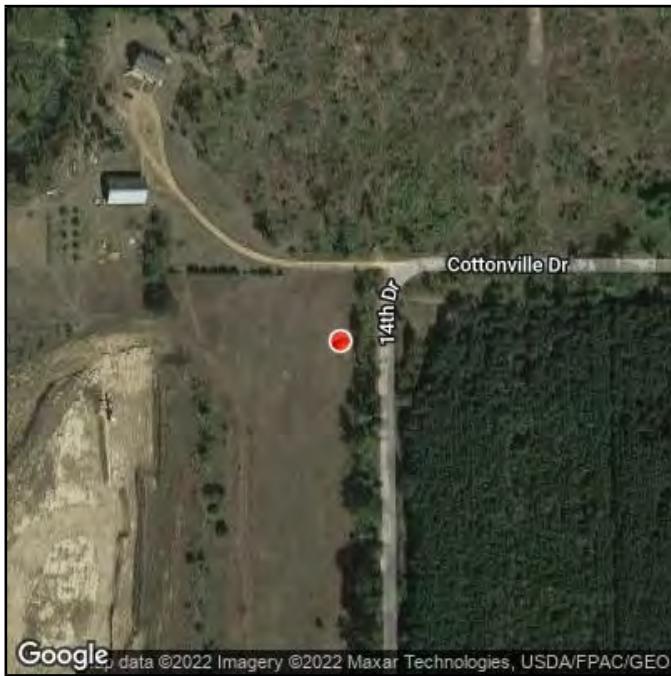
Photo 14



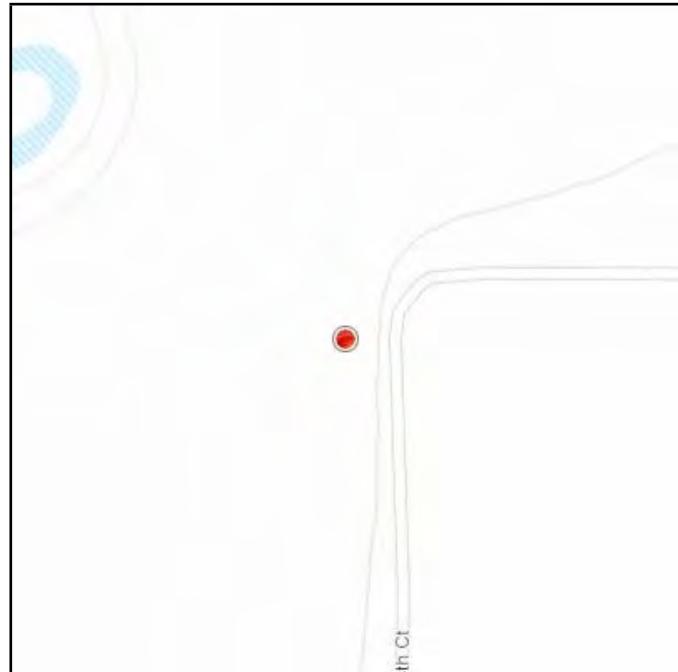
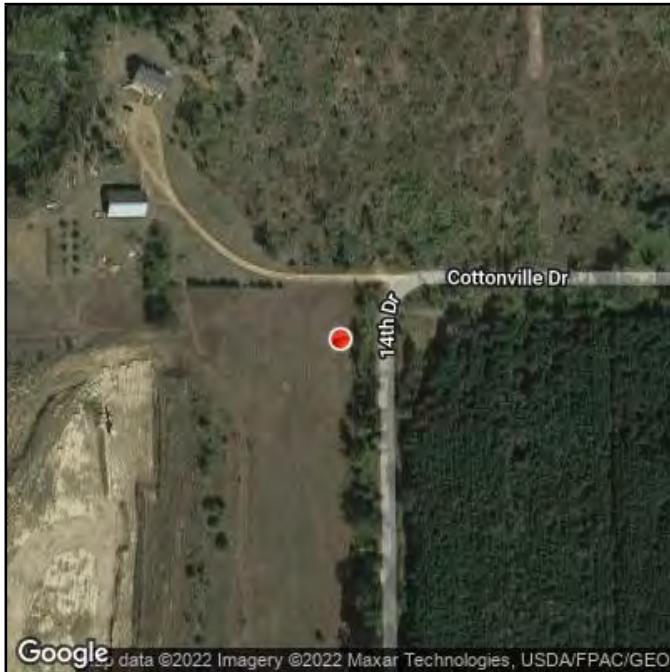
Photo 15



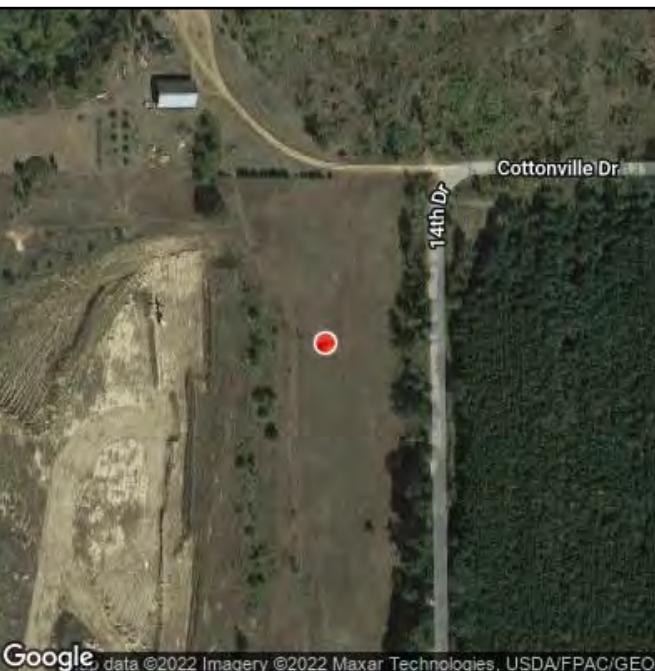
**Photo 16**



**Photo 17**



**Photo 18**



## **Appendix B**

### Historical and Archaeological Review Results

## **Leopold, Michael**

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**From:** Leopold, Michael  
**Sent:** Tuesday, March 8, 2022 9:40 AM  
**To:** AMY D WYATT; Peotter, Ben  
**Subject:** RE: Adams County Landfill Clay Borrow Site WHPD

Good Morning Amy,

Thank you for the information, Ben will be available next week to make an appointment for the in person review. He can coordinate with you on what timeframe works best,

Thanks,  
Michael

**Michael G. Leopold**  
[Environmental Engineering Staff](#)

**Ayres Associates Inc**  
[Office: 715.834.3161](#) | [Direct: 715.831.7534](#)  
[LeopoldM@AyresAssociates.com](mailto:LeopoldM@AyresAssociates.com)  
[www.AyresAssociates.com](http://www.AyresAssociates.com)

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**From:** AMY D WYATT <[amy.wyatt@wisconsinhistory.org](mailto:amy.wyatt@wisconsinhistory.org)>  
**Sent:** Monday, March 7, 2022 11:15 AM  
**To:** Leopold, Michael <[LeopoldM@AyresAssociates.com](mailto:LeopoldM@AyresAssociates.com)>  
**Subject:** Re: Adams County Landfill Clay Borrow Site WHPD

Hi Michael,

Now that our offices are re-opened to the public, the appointments are in person only. You can make an appointment to come to the office to do the research or you can purchase a short-term or long-term subscription to do the research remotely: <https://www.wisconsinhistory.org.wphd>.

I can help you either make an appointment or gain temporary online access.

Thanks-  
Amy

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**From:** Leopold, Michael <[LeopoldM@AyresAssociates.com](mailto:LeopoldM@AyresAssociates.com)>  
**Sent:** Monday, March 7, 2022 8:15 AM  
**To:** AMY D WYATT <[amy.wyatt@wisconsinhistory.org](mailto:amy.wyatt@wisconsinhistory.org)>  
**Subject:** RE: Adams County Landfill Clay Borrow Site WHPD

Hello Amy,

Are the appointments virtual? I would like to schedule your next available window this afternoon if possible..

Thanks,  
Michael

**Michael G. Leopold**  
Environmental Engineering Staff

**Ayres Associates Inc**  
Office: 715.834.3161 | Direct: 715.831.7534  
LeopoldM@AyresAssociates.com  
www.AyresAssociates.com

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**From:** AMY D WYATT <[amy.wyatt@wisconsinhistory.org](mailto:amy.wyatt@wisconsinhistory.org)>

**Sent:** Wednesday, March 2, 2022 3:37 PM

**To:** Leopold, Michael <[LeopoldM@AyresAssociates.com](mailto:LeopoldM@AyresAssociates.com)>

**Subject:** Re: Adams County Landfill Clay Borrow Site WHPD

Hello Michael,

When would you like to make an appointment? We are generally available Monday-Friday from 8:00-4:30.

Thanks-

Amy Wyatt

Amy Wyatt  
Digital Historic Preservation Coordinator  
State Historic Preservation Office

Wisconsin Historical Society  
816 State Street, Madison, WI 53706  
608-264-6506  
[amy.wyatt@wisconsinhistory.org](mailto:amy.wyatt@wisconsinhistory.org)

**Wisconsin Historical Society**  
Collecting, Preserving, and Sharing Stories Since 1846

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**From:** Leopold, Michael <[LeopoldM@AyresAssociates.com](mailto:LeopoldM@AyresAssociates.com)>

**Sent:** Tuesday, March 1, 2022 11:16 AM

**To:** AMY D WYATT <[amy.wyatt@wisconsinhistory.org](mailto:amy.wyatt@wisconsinhistory.org)>

**Subject:** Adams County Landfill Clay Borrow Site WHPD

Good Morning,

I am requesting an appointment for the WHPD to perform a historical and archeological search at the Wisconsin Historical Society using the Wisconsin Archeological Site Inventory (ASI) and the Architectural Historical Inventory (AHI) databases on Adams County Landfill, 1420 State Highway 21 Friendship, WI 53934. This search is for a clay borrow source search of the contiguous owned property to the west of the landfill area.

Thanks,  
Michael



**Michael G. Leopold | Environmental Engineering Staff**

Office: 715.834.3161 | Direct: 715.831.7534  
3433 Oakwood Hills Parkway | Eau Claire, WI 54701-7698

Primary Info

State Site #	AD-0092
Name	Erickson Mound Group
Other Name	
Field #	
ASI #	1029

Location Information

County	Adams													
Municipality														
Civil Town	Strong Prairie													
Location Description	This site is located seventy-five feet north of Big Roche a Cri Creek, northeast of Arkdale, Wisconsin.													
PLSS	Township	Range	Direction	Section	QSection	Grid Alignment	French Lot	Gov. Lot						
	18	5	E	14	NE, NW									
	18	5	E	14	SW, NW									
UTM Info	UTM Method		UTM Zone		Easting		Northing							
	Interpolated from topo map													
USGS 7.5' Quad Info	ROCHE A CRI													
Parcel ID														

Site Description

Site Description	This site consists of at least three mounds. Mound 1 is an oval, dome-shaped mound while the other two are linear and much larger. Mound 1 was excavated, and found to have been built of mottled sand over an unmodified ground surface. A burial pit was noted in the center of the mound, containing a tightly grouped bundle burial.		
Site Dimensions (feet)		Site Area (acres)	
Site Dimensions (meters)		Site Area (hectares)	
Site Type	Mound(s) - Other/Unk, Mound(s) - Linear		
Cultural Info	Culture		Certainty
	Woodland		Definite
Investigation Type	Test Excavation/ Phase II, Walk Over/Visual Inspection		
Archaeological Phase/Complex			
Tribe/Ethnic Group			
Site Status	This human burial site is protected under Wis. Stats 157.70. Consultation with the Wisconsin Historical Society is required. See burial page.		
Covenant	No - None of site		

Site Characteristics

Modern Landuse	Pasture/Grassland		
Degree of Disturbance	Moderate		
Impacts to Sites	Agricultural		

Burial Site Info

Burial Number	BAD-0100	Burial Status	Not Catalogued
Date Catalogued		Cemetery Type	Inactive/Marked
Earliest Grave Date	Precontact	Latest Grave Date	Precontact
Disposition Activity		Date of Disposition	
Cataloging Comments			

National Register InfoOther Eligibility Evaluation

<b>Individual Eligibility Evaluation</b>	
<b>Proposed Historic District</b>	
<b>Contributing</b>	
<b>Evaluation Date</b>	
<b>Eligibility Comments</b>	

<u>Ownership</u>		<a href="#">Add</a>
<b>Owner</b>	Don A. Massen	<b>Address 2</b>
<b>Chronology</b>	Current Owner	<b>City</b>
<b>Ownership Type</b>	Private	<b>State</b>
<b>Year Determined</b>	1961	<b>Zip</b>
<b>Address 1</b>		-

<u>Artifact Info</u>	
<b>Artifact Repository</b>	
<b>Material Class</b>	
<b>Artifact List</b>	One broken scraper in mound fill.
<b>Date of Site</b>	
<b>Dating Method</b>	

<u>Investigator Info</u>				
Investigator	Organization	Date	Recommendation	
Peter Larson	Independent or not affiliated	1/1/1961		

<u>Site Reporter Info</u>				
Reporter	Peter Larson			
Organization	Independent or not affiliated			
Date Reported	1/1/1961			
Bibliography	Lawson, P. L., 1961, The Erickson Mound Group, WA (NS) 42(2): 88.			

<u>Tracking Info</u>				
WHS Project #	ARI #	Reason For Reporting		

