PRE-CONSTRUCTION NOTIFICATION
NATIONWIDE PERMIT 38 (*CLEANUP OF HAZARDOUS AND TOXIC WASTE*)
FORMER SATRALLOY SITE, JEFFERSON COUNTY, OHIO

Prepared for: Cyprus Amax Minerals Company

Prepared by: WestLand Resources, Inc.

Date: March 12, 2019

Project No.: 1271.05

Corps File No.: 2005-2397

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FIGURES

(*follow text*)

APPENDICES

1. INTRODUCTION

WestLand Resources, Inc. (WestLand) was retained by Cyprus Amax Minerals Company (Cyprus) to prepare this Pre-Construction Notification (PCN) for submittal to the U.S. Army Corps of Engineers (Corps) for their authorization to fill certain potential Waters of the United States (Waters) in accordance with the Clean Water Act (CWA) Section 404 Nationwide Permit (NWP) program. Specifically, Cyprus plans to demolish derelict buildings, improve existing primitive roads, and improve surface water drainage (the Project) at the Former Satralloy Site in Jefferson County, Ohio (the Site; **Figure 1**). The planned activities will result in fill of small areas of potential Waters on the Site (the Project Area; **Figure 2**). The planned activities are being conducted to meet the requirements of a Consent Order for Preliminary Injunction (COPI) with the Ohio Environmental Protection Agency (OEPA).

The Site is located in Cross Creek Township, within Township 6 North, Range 2 West of the Ohio River Survey, in portions of Section 8 (**Figures 1 and 2**). The Project is required to support eventual remediation of the Site and therefore qualifies for use of NWP 38 (*Cleanup of Hazardous and Toxic Waste*) and will include the discharge of fill material into approximately 0.0886 acres of potential Waters (**Appendix A**).

The information provided in this PCN documents the Project's compliance with NWP General and Regional Conditions as well as the terms and conditions of NWP 38, assuming the affected wetland areas and drainage channel are Waters (per the Corps' Preliminary Jurisdictional Delineation guidance). This document provides an assessment of the applicability of NWP 38 to the Project, and the terms and conditions that must be met to maintain compliance with NWP 38. The Corps is receiving this PCN because all activities authorized under NWP 38 require notification.

2. PROJECT DESCRIPTION

The former Satralloy Site has been used for a variety of purposes over the course of its history. Agriculture and coal mining (both underground and strip mining) were conducted within the Site for the first half of the 1900s. From 1958 to 1994, a ferro-chromium alloy smelter, which processed chromium ore from international mines, was in operation at the Satralloy Site. Slag (a byproduct of smelter operations) was placed at various locations on the Site. Since the end of operations, much of the processing equipment from the plant's smelter has been removed, although the building shells and other appurtenant structures remain. Cyprus acquired the former Satralloy Site in 2010 and entered into a COPI with the OEPA to conduct a Remedial Investigation/Feasibility Study to address potential environmental impacts that may have resulted from the past industrial operations.

The Project is part of the Interim Actions (preceding eventual remediation activities) described in the Work Plan required by the COPI and approved by the OEPA. The planned activities fall into three categories – building demolition, surface water management, and road improvements – described in

more detail below. The Project Area includes the locations of these activities and occurs across a small portion (approximately 7.5 acres) of the approximately 327-acre former Satralloy Site. These activities would result in placement of fill in potential Waters.

Building Demolition

The Applicant (Cyprus) plans to demolish the North Mill Building, the South Mill Building, two small support buildings, and an adjacent truck scale in accordance with the Work Plan. The structures are derelict and present a health and safety hazard due to their deteriorating condition and construction materials (including asbestos-containing building materials and lead-based paint), as well as accumulated dust and ash from the prior smelter operations. Potential Waters adjacent to these structures will be partially or wholly filled as part of the demolition activities, as described in **Section 3, Environmental Effects**.

Surface Water Management

The Applicant plans to construct a settling pond adjacent to an existing surface water management channel, divert flows from the channel into the settling pond, and release flows back into the channel farther downstream. The settling pond will better manage the precipitates and solids that are currently accreting in the channel, decreasing the channel's ability to convey flows downstream. The settling pond is designed to slow surface water flows and allow the majority of precipitate and sediments to settle out. The settling pond will be constructed adjacent to the existing channel, rather than within, because physical constraints (e.g., buried utilities under the channel) prevent modification of the channel to the extent necessary to facilitate settlement. Flow from the settling pond will return to the channel and ultimately discharge to Cross Creek. Work will be conducted under an OEPA general construction permit and include a Stormwater Pollution Prevention Plan (SWPPP). A portion of the surface water management channel and an associated wetland will be filled to accommodate the diversion, as described in **Section 3, Environmental Effects**. The section of the channel between the inflow and outflow will remain in place to catch run-off in the immediate vicinity, and will continue to discharge to the downstream outfall.

Road Improvements

The Applicant plans to improve an existing, deteriorated primitive road encircling a former coal mine area located within the northern portion of the Site. A portion of the former coal mine was used to store slag (waste material from the processing plant). The improved road will allow access to that area.

The existing road is currently up to 8-feet-wide and is significantly degraded by erosion and vegetation. The roadbed will be widened to 15 feet and the surface improved to accommodate the large equipment needed to support the planned remediation activities at the Site. The planned road improvements include trimming vegetation, leveling the ruts with gravel, grading the surface, and widening the

roadbed. The majority of vegetation removal would consist of shrubs and saplings (less than 3 inches diameter at breast height [dbh]), and the route would be designed to avoid larger trees to the maximum extent possible while maintaining an alignment that can be negotiated by the expected equipment. Approximately 20-30 trees with a dhb greater than 10 inches are anticipated to be unavoidable, and therefore would be removed; removal would occur during the winter season between October 1 to March 31. Two wetlands that extend onto the existing road would be filled by the road widening activities, as described in **Section 3, Environmental Effects**.

3. ENVIRONMENTAL EFFECTS

3.1. WATERS OF THE U.S.

A preliminary jurisdictional determination (PJD) was prepared to identify the extent of potential Waters within the Project Area (**Appendix A**). This PCN considers impacts to all potential aquatic resources identified within the Project Area.

The Project Area occurs within two sections of the former Satralloy Site – the Plant Area and the Mine Perimeter Road around the northern Slag Deposition Area (**Figure 2**). The Plant Area, which consists of the North Mill Building, South Mill Building, and other structures associated with former processing activities, contains two wetlands and a drainage channel that would be impacted by building demolition activities (**Figure 3**). The Plant Area also contains a drainage channel that will be rerouted into a settling pond to better manage surface water flows with high levels of precipitate and suspended solids (**Figure 3**).

The Mine Perimeter Road crosses two wetlands (Wetland S3 and S4) that are part of a wetland system (Wetland S complex) abutting a tributary that discharges to Cross Creek (**Figure 2 and 3**).

Table 1 below provides the acreage of proposed impacts to potential Waters, which total 0.0886 acres for all activities.

Table 1. Project Impacts to Potential Waters of the U.S.

Activity (Location)	Potential Waters Impacted	Impacts (acres)
Building Demolition (Plant Area)	Tributary OO	0.0019
	Wetland QQ	0.0256
	Wetland RR	0.0072
	Subtotal	**0.0347**
Settling Pond Development (Plant Area)	Tributary LL	0.0059
	Wetland LL	0.0030
	Subtotal	**0.0089**
Road Improvements (Mine Perimeter Road)	Wetland S3	0.0332
	Wetland S4	0.0118
	Subtotal	**0.0450**
	Total Tributary Impacts (ac)	0.0078
	Total Wetland Impacts (ac)	0.0808
	Total Impacts (ac)	**0.0886**

3.2. THREATENED AND ENDANGERED SPECIES

A Biological Evaluation of the Project Area was conducted to assess the potential occurrence of species listed by the U.S. Fish and Wildlife Service (USFWS) as endangered, threatened, or proposed for listing, and proposed or designated critical habitat, as well as the species' potential to be affected by the Project (**Appendix B**).

Two federally listed species, the Indiana bat and the northern long-eared bat, are reported by USFWS to occur in Jefferson County. The Project Area occurs within the known range of both bat species and contains potentially suitable warm season habitat (forested areas) but the does not have appropriate cold season habitat (abandoned underground mines or caves) for hibernation. There is no designated critical habitat for either species at or near the site. WestLand's investigations did not find evidence of either of these myotis species utilizing the buildings during the warm season (through guano analyses) and roosting during the cold season (observations of only big brown bats in torpor).

The Biological Evaluation prepared for the Project demonstrates that, although Project activities have the potential to affect the listed bats, they are not likely to adversely affect either species (**Appendix B**). The streams and wetlands that will be filled are in the industrial plant portion of the Site and suitable hibernacula for either species is not present nearby. The majority of planned vegetation removal consists of shrubs and saplings (less than 3 inches dbh) along existing roads necessary to provide support for remediation efforts. Measures will be taken to avoid tree removal to the maximum extent practicable. If deemed necessary, removal of any large trees suitable for Indiana bat or northern long-eared bat roosting (dbh greater than 4 inches with peeling bark, presence of roosting cavities, and/or height greater than 52 feet) will be conducted outside of sensitive periods during the warm season. Specifically, no tree clearing will be conducted from April 1 through September 30 to further reduce potential impacts to these bats. Smaller trees, saplings, and shrubs do not provide potentially suitable roosting habitat for either of these species and therefore should not require specific removal restrictions.

The analysis presented in the Biological Evaluation concluded that the Project would have an insignificant and discountable potential to affect either species (**Appendix B**).

3.3. HISTORIC PROPERTIES AND CULTURAL RESOURCES

A cultural resources literature review was prepared for the Project Area for the prior NWP 38 authorization mentioned above and no sites eligible for listing on the National Register of Historical Places were identified. The Ohio Historic Preservation Office concurrence with this assessment is provided in **Appendix C**.

All ground-disturbing activities have the potential to unearth archaeological sites and human remains. In the event that human remains older than 50 years are encountered, work would cease, and any such

discoveries would be treated in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA, Public Law 101-601; 25 U.S.C. 3001–3013) of 1990.

4. NATIONWIDE PERMIT 38 (*CLEANUP OF HAZARDOUS AND TOXIC WASTE*) PERMIT SPECIFIC CONDITIONS

(*Corps Public Notice, Nationwide Permits for Ohio, March 21, 2017*)

Specific terms that must be met in order for a project to qualify under NWP 38 are outlined below in italics. Documentation of the Project's compliance with these terms is provided in normal text. **Appendix D** provides the completed Nationwide Permit PCN Form.

Specific activities required to effect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Court ordered remedial action plans or related settlements are also authorized by this NWP. This NWP does not authorize the establishment of new disposal sites or the expansion of existing sites used for the disposal of hazardous or toxic waste.

Determination: The planned Project activities would be conducted in support of remediation activities as required by a COPI between the Applicant and the OEPA. The fill activities are a component of the required activities defined in the project Work Plan developed for and approved by the OEPA. Project activities do not include the establishment of new disposal sites or the expansion of an existing disposal site for hazardous or toxic waste.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 32.) (Authorities: Sections 10 and 404)

Determination: This PCN is submitted to the district engineer prior to commencing the proposed Project activities, which are scheduled to begin in the fall of 2019 and last for up to 14 months.

Note: Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act

Determination: The Site is not a designated EPA CERCLA site and the activities are being conducted under a COPI from the OEPA, not the EPA CERCLA program.

Ohio 401 Certification Special Limitations and Conditions:

1. Ohio state certification general limitations and conditions apply to this nationwide permit.

Determination: Project activities comply with the Ohio CWA Section 401 program and do not require 401 certification, as is demonstrated in **Appendix E**.

2. Except for emergency response actions required to address immediate threats to public health or the environment, an individual 401 WQC is required for use of this nationwide permit when temporary or permanent impacts are proposed on or in any of the following waters:

a. category 3 wetlands;

Determination: There are no category 3 wetlands located within the Project Area. Project activities will not impact any category 3 wetlands.

b. category 1 and category 2 wetlands when impacts exceed 0.50 acres;

Determination: There are no category 2 wetlands within the Project Area. Impacts to category 1 wetlands will not exceed 0.50 acres.

c. streams located in ineligible areas as depicted in the GIS NWP Stream Eligibility Map, Appendix C;

Determination: The Project Area is not located in an ineligible area in the GIS NWPs Stream Eligibility Map (**Figure 4**).

d. streams located in possibly eligible areas as depicted in the GIS NWPs Stream Eligibility Map determined to be high quality through one of the NWP eligibility flowcharts, Appendix C;

Determination: The Project is located within an area depicted as possibly eligible on the GIS NWPs Stream Eligibility Map. However, the streams have been determined to not be high quality, and an Individual 401 permit is not required (**Figure 4**).

e. state wild and scenic rivers;

Determination: No state wild and scenic rivers are present within the Project Area. The nearest designated state wild and scenic river is Little Beaver Creek, located approximately 28 miles upstream from the Project Area. The Project will not result in any impacts to state wild and scenic rivers.

f. national wild and scenic rivers; and

Determination: No national wild and scenic rivers are present within the Project Area. The nearest designated national wild and scenic river is Little Beaver Creek, located approximately 28 miles upstream from the Project Area. The Project will not result in any impacts to national wild and scenic rivers.

g. general high-quality water bodies which harbor federally- and state-listed threatened or endangered aquatic species.

Determination: No high-quality water bodies are present within the Project Area (features are limited to surface water control features and category 1 wetlands) and no federally- or state-listed threatened or endangered aquatic species are expected to be impacted by Project activities (**Appendix B**).

3. This certification shall only authorize projects that are performed, ordered or sponsored by state or federal government agency with established legal or regulatory authority.

Determination: The Project activities are a component of the required activities defined in the project Work Plan developed for and approved by the OEPA.

5. NATIONWIDE PERMIT GENERAL CONDITIONS

(*Corps Public Notice, Nationwide Permits for Ohio, March 21, 2017*)

The Project's compliance with the General Conditions of the NWP program is outlined in **Table 2**.

Table 2. Nationwide Permit General Conditions

General Condition	Applicability/Compliance
1. Aids to Navigation	There are no navigable waters within the vicinity of the Project, and the Project will have no effect on navigation.
2. Aquatic Life Movements	No aquatic life was observed within the features that will be impacted by Project activities. Although features with aquatic life were observed within the larger former Satralloy Site, those features do not share a physical nexus with the features that would be impacted by the Project. Therefore, impacts to life cycle movements for aquatic life indigenous to the waterbodies are not anticipated.
3. Spawning Areas	There are no spawning areas located within or downstream of the Project that will be affected by Project activities.
4. Migratory Bird Breeding Areas	No known breeding areas would be disturbed. All activities within the Plant Area occur within existing disturbances and structures that do not support breeding habitat. Project activities along the Mine Perimeter Road are designed to overlap with the existing road and avoid potential breeding habitat to the maximum extent practicable.
5. Shellfish Beds	There are no shellfish populations in the Project Area.
6. Suitable Material	No unsuitable materials would be used for construction. Construction materials would consist of clean onsite native soils or other suitable inert fill materials, such as crushed concrete. All construction materials used have been approved under the OEPA COPI.

Table 2. Nationwide Permit General Conditions

General Condition	Applicability/Compliance
7. Water Supply Intakes	There are no public water supply intakes that occur in proximity of the Project Area associated with the proposed work.
8. Adverse Effects from Impoundments	There will be no adverse effects from the construction and operation of the settling pond. In contrast, the settling pond will benefit the adjacent channel by slowing surface water flows and allowing the majority of precipitate and sediments to settle out before releasing flows to a downstream extent of the original tributary.
9. Management of Water Flows	Activities resulting in fill have been designed to avoid impacts to the surface water management system at the former Satralloy Site, and would maintain, to the maximum extent practicable, the pre-construction course, condition, capacity, and location of any potential Waters that are not filled by Project activities. Project activities would not restrict or impede the passage of normal or high flows on the Site. The settling pond has been designed to allow flow to discharge to the downstream portions of the existing tributary.
10. Fills within 100-year Floodplains	The Project activities are designed to comply with applicable FEMA-approved local floodplain management requirements.
11. Equipment	Flagging will be used to delineate Waters occurring near Project activities that will not be filled and equipment operators will be instructed to avoid these Waters.
12. Soil Erosion and Sediment Controls	Work will be conducted under an OEPA general construction permit and include a Stormwater Pollution Prevention Plan (SWPPP). All necessary soil erosion and sediment controls would be installed and maintained during demolition and construction.
13. Removal of Temporary Fills	All fills will be permanent; no temporary fills are anticipated to result from Project activities.
14. Proper Maintenance	The road and remediation sites will be maintained to ensure compliance with applicable NWP conditions.
15. Single and Complete Project	The Project activities (building demolition and surface water management activities in the Plant Area, road improvements in the Slag areas) are considered a single and complete project, the purpose of which is to proceed with remediation activities mandated by the OEPA. NWP 38 is required only once for the authorization of this Project.
16. Wild and Scenic Rivers	No wild or scenic rivers, or designated study reaches, are present within the Project Area.
17. Tribal Rights	The Project activities would not occur on or adjacent to any tribal lands, and, to the best of our knowledge, the Project would not impair any tribal rights.
18. Endangered Species	The Indiana bat (endangered) and the northern long-eared bat (threatened) are the only two federally listed species identified as having some potential to occur within the Site. No designated critical habitat occurs within the Project Area. No known hibernacula for either species occur within Jefferson County.

Table 2. Nationwide Permit General Conditions

General Condition	Applicability/Compliance
	The Mill buildings and two support structures do not provide maternity roost habitat or hibernacula for Indiana bat or northern long-eared bat, and demolition of these structures will not affect these species. The road improvement activities will occur within and along the edges of existing disturbance. The tree removal required for road improvement activities will be conducted between October 1 and March 31 in order to avoid impacts to potential maternity roosts. Project activities are expected to have an insignificant and discountable effect to these species (see **Section 3.2** and **Appendix B**).
19. Migratory Birds and Bald and Golden Eagles	The Permittee is aware of their responsibility for obtaining any applicable take permits from the USFWS under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. No take permits for migratory birds or bald and golden eagles are warranted for Project construction activities.
20. Historic Properties	A cultural resources literature review did not identify any archaeological sites within the Project Area. The Project would not adversely affect the cultural sites in the Project Area (see **Section 3.3** and **Appendix C**).
21. Discovery of Previously Unknown Remains and Artifacts	The Permittee is aware that if any previously unknown historic, cultural, or archaeological remains or artifacts were discovered while accomplishing the activities authorized by this permit, then work at that location would be stopped and such findings must be treated in accordance with state statutes. If such findings were located within the Project Area or within 50 feet of the jurisdictional area, the Corps would be promptly notified.
22. Designated Critical Resource Waters	No designated critical resource waters occur in the Project Area.
23. Mitigation	The Project is designed to avoid and minimize adverse effects to potential Waters to the maximum extent practicable. The Project would result in a maximum of 0.0886 acres of impacts to potential Waters. Due to the minimal nature of project impacts and the self-mitigating nature of remediation activities, no compensatory mitigation is proposed.
24. Safety of Impoundment Structures	The Project would not include the construction of impoundment structures and would not affect the safety of any existing impoundment structures.
25. Water Quality	Individual water quality certification requirements do not apply to the Project (see **Appendix E**).
26. Coastal Zone Management	The Project Area does not occur within a coastal zone. Coastal zone management consistency concurrence would not be required for this Project.
27. Regional and Case-by-case Conditions	The Project, as designed, meets all the requirements of applicable Regional Conditions, as outlined in **Section 6**, below.
28. Use of Multiple Nationwide Permits	The Project activities meet the terms of a single and complete project under NWP 38, as they are part of long-term remediation activities being planned for the former Satralloy Site.

Table 2. Nationwide Permit General Conditions

General Condition	Applicability/Compliance
29. Transfer of Nationwide Permit Verifications	The Permittee is aware of the transfer requirements.
30. Compliance Certification	The Project does not require compliance certification.
31. Pre-Construction Notification	Pre-notification is being submitted to the Corps per the conditions of NWP 38.

6. NATIONWIDE PERMIT REGIONAL GENERAL CONDITIONS

(*Corps Public Notice, Nationwide Permits for Ohio, March 21, 2017*)

Regional general conditions are presented below in italics. Documentation of the Project's compliance with these terms is provided in normal text.

1. *Nationwide Permits shall not authorize any activity which negatively impacts bogs and/or fens.*

   Determination: No bogs or fens are located within the Project Area and Project activities will not result in negative impacts to either bogs or fens.

2. *No nationwide permit may be used in Lake Erie for purposes of diverting water from the Great Lakes.*

   Determination: The Project Area is not located in Lake Erie and will not be used to divert water from the Great Lakes.

3. *Nationwide Permits shall not authorize any activity which has an adverse impact on littoral transport within Lake Erie*

   Determination: The Project Area is not located in Lake Erie and will not have an adverse impact on littoral transport within Lake Erie.

4. *In-Water Work Exclusion Dates: Any regulated work associated with a nationwide permit cannot take place during the restricted period of the following Ohio Department of Natural Resources (ODNR) In-Water Work Restrictions […].*

   Determination: The Project Area does not occur within any of the streams covered under the ODNR In-Water Work Restrictions.

5. *Waters of Special Concern: PCN in accordance with Nationwide Permit General Condition 32 and Regional General Condition 6 is required for regulated activities in the following resources:*

   a. *Endangered Species and Threatened Species:*

Determination: A PCN is being submitted for the proposed activities. There is some potential for the Indiana bat and the northern long-eared bat to occur within the Site. The majority of Project activities will be conducted within existing disturbance, but road improvement activities will require the removal of trees located along the edge of the existing road. The majority of the trees will be small (less than 3 inches dbh) and are not suitable maternity roosts (no exfoliating tree bark). The attached Biological Evaluation (**Appendix B**) provides a detailed review of these species.

b. Critical Resource Waters:

Determination: No designated critical resource waters (defined as including critical habitat for the piping plover [*Charadrius melodus*], rabbitsfoot mussel [*Quadrula cylindrica cylindrica*], and Old Woman Creek National Estuarine Research Preserve) occur within the Project Area

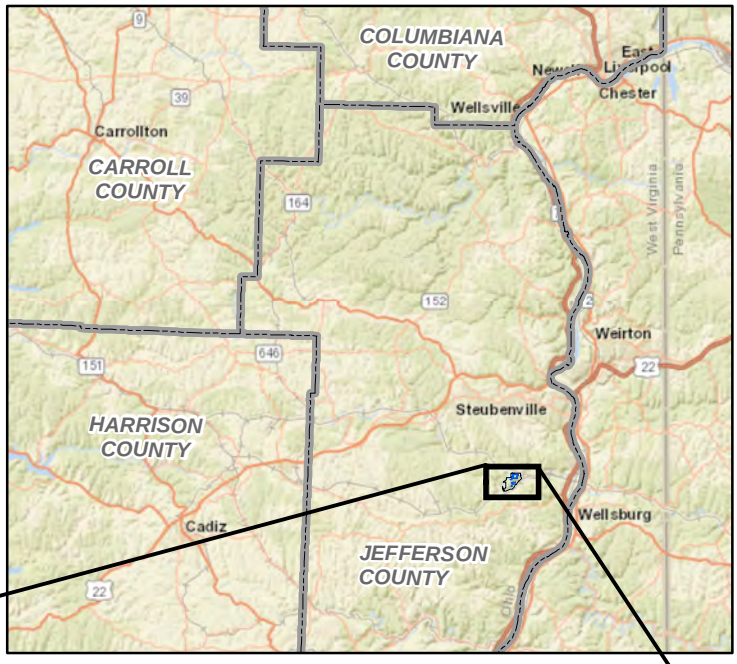
c. Oak Openings:

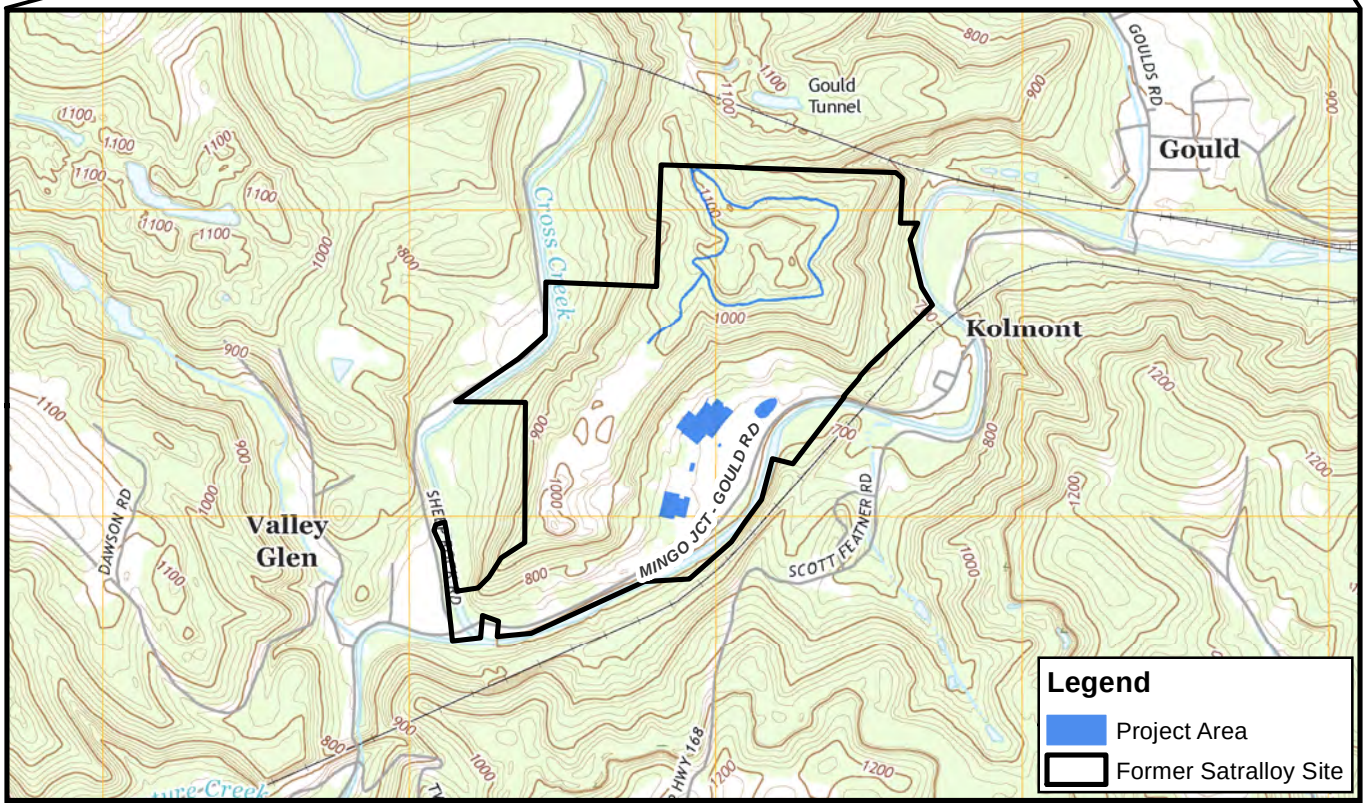
Determination: The Project Area is not located within the Oak Openings Region of Northwest Ohio.

6. *PCN Submittals: In addition to the information required under Nationwide Permit General Condition 32, the following information must be provided with the PCN: a) illustrations/drawings, b) USFWS, c) cultural resources, d) National Wild and Scenic Rivers, and e) Agency Coordination.*

Determination: This PCN submittal provides the information requested in Regional Condition 6.

FIGURES





Project Area in:
T6N, R2W, Portions of Sections 8, and 9,
Jefferson County, Ohio
Steubenville West USGS 7.5' Quadrangle (2016)
Data Source: Golder
Image Source: ArcGIS Online, World Street Map

WestLand Resources

N

0 1,000 2,000 Feet

0 300 600 Meters

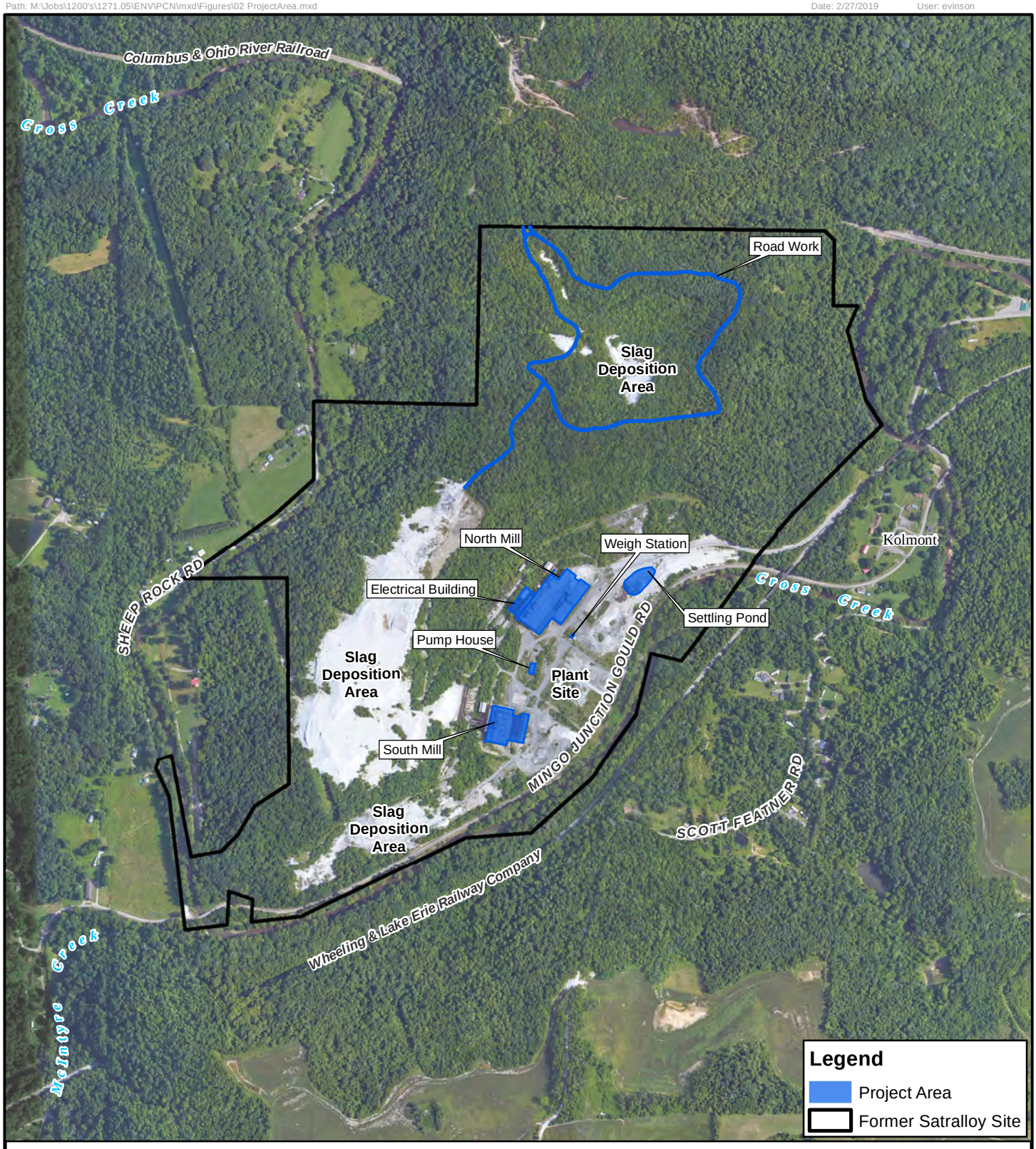
CYPRUS AMAX MINERALS CORPORATION

Pre-Construction Notification
Nationwide Permit 38
(Cleanup of Hazardous and Toxic Waste)

VICINITY MAP

Figure 1

Path: M:\Jobs\1200's\1271.05\ENV\PCN\mxd\Figures\02 ProjectArea.mxd Date: 2/27/2019 User: evinson



Project Area in:
T6N, R2W, Portions of Sections 8, and 9,
Jefferson County, Ohio
Data Source: Golder
Image Source: Google Earth 06/08/2016

CYPRUS AMAX MINERALS CORPORATION

Pre-Construction Notification
Nationwide Permit 38
(Cleanup of Hazardous and Toxic Waste)

PROJECT AREA

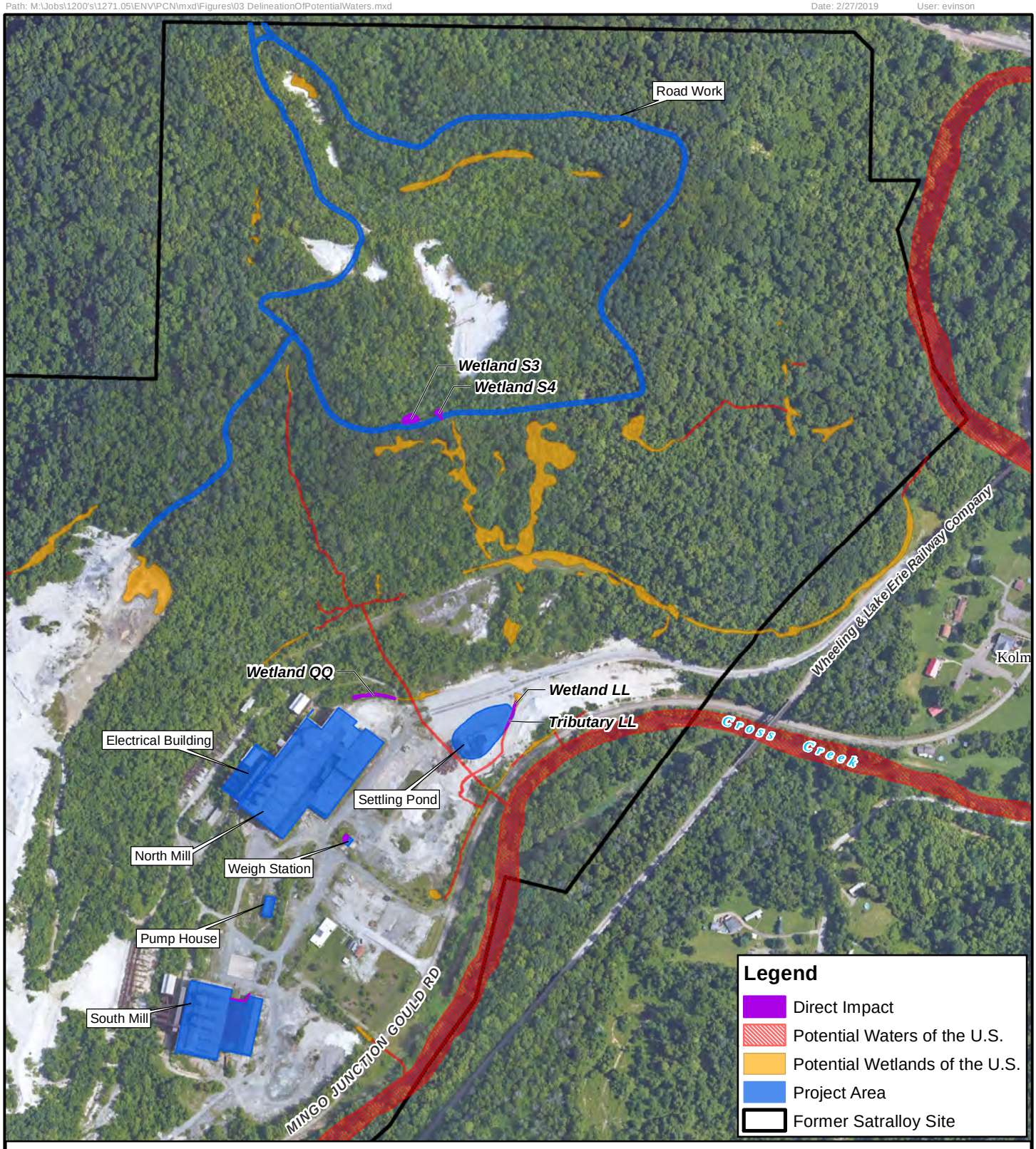
Figure 2

WestLand Resources

N

0 500 1,000 Feet

0 150 300 Meters



Project Area in:
T6N, R2W, Portions of Sections 8, and 9,
Jefferson County, Ohio
Data Source: Golder
Image Source: Google Earth 06/08/2016

CYPRUS AMAX MINERALS CORPORATION

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IMPACTS TO POTENTIAL WATERS AND WETLANDS OF THE U.S.

Figure 3

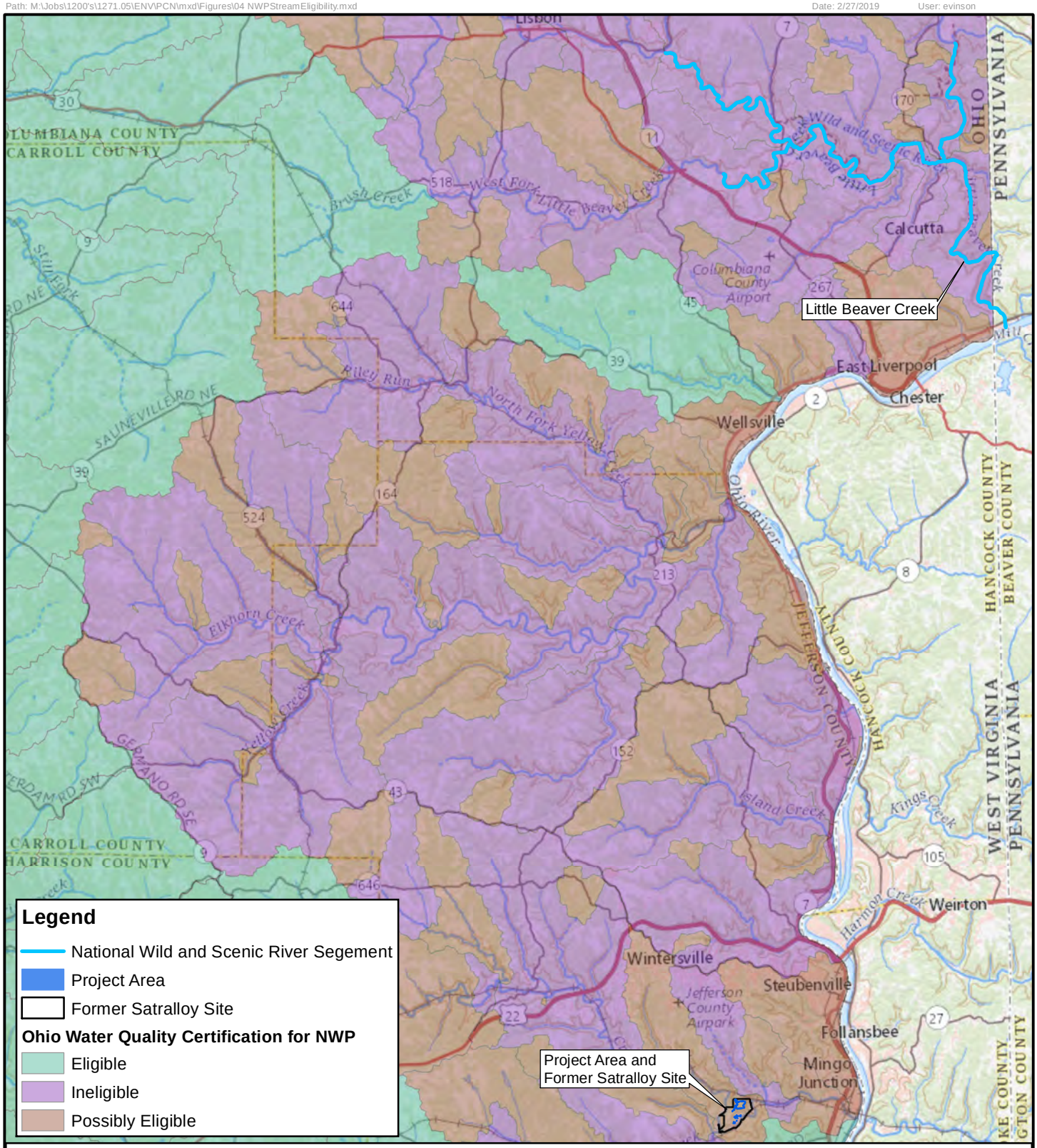
WestLand Resources

N

0 250 500 Feet

0 75 150 Meters

Path: M:\Jobs\1200's\1271.05\ENV\PCN\mxd\Figures\04 NWPStreamEligibility.mxd Date: 2/27/2019 User: evinson



Project Area in:
T6N, R2W, Portions of Sections 8, and 9,
Jefferson County, Ohio
Data Source: Golder
National and Scenic River: USFS 4/23/2018
401 Water Quality Certification: Ohio EPA, 1/25/2019
Image Source: ArcGIS Online, USGS Topo

WestLand Resources

N

0 2 4 Miles

0 4 8 Kilometers

CYPRUS AMAX MINERALS CORPORATION

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NWP STREAM ELIGIBILITY

Figure 4

APPENDIX A

Preliminary Jurisdictional Delineation

Appendix 1 - REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD)

To: District Name Here

- I am requesting a JD on property located at: 4243 Co Rd 74
  (Street Address)
  City/Township/Parish: Mingo Junction County: Jefferson State: OH, 43938
  Acreage of Parcel/Review Area for JD: ~7.7 acres
  Section: 8, 9 Township: 6N Range: 2W
  Latitude (decimal degrees): 40.311718 Longitude (decimal degrees): -80.672305
  (For linear projects, please include the center point of the proposed alignment.)
- Please attach a survey/plat map and vicinity map identifying location and review area for the JD.
- ___ I currently own this property. ___ I plan to purchase this property.
  _X_ I am an agent/consultant acting on behalf of the requestor.
  ___ Other (please explain): _____.
- Reason for request: (check as many as applicable)
  ___ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
  ___ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
  ___ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
  _X_ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
  ___ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
  ___ A Corps JD is required in order to obtain my local/state authorization.
  ___ I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
  ___ I believe that the site may be comprised entirely of dry land.
  ___ Other: _____
- Type of determination being requested:
  ___ I am requesting an approved JD.
  _X_ I am requesting a preliminary JD.
  ___ I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.
  ___ I am unclear as to which JD I would like to request and require additional information to inform my decision.

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

*Signature: WB Cobb Date: 3/13/19

- Typed or printed name: William E. Cobb
  Company name: Cyprus Amax Minerals Company
  Address: 333 North Central Avenue
  Phoenix, Arizona, 85004
  Daytime phone no.: 602 366-7826
  Email address: wcobb@fmi.com

***Authorities:** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: Feruary 15, 2019

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Christopher Rife, 4001 E Paradise Falls Dr, Tucson, AZ 85705

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Pittsburgh Office, File No. 2005-2397

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: OH County/parish/borough: Jefferson City: Mingo Junction

Center coordinates of site (lat/long in degree decimal format):

Lat.: 40.311718 Long.: -80.672305

Universal Transverse Mercator:

Name of nearest waterbody: Cross Creek

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:

☒ Field Determination. Date(s): May, 2018

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
	See Attachment 1				

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
  Map: Attachment 2: Preliminary JD maps.
- [x] Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [ ] Office concurs with data sheets/delineation report.
  - [ ] Office does not concur with data sheets/delineation report. Rationale: _____
  Attachment 3: ORAM figures
- [ ] Data sheets prepared by the Corps: _____.
- [ ] Corps navigable waters' study: _____.
- [ ] U.S. Geological Survey Hydrologic Atlas: _____.
  - [ ] USGS NHD data.
  - [ ] USGS 8 and 12 digit HUC maps.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: 7.5' Steubenville West (Att. 4: Figure 1).
- [ ] Natural Resources Conservation Service Soil Survey. Citation: _____.
- [ ] National wetlands inventory map(s). Cite name: _____.
- [ ] State/local wetland inventory map(s): _____.
- [ ] FEMA/FIRM maps: _____.
- [ ] 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- [x] Photographs: [x] Aerial (Name & Date): Att. 2: Preliminary JD maps; Att. 4: Figure 2.
  or [x] Other (Name & Date): Attachment 5: Ground photographs.
- [ ] Previous determination(s). File no. and date of response letter: _____.
- [ ] Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

_____	WE Cutt 3/13/19
Signature and date of Regulatory staff member completing PJD	Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

ATTACHMENT 1
PJD Feature Table

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude	Longitude	Estimated amount of aquatic resource in review area	Type of aquatic resource	Geographic authority to which the aquatic resource "may be" subject
Tributary OO	-80.671711	40.308637	0.0019 acres, 85 feet	Non-wetland waters	Section 404
Wetland QQ	-80.669331	40.311612	0.0256 acres	Wetland	Section 404
Wetland RR	-80.670388	40.31021	0.0072 acres	Wetland	Section 404
Tributary LL	-80.668857	40.310682	0.0059 acres; 135 feet	Non-wetland waters	Section 404
Wetland LL	-80.668112	40.311552	0.0030 acres	Wetland	Section 404
Wetland S3	-80.669428	40.314396	0.0332 acres	Wetland	Section 404
Wetland S4	-80.669052	40.314448	0.0118 acres	Wetland	Section 404

ATTACHMENT 2
Waters of the U.S. Delineation Map

Path: M:\Jobs\1200's\1271.05\ENV\CWA\mxd\Attach01 PotentialWatersOfTheUS.mxd

Date: 2/27/2019 User: evinson

*** * * * P R E L I M I N A R Y (RGL 16-01) * * * ***

SECTION 404 JURISDICTIONAL DELINEATION

U.S. Army Corps of Engineers, PittsburghDistrict

Application No. SPL -_____-_____-_____

Boundary of area surveyed for jurisdictional waters of the United States

Approximate Ordinary High Water Mark

Potential Waters of the United States

Potential Wetlands
(If legend is blank no wetlands occur in survey area.)

1"= 200' Scale *06/08/2016* Date of Photograph

_____ Site Visit by Corps (Y/N) Date:_____

_____Date Delineation issued by Corps

_____Corps Project Manager

Sheet *1* of *1*

*** * * * P R E L I M I N A R Y (RGL 16-01) * * * ***

Project Area in:
T6N, R2W, Portions of Sections 8, and 9,
Jefferson County, Ohio
Data Source: Golder
Image Source: Google Earth 06/08/2016

Legend

- Direct Impact to Potential Waters of the U.S.
- Direct Impact to Potential Wetlands
- Former Satralloy Site

WestLand Resources

N

0 100 200 Feet

0 30 60 Meters

CYPRUS AMAX MINERALS CORPORATION

Former Satralloy Site
Nationwide Permit 38
(Cleanup of Hazardous and Toxic Waste)
Preliminary Jurisdictional Determination

PRELIMINARY JURISDICTIONAL DETERMINATION
Attachment 1

ATTACHMENT 3
ORAM Forms

Version 5.0	**Ohio Rapid Assessment Method for Wetlands** **10 Page Form for Wetland Categorization**	
	Background Information **Scoring Boundary Worksheet** **Narrative Rating** **Field Form Quantitative Rating** **ORAM Summary Worksheet** **Wetland Categorization Worksheet**	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name: J. Melko, B. Jacoby	
Date:	
Affiliation: Cyprus Amax Minerals Company	
Address:	
Phone Number:	
e-mail address:	
Name of Wetland: Wetland LL	
Vegetation Communit(ies): PEM1	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See jurisdictional delineation map.	

Lat/Long or UTM Coordinate	Lat 40.311552, Long -80.668112
USGS Quad Name	Steubenville West
County	Jefferson
Township	T6N, R2W
Section and Subsection	S8
Hydrologic Unit Code	05030101
Site Visit	Y
National Wetland Inventory Map	Y
Ohio Wetland Inventory Map	
Soil Survey	Y
Delineation report/map	Y

Name of Wetland: Wetland LL	
Wetland Size (acres, hectares):	0.0233 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See attached figure.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 8	**Category:** 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☐	☑
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☐	☑

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wetland LL	**Rater(s):** JMM, BJJ	**Date:** 5/8/2018

Metric 1. Wetland Area (size).

0 (max 6 pts.) | 0 (subtotal)

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

1 (max 14 pts.) | 1 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☑ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☑ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

7 (max 30 pts.) | 8 (subtotal)

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☑ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☑ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☑ <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☑ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☑ Recent or no recovery (1)

Check all disturbances observed

- ☑ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☑ stormwater input
- ☐ point source (nonstormwater)
- ☑ filling/grading
- ☑ road bed/RR track
- ☐ dredging
- ☐ other_____

Metric 4. Habitat Alteration and Development.

3 (max 20 pts.) | 11 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☑ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☑ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☑ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☑ clearcutting
- ☐ selective cutting
- ☑ woody debris removal
- ☐ toxic pollutants
- ☑ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☑ sedimentation
- ☑ dredging
- ☐ farming
- ☐ nutrient enrichment

11 (subtotal this page)

last revised 1 February 2001 jjm

Site: Wetland LL	**Rater(s):** JMM, BJJ	**Date:** 5/8/2018

11
subtotal first page

Metric 5. Special Wetlands.

0 max 10 pts. | 11 subtotal

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

-3 max 20 pts. | 8 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 0 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☑ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☑ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- ☐ Vegetated hummucks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

8

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	8	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3
	☑	☐	☐

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	**Ohio Rapid Assessment Method for Wetlands** **10 Page Form for Wetland Categorization**	
	Background Information **Scoring Boundary Worksheet** **Narrative Rating** **Field Form Quantitative Rating** **ORAM Summary Worksheet** **Wetland Categorization Worksheet**	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name: J. Melko, B. Jacoby	
Date:	
Affiliation: Cyprus Amax Minerals Company	
Address:	
Phone Number:	
e-mail address:	
Name of Wetland: Wetland LL	
Vegetation Communit(ies): PEM1	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See jurisdictional delineation map.	

Lat/Long or UTM Coordinate	Lat 40.311552, Long -80.668112
USGS Quad Name	Steubenville West
County	Jefferson
Township	T6N, R2W
Section and Subsection	S8
Hydrologic Unit Code	05030101
Site Visit	Y
National Wetland Inventory Map	Y
Ohio Wetland Inventory Map	
Soil Survey	Y
Delineation report/map	Y

Name of Wetland: Wetland LL	
Wetland Size (acres, hectares):	0.0233 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See attached figure.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 8	**Category:** 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☐	☑
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☐	☑

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wetland LL	**Rater(s):** JMM, BJJ	**Date:** 5/8/2018

Metric 1. Wetland Area (size).

0 (max 6 pts.) | 0 (subtotal)

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

1 (max 14 pts.) | 1 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☑ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☑ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

7 (max 30 pts.) | 8 (subtotal)

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☑ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☑ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☑ <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☑ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☑ Recent or no recovery (1)

Check all disturbances observed

- ☑ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☑ stormwater input
- ☐ point source (nonstormwater)
- ☑ filling/grading
- ☑ road bed/RR track
- ☐ dredging
- ☐ other_____

Metric 4. Habitat Alteration and Development.

3 (max 20 pts.) | 11 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☑ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☑ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☑ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☑ clearcutting
- ☐ selective cutting
- ☑ woody debris removal
- ☐ toxic pollutants
- ☑ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☑ sedimentation
- ☑ dredging
- ☐ farming
- ☐ nutrient enrichment

11 (subtotal this page)

last revised 1 February 2001 jjm

Site: Wetland LL	**Rater(s):** JMM, BJJ	**Date:** 5/8/2018

11
subtotal first page

Metric 5. Special Wetlands.

0 max 10 pts. | 11 subtotal

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

-3 max 20 pts. | 8 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 0 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☑ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☑ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- ☐ Vegetated hummucks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

8

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	8	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3
	☑	☐	☐

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	**Ohio Rapid Assessment Method for Wetlands** **10 Page Form for Wetland Categorization**	
	Background Information **Scoring Boundary Worksheet** **Narrative Rating** **Field Form Quantitative Rating** **ORAM Summary Worksheet** **Wetland Categorization Worksheet**	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name: J. Melko, B. Jacoby	
Date:	
Affiliation: Cyprus Amax Minerals Company	
Address:	
Phone Number:	
e-mail address:	
Name of Wetland: Wetland LL	
Vegetation Communit(ies): PEM1	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See jurisdictional delineation map.	

Lat/Long or UTM Coordinate	Lat 40.311552, Long -80.668112
USGS Quad Name	Steubenville West
County	Jefferson
Township	T6N, R2W
Section and Subsection	S8
Hydrologic Unit Code	05030101
Site Visit	Y
National Wetland Inventory Map	Y
Ohio Wetland Inventory Map	
Soil Survey	Y
Delineation report/map	Y

Name of Wetland: Wetland LL	
Wetland Size (acres, hectares):	0.0233 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See attached figure.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 8	**Category:** 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☐	☑
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☐	☑

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wetland LL	**Rater(s):** JMM, BJJ	**Date:** 5/8/2018

Metric 1. Wetland Area (size).

0 (max 6 pts.) | 0 (subtotal)

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

1 (max 14 pts.) | 1 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☑ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☑ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

7 (max 30 pts.) | 8 (subtotal)

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☑ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☑ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☑ <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☑ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☑ Recent or no recovery (1)

Check all disturbances observed

- ☑ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☑ stormwater input
- ☐ point source (nonstormwater)
- ☑ filling/grading
- ☑ road bed/RR track
- ☐ dredging
- ☐ other_____

Metric 4. Habitat Alteration and Development.

3 (max 20 pts.) | 11 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☑ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☑ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☑ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☑ clearcutting
- ☐ selective cutting
- ☑ woody debris removal
- ☐ toxic pollutants
- ☑ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☑ sedimentation
- ☑ dredging
- ☐ farming
- ☐ nutrient enrichment

11 (subtotal this page)

last revised 1 February 2001 jjm

Site: Wetland LL	**Rater(s):** JMM, BJJ	**Date:** 5/8/2018

11
subtotal first page

Metric 5. Special Wetlands.

0 max 10 pts. | 11 subtotal

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

-3 max 20 pts. | 8 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 0 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☑ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☑ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- ☐ Vegetated hummucks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

8

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	8	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3
	☑	☐	☐

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	**Ohio Rapid Assessment Method for Wetlands** **10 Page Form for Wetland Categorization**	
	Background Information **Scoring Boundary Worksheet** **Narrative Rating** **Field Form Quantitative Rating** **ORAM Summary Worksheet** **Wetland Categorization Worksheet**	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name: J. Melko, B. Jacoby	
Date:	
Affiliation: Cyprus Amax Minerals Company	
Address:	
Phone Number:	
e-mail address:	
Name of Wetland: Wetland LL	
Vegetation Communit(ies): PEM1	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See jurisdictional delineation map.	

Lat/Long or UTM Coordinate	Lat 40.311552, Long -80.668112
USGS Quad Name	Steubenville West
County	Jefferson
Township	T6N, R2W
Section and Subsection	S8
Hydrologic Unit Code	05030101
Site Visit	Y
National Wetland Inventory Map	Y
Ohio Wetland Inventory Map	
Soil Survey	Y
Delineation report/map	Y

Name of Wetland: Wetland LL	
Wetland Size (acres, hectares):	0.0233 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See attached figure.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 8	**Category:** 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☐	☑
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☐	☑

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wetland LL	**Rater(s):** JMM, BJJ	**Date:** 5/8/2018

Metric 1. Wetland Area (size).

0 (max 6 pts.) | 0 (subtotal)

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

1 (max 14 pts.) | 1 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☑ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☑ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

7 (max 30 pts.) | 8 (subtotal)

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☑ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☑ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☑ <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☑ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☑ Recent or no recovery (1)

Check all disturbances observed

- ☑ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☑ stormwater input
- ☐ point source (nonstormwater)
- ☑ filling/grading
- ☑ road bed/RR track
- ☐ dredging
- ☐ other_____

Metric 4. Habitat Alteration and Development.

3 (max 20 pts.) | 11 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☑ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☑ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☑ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☑ clearcutting
- ☐ selective cutting
- ☑ woody debris removal
- ☐ toxic pollutants
- ☑ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☑ sedimentation
- ☑ dredging
- ☐ farming
- ☐ nutrient enrichment

11 (subtotal this page)

last revised 1 February 2001 jjm

Site: Wetland LL	**Rater(s):** JMM, BJJ	**Date:** 5/8/2018

11
subtotal first page

Metric 5. Special Wetlands.

0 max 10 pts. | 11 subtotal

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

-3 max 20 pts. | 8 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 0 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☑ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☑ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- ☐ Vegetated hummucks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

8

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	8	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

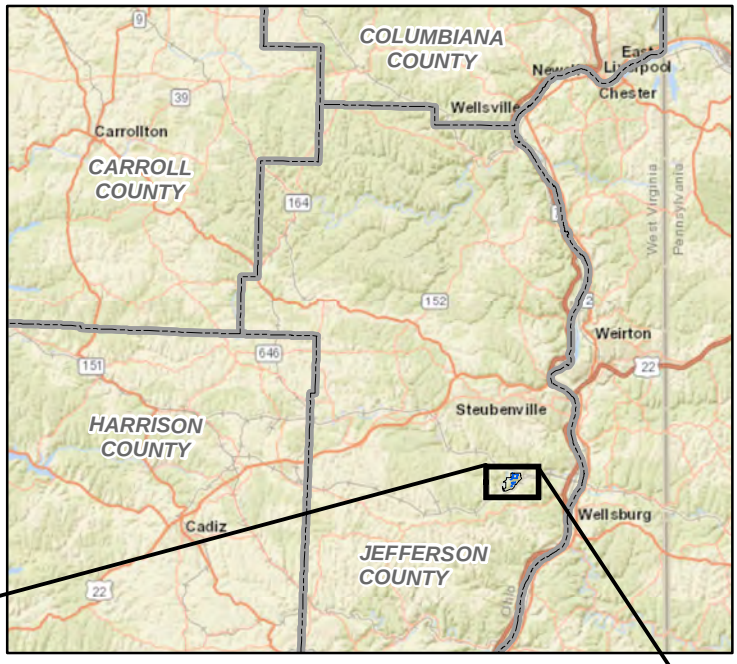
Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

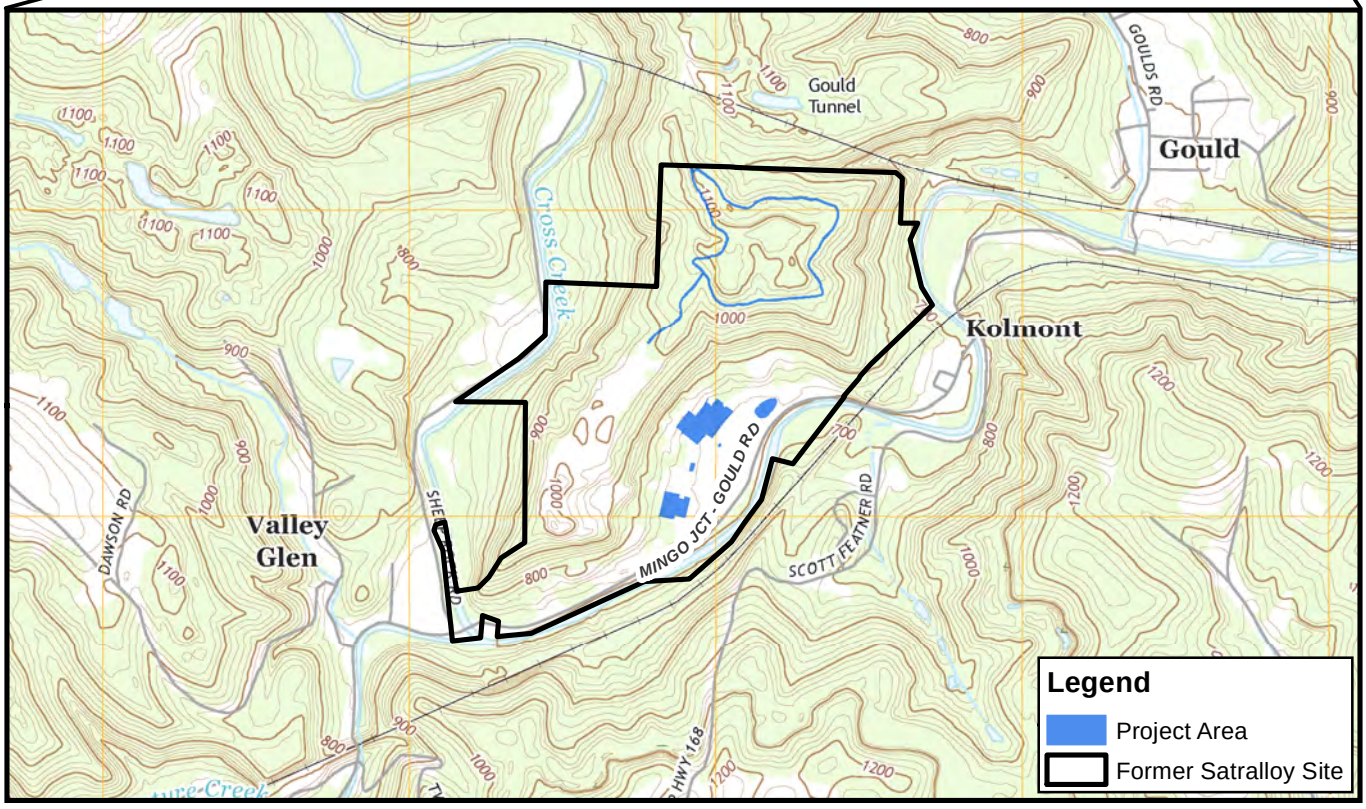
Choose one	Category 1	Category 2	Category 3
	☑	☐	☐

End of Ohio Rapid Assessment Method for Wetlands.

ATTACHMENT 4
Figures



Approximate Scale 1 Inch = 10 Miles



Project Area in:
T6N, R2W, Portions of Sections 8, and 9,
Jefferson County, Ohio
Steubenville West USGS 7.5' Quadrangle (2016)
Data Source: Golder
Image Source: ArcGIS Online, World Street Map

WestLand Resources

N

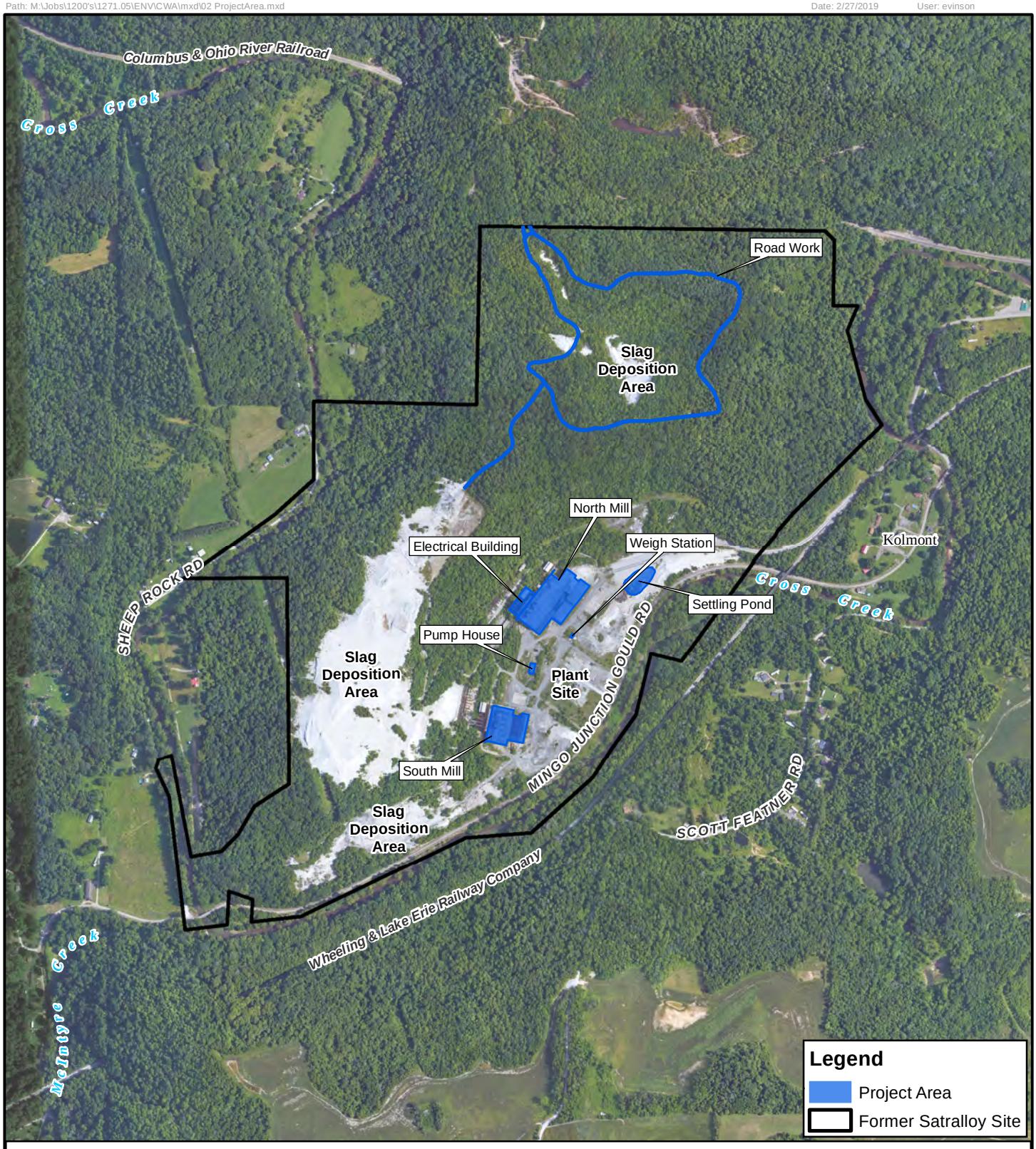
0 1,000 2,000 Feet

0 300 600 Meters

CYPRUS AMAX MINERALS CORPORATION

Former Satralloy Site
Nationwide Permit 38
(Cleanup of Hazardous and Toxic Waste)
Preliminary Jurisdictional Determination

VICINITY MAP
Figure 1



Project Area in:
T6N, R2W, Portions of Sections 8, and 9,
Jefferson County, Ohio
Data Source: Golder
Image Source: Google Earth 06/08/2016

CYPRUS AMAX MINERALS CORPORATION

Former Satralloy Site
Nationwide Permit 38
(Cleanup of Hazardous and Toxic Waste)
Preliminary Jurisdictional Determination

PROJECT AREA
Figure 2

WestLand Resources

N

0 500 1,000 Feet

0 150 300 Meters

ATTACHMENT 5
PJD Photographic Log

POTENTIAL FEDERALLY JURIDISCTIONAL FEATURES

Feature: Wetland LL
Date: 5/8/2018
ORAM Category: 1
Description: Wetland LL is a riprap filled basin that collects stormwater flow from culverts created during railroad construction conducted in 2015. The wetland is adjacent to Tributary LL, which discharges to Cross Creek.

Feature: Tributary LL
Date: 5/11/2018
Description: Tributary LL is a constructed drainage designed to discharge stormwater into Cross Creek through a series of culverts.

Feature: Tributary LL
Date: 5/11/2018
Description: Tributary LL is a constructed drainage designed to discharge stormwater into Cross Creek through a series of culverts.

Feature: Tributary OO
Date: 5/9/2018
Description: Tributary OO has developed as the result of trenching near a blocked pipe located alongside the south mill. Flows from this drainage are captured in a ponding area that does not demonstrate wetland characteristics.

Feature: Wetland QQ
Date: 5/10/2018
ORAM Category: 1
Description: Wetland QQ is hydrologically isolated from downgradient receiving surface waters and was determined to be potentially under OEPA jurisdiction.

Feature: Wetland QQ
Date: 5/8/2018
ORAM Category: 1
Description: Wetland QQ is hydrologically isolated from downgradient receiving surface waters and was determined to be potentially under OEPA jurisdiction.

Feature: Wetland RR
Date: 5/2/2018
ORAM Category: 1
Description: Wetland has developed at the outlet of a stormwater outlet. Previously adjacent to Tributary C; however, due to changes in stormwater flow from surface water management alterations, the wetland receives less water and has shrunk considerably.

Feature: Wetland S3
Date: 5/7/2018
ORAM Category: 1
Description: Part of a series of wetlands located on steep slope upstream from Wetland P, west of Wetland T. Crosses old road related to smelting and slag disposal operations. The wetland was delineated as isolated in 2007. However, the Wetland S complex abuts Wetland P, and due to changes in the flow regimes since 2007, it is now connected to the TNW through Wetlands P and Q, which ultimately discharge to Cross Creek.

Feature: Wetland S4
Date: 5/7/2018
ORAM Category: 1
Description: Part of the Wetland S complex described above. Located along the existing road, immediately east of Wetland S3.

APPENDIX B

Biological Evaluation

BIOLOGICAL EVALUATION OF THE FORMER SATRALLOY SITE, JEFFERSON COUNTY, OHIO

Cyprus Amax Minerals Company

Prepared for:

Cyprus Amax Minerals Company
333 North Central Avenue, Phoenix, Arizona 85004

Project Number: 1271.05

March 2019

WestLand Resources

WestLand Resources, Inc. • 4001 E. Paradise Falls Drive • Tucson, Arizona 85712 • 520•206•9585

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FIGURES

(follow text)

APPENDICES

1. INTRODUCTION AND BACKGROUND

WestLand Resources, Inc. (WestLand) was retained by Cyprus Amax Minerals Company (Cyprus) to conduct a Biological Evaluation (BE) in support of proposed work at the former Satralloy Site (the Site) located near Steubenville in Jefferson County, Ohio (the Project Area) (**Figure 1**). Cyprus proposes to conduct activities to support eventual remediation of the Site (the Project). This BE presents a screening analysis to determine: 1) the actual or potential occurrence of special-status species, and/or 2) whether designated or proposed critical habitat exists in the Project Area or its vicinity. The special-status species evaluated in this report includes species listed under the Endangered Species Act (ESA) or Bald and Golden Eagle Protection Act (BGEPA) by the U.S. Fish and Wildlife Service (USFWS) that have the potential to occur in the Project Area (**Appendix A**).

This BE comprises:

- A description of the Project and its location (**Section 2**),
- A description of the environmental setting of the Project Area (**Section 3**),
- An explanation of the special-status species screening analysis methods (**Section 4**),
- Results of the analysis (**Section 5**),
- Conclusions (**Section 6**), and
- References cited in the text (**Section 7**).

2. PROJECT LOCATION AND DESCRIPTION

The Project Area is located within the Site, approximately 4 miles southwest of Steubenville in Jefferson County, within portions of Sections 8 and 9 of Township 6 North, Range 2 West (**Figure 1**). The entire Site encompasses approximately 327 acres with proposed project activities occurring in small portions of the Site (**Figure 2**).

The Project activities fall into three categories: building demolition, surface water control, and road improvements. The proposed building demolition activities include removal of the North Mill building, the South Mill building, two small support buildings, and a truck weigh station (**Figure 2**).

The structures are derelict and present a health and safety hazard due to their deteriorating condition and construction materials (including asbestos-containing building materials and lead-based paint), as well as accumulated dust and ash from the prior smelter operations.

The proposed surface water control activities include constructing a settling pond adjacent to an existing surface water management channel, diverting flows from the channel into the settling pond, and releasing flows back into the channel farther downstream (**Figure 2**). The settling pond is designed to slow surface water flows and allow the majority of precipitate and sediments to settle out.

Flow from the settling pond will be returned to the channel below the diversion point, and ultimately discharge to Cross Creek.

The road improvement activities consist of improving an existing, deteriorated primitive road system encircling a former coal mine area located within the northern portion of the Site. The roads are significantly degraded by erosion and vegetation encroachment. The existing roads range from approximately 4 to 8 feet wide. The roadbed will be widened to 15 feet and the surface improved to accommodate the large equipment needed to support the planned remediation activities at the Site. The planned road improvements include trimming vegetation, leveling the ruts with gravel, grading the surface, and widening the roadbed. No more than 1.7 acres of vegetation will be removed as a result of road improvement activities, and tree removal will occur within the winter season (October 1 to March 31) to avoid impacts to potentially roosting bats. The majority of vegetation removal would consist of shrubs and saplings (less than 3 inches diameter at breast height [dbh]), and the route would be designed to avoid larger trees to the maximum extent possible while maintaining an alignment that can be negotiated by the expected equipment. We estimate that approximately 20 to 30 trees with a dhb greater than 10 inches would be unavoidable, and therefore would be removed.

3. ENVIRONMENTAL SETTING OF THE PROJECT AREA

3.1. LAND USE

The Site has been subject to a variety of industrial uses during the 20th century, including coal mining and chromium ore processing. The Site served as a former operation of the ferrochromium alloy processing plant, from the 1950s through the 1980s. After industrial operations ceased, the Site was heavily used as a recreation site by trespassing all-terrain vehicle (ATV) riders, who created non-mine-related trails through the forested areas, in addition to using the existing roads and slag piles. Cyprus has taken action to prevent trespass within the Site, including fencing certain portions of the site and providing 24/7/365 security. Current land use on the Site is limited to post-closure maintenance.

Four buildings associated with chromium ore processing activities are still present (**Figure 2**), including two industrial-sized multi-story ore processing plant buildings, one building associated with water processing, and one electrical building. Industrial equipment inside these buildings has been removed; only the shells and interior structural components remain. The two multi-story structures (North and South Mill Buildings) consist of steel and concrete buildings that are clad in sheet metal. Each of these mill buildings consists of three areas: 1) an open, large bay area with an I-beam and sheet metal roof in the center of the building, 2) a smaller bay area with interspersed concrete block structures on the southeastern side, and 3) a three-tiered area containing a series of concrete block buildings on the northwest side. The third building associated with water processing (Pump House) is a single room, concrete block building. The fourth structure (Electrical Building) is a two-level concrete block building. None of these buildings are insulated, and they are open to the elements with

the exception of the Pump House that is sealed. None of these buildings are climate-controlled, and as such, climatic conditions are highly dependent upon external weather conditions.

Large areas of the Site are covered by slag from the chromium smelting operation; solid slag was transported to deposition sites in the southern portion of the Site by truck while a thick slurry was pumped through pipelines to other deposition sites in the northern portions. A network of roads, mostly related to the smelter operations and slag disposal, crosses the Site. During plant operations, two railroad spurs entered the Project Area from the east, near the trestle over County Road 74, to provide rail access for material delivery and product shipment. The rail infrastructure was removed after plant closure. Tracks have recently been rebuilt on the lower spur to provide rail access for delivering heavy equipment and removing demolition debris when the remaining industrial buildings are demolished.

Earlier uses of the Site included coal mining and farming. Both underground and strip coal mining methods were used in the first quarter of the 1900s. Some of the strip mine areas have been partially filled with the pumped slag from the chromium ore processing described above. There are also traces of older roads related to the coal mining activities. The industrial plant area was formerly occupied by a small farm.

Modern activities in the immediate vicinity of the Site include railroad transportation, residence, and recreation. An active line of the Wheeling and Lake Erie Railroad follows the Cross Creek valley and the alignment abuts the southeastern boundary; the railroad spurs into the Site mentioned above connect to this main line (**Figure 2**). Another active rail line, the Columbus and Ohio River Railroad, passes through the Gould Tunnel near the north boundary of the Site (**Figure 2**). An electrical transmission line corridor traverses the western portion of the Site. Rural residences and small communities are present surrounding the Site; a residential area known as Kolmont lies just to the east.

Recreational use in the area includes hunting, fishing, and off-road vehicle use. Birds and mammals present in forested areas surrounding the Site are available as game. Although hunting is not permitted on the Site itself, as it is closed to the public, a private hunting club occupies a parcel abutting the southwestern edge of the Site. Cross Creek is fished recreationally, but a health advisory recommends limited consumption (Ohio EPA 2018).

3.2. PHYSICAL FEATURES

The Site is located on a ridge that is surrounded on three sides by Cross Creek, a perennial stream that discharges to the Ohio River east of the Site. Topographically, the elevation ranges from about 700 feet above mean sea level (amsl) along Cross Creek up to a high point of about 1,120 feet amsl on the ridge northeast of the main slag pile (**Figure 2**). Very steep slopes are located above the former processing plant area and near Cross Creek on the northwest side of the Site. Springs, seeps, and ephemeral-to-intermittent drainages on the Site ultimately discharge into Cross Creek.

3.3. BIOTIC COMMUNITIES AND MAJOR PLANT ASSOCIATIONS

Currently, second-growth hardwood forest covers approximately two-thirds of the Site and, as can be seen on aerial photography (**Figure 2**), the remaining one-third of the Site is devoid of vegetation due to previous land use activities. Over 190 species of trees, shrubs, vines, and herbaceous plants have been identified on the Site. Common tree species in this area include sugar maple (*Acer saccharum*), several species of oak (*Quercus* spp.), Ohio buckeye (*Aesculus glabra*), and green ash (*Fraxinus pennsylvanica*). Eastern hemlock (*Tsuga canadensis*) is present on the north-facing slopes. Common understory shrubs include poison ivy (*Toxicodendron radicans*), common elderberry (*Sambucus nigra*), black raspberry (*Rubus occidentalis*), and multiflora rose (*Rosa multiflora*). Numerous species of grasses, forbs, and ferns are also present.

Large portions of the Site have been subjected to a variety of disturbances, as described above. Some of the second-growth forest stands are present on or adjacent to areas of slag deposition or coal mine spoil piles. Additionally, the disturbed parts of the Site have several exotic and invasive plant species, including spotted knapweed (*Centaurea stoebe*), Canada thistle (*Cirsium arvense*), common dandelion (*Taraxacum officinale*), white sweetclover (*Melilotus albus*), and Johnson grass (*Sorghum halepense*).

Aquatic features on the Site (including the riparian corridor of Cross Creek, a few small tributary streams, and several small wetlands) support a variety of aquatic plants. Common plants in aquatic areas include American elm (*Ulmus americana*), American sycamore (*Platanus occidentalis*), narrowleaf willow (*Salix interior*), narrowleaf cattail (*Typha angustifolia*), and a variety of sedges (*Carex* spp.) and rushes (*Juncus* spp.).

3.4. SURFACE WATER FEATURES

Surface water within the Site, or its immediate vicinity, includes seeps, springs, wetlands, and ephemeral-to-intermittent drainages that ultimately discharge into Cross Creek. Cross Creek is a perennial stream that runs along the eastern, western, and southern boundaries of the Site (**Figure 2**). McIntyre Creek, a tributary to Cross Creek, is immediately upstream of the Site. Cross Creek's confluence with the Ohio River is approximately 3.5 miles east of the Site.

4. SPECIAL-STATUS SPECIES SCREENING ANALYSIS METHODS

4.1. SPECIAL-STATUS SPECIES IDENTIFICATION

Special-status species for the purpose of this report include:

1) Species listed by the USFWS under the ESA that have been identified by the USFWS Ohio Ecological Service Field Office through the Information, Planning, and Conservation System

(IPaC)[1] online query (**Appendix A**).

2) Species protected under the BGEPA that have been recorded within the county or within 1 mile of the Project Area and identified by the Ohio Department of Natural Resources (DNR) Division of Wildlife review of their Natural Heritage Database (**Appendix B**).

4.2. SPECIAL-STATUS SPECIES SCREENING

Based on the special-status species lists generated from the above sources, a screening analysis was performed to evaluate the potential for special-status species or designated or proposed critical habitat to occur within the Project Area. Determinations of the potential for special status-species or designated or proposed critical habitat to occur in the Project Area were based on:

- Examination of the natural history and known geographical and elevational ranges of special-status species;
- Results of an Ohio DNR review of their Natural Heritage Database, which provided records of special-status species within 1 mile of the Project Area (**Appendix B**);
- Review of other occurrence records in published or grey literature;[2] and
- Comparisons of this information with the habitats present in the Project Area.

4.3. SURVEYS WITHIN THE PROJECT AREA

WestLand has conducted numerous surveys of the Project Area between 2005 and 2015 (WestLand 2015). Two bat habitat evaluations have been conducted within the Project Area; a habitat evaluation of the forested areas for Indiana bat was conducted in 2008 (Tragus 2008) and a habitat evaluation of the derelict buildings was conducted in 2019. A preliminary bat survey was conducted to assess the potential for suitable forested habitat for the endangered Indiana bat (*Myotis sodalis*) within the Site (Tragus 2008), as this species had been identified as having some potential to occur within the Site.

In December 2018, an unidentified bat, likely of the *Myotis* genus was found deceased within the North Mill building within the Project Area by an onsite crew member (John Wise pers. comm.). Identification of the deceased bat to species was not possible without handling the specimen and collecting identification measurements of diagnostic features. Initial identification by photograph suggested the deceased bat had some potential to be a myotis based on its overall morphology.

Consequently, in January 2019, WestLand conducted a bat survey to assess the potential for roosting habitat within the four buildings in the Project Area (North Mill Building, South Mill Building, Pump House, and Electrical Building) and to identify the potential myotis encountered in December to the

[1] The IPaC list identifies special-status species and designated and proposed critical habitat that *may* occur within one or more delineated United States Geological Survey 7.5-minute quadrangles that the Project Area intersects (**Appendix A**).

[2] Grey literature includes documents that are not controlled by commercial publishers such as technical reports produced by government agencies, academic institutions, scientific research groups, or private industry.

species level. To evaluate the potential for roosting habitat, a WestLand bat biologist surveyed each of the buildings evaluating potential roosting areas, microclimate conditions within the structures, presence of bats roosting during the cold season hibernation period, and bat sign (guano or urine accumulation on the floor, body oil staining along walls or ceilings, and discarded insect debris from feeding) that would suggest bat use during the warm season. Interiors of these buildings were completely surveyed, and guano samples were collected from each of the buildings and sent to Northern Arizona University (NAU) Bat Ecology and Genetics Lab for DNA analysis to species.

5. SPECIAL-STATUS SPECIES SCREENING ANALYSIS RESULTS

5.1. SPECIES IDENTIFICATION RESULTS

Results from the IPaC query (**Appendix A**) and Ohio DNR-Division of Wildlife state-listed wildlife species (**Appendix B**) identified two USFWS special-status species, Indiana bat and northern long-eared bat, with some potential to occur in the Project Area or its vicinity. No additional species were included in the USFWS IPaC or Ohio DNR lists.

Ohio DNR Natural Heritage Database review has no records of any "unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves or parks, national wildlife refuges, parks or forests, or other protected natural areas" within 1-mile of the Project Area. There is no designated or proposed critical habitat within the Project Area (**Appendices A and B**).

5.2. SURVEY RESULTS

Bat habitat surveys were conducted to further assess the potential for the Indiana bat and northern long-eared bat to occur within the Project Area, which is discussed further in **Sections 5.2.1 and 5.2.2**

General biological surveys of the Site identified 11 mammal species, 54 bird species, 6 reptile species, and 8 amphibian species (WestLand 2015). A wide diversity of invertebrate species, primarily insects, has been observed in the Site, including butterflies and dragonflies. Over 190 species of trees, vines, and herbaceous plants were identified in the Site (WestLand 2015). No special-status species have been observed within the Project Area.

5.2.1. 2008 Bat Habitat Evaluation of Site

Tragus (2008) determined the Site and vicinity provide suitable warm season habitat for the Indiana bat because the Site includes well-developed second-growth forested areas with a high diversity of tree species, with opportunities for maternity roost sites when appropriate roost trees are present. Cross Creek, wetlands, and old strip mine ponds within and in vicinity of the Project Area provide opportunities for drinking and foraging. Cross Creek and old roads within the Site also provide additional areas for navigation and foraging for local bats.

A habitat assessment for the threatened northern long-eared bat was not included in the Tragus (2008) report, as the species was not listed at the time. However, the site characteristics identified as suitable habitat for Indiana bat also apply to habitat suitability for the northern long-eared bat, which has similar roosting and foraging requirements.

5.2.2. 2019 Bat Habitat Evaluation of Buildings

The survey of the North Mill, South Mill, and Electrical buildings determined the structures are uninsulated and open to the environment, suggesting internal temperatures would fluctuate with weather events during the cold and warm seasons. The survey also determined the Pump House is completely closed and does not provide roosting habitat, as it is inaccessible to bats.

Bat sign was observed within three of the buildings (North Mill, South Mill, and Electric buildings); however, the deceased potential myotis was not present at the time of the survey and no myotis species were observed in torpor (i.e., hibernating). Guano, in low amounts, was observed in the North Mill, South Mill, and Electrical buildings. Based on guano pellet characteristics observed in situ, guano from potentially two different species were encountered: the common big brown bat (*Eptesicus fuscus*; EPFU) and potentially from a myotis. Because guano is typically produced during the warm season when bats are actively feeding, genetic analysis of the pellets allows for identification of bats using these buildings during the warm season. Guano samples were collected from each of the buildings and were sent to Northern Arizona University (NAU) Bat Ecology and Genetics Lab for DNA analysis to species.

In addition to observing guano, WestLand detected big brown bats in torpor inside the North Mill (four individual EPFU including one mortality) and South Mill (seven individual EPFU) buildings. No myotis or other bat species were observed roosting inside any of the buildings. Based on guano deposition and accumulation patterns and low numbers of EPFU observed in torpor (11 in total), WestLand estimated that less than 100 bats utilize these building during the warm season and overall use is low during the cold season. The structure of and climactic conditions within the buildings also indicate that although bats may utilize these buildings during the winter, they do not provide conditions conducive to hibernation; the buildings are not insulated, are largely open to outside conditions, and thus do not provide stable winter temperatures for hibernating bats. The carcasses observed within the buildings provide further evidence for this conclusion.

Guano samples were genetically analyzed and all samples that were able to be identified were classified as EPFU. No myotis species were genetically identified through DNA samples. Based on WestLand's observations, these buildings appear to serve as warm and cold season roost sites for the more common EPFU, as hibernating individuals were observed during the cold season and analysis of older guano identified this species as being present in the warm season. Although a carcass of a potential myotis species was found in December 2018, no myotis were observed during the evaluation of the buildings in January 2019, and none of the guano was genetically identified to a myotis.

5.3. SCREENING ANALYSIS RESULTS

Because these bats occupy vastly different habitats during different times of the season, WestLand classifies their potential to occur depending on their habitat requirements.

Based on the screening analysis, bat habitat evaluations, and genetic analyses of guano, the potential for the two special-status species to occur within the Project Area are:

- Indiana bat (*Myotis sodalis*):
  - Possible in forested areas during the warm season; and
  - Not expected to occur in buildings during the cold season.
- Northern long-eared bat (*M. septentrionalis*):
  - Possible in forested areas during the warm season; and
  - Not expected to occur in buildings during the cold season.

The two species that could possibly occur are discussed further in **Sections 5.4 and 5.5**.

5.4. INDIANA BAT

Indiana bats are small, with a body size of 1.2 to 2.0 inches and weight of only one-quarter of an ounce, with a 9- to 11-inch wingspan (USFWS 2007b, USFWS 2009). This species belongs to the myotis genus, a group of small, insectivorous, mouse-eared bats. These bats mate in fall before hibernation and the females become pregnant in spring. Gestation period for this species is unknown but birth is thought to occur in late June or early July (USFWS 2007b). This species is discussed further regarding its taxonomy and listing history, habitat requirements, its range, and potential to occur within the Project Area.

5.4.1. Taxonomy and Listing History

The Indiana bat has undergone a range of petitioning and listing efforts beginning in 1967. The species was identified as in danger of extinction in 1967 under the Endangered Species Preservation Act of 1966 and listed as an endangered species in 1973 under the ESA due to episodes of human disturbance to hibernation roosts resulting in death of large numbers of individuals (USFWS 1976). The USFWS established critical habitat for the species in portions of Illinois, Indiana, Kentucky, Missouri, Tennessee, and West Virginia in 1976 (USFWS 1976) with final revisions in 1977 (USFWS 1977). Revision to designated critical habitat was not warranted in 2007 (USFWS 2007a). In response to listing and designation of critical habitat, a recovery plan for Indiana bat first revision was drafted in 2007 (USFWS 2007b) and the most recent 5-year review for this species was published in 2014 (USFWS 2014).

In addition to designating critical habitat, the UFSWS also ranks known hibernacula based on their hibernating populations and has issued protections and/or conservation measures where possible to

the highest priority hibernation roosts (USFWS 2007b). Priority 1 sites (inhabited by 10,000 or more bats) are considered essential to recovery of the species and Priority 2 sites (1,000-10,000 bats) contribute to the recovery and long-term conservation of the species (USFWS 2007b, Henning, Hinz Jr., and Kath 2017).

Declines in populations of hibernating bats in the eastern United States and Canada due to white-nose syndrome (WNS), a fungus introduction since at least 2006, has led to continued review of bat species. While WNS doesn't affect all bats (11 species have contracted WNS while an additional six species are carriers), Indiana bat is susceptible (USFWS 2019). In response to WNS, the Center for Biological Diversity submitted a petition to enact immediate cave closures to protect bat species from spread of WNS in 2010 (CBD 2010).

5.4.2. Habitat

Indiana bats utilize a variety of habitats that change with season. Cold season habitat for this species includes caves or abandoned mines (USFWS 2007a, USFWS 2007b, USFWS 2009). Hibernacula roosts for this species require stable temperatures below 50 F degrees and above freezing and most individuals hibernate between October through April (USFWS 2007b). Hibernation caves in Ohio tend to be in the southernmost portion of the state (USFWS 2007a, UWSFWS 2007b, USFWS 2009). Suitable hibernacula tend to have a large volume with complexity to buffer against rapid and extreme changes in external environmental temperatures (USFWS 2007b). They usually hibernate in large, dense clusters ranging from 300 to 484 bats per square foot (USFWS 2007b).

In Ohio, no known hibernation sites are ranked as Priority 1. Five hibernation cave sites are listed in Ohio with one site ranked as Priority 2, one site as Priority 3, and three sites as Priority 4 (USFWS 2007b). The documented hibernation cave sites in Ohio are located in the south-central and southwest portions of the state, more than 100 miles southwest of the Project Area. Two counties in western Pennsylvania, approximately 15 miles northeast of the Project Area, contain Priority 4 hibernacula (USFWS 2007b), and the Priority 2 hibernacula located nearest to the Project Area is in central Pennsylvania, more than 100 miles east of the Site (USFWS 2007b).

Warm season habitat for Indiana bat include roosts located within wooded areas, where they roost under loose bark on dead or dying trees (USFWS 2007a, USFWS 2007b, USFWS 2009). Males roost alone or in small groups while females roost in larger groups of up to 100+ bats. Maternity colonies may alternate roosts between trees, but occupied trees tend to have large, thick slabs of peeling bark, located in areas within canopy gaps within a forest, along fence lines or along wooded edges and are generally between 16 to 24 dbh (USFWS 2007b). The majority of occupied trees are dead or nearly dead, although they roost under naturally peeling bark of living trees, with shagbark and shellbark hickories most common. In Ohio, nearly all primary roost trees were located within 328 feet of a stream with the most common tree characteristic being loose bark (Kniowski and Gehrt 2011). Forage

habitat includes along rivers, lakes, and in the upland where flying insects (moths, beetles, flies, caddisflies, and ichneumons wasps) are located.

Generally, buildings are deemed unsuitable roosting habitat for Indiana bat (Brown and Brack 2002) and the use of buildings as maternity roosts is extremely rare (Butchkoski and Hassinger 2002). Only four out of 400 known maternity roosts occurred in man-made structures (one in abandoned church, two in houses, and one in a barn) (USFWS 2007b). During hibernation, this species is restricted to underground structures consisting primarily of natural caves (70 percent) and occasionally in man-made sites (30 percent, comprised of 24 abandoned mines, one tunnel, and one dam) (USFWS 2007b).

5.4.3. Range

Indiana bats' range includes the eastern half of the United States (USFWS 2006, USFWS 2007, USFWS 2009). Almost half of all Indiana bats hibernate in caves in southern Indiana, Missouri, and Kentucky (Luensmann 2005).

Within Ohio, this species' range is considered to be statewide (USFWS 2006, USFWS 2009). However, only a small portion of the species' total population, approximately 0.5% of total population of Indiana bats, is known to be hibernating in Ohio (USFWS 2018a). In 2007, 11 known maternity colonies and seven hibernacula with previous winter records were documented in Ohio (USFWS 2007b). None of the maternity colonies or hibernacula were located in Jefferson County, and furthermore, only two of the known hibernation sites in Ohio are still in existence based on the presence of more than one bat observed roosting within the site since recording began in 1995 (USFWS 2007b).

5.4.4. Potential to Occur Within the Project Area

The Indiana bat records in vicinity to the Project Area are as follows:

- One record of a female Indiana bat radio-tracked from a hibernaculum (no specification of the type or actual location of the hibernaculum) in Pennsylvania to a location approximately 5 miles northeast of the Site near Coketown, West Virginia (pers. comm with USFWS biologist [Tragus 2008]);
- No additional records occur within a 15-mile radius of the Site;
- No known hibernacula, including Priority hibernacula, are known to occur on or within less than 15 miles of the Site;
- No maternity roosts are known to occur on or within 15 miles of the Site; and
- The closest record of a pregnant female being captured is near Somerton in Belmont County, Ohio, approximately 40 miles southwest of the Project Area (USFWS, pers. comm. from Jeromy Applegate, Fish and Wildlife Biologist). Tragus (2008) also refers to the Coketown West Virginia hibernaculum record.

Potential for Occurrence:

Cold Season: Not expected to occur. There are no caves or abandoned underground mines located within the Site that would provide potentially suitable hibernacula during the cold season and this species is not known to hibernate in buildings (USFWS 2007b). No myotis were observed during the survey of the buildings and none of the guano samples from inside the buildings were from Indiana bat. Additionally, the buildings are open to the elements and therefore are not able to maintain the stable temperatures needed for suitable Indiana bat hibernacula; instead, temperature and conditions are likely to fluctuate with weather events. The deceased potential myotis observed in December 2018 was likely moving between roosts during the hibernation period, which this species is known to do (USFWS 2007b) and likely took temporary shelter in the building. Because no suitable hibernacula occur within the Site, the Indiana bat is not expected to occur in the Project Area during the cold season.

Warm Season: Possible. The 2008 habitat evaluation of the Project Area for Indiana bat concluded that the Site and vicinity provide suitable warm season habitat (Tragus 2008). The report describes potential roosting, foraging, movement corridors, and watering habitats as being present within the Project Area. This survey evaluated the habitat potential for the entire Project Area, but no inhabited roost trees were identified, and bat inventory surveys were not conducted. There is a possibility that Indiana bats could forage in the Project Area along the primitive road system and may roost in the Site if appropriate roost trees are present. Buildings have been shown to rarely serve as warm season roosts for Indiana bat (USFWS 2007b) although no sign of Indiana bats were confirmed in any of the buildings in the Project Area. The deceased potential myotis observed in the North Mill building was observed in the cold season and older guano that would have been deposited in the warm season was not confirmed as coming from a myotis. Any potential roost sites in the Project Area are expected to occur in appropriate tree species.

Effects Analysis:

During the cold season, this species is not expected to be present in the Project Area based on the lack of appropriate hibernation habitat (no available underground workings or alternative artificial structures similar to typical hibernation sites), no Indiana bats were observed roosting during surveys of the buildings during their typical hibernation period, and planned activities are scheduled to occur in buildings determined not to provide suitable hibernation conditions (stable temperatures).

During the warm season, this species has some potential to occur in the Project Area. Impacts to individuals of the species are only expected to occur as a result of road improvements that consist of widening (from 8 feet to 15 feet) the existing primitive roads and would primarily require removal of shrubs and saplings to allow access for future remediation activities of the Site. The total area to be disturbed from road improvement is minimal (no more than 1.7 acres), and the removal of larger trees (greater than 10 inches dbh) along the existing roadways is expected to be minimal. Moreover, tree clearing will occur outside of potential warm season maternity periods (June to August) (USFWS

2007b, USFWS 2009). The majority of the forested area in the Project Area will remain in the existing condition and proposed work will be performed along existing roadways within the Site that have already been modified. Because of the minimal amount of habitat expected to be affected by the Project and the avoidance of tree clearing activities during the maternity period, the potential impacts of the Project are expected to be insignificant. Therefore, the Project may affect, but is not likely to adversely affect the Indiana bat.

5.5. NORTHERN LONG-EARED BAT

Northern long-eared bats are medium-sized, with body length of 3.0 to 3.7 inches and wingspan of 9 to 10 inches (USFWS 2015a, USFWS 2015b). Northern long-eared bats forage on flying insects (moths, beetles, caddisflies, and flies) in the understory of forested areas. These bats breed in late summer or early fall before hibernation and females are pregnant in spring and young are born from late May to late July (USFWS 2015b). This species is discussed further regarding its taxonomy and listing history, habitat requirements, its range, and potential to occur within the Project Area.

5.5.1. Taxonomy and Listing History

The northern long-eared bat was listed as a threatened species in April 2015 (USFWS 2015a). No critical habitat is proposed for this species. As part of the rule listing the species under the ESA, the USFWS developed a section 4(d) rule that describes measures that are necessary and advisable to provide for the conservation in the areas of which it occurs (USFWS 2015a, USFWS 2016a, USFWS 2016b, USFWS 2018b). The 4(d) rule for this species prohibits "purposeful take" throughout the species' range, except where removal from human structures (defined as houses, garages, barns, sheds and other buildings designed for human entry), removal of hazardous trees for protection of property and human life, when in the defense of human life (including public health monitoring), and authorized capture and handling for recovery purposes by properly permitted individuals (USFWS 2016b). The specific requirements of the 4(d) rule vary whether the specific area occurs within or outside of WNS zone. Ohio, and much of the eastern United States, occur within the WNS Zone (USFWS 2016b). Specific "take" restrictions are involved whether planned activities are within or outside of known hibernacula (USFWS 2016a, USFWS 2018b) and are described as follows.

Inside Hibernacula:

- Take is prohibited in areas affected by WNS unless permitted.
- Take inside hibernacula includes disturbing or disrupting hibernating individuals or physical alteration of the hibernaculum's entrance or environments that will impair essential behavioral patterns including sheltering.

Outside Hibernacula:

- Incidental take (defined as any taking otherwise prohibited, if such taking is incidental to, and

not the purpose of, an otherwise lawful activity) resulting from the removal of hazardous trees for the protection of human life and property is not prohibited.

- Incidental take resulting from activities other than tree removal (defined as cutting down, harvesting, destroying, trimming, or manipulating in any way other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by this species) is not prohibited in areas outside of WNS zone.
- Incidental take resulting from tree removal is prohibited if it:
  - Occurs within a 0.25-mile radius of known hibernacula (defined as locations where this species has been detected during hibernation or at the entrance during fall swarming or spring emergence).
  - Cuts or destroys known occupied maternity roost trees (defined as that have had females or juveniles tracked to them or the presence of females or juveniles is known as a result of other methods) or other trees within a 150-foot radius of known maternity roost trees during the pup season (June 1 through July 31).

5.5.2. Habitat Requirements

Northern long-eared bats utilize a variety of habitats that change with season. This species hibernates in caves and abandoned mines with stable temperature (below 50 degrees F), high humidity, and no air currents, between October/November to March/April (USFWS 2015a, USFWS 2015b). They roost in small crevices, small holes, or cracks. Hibernation period occurs from as early as October to as late as April. They have occasionally been observed roosting in sites that resemble underground habitat including an abandoned railroad tunnel, a stormwater sewer, a hydroelectric dam, and a hollow tree (USFWS 2016a). They have been known to move between hibernacula throughout the winter (USFWS 2015a, USFWS 2016a).

Warm season habitat for the northern long-eared bats includes roosts under bark or in cavities or crevices of live and dead trees (USFWS 2015a, USFWS 2015b). Roost trees consist primarily of hardwoods with a variety of diameters with the majority of maternity roost trees ranging between 4- to 10-inch dbh (80 percent of 400 documented sites) (USFWS 2015a). This species has also been observed in artificial roosts in the warm season including buildings (one abandoned church, two houses, and one barn), bat houses, utility poles, and behind window shutters (USFWS 2016a). This species is known to switch tree roosts often (USFWS 2015a). A study in north-central Ohio found that this species primarily roosted in dead trees under exfoliating bark (Krynak 2010). The majority of the roost trees (71%) were within oaks (*Quercus* spp.) while other roost tree species included white ash (*Fraxinus americana*), black walnut (*Juglans nigra*), Hickory (*Carya* spp.), sugar maple (*Acer saccharum*), and black locust (*Robinia pseudoacacia*) (Krynak 2010). Males often roost in cooler places like caves, mines, and man-made structures including buildings, while females form maternity colonies of a few individuals to around 60 bats, often in cracks, cavities, and under bark. Forage habitat includes the understory of forested areas where flying insects (moths, beetles, caddisflies, and flies) are located.

5.5.3. Range

Northern long-eared bats range includes the eastern half of the United States and throughout much of Canada (USFWS 2015a, USFWS 2015b).

Within Ohio, this species' range is considered to be statewide (USFWS 2015b). Federal Register states that there are seven known hibernacula in Ohio with one or more winter records, two of which are in abandoned mines (USFWS 2015a). However, the USFWS 4(d) rule lists a total of 32 known hibernacula and four occupied maternity roost trees in Ohio (USFWS 2015b). The specific locations of known roosts are not provided.

There are no population size estimates for northern long-eared bats in Ohio; however, it is estimated that there are several million bats (consisting of several bat species) within six mid-western states (including Ohio) after taking into consideration effects of WNS (USFWS 2015a). WNS was first detected in Ohio the winter of 2010-2011 and known northern long-eared bat hibernacula numbers declined by 90 to 100 percent (USFWS 2015a). Eleven bat species have been confirmed with WNS and an additional six species have the fungus but did not contract WNS (USFWS 2019).

5.5.4. Potential to Occur Within the Project Area

Ohio DNR does not have any heritage records of the northern long-eared bat within 1 mile of the Project Area (**Appendix B**), but the Project Area is within the species' current range. Therefore, the habitat characteristics present within the Site were assessed for their suitability as northern long-eared bat cold season and warm season habitat.

The 2019 survey by WestLand during the cold season at the buildings did not confirm use by northern long-eared bats through genetic analysis of guano or observation of roosting bats. The buildings that were accessible to bats were open to the elements and, therefore, lacked thermal stability required by this species during hibernation. Based on these factors, these buildings do not provide appropriate habitat for the northern long-eared bat.

Potential for Occurrence:

Cold Season: Not expected to occur. Natural limestone caves are not present on the Site, and there are no openings into any former underground coal mines on the Site to provide potentially suitable hibernacula this species is known to use during the cold season (Tragus 2008). This species occupies hibernation sites with stable temperatures between 32 and 50 degrees F, with high humidity, and no air flow (USFWS 2016a). The buildings in the Project Area are open to the elements; therefore, internal microclimate conditions are likely to fluctuate along with weather events, and would not provide the conditions required for northern long-eared bat hibernacula. The deceased potential myotis observed in December 2018 was likely moving between roosts during the hibernation period, which this species is known to do (USFWS 2016a), and likely took temporary shelter in the building. However, the

features of the deceased potential myotis indicate it was unlikely to be a northern long-eared bat, no guano samples from the January 2019 survey were identified as northern long-eared bat or any other myotis species, and there was no further evidence of myotis roosting within the buildings. Therefore, the northern long-eared bat is not expected to occur in the Project Area during the cold season.

Warm Season: Possible. There is a possibility that northern long-eared bats could forage or roost in trees within the Project Area. Buildings (primarily barns and sheds) have been shown to occasionally serve as roosts for male northern long-eared bat in the warm season (USFWS 2016a). However, none of the guano samples within the buildings were identified as northern long-eared bat or any other myotis species which suggests that this species would not use the buildings as a warm season roost. Older guano collected within the buildings that would have been deposited in the warm season was not confirmed as coming from a myotis. Any potential roost sites in the Project Area are expected to occur in appropriate tree species.

Effects Analysis:

During the cold season, this species is not expected to occur in the Project Area based on the lack of appropriate hibernation habitat (no available underground workings or alternative artificial structures similar to typical hibernation sites). No northern long-eared bats were observed roosting during surveys of the buildings during their hibernation period and genetic analyses of guano did not indicate that the species used buildings within the Project Area. These buildings do not provide suitable hibernation conditions (stable temperatures, high humidity, and no airflow).

During the warm season, this species has some potential to occur in the Project Area. Impacts to individuals of the species are only expected to occur as a result of road improvements that consist of widening (from 8 feet to 15 feet) the existing primitive roads and would primarily require removal of shrubs and saplings to allow access for future remediation activities of the Site. The total area to be disturbed from road improvement is minimal (no more than 1.7 acres), and the removal of larger trees (greater than 10 inches dbh) along the existing roadways is expected to be between 20-30 trees. Tree clearing will also occur only within the winter season (October 1 to March 31), a standard seasonal clearing period established to avoid impacts to roosting bats. There is only a total of seven known hibernacula in Ohio, none of which occur within 0.25 miles of the Project Area. There is only a total of four known occupied maternity roosts in Ohio, none of which occur in the vicinity of the Project Area.

Building demolition is not anticipated to affect the species, as only rare cases of roosting in human structures has been recorded, and those instances appear to be limited to males, while maternity colonies are formed in tree roots, cracks and cavities (USFWS 2015a). The guano genetics analysis did not identify the presence of any northern long-eared bats within the buildings on the Site. Therefore, it is unlikely the species would roost in the buildings during the warm season, and effects to individuals of the species are expected to be discountable.

Because the amount of habitat expected to be affected by the Project is minimal and tree clearing activities will be conducted at times to avoid the active period, the potential impacts of the Project are expected to be insignificant. Therefore, the Project may affect, but is not likely to adversely affect the northern long-eared bat. Moreover, the specifics of the Project activities that may affect the species (i.e., tree clearing) fall within the requirements of the 4(d) rule associated with the species and thus are explicitly allowed and exempt from take prohibitions under the ESA.

6. CONCLUSIONS

Two federally-listed species, the Indiana bat and the northern long-eared bat, are reported by USFWS to occur in Jefferson County, Ohio. The Project Area occurs within the known range of both bat species and contains potentially suitable warm season habitat (forested areas) for foraging and potential roosting, but the Project Area does not have appropriate cold season habitat (abandoned underground mines or caves or structures with stable temperatures) for hibernation. There is no designated critical habitat for either species at or near the Site. WestLand's investigations did not find evidence of either of these myotis species utilizing the buildings during the warm season (through guano analyses) or roosting during the cold season (observations of bats in torpor).

Based on the analyses described in this report, the Project may affect, but is not likely to adversely affect the Indiana bat.

The Project may affect, but is not likely to adversely affect, the northern long-eared bat. The specifics of the Project activities that may affect the species (i.e., tree clearing) fall within the requirements of the 4(d) rule associated with the species and thus are allowed and exempt from take prohibitions under the ESA.

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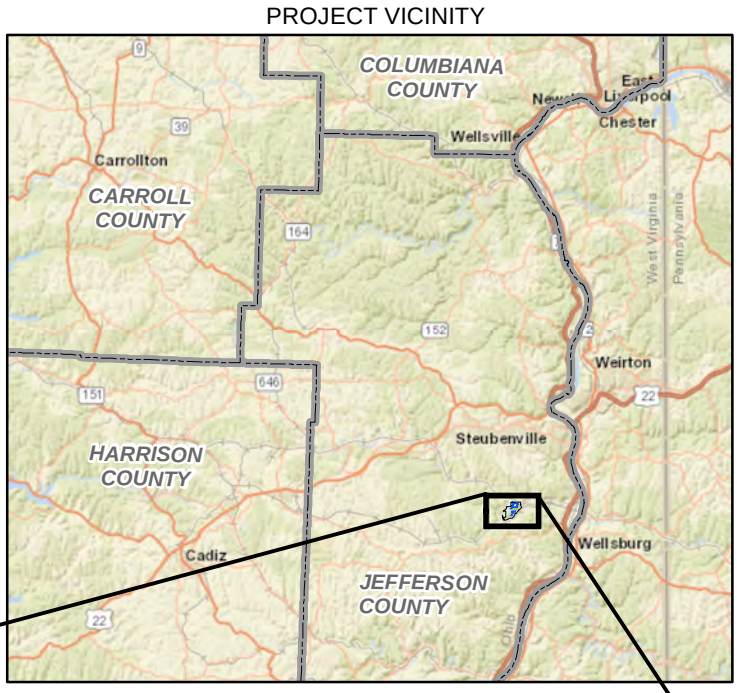
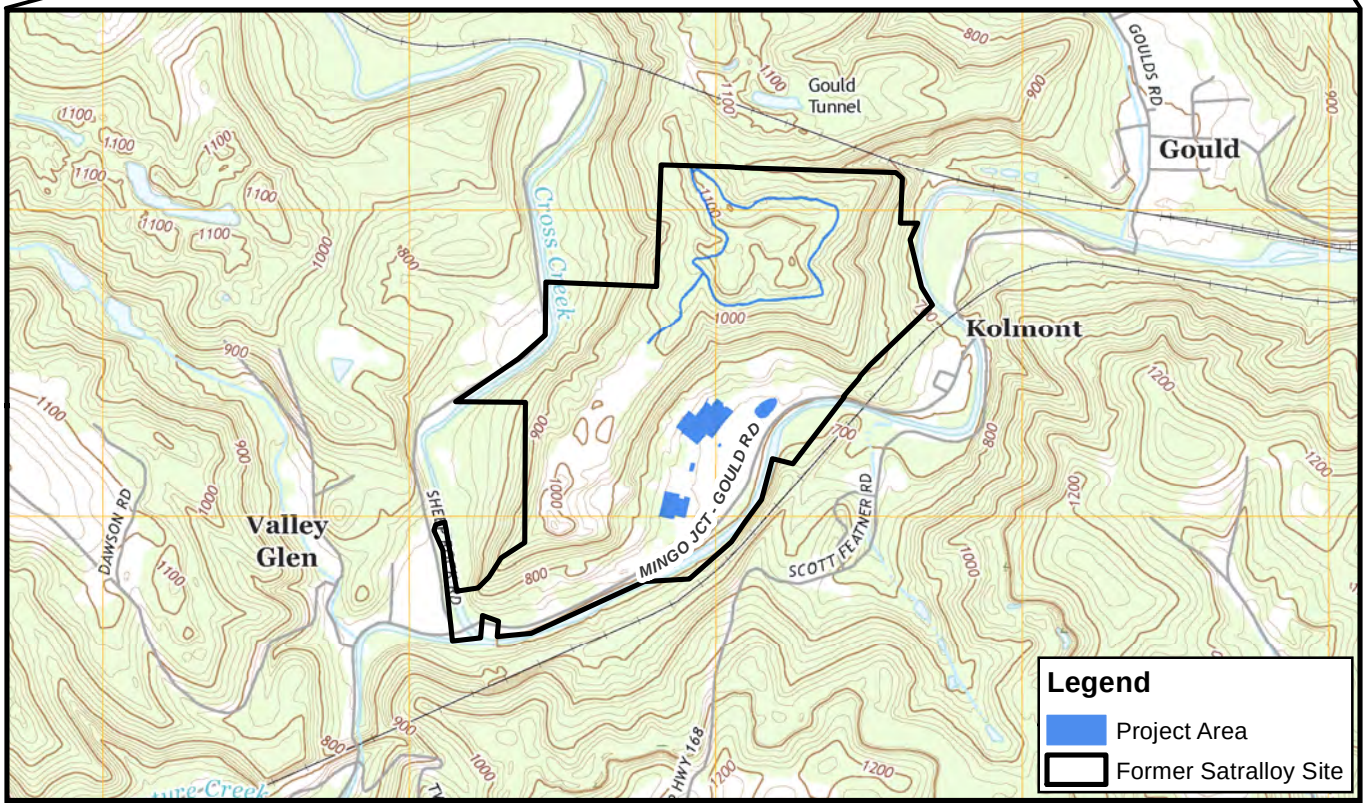
FIGURES



Approximate Scale 1 Inch = 10 Miles



Project Area in:
T6N, R2W, Portions of Sections 8, and 9,
Jefferson County, Ohio
Steubenville West USGS 7.5' Quadrangle (2016)
Data Source: Golder
Image Source: ArcGIS Online, World Street Map

WestLand Resources

N

0 1,000 2,000 Feet

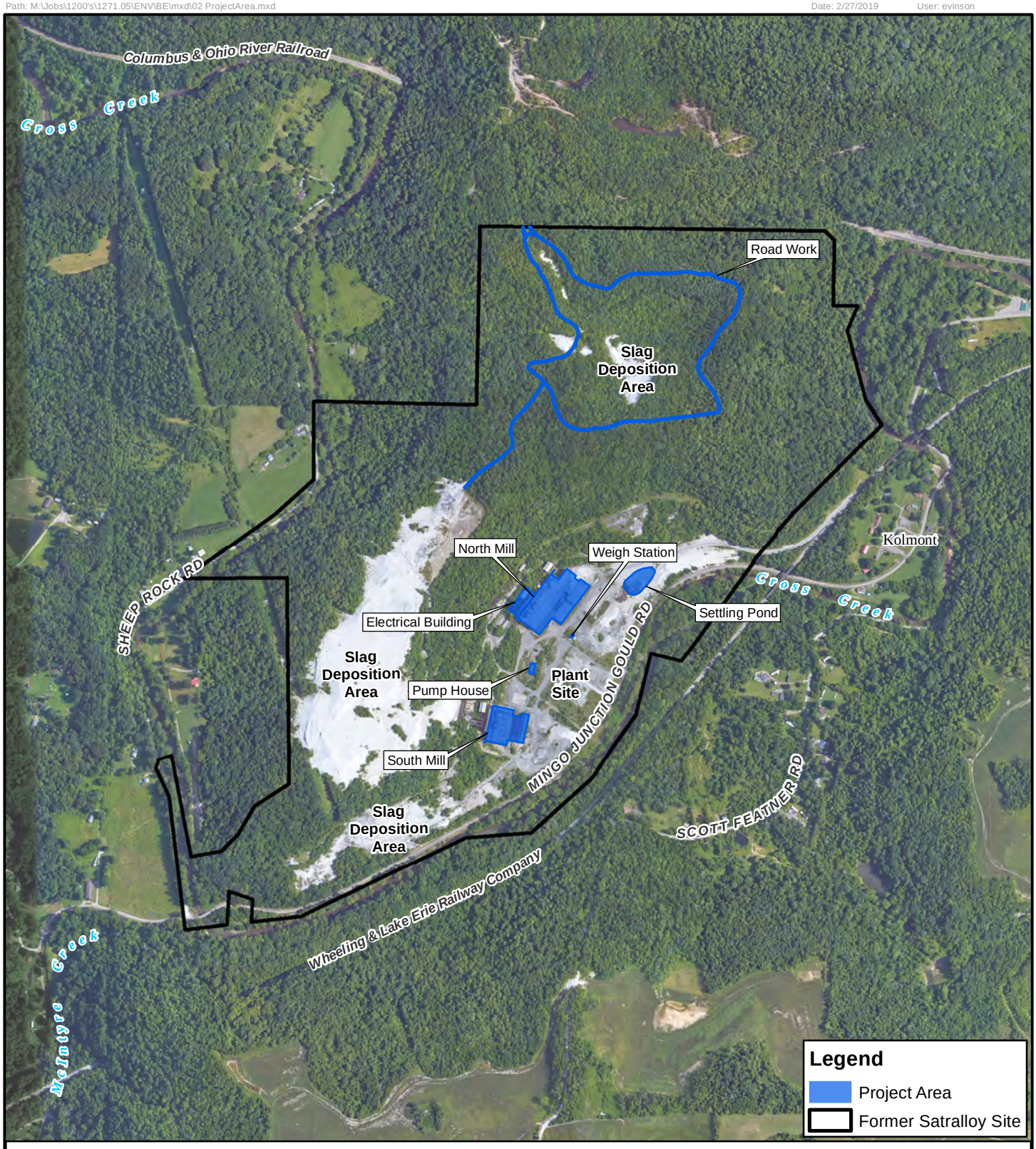
0 300 600 Meters

CYPRUS AMAX MINERALS CORPORATION

Biological Evaluation

VICINITY MAP
Figure 1

Path: M:\Jobs\1200's\1271.05\ENV\BE\mxd\02 ProjectArea.mxd Date: 2/27/2019 User: evinson



Project Area in:
T6N, R2W, Portions of Sections 8, and 9,
Jefferson County, Ohio
Data Source: Golder
Image Source: Google Earth 06/08/2016

CYPRUS AMAX MINERALS CORPORATION

Biological Evaluation

PROJECT AREA
Figure 2

WestLand Resources

N

0 500 1,000 Feet

0 150 300 Meters

APPENDIX A

USFWS IPaC Online Query

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To:
Consultation Code: 03E15000-2019-SLI-0354
Event Code: 03E15000-2019-E-00424
Project Name: Satralloy Nationwide Permit

December 06, 2018

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
(614) 416-8993

Project Summary

Consultation Code: 03E15000-2019-SLI-0354

Event Code: 03E15000-2019-E-00424

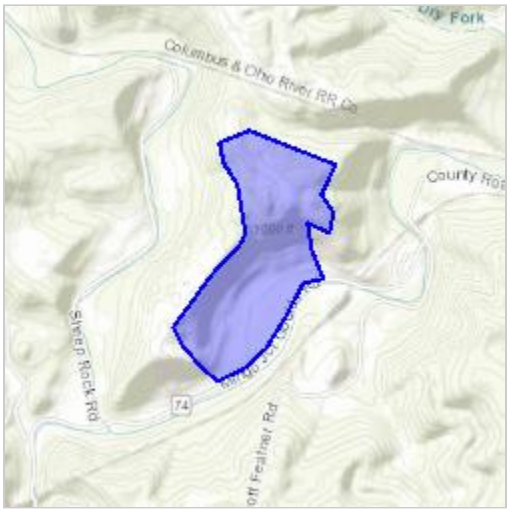
Project Name: Satralloy Nationwide Permit

Project Type: LAND - RESTORATION / ENHANCEMENT

Project Description: NWP 14 and NWP 38

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/40.31260118419044N80.66975964122199W



Counties: Jefferson, OH

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

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

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

---

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

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Incidental take of the northern long-eared bat is not prohibited at this location. Federal action agencies may conclude consultation using the streamlined process described at https://www.fws.gov/midwest/endangered/mammals/nleb/s7.html Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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

APPENDIX B

Ohio DNR Natural Heritage Program Database Review

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife
Michael R. Miller, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

13 December 2018

Claire Phillips
WestLand Resources, Inc.
4001 E. Paradise Falls Dr.
Tucson, AX 85712

Dear Ms. Phillips,

I have reviewed the Natural Heritage Database for the Former Satralloy Site Remediation project area, including a one mile radius, in Cross Creek Township, Jefferson County, Ohio. The numbers/letters on the list below correspond to the areas marked on the accompanying map. Common name, scientific name and status are given for each species.

A. Fernwood State Forest – ODNR Division of Forestry
1. *Rhinichthys cataractae* – Longnose Dace, species of concern

We are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves or parks, national wildlife refuges, parks or forests, or other protected natural areas within a one mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

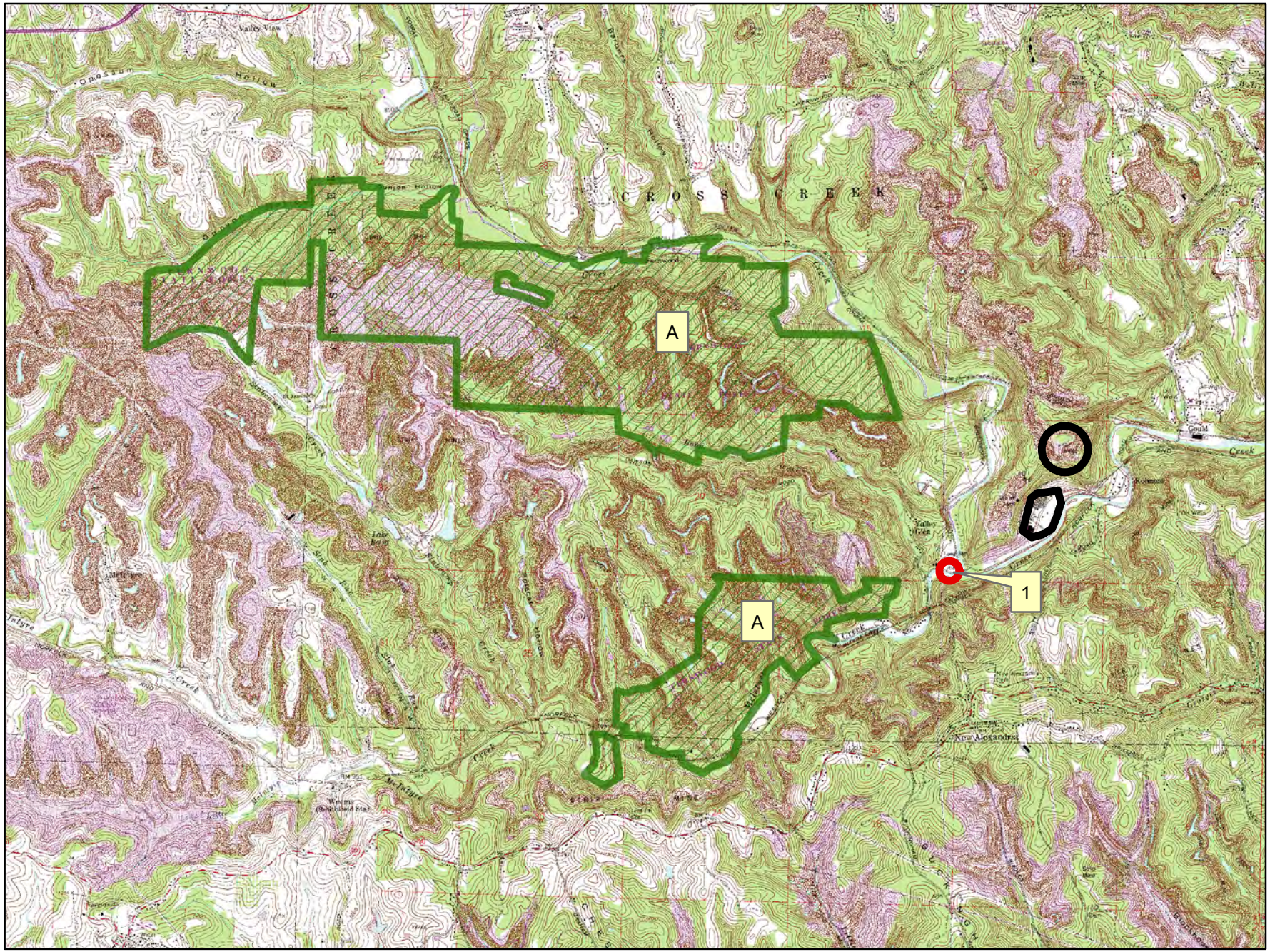
Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

Debbie Woischke

Debbie Woischke
Ohio Natural Heritage Program

Former Satralloy Site Remediation



APPENDIX C

Cultural Resources Concurrence Letter

OHIO HISTORY CONNECTION

In reply refer to
2007-JEF-43902-2

February 19, 2019

Christopher Rife
Westland Resources Inc.
4001 East paradise Falls Drive
Tucson, AZ 85712

Dear Mr. Rife:

RE: Satralloy Site Remediation, Cross Creek Township, Jefferson County, Ohio

This is in response to correspondence, received on January 30, 2019, regarding the proposed site remediation at the above location in Jefferson County, Ohio. My comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated regulations at 36 CFR Part 800.

Based on the information submitted, I concur with the opinion that the proposed action will not affect properties listed in or eligible for listing in the National Register of Historic Places. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. Should this happen, this office should be notified as required by 36 CFR 800.13.

Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs. If you have any questions, please contact me at (614) 298-2000, or by email at nyoung@ohiohistory.org

Sincerely,

Nathan J. Young, Project Reviews Manager
Resource Protection and Review

APPENDIX D

Nationwide Permit Pre-Construction Notification Form

U.S. Army Corps of Engineers (USACE)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 01-08-2018

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - William Middle - E. Last - Cobb	First - Christopher Middle - E. Last - Rife
Company - Cyprus Amax Minerals	Company - WestLand Resources, Inc.
E-mail Address - wcobb@fmi.com	E-mail Address - crife@westlandresources.com
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- 333 North Central Avenue	Address- 4001 East Paradise Falls Drive
City - Phoenix State - AZ Zip - 85004 Country - USA	City - Tucson State - AZ Zip - 85712 Country - USA
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business 602-366-7826 c. Fax	a. Residence b. Business 520-206-9886 c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Christopher Rife to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

WR Cobb — SIGNATURE OF APPLICANT

3/13/19 — DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Former Satralloy Site Remediation and Road Improvement

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Wetland S3, Wetland S4, Trib LL, etc.: all discharge to Cross Creek	Address 4243 Country Road 74 (Gould Road)
15. LOCATION OF PROJECT	City - Mingo Junction State- OH Zip- 43938
Latitude: ◦N 40.310 Longitude: ◦W 80.671	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID Municipality Cross Creek Township

Section - 8 Township - 6 North Range - 2 West

17. DIRECTIONS TO THE SITE

From central Mingo Junction, Ohio, proceed south on Commercial Avenue. Continue straight on Clifton Avenue as it bears to the right (west) and passes under State Highway 7. Clifton Avenue becomes County Road 74 (Gould Road) at this point. Follow County Road 74 approximately 4.7 miles to the site. Note that in Gould, 2.8 miles from Mingo Junction, Country Road 74 intersects with County Road 28 at a T. Turn left at this point to continue on Country Road 74. Pass over Cross Creek on a bridge just south of Gould, and continue on County Road 74 to another T intersection, with Scott Featner Road. Turn right, pass over Cross Creek on another bridge and through the settlement of Kolmont. The site is on the right approximately 0.8 miles past the bridge. Access to the site is restricted by 24-hour security. See Attachment 1 for map to site.

18. Nature of Activity (Description of project, include all features)

See Attachment 2, Block 18.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

See Attachment 2, Block 19.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

See Attachment 2, Block 20.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See Attachment 2, Block 23.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- The streams and wetlands that will be filled for the Project are entirely contained within the Applicant's Property

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

WE Cuff — SIGNATURE OF APPLICANT
3/13/19 — DATE
SIGNATURE OF AGENT
2019-03-13 — DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

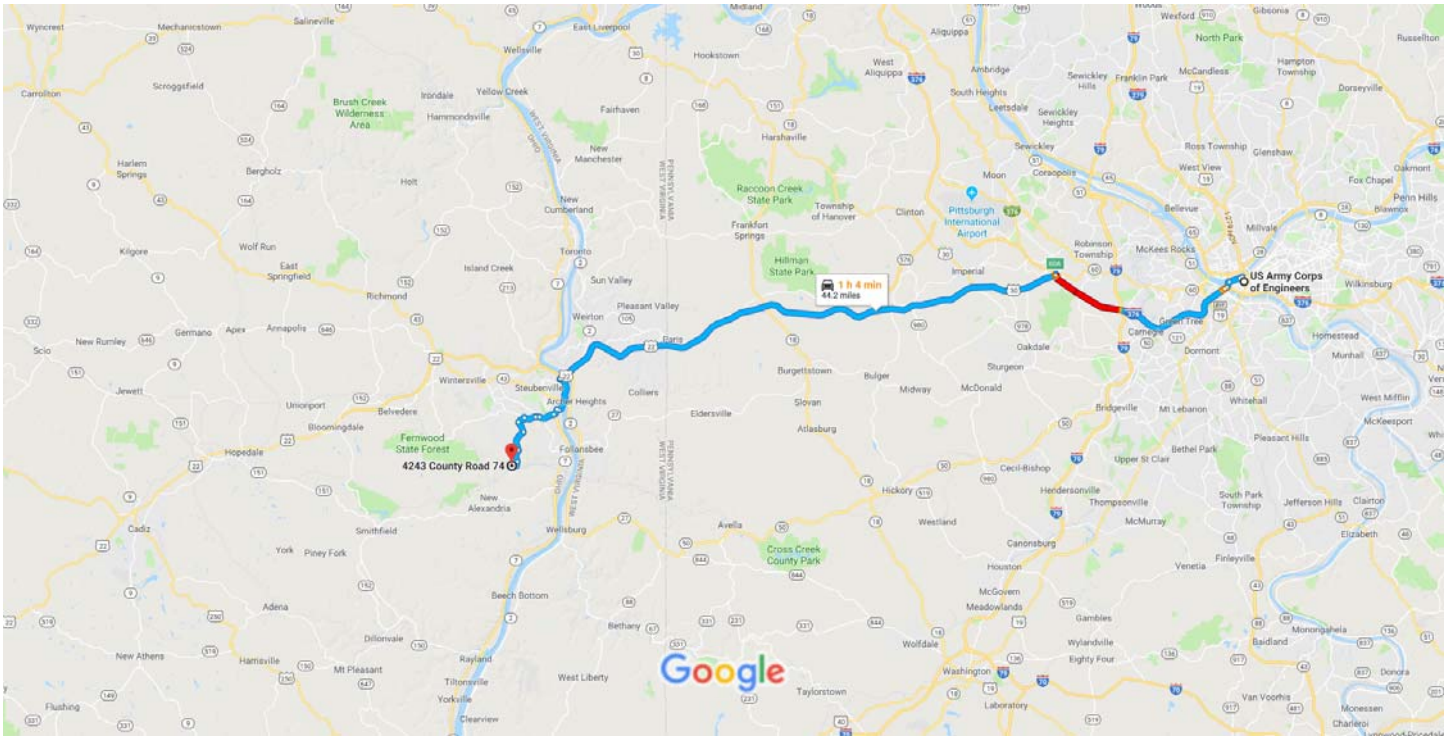
18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Google Maps

US Army Corps of Engineers to 4243 Co Rd 74, Mingo Junction, OH 43938

Drive 44.2 miles, 1 h 4 min

Direction to the Former Satralloy Site



Map data ©2018 Google 2 mi

US Army Corps of Engineers

1000 Liberty Ave, Pittsburgh, PA 15222

Get on I-376 W/Fort Pitt Bridge from 10th St Bypass

4 min (1.2 mi)

1. Head west on Liberty Ave toward 10th St

161 ft

2. Turn right onto 10th St

0.2 mi

3. Turn left onto Fort Duquesne Blvd

0.1 mi

4. Continue straight onto 10th St Bypass

0.6 mi

5. Keep right at the fork, follow signs for I-376 W/Airport/Fort Pitt Bridge and merge onto I-376 W/Fort Pitt Bridge

0.3 mi

Follow I-376 W and US-22 W to Island Creek Township. Take the University Blvd/Downtown exit from US-22 W

36 min (36.4 mi)

6. Use the left lane to merge onto I-376 W/Fort Pitt Bridge

0.1 mi

7. Keep left to continue on I-376 W

9.8 mi

8. Take exit 60A for US-22 W/US-30 W toward Weirton

0.2 mi

9. Continue onto US-22 W/US-30 W
   - Continue to follow US-22 W
   - Passing through West Virginia
   - Entering Ohio

26.2 mi

10. Take the University Blvd/Downtown exit toward OH-7 S

0.1 mi

Continue on OH-7 S/Dean Martin Blvd/Ohio River Scenic Byway. Take Lincoln Ave, Coal Hill Rd, Goulds Rd and Co Hwy 28 to Co Rd 74 in Cross Creek Township

14 min (6.7 mi)

11. Continue onto OH-7 S/Dean Martin Blvd/Ohio River Scenic Byway

1.7 mi

12. Turn right onto S 3rd St

33 ft

13. Turn left onto Slack St

449 ft

14. Turn left onto S 4th St

0.3 mi

15. Continue onto Lincoln Ave

0.8 mi

16. Turn left to stay on Lincoln Ave

0.2 mi

17. Continue onto Coal Hill Rd

0.6 mi

18. Turn left onto Goulds Rd

0.4 mi

19. Turn left to stay on Goulds Rd

0.5 mi

20. Turn right onto Cty Rd 28/Goulds Rd
    - Continue to follow Goulds Rd

1.0 mi

21. Goulds Rd turns slightly right and becomes Co Hwy 28

0.6 mi

22. Continue onto Goulds Rd

0.4 mi

23. Continue onto Co Rd 74

49 ft

4243 Co Rd 74

Mingo Junction, OH 43938

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Block 18. Nature of Activities

The proposed activities fall into three categories – building demolition, stormwater control, and road improvements, described in more detail below.

Building Demolition

The Applicant plans to demolish the North Mill Building, the South Mill Building, two small support buildings, and an adjacent truck scale in accordance with the Work Plan. The structures are derelict and present a health and safety hazard due to their deteriorating condition and construction materials (including asbestos-containing building materials and lead-based paint), as well as accumulated dust and ash from the prior smelter operations. Potential Waters adjacent to these structures will be partially or wholly filled as part of the demolition activities.

Surface Water Management

The Applicant plans to construct a settling pond adjacent to an existing surface water management channel, divert flows from the channel into the settling pond, and release flows back into the channel further downstream. The settling pond will better manage the precipitates and solids that are currently accreting in the channel, decreasing the channel's ability to convey flows downstream. The settling pond is designed to slow surface water flows and allow the majority of precipitate and sediments to settle out. The settling pond will be constructed adjacent to the existing channel, rather than within, because physical constraints (e.g., buried utilities under the channel) prevent modification of the channel to the extent necessary to facilitate settlement. Flow from the settling pond will return to the channel and ultimately discharge to Cross Creek. A portion of the surface water management channel and associated wetland (Tributary LL and Wetland LL) will be filled to accommodate the diversion. The section of the channel between the inflow and outflow will remain in place to catch run-off in the immediate vicinity and will continue to discharge to the downstream outfall.

Road Improvements

The Applicant plans to improve an existing, deteriorated primitive road encircling a coal mine area located within the northern portion of the Site. A portion of the former coal mine was used to store slag (waste material from the processing plant). The improved road will allow access to that area.

The existing road is currently approximately 4 to 8 feet wide and is significantly degraded by erosion and vegetation. The roadbed will be widened to 15 feet and the surface improved to accommodate the large equipment needed to support the planned remediation activities at the Site. The planned road improvements include trimming vegetation, leveling the ruts with gravel, grading the surface, and widening the roadbed. The majority of vegetation removal would consist of shrubs and saplings (less than 3 inches diameter at breast height [dbh]), but some larger trees (dbh of 10 inches or more) would also need to be removed. The larger trees would be avoided to the maximum extent possible while maintaining an alignment that can be negotiated

by the expected equipment. Tree removal activities will occur between October 1 and March 31 to avoid potential impacts to roosting habitat for two bat species listed on the Endangered Species Act (ESA) that have the potential to occur within the vicinity of the site. Two wetlands that extend onto the existing road would be filled by the road widening activities.

A Biological Evaluation of the project (**Appendix B**) documents the potential presence of ESA-listed species and the project's potential to affect those species. The proposed activities may affect, but are not likely to adversely affect species listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service under their authority through the ESA. The proposed activities will also not affect any cultural resources listed or eligible for listing on the National Register of Historic Places, as documented in the attached letter from the Ohio State Historic Preservation Office (**Appendix D**).

Block 19. Project Purpose

The overall purpose of the project is to conduct activities in support of remediation activities for the former Satralloy Site as required by a Consent Order for Preliminary Injunction (COPI) with the Ohio Environmental Protection Agency (OEPA). The COPI requires that physical and chemical hazards at the site are addressed to protect human health and the environment. As described in Blocks 18 and 20, each of the proposed fill activities is a component of the required activities defined in the project Work Plan developed for and approved by the OEPA.

The proposed Project activities qualify for coverage under Nationwide Permit No. 38, Cleanup of Hazardous Waste, based on the requirements of the COPI with OEPA. Mitigation is not proposed because the wetland fill area is below the mitigation threshold of 0.10 acres defined in General Condition 23 and impacts from remediation activities conducted under NWP 38 are considered self-mitigating.

Block 20. Reason for Discharge

Building Demolitions

- A 0.0256-acre portion of Wetland QQ will be filled as part of building demolition activities.
- Wetland RR (totaling 0.007 acres) will be filled as part of building demolition activities
- Tributary QQ (totaling 0.002 acres) will be filled as part of building demolition activities

Surface Water Management

- A 0.006-acre portion of Tributary LL and a 0.003-acres portion of Wetland LL will be filled as flows from Tributary LL are diverted into a settling pond to better manage flows with high levels of precipitate and sediment. Flows will exit the settling pond into a downstream portion of Tributary LL.

Road Improvements

- Wetland S3 (totaling 0.033 acres) will be filled to support road improvement activities. The road improvement activities are being conducted to enable suitable equipment to access portions of the former Satralloy site designated for remediation. The road is currently only suitable for light off-road vehicle traffic, and would not support the large vehicles and equipment needed to conduct future remediation activities.
- Wetland S4 (totaling 0.011 acres) will be filled to support road improvement activities. The road improvement activities are being conducted to enable suitable equipment to access portions of the former Satralloy site designated for remediation. The road is currently only suitable for light off-road vehicle traffic, and would not support the large vehicles and equipment needed to conduct future remediation activities.

Block 23. Description of Avoidance, Minimization, and Compensation

The building demolition, road improvement, and stormwater management activities (the Project) have been designed avoid impacts to potential waters of the U.S. to the maximum extent possible while meeting the requirements of the Consent Order for Preliminary Injunction described in Block 19. Ultimately, the planned fill of potential Waters of the U.S. is needed to protect human health and the environment by removing physical and chemical hazards and managing stormwater flow. The PJD submitted with this package (**Appendix A**) includes all potential waters of the U.S. delineated within the former Satralloy site that would be impacted by Project activities. Compensatory mitigation is not required, as the proposed activities would fill less wetland area than the threshold area (0.10 acres) referenced in General Condition 23 and Project activities conducted for remediation purposes are considered self-mitigating.

APPENDIX E

Compliance with Ohio CWA Section 401 Program

APPENDIX E. COMPLIANCE WITH OHIO 401 PROGRAM

Table 1. General Limitations and Conditions for All OEPA Certified Nationwide Permits

General Condition	Applicability/Compliance
A(1). When practicable, bottomless or buried culverts are required when culvert size is greater than 36" in diameter. This condition does not apply if the culverts have a gradient of greater than 1% grade or installed on bedrock. A buried culvert meant that the bottom 10% by dimension shall be buried below the existing stream bed elevation.	The Application is aware of these conditions and will comply with them if a culvert larger than 30" is required.
A(2). The culvert shall be designed and sized to accommodate bankfull discharge and match the existing depth of flow to facilitate the passage of aquatic organisms.	The Applicant is aware of these conditions and will comply with them in the event a culvert is deemed necessary.
A(3). When practicable, culverts shall be installed at the existing streambed slope, to allow for the natural movement of bedload and aquatic organisms.	The Applicant is aware of these conditions and will comply with them in the event a culvert is deemed necessary.
B(1). Unless subject to a more specific storm water NPDES permit, all best management practices for storm water management shall be designed and implemented in accordance with the most current version of the NPDES construction general permit.	The Applicant will be working under a general construction SWPPP and will use best management practices.
B(2) Sediment control and erosion control measures and best management practices must be designed , installed, and maintained in effective operation condition at all times during construction activities.	The Applicant will be working under a general construction SWPPP and will use best management practices.
B(3) For perennial and intermittent streams, in-stream sediment control measures shall not be utilized, with the exception of turbidity curtains parallel to the stream bank, for the purposes of sediment collection. All erosion and sediment control measures shall be entirely removed and the natural grade of the site restored once construction project is completed.	In-stream sediment control measures will not be used. The settling pond is a sediment control measure but is not planned for removal.
B(4) avoid all water resources and associated burffers/riparian areas shall be demarcated in the field and protected with suitable materials (e.g. silt fencing, snow benching, signage) prior to soil disturbance These materials shall remain in place and be maintained throughout the construction process and shall be entirely removed once construction is completed.	Project construction has been designed to avoid disturbance to the maximum extent possible, especially within Waters of the U.S. Fill of wetlands not covered under the NWP 38 will be flagged to alert construction crews as to the edges of wetland areas. No riparian areas will be affected by the Project.
B(5). Disturbance and removal of vegetation from the project construction area is to be avoided where possible and minimized to the maximum extent practicable.	The removal of vegetation will be avoided to the maximum extent possible. No Project activities will impact riparian areas.
B(6). All dredged materials placed at an upland site shall be controlled so that sediment run-off to adjacent surface waters is minimized to the maximum extent possible.	The Applicant will manage dredged materials as to avoid sediment run-off.
B(7). Straw bales shall not be used as a form of sediment control unless used in conjunction with another structural control such as silt fencing. Straw bales may be utilized for purposes of erosion control such as ditch checks.	The Applicant's use of straw bales, if needed, will be done in compliance with this condition.

Table 1. General Limitations and Conditions for All OEPA Certified Nationwide Permits

General Condition	Applicability/Compliance
B(8). Heavy equipment shall not be placed below the OHWM of any surface water, except when no other alternative is available.	The Applicant will avoid placing heavy equipment within surface waters unless no other alternatives are available.
B(9). Temporary fill for purposes of access or staging shall consist of suitable non-erodible material and shall be maintained to minimize erosion.	No temporary fills are anticipated for this Project.
B(10). Chromated copper arsenate (CCA) and creosote treated lumber shall not be used in structures that come in contact with waters of the U.S.	The use of CCA and/or creosote is not anticipated to be required for this Project.
B(11) All dewatering activities must be conducted in such a manner that does NOT result in a violation of water quality standards.	The Project is being conducted to improve human health and the environment, and is anticipated to improve water quality, if anything.
B(12). All areas of final grade must be protected from erosion within 7 days.	The Applicant is aware of this condition and will comply with it.
B(13). All disturbed areas which remain dormant in excess of 14 days must be protected from erosion within 7 days from the last earth-moving day.	The Applicant is aware of this condition and will begin any warranted erosion-control efforts within 7 days of last earth-moving day.
B(14). In the event of authorized in-stream activities, provisions must be established to redirect the stream flow around or through active areas of construction in a stabilized, non-erosive manner to the maximum extent possible.	This condition primarily applies to the construction of the settling pond. All construction related to the settling pond will be conducted so as to redirect flows in a non-erosive manner.
C(1). Compensatory mitigation is required for the discharge of dredged or fill material into wetlands for permanent impacts exceeding 0.10 acres.	Permanent impacts to wetlands are approximately 0.081 acres, which is less than the threshold requirement for compensatory mitigation.
C(2). Compensatory mitigation will be provided in accordance with chapters 3745-1 and 3745-32 of the Ohio Administrative Code.	Compensatory mitigation is not required for the Project activities, as wetland impacts will be under 0.10 acres and NWP 38, which permits hazardous and toxic waste cleanup, is considered to be self-mitigating.
C(3). The Interagency Review Team must approve the use of mitigation banks or ILFs.	Compensatory mitigation is not required for this Project.
C(4). Compensatory mitigation for stream impacts, if required, shall be conducted in accordance with the requirements of the applicable NWP.	Compensatory mitigation is not required for this Project.
D(1). The OEPA director may grant 401 coverage to projects that do not meet all general conditions. If the director does not grant 401 coverage and the project does not meet all conditions, the Applicant must obtain an individual 401 WQC.	The Project meets all general and NWP-specific conditions, so special authorization from the Director is not necessary.
E(1). Notification to the OEPA is required if a PCN is not submitted for activities authorized under a number of NWPs.	A PCN is being submitted to the Corps. No additional notification to OEPA is deemed necessary.
E(2-5). Specifics regarding notification process to the OEPA	A PCN is being submitted to the Corps. No additional notification to OEPA is deemed necessary
F(1) Authorization under this certification does not relieve the certification holder from the responsibility of obtaining any other federal, state or local permits, approvals or authorizations.	The Applicant is aware they are responsible for gaining all appropriate federal, state, or local permits for the proposed Project.

Table 1. General Limitations and Conditions for All OEPA Certified Nationwide Permits

General Condition	Applicability/Compliance
F(2). For purposes of this certification the Corps' definition of single and complete linear and non-linear projects shall be applied to all conditions regarding impacts, mitigation, and director's authorizations. If a project includes impacts that are ineligible under this certification, an applicant must apply for an individual 401 WQC or a director's authorization for those impacts to resources that do not meet one or more of the terms and conditions within this certification.	The Project complies with the Corps definition of single and complete project and all project impacts can be authorized under NWP 38.
F(3). For purposes of this certification temporary impact means temporary activities which facilitate the nature of the activity or aid in the access, staging, or development of construction that are short term in nature and which are expected, upon removal of the temporary impact, to result in the surface water returning to conditions which support pre-impact biological function with minimal or no human intervention within 12 months following the completion of the temporary impact. Examples of temporary impacts include, but are not limited to access roads, work pads, staging areas, and stream crossings, including utility corridors. Activities that result in a wetland conversion (e.g. forested to nonforested) are not considered temporary impacts.	All Project activities are considered permanent.
F(4). In the event that the issuance of a nationwide permit by the Corps requires individual 401 WQC for an activity that constitutes an emergency as defined in 33 CFR 325.2(e)(4), the limitation and/or condition requiring the individual 401 WQC is not applicable and the project may proceed upon approval by the Corps provided all other terms of this certification, including mitigation, are met.	The Project is not considered an emergency as defined in 33 CFR 325.2(E)(4) and individual 401 certification is not required.
F(5). Representatives from Ohio EPA, Division of Surface Water will be allowed to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of this certification. This includes, but is not limited to, access to and copies of any records that must be kept under the conditions of this certification; and authorization to sample and/or monitor any discharge activity or mitigation site. Ohio EPA will make a reasonable attempt to notify the applicant of its intention to inspect the site in advance of that inspection.	Individual 401 certification is not required for this project, However, representatives of the OEPA are permitted to inspect the Property as deemed appropriate to assess compliance with the terms and conditions
F(6). Impacts as referenced in this certification consist of waters of the state directly impacted by the placement of fill or dredged material.	No waters of the state are present within the Project Area.
F(7). In accordance with the procedures outlined in Appendix 8, and where specifically required in the special limitations and conditions of this certification, an applicant proposing to impact a wetland shall perform a wetland characterization analysis consistent with the Ohio Rapid Assessment Method (ORAM) to demonstrate wetland category for all projects requiring a PCN to the Corps or notification to Ohio EPA.	ORAM reports were prepared for all wetlands within the Project Area and are included in **Appendix A.**

Table 1. General Limitations and Conditions for All OEPA Certified Nationwide Permits

General Condition	Applicability/Compliance
F(8). In accordance with the procedures outlined in Appendix C, and where specifically required in the special limitations and conditions of this certification, an applicant proposing to impact a stream shall determine the eligibility of the stream proposed for impact for all projects requiring a PCN to the Corps or notification to Ohio EPA.	Stream eligibility was assessed and discussed in **Section 3** of the report this appendix is attached to. A figure of stream eligibility is also presented in **Figure 4**.