



Legal Department

American Electric Power  
1 Riverside Plaza  
Columbus, OH 43215-2373  
AEP.com

Ms. Betty McCauley  
Director, Administration Department  
Secretary to the Commission  
Docketing Division  
The Public Utilities Commission of Ohio  
Ohio Power Siting Board  
180 East Broad Street  
Columbus, Ohio 43215

Yazen Alami  
Regulatory Services  
(614) 716-2920 (P)  
(614) 716-2950 (F)  
yalami@aep.com

January 22, 2013

**RE: Letter of Notification**  
**Case No. 13-0171-EL-BLN Trent – Delaware 138kV Line Improvement Project**

Dear Ms. McCauley:

In accordance with Rules 4906-5-02 and 4906-11-01, Ohio Administrative Code ("OAC"), AEP Ohio Transmission Company ("AEP Transco") submits this Letter of Notification for expedited approval. A copy of a check in the amount of \$2,000 for the expedited application processing fee will be filed under separate cover. The requested start date of construction is March 4, 2013, and is scheduled to be completed by November 1, 2013.

As required by Rule 4906-11-01(D)(4), AEP Transco has submitted a copy of this Letter of Notification to the chief executive officer of each municipal corporation and county and the head of each public agency charged with protecting the environment or of planning land use in the area in which the proposed project will be located. Attached to the Letter of Notification are copies of cover letters that have been submitted to the Delaware County Commissioners, Berkshire Township Trustees, Berlin Township Trustees, Delaware Township Trustees, and the Trenton Township Trustees.

Should you have any questions, please do not hesitate to contact me.

Respectfully submitted,

/s/ Yazen Alami  
Yazen Alami

Attachments

**Letter of Notification**

**for the**

**Trent – Delaware 138kV Line  
Improvement Project**

**Submitted by**

**American Electric Power  
Ohio Transmission Company**

**To**

**The State of Ohio Power Siting Board  
January 2013**

## **LETTER OF NOTIFICATION**

In accordance with Ohio Administrative Code Section 4906-11-01, Letter of Notification requirements, AEP Ohio Transmission Company ("AEP Transco") submits the following.

### **4906-11-01 (A) General Information**

#### **4906-11-01 (B)(1) Project Name and Reference Number**

The name of this project is the Trent – Delaware 138kV Line Improvement Project.

#### **4906-11-01 (B)(1) Description of this Project**

This project involves replacing existing structures 36, 37, 38 and 61, which are currently double circuit lattice steel towers, with tubular steel double circuit structures. A second conductor circuit and optical ground wire will be installed on the existing transmission line structures and the new structures.

#### **4906-11-01 (B)(1) Reasons this Project Meets the Letter of Notification Requirements**

This project meets the requirements for a Letter of Notification because the extent of this project is defined by Item (4)(a) of Appendix A "Application Requirement Matrix for Electric Power Transmission Lines" of Section 4906-1-01 of the Ohio Administrative Code. This project consists of replacing electric power transmission line structures with a different type of structure within an existing electric power transmission line, and two miles or less of new right-of-way are required.

#### **4906-11-01 (B)(2) Need for this Project**

The purpose of the Trent - Delaware 138kV Line Improvement project is to install a second conductor circuit to the existing transmission structures to improve and maintain the quality of electric service and reliability to the Central Ohio area, including AEP's load area. This area includes, but is not limited to the communities of Delaware, Sunbury, Galena, Columbus, Dublin, Upper Arlington, Grandview Heights, Hilliard, Grove City, Gahanna, Westerville, New Albany, Pickerington, and others. This project is a critical component of a much larger project, which is the Vassell Substation Project: OPSB Case Number: 11-1313-EL-BSB.

#### **4906-11-01 (B)(3) Project Location Relative to Existing or Proposed Lines**

The location of this project is shown on Map 1 and Map 2.

#### **4906-11-01 (B)(4) Alternatives Considered**

No alternative locations were considered. The Trent – Delaware 138kV Line is an existing AEP transmission facility.

#### **4906-11-01 (B)(5) Anticipated Construction Schedule**

Construction of this section of the Trent – Delaware 138kV Line is expected to begin March 4, 2013. This project is scheduled to be completed November 1, 2013.

#### **4906-11-01 (B)(6) Maps Depicting Project Location**

Map 1 has been prepared to show the project location in relation to other transmission lines in the area. To view this project, take Interstate 71 to exit 131 for US-36/OH-37 toward Delaware/Sunbury. Turn right onto OH-37 E/State Route 37E/US-36E. Turn left onto US-36E. Turn left onto North Old 3C Road. Turn Left onto Centerburg Road. This road will lead to AEP's Trent Substation where the project begins. Map 2 has been prepared to show the project location in relation to the new Vassell Substation (OPSB Case No. 11-1313-EL-BSB).

#### **4906-11-01 (B)(7) Property Easements**

The existing line has existing easements that were obtained by American Electric Power. All new structures will be located within the existing transmission line right-of-way. The property owners have been notified and are aware of the transmission line structure replacements. All property owners along the existing transmission line have been notified of the installation of the second conductor circuit and optical ground wire to the existing lattice towers.

#### **4906-11-01 (C) Technical Features**

##### **4906-11-01 (C)(1) Description of Technical Features**

The proposed transmission line structure replacements will be designed for 138kV. Figure 1 depicts the typical proposed tangent single pole structure to be installed. Figure 2 depicts the typical proposed dead end 2-pole structure to be installed.

##### **4906-11-01 (C)(1) Number and Type of Structures**

The transmission line work will include installing two (2) self-supporting 2-pole dead end structures and two (2) self-supporting single pole davit arm structures. New insulators and hardware will be installed on the new structures, and the existing conductor will be transferred. Construction will also include the installation of a new conductor circuit on the existing tower line's vacant arms as well as optical ground wire.

#### **4906-11-01 (C)(1) Right-of-Way and Land Requirements**

The new structures will be constructed on existing right-of-way. No new right-of-way will be required for this project. No additional land rights will be required.

#### **4906-11-01 (C)(2)(a) Calculated Electric and Magnetic Field Levels**

Electric and Magnetic Fields During Operation

##### *(a) Calculated Electric and Magnetic Field Levels*

Three loading conditions were examined: (1) normal maximum loading, (2) emergency line loading, and (3) winter normal conductor rating. Normal maximum loading represents the peak flow expected with all system facilities in service; daily/hourly flows fluctuate below this level. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter normal (WN) conductor rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. It is not anticipated that this line would operate at its WN rating in the foreseeable future.

#### **Line Loading and Rating**

Circuit	Normal Maximum Loading	Emergency Loading	Winter Normal Conductor Rating
Delaware – Vassell 138kV	669 A	805 A	1786 A
Delaware – Trent 138kV	125 A	163 A	1786 A

The electric and magnetic field levels for the proposed project were calculated for the conductor configuration as depicted by "Figure 1" (See Appendix).

#### **Electric and Magnetic Field (EMF) Strength**

Condition	Ckt.1/Ckt.2 Load (A) *	Electric Field (kV/m) **	Magnetic Field (mG) **
(1) Normal Max. Loading	669/125	0.2/ 0.9/0.2	32/ 66/ 14
(2) Emergency Line Loading	805/163	0.2/ 0.9/0.2	38/ 80/ 16
(3) WN Conductor Rating	1786/1786	0.2/ 2.8/0.2	77/526/ 75
IEEE Std C95.6-2002 Limits		5.0/10.0/5.0	9040/***/9040

American Electric Power  
Letter of Notification  
Trent – Delaware 138kV Line

\*Current flows in Circuit 1 (Delaware-Vassell) and Circuit 2 (Delaware-Trent) are in the same direction.  
\*\*EMF levels (left ROW edge/maximum/right ROW edge) calculated one meter above ground at the point of minimum ground clearance, assuming balanced phase currents and nominal voltages. ROW width is 100 feet.  
\*\*\*Maximum permissible level in a "controlled environment" is 27,100 mG.

#### **4906-11-01 (C)(2)(b) Discussion of Design Alternatives**

Double circuit davit arm, single steel pole structures and two-pole steel pole dead end structures were selected to minimize the affected area on private properties. Installing single pole structures and 2-pole dead end structures reduces the affected area significantly when compared to the affected area of the existing towers.

#### **4906-11-01 (C)(3) Estimated Capital Costs**

The 2013 capital cost estimates for the proposed project have been tabulated by the Federal Energy Regulatory Commission (FERC) Electric Plant Transmission Accounts:

FERC Accounts	Estimated Capital Costs
355 Poles and Fixtures	\$1,437,124
356 Overhead Conductors and Devices	\$3,686,444
Total Cost	\$5,123,568

#### **4906-11-01 (D) Socioeconomic Data**

##### **4906-11-01 (D)(1) Land Use and Population Density**

This transmission line project is located in Trenton Township, Berkshire Township, Berlin Township, and Delaware Township of Delaware County. The installation of tubular steel poles at certain locations will result in a smaller footprint than the existing lattice steel towers. This will result in less of an impact to the existing land use. URS, an independent environmental consultant, has prepared a detailed land use description and population density. The URS report is provided in the Appendix.

##### **4906-11-01 (D)(2) Location and Description of Existing Agricultural Districts**

URS performed a study to determine if any Agricultural District Land parcels were located within the study corridor. Twelve Agricultural District Land parcels were identified within the 2,000 foot study corridor. The URS report is provided in the Appendix.

**4906-11-01 (D)(3) Archaeological and Cultural Resources**

A Phase I Archaeological Investigation was conducted by Weller & Associates. A copy of this report will be provided to the Ohio Power Siting Board under separate cover.

**4906-11-01 (D)(4) Local Officials to be Notified**

Copies of this Letter of Notification have been sent to the Delaware County Commissioners, the Township Trustees for each of the four townships, and the Delaware County Public Library. Copies of the cover letters to these officials and the local library are attached in the Appendix.

**4906-11-01 (D)(4) Public Information Program**

All existing property owners have been notified. There are no adjacent property owners that will be affected by the structure replacement or conductor installation. A copy of the LON has been placed on AEP Ohio's website, as well as a copy sent to the library in the vicinity of the project.

**4906-11-01 (D)(5) Pending Litigation**

There are no litigation involving this project and none is expected.

**4906-11-01 (D)(6) Local, State, and Federal Requirements**

These structures will be designed and constructed to meet or exceed the requirements of the National Electric Safety Code, AEP design standards, and all applicable OSHA standards.

**4906-11-01 (E) Environmental**

**4906-11-01 (E)(1) Endangered or Threatened Species**

AEP retained URS to conduct a threatened and endangered species review within the counties crossed by the project centerline, and field survey within the existing maintained right-of-way (approximately 50 feet on each side of the project centerline) for the entire length of the project. The field survey was conducted by URS from December 17, 2012 through December 21, 2012. Based on the nature of the project, review of available current literature, review of federal and state records of species of concern, contact with the USFWS and the ODNR, and the field survey conducted in December 2012, it is not expected that federal or state species of concern will be impacted by the project as currently planned. URS has prepared a detailed threatened and endangered species survey report, which is located in the Appendix.

**4906-11-01 (E)(2) Areas of Ecological Concern**

No national forests or parks designated or proposed wilderness areas, National Wild and Scenic Rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries were identified within 1,000 feet of the proposed Project. Alum Creek State Park, the Olentangy River Ohio Scenic River, and the Jones/Logan Olentangy Scenic River easement are crossed by the Project corridor. Based on the nature of the construction within existing maintained right-of way, no or minimal temporary impacts to these areas are anticipated.

The proposed new circuit will cross multiple 100-year flood zone areas including in the vicinities of Big Walnut Creek, Little Walnut Creek, Alum Creek Reservoir, and the Olentangy River. Based on 2009 floodplain GIS data obtained from Delaware County, none of the proposed replacement pole locations are located within 100-year flood zones. No changes in flood elevations are anticipated as a result of the Project.

During the field survey, a total of 36 wetlands were identified within the survey corridor. The 36 wetlands totaled 9.4 acres within the survey area. These wetlands are of five wetland habitat types: 28 PEM wetlands, four PEM/PSS wetlands, two PSS wetlands, one PSS/PEM wetland, and one POW/PEM wetland. Twenty-five of the 36 wetlands were classified as Category 1 wetlands, and the remaining 11 wetlands were classified as Category 2 wetlands. Wetlands will be avoided where possible. Where avoidance is not possible, wetlands will be matted with timber matting which will prevent impacts to the wetland.

Within the survey corridor, 36 streams, totaling 9,532 feet, were assessed: 12 ephemeral, 20 intermittent, and 4 perennial water bodies.

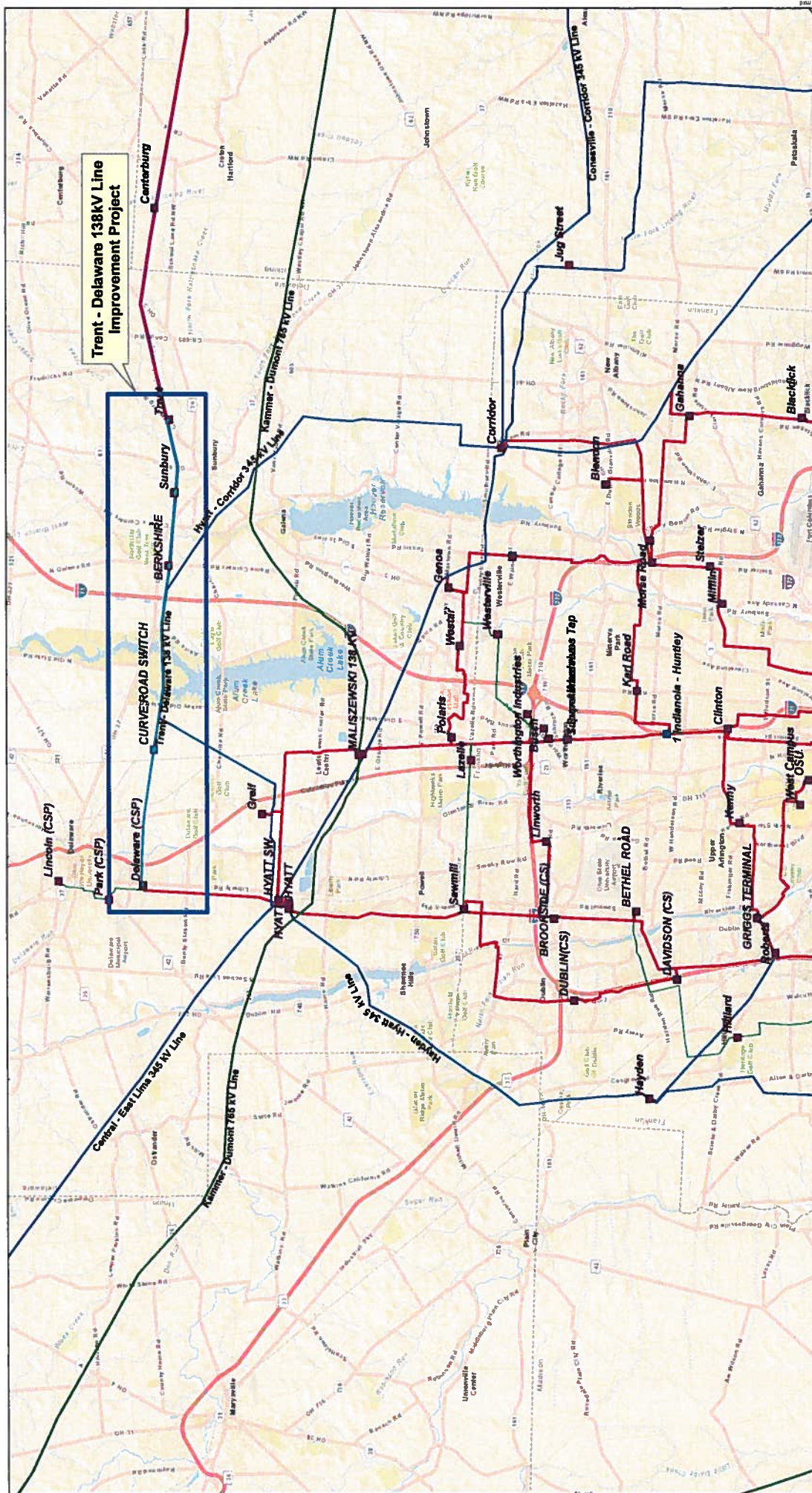
Two ponds, totaling 1.45 acres, were identified within the Project survey corridor. The two ponds appear to be man-made for recreational use or storm water retention.

URS has prepared an Areas of Ecological Concern report, which is located in the Appendix.

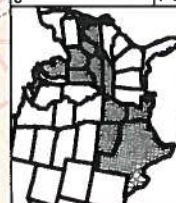
#### **4906-11-01 (E)(3) Additional Information**

There are no unusual conditions that will result in significant environmental or social impacts from the conductor stringing and replacement of these proposed 138kV transmission line structures. A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction stormwater discharges under General Permit OHC000003. The Stormwater Pollution Prevention Plan (SWPPP), which will include the Access Plan, will be provided to the OPSB upon completion of final access road design.





Coordinate System: NAD 1983 StatePlane Ohio North FIPS 5401 Foot



# MAP 1: Trent - Delaware 138kV Line Improvement Project

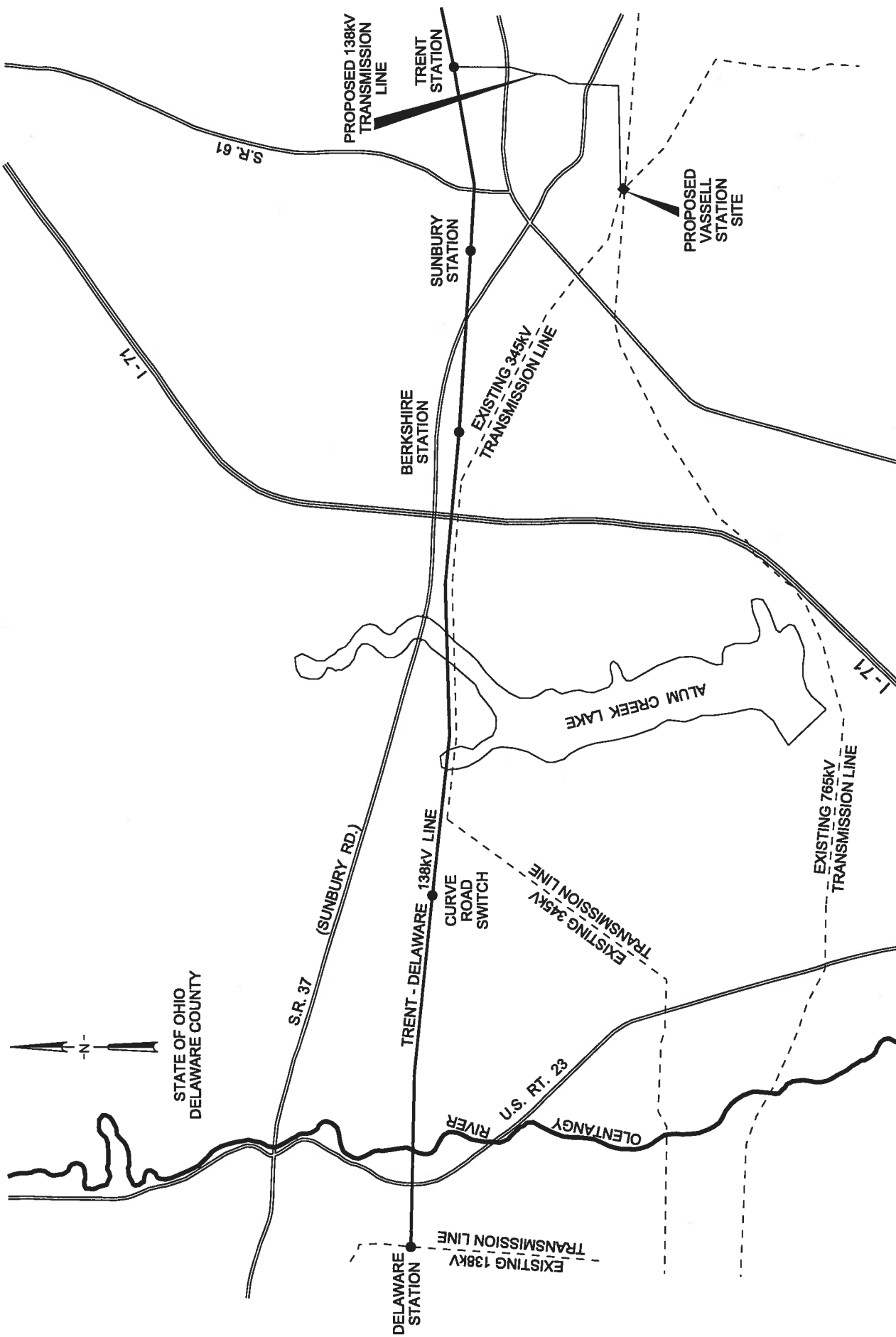
Transmission Line Engineering Group



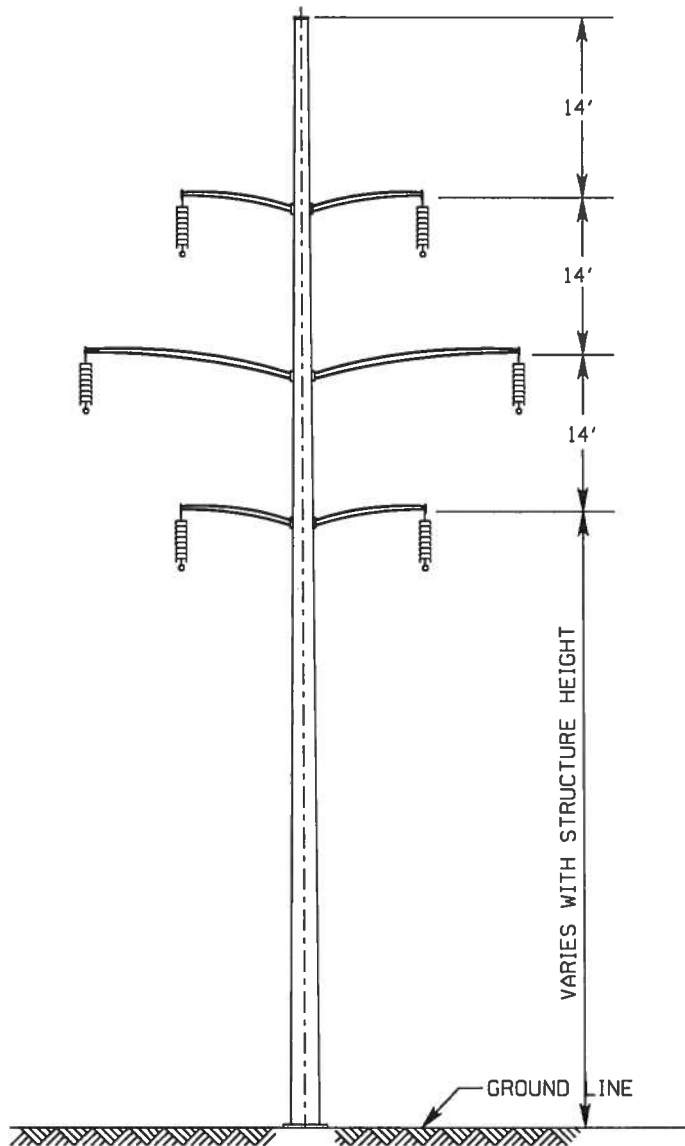
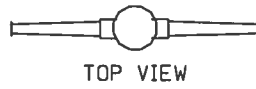
The American Electric Power Company, Inc.  
 One American Center Drive  
 Cincinnati, OH 45202-4242  
 PH: (614) 714-1000  
 FAX: (614) 763-9115

Drawing No. 231113  
 Date: 1/1/2013  
 Source: American Electric Power, ESR  
 Comments:

This drawing from the Transmission Line Project Engineering Group of American Electric Power is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender and delete all copies of this document.



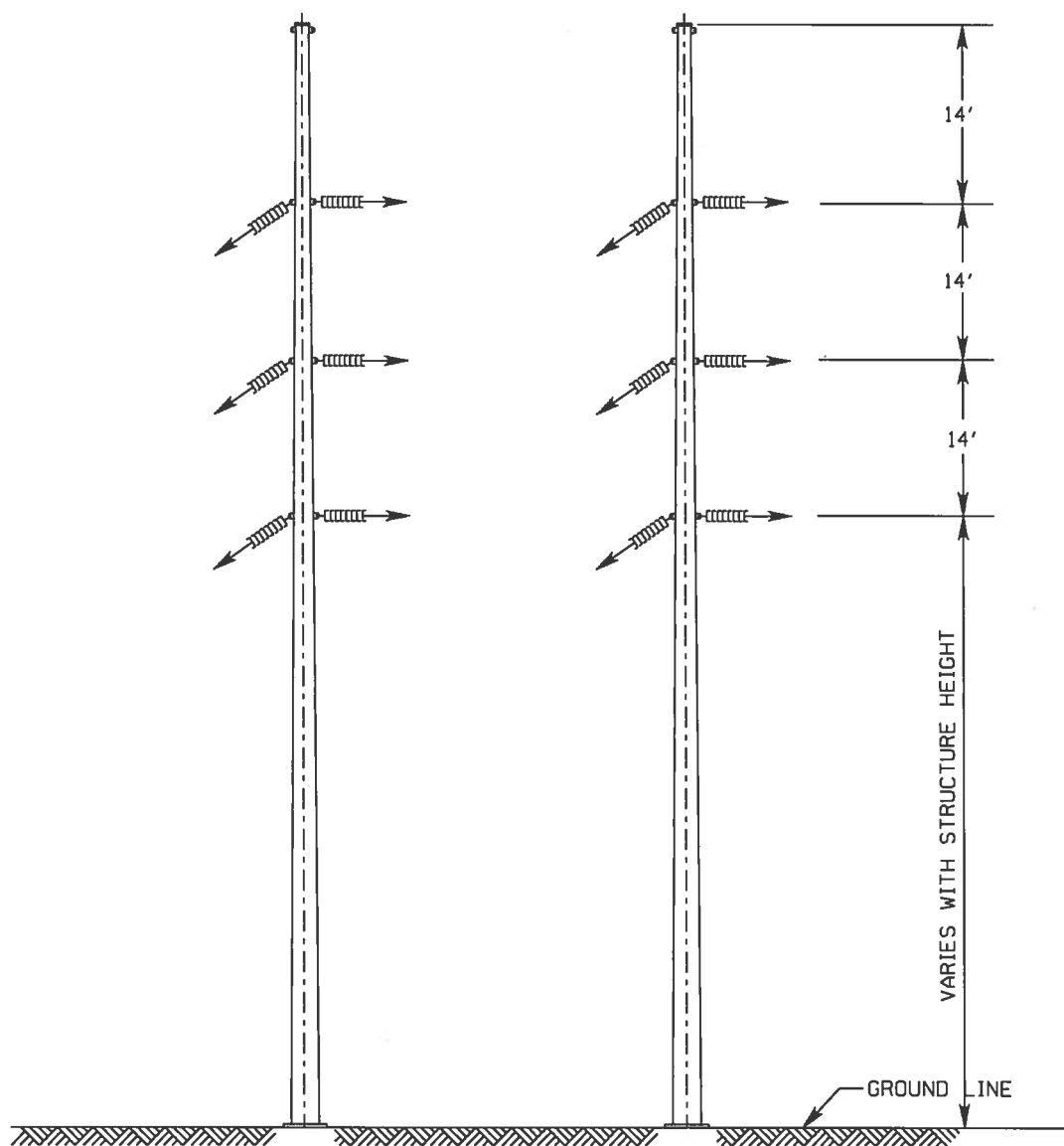
 <b>AMERICAN ELECTRIC POWER</b>	<b>TRENT - DELAWARE 138kV LINE</b>
<b>PROJECT LOCATION MAP</b>	
<b>NOT TO SCALE</b>	



DOUBLE CIRCUIT  
DAVIT ARM TANGENT STRUCTURE  
TRENT - DELAWARE 138kV LINE

NOT TO SCALE

FIGURE 1



DOUBLE CIRCUIT  
2-POLE DEADEND STRUCTURE  
TRENT - DELAWARE 138kV LINE

NOT TO SCALE

FIGURE 2



American Electric Power  
700 Morrison Road  
Gahanna, OH 43230

January 14, 2013

Delaware County Commissioners  
Ken O'Brien  
Dennis Stapleton  
Tommy Thompson  
101 North Sandusky Street  
Delaware, Ohio 43015

**Letter of Notification  
Trent – Delaware 138kV Line  
Improvement Project**

Dear Commissioners:

In accordance with Chapter 4906 of the Ohio Administrative Code, the Columbus Southern Power Company is required to submit a Letter of Notification to the State of Ohio Power Siting Board whenever certain changes are made to our transmission facilities.

AEP Transco will be installing a second conductor circuit and optical ground wire to the existing transmission line and new structures. AEP Ohio is planning to replace 4 structures to accommodate a second circuit in Berkshire Township, Delaware County, Ohio. AEP Transco will be installing a second conductor circuit and optical ground wire to the existing transmission line and new structures.

In compliance with Rule 4906-11-02 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

Cordially,

A handwritten signature in black ink that reads "Elizabeth Decima". The signature is written in a cursive, flowing style.

Elizabeth Decima  
Transmission Line Engineering





American Electric Power  
700 Morrison Road  
Gahanna, OH 43230

January 13, 2013

Berkshire Township Trustees  
Bill Holtry  
Robert Carpenter  
Rod Myers  
Melody George  
1454 Rome Corners Road  
Galena, OH 43021

**Letter of Notification  
Trent – Delaware 138kV Line  
Improvement Project**

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Elizabeth Decima  
Transmission Line Engineering



American Electric Power  
700 Morrison Road  
Gahanna, OH 43230

January 13, 2013

Berlin Township Trustees  
Tom D'Amico  
Phillip Panzarella  
Ron Bullard  
3271 Cheshire Road  
Delaware, OH 43015

**Letter of Notification  
Trent – Delaware 138kV Line  
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Elizabeth Decima  
Transmission Line Engineering



American Electric Power  
700 Morrison Road  
Gahanna, OH 43230

January 13, 2013

Delaware Township Trustees  
Steven Jefferis  
Roger VanSickle  
M. John Main  
2590 Liberty Road  
Delaware, OH 43015

**Letter of Notification  
Trent – Delaware 138kV Line  
Improvement Project**

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Elizabeth Decima  
Transmission Line Engineering





American Electric Power  
700 Morrison Road  
Gahanna, OH 43230

January 13, 2013

Trenton Township Trustees  
Mark Almendinger  
Richard Fisher  
Kevin Justice  
15495 Hartford Road  
Sunbury, OH 43074

**Letter of Notification  
Trent – Delaware 138kV Line  
Improvement Project**

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Elizabeth Decima  
Transmission Line Engineering

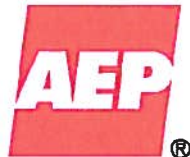
## Appendix

# **TRENT-DELAWARE SECOND 138 KV CIRCUIT PROJECT**

## **AREAS OF ECOLOGICAL CONCERN, WETLAND DETERMINATION, AND STREAM ASSESSMENT REPORT**

*Prepared for:*

American Electric Power Service Corporation  
700 Morrison Road  
Gahanna, Ohio 45230



*Prepared by:*

**URS**

525 Vine Street, Suite 1800  
Cincinnati, Ohio 45202

Project #: 14951002

January 2013



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## FIGURES (follow text)

### Number

FIGURE 1	PROJECT OVERVIEW
FIGURE 2A TO 2K	ECOLOGICAL SURVEY RESULTS

## APPENDICES (follow figures)

### Number

APPENDIX A	ORAM FORMS
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## 1.0 PROJECT DESCRIPTION

This document presents the results of the wetland and stream assessment conducted by URS Corporation (URS) for the American Electric Power's (AEP) proposed Trent-Delaware 138 kV Line Improvement Project (Project). AEP is proposing to string a second 138 kV circuit predominantly on the open side of structures along the existing Trent-Delaware 138 kV transmission line. The open side is sufficient for 60 of 64 existing structures. It is necessary to replace the remaining four structures with new double-circuit steel poles. Two of the structure replacements will be approximately 200 to 400 feet west of their current locations. The entire Project is proposed within existing right-of-way that includes the single circuit Trent-Delaware line as well as portions of the Hyatt-Corridor and Hyatt-Conesville 345 kV circuits. The Project extends for approximately 13.5 miles in Delaware County, Ohio, as shown on Figure 1.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP is required to describe the investigation concerning the presence or absence of areas of ecological concern as stated in Ohio Administrative Code (OAC) Rule 4906-15-11-01(E)(2). This rule states:

- (E) *Environmental data. Describe the environmental impacts of the proposed project. This description shall include the following information:*
  - (2) *A description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the areas likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.*

AEP retained URS to review areas of ecological concern, as defined above, within the proposed Project vicinity and conduct a field survey of wetlands and streams within the existing maintained right-of-way (ranging from approximately 100 to 200 feet wide). This report will be used to assist AEP's efforts to avoid impacts to areas of ecological concern present in the study area during construction activities.

## 2.0 METHODS

### 2.1 Special Status Ecological Areas

URS reviewed desktop maps and GIS data in order to identify national and state forests and parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries in the Project vicinity. GIS data sources included the ODNR Biodiversity Database and federal land and parks layers available from Environmental Systems Research Institute (ESRI). Property ownership within 1,000 feet of the Project was reviewed to identify parcels that may have special status. URS also noted land use during the field reconnaissance conducted from December 17, 2012 through December 21, 2012.



Floodplains were evaluated based on the Federal Emergency Management Agency's (FEMA) Flood Map Viewer (<https://hazards.fema.gov/wps/portal/mapviewer>).

## 2.2 Wetland Assessment

The proposed Project construction activities include open side stringing and limited rebuild of four existing structures within existing right-of-way. Since construction impacts are expected to be minimal, URS restricted the wetland assessments to: 1) rapidly identifying wetlands, particularly to Cowardin classification and approximate boundaries, and 2) evaluations using the Ohio Rapid Assessment Method (ORAM) protocol. The Project area was reviewed for the presence of wetlands using the procedures outlined in the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (1987 Manual) (Environmental Laboratory, 1987) in conjunction with the procedures outlined in the USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Regional Supplement)(2010). Since the Project survey only included a wetland determination, URS did not conduct detailed examinations of the three wetland parameters that are documented in USACE Regional Supplement data sheets. However, enough information was gathered to make the determination whether a wetland was present or not based on a three-factor approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology.

Recent USACE guidance indicates that to the extent possible, the hydrophytic vegetation decision should be based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year (USACE, 2009). Vegetation sampling for a wetland determination can be challenging when some plants are covered by snow or die back due to freezing temperatures or other factors (USACE, 2009). The end of the growing season is indicated when woody deciduous species lose their leaves or the last herbaceous plants cease flowering and their leaves become dry or brown, whichever occurs last. The wetland delineation field work along the Project survey corridor was conducted after the occurrence of these events and therefore, outside the normal growing season. Conducting a wetland determination outside the normal growing season can make identifying the wetland/upland boundary more challenging and may require further assessment during the next growing season.

URS biologists identified wetlands through a pedestrian site reconnaissance of the existing right-of-way, including identifying the vegetation communities, soils identification where necessary, conducting a geomorphologic assessment of hydrology, and notation of disturbance. Determined wetland boundaries were noted where one or more of these criteria gave way to upland characteristics. The determined wetland boundaries were recorded with a handheld Trimble GeoXH GPS unit where the proposed Project enters and exits a wetland.

At the time of the field surveys, approximately 0.25-mile of the Project survey corridor was inaccessible due to severe flooding and a subsequent snow fall event that produced three to four inches of snow. The inaccessible area was located near the confluence of Little Walnut Creek and several intermittent streams. Like other areas of the project, the inaccessible area is existing maintained right-of-way. This inaccessible area is located within the 100-year floodplain of Little Walnut Creek. No structure



replacements are proposed within this area, although access to one existing structure appears to be necessary.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which URS is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may become invalidated, wholly or in part, by changes beyond the control of URS.

**Wetland Classifications:** Wetlands were classified based on the naming convention found in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin *et al*, 1979). All identified wetlands within the survey corridor were classified as freshwater, Palustrine Systems, which includes all nontidal wetlands dominated by trees, shrubs, emergents, mosses or lichens. Three Palustrine wetland classes were identified within the Project survey corridor. The wetland classes were as follows:

**PEM** – Emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

**PSS** – Scrub/shrub wetlands are characterized by woody vegetation that is less than 3 inches diameter at breast height (DBH), and greater than 3.28 feet tall. The woody angiosperms (i.e. small trees or shrubs) in this broad leaved deciduous community have relatively wide, flat leaves that are shed annually during the cold or dry season.

**POW** – Palustrine open water communities generally have water depths of less than 6.6 feet (2 meters) and remain permanently inundated.

**Ohio Rapid Assessment Method v. 5.0:** The Ohio Environmental Protection Agency (Ohio EPA) ORAM for Wetlands v 5.0 was developed to determine the relative ecological quality and level of disturbance of a particular wetland in order to meet requirements under Section 401 of the Clean Water Act. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under ORAM v5.0 resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between "Categories 1 and 2" from 30 to 34.9 and between "Categories 2 and 3" from 60 to 64.9. However, according to the Ohio EPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower Category (Mack, 2001). The ORAM scores for the wetlands that were delineated are discussed in Section 3.2 of this report. The three





categories of wetlands defined by the individual wetland ORAM scores are defined in the following paragraphs:

**Category 1 Wetlands** – Category 1 wetlands support minimal wildlife habitat, hydrological and recreational functions, and do not provide for or contain critical habitats for threatened or endangered species. In addition, Category 1 wetlands are often hydrologically isolated and have some or all of the following characteristics: low species diversity, no significant habitat or wildlife use, limited potential to achieve wetland functions, and/or a predominance of non-native species. These limited quality wetlands are considered to be a resource that has been severely degraded or has a limited potential for restoration, or is of low ecological functionality.

**Category 2 Wetlands** – Category 2 wetlands "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands constitute the broad middle category of "good" quality wetlands, and can be considered a functioning, diverse, healthy water resource that has ecological integrity and human value. Some Category 2 wetlands are lacking in human disturbance and considered to be naturally of moderate quality; others may have been Category 3 wetlands in the past, but have been degraded to Category 2 status.

**Category 3 Wetlands** – Wetlands that are assigned to Category 3 have "...superior habitat, or superior hydrological or recreational functions." They are typified by high levels of diversity, a high proportion of native species, and/or high functional values. Category 3 wetlands include wetlands which contain or provide habitat for threatened or endangered species, are high quality mature forested wetlands, vernal pools, bogs, fens, or which are scarce regionally and/or statewide. It is important to stress that a wetland may be a Category 3 wetland because it exhibits one or all of the above characteristics. For example, a forested wetland located in the flood plain of a river may exhibit "superior" hydrologic functions (e.g. flood retention, nutrient removal), but not contain mature trees or high levels of plant species diversity.

### 2.3 Stream and River Crossings

Regulatory activities under the Clean Water Act provide authority for states to issue water quality standards and "designated uses" to all "Waters of the U.S." upstream to the highest reaches of the tributary streams. In addition, the Federal Water Pollution Control Act (FWPCA) of 1972 and its 1977 and 1987 amendments require knowledge of the potential fish or biological communities that can be supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high water mark (OHWM). Similar to the wetland assessments, URS stream assessments were limited to GPS recording of channels and basic classification based on flow regime (perennial, intermittent, or ephemeral).





## **3.0 RESULTS**

### **3.1 Special Status Ecological Areas**

URS conducted a review of published resources and agency consultations to identify national or state forests and parks designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, wildlife sanctuaries and floodplains crossed by and in the immediate vicinity of the Project. No national forests or parks designated or proposed wilderness areas, national wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries were identified within 1,000 feet of the proposed Project.

Alum Creek State Park is crossed by the Project corridor. Preliminary locations of three of the four proposed structure replacements are within Alum Creek State Park between Dunham Road and Lackey Old State Road. It is expected that access to the existing and proposed structure locations will be obtained along the existing right-of-way in this area, although full design and engineering of the access roads is pending. No in-water work within Alum Creek Reservoir is planned at this time. Due to the nature of the construction with an existing right-of-way, temporary impacts to Alum Creek State Park are expected to be minimal.

The portion of the Olentangy River designated as an Ohio Scenic River and the Jones/Logan Olentangy scenic river easement will be spanned by the new circuit utilizing existing structures. No structures are located within the scenic river easement and it is not expected to be necessary for major equipment to cross the easement or Olentangy River due to the use of cable messenger stringing methods. Based on the nature of the construction within existing maintained right-of way, no or minimal temporary impacts to these areas are anticipated.

The proposed new circuit will cross multiple 100-year flood zone areas including in the vicinities of Big Walnut Creek, Little Walnut Creek, Alum Creek Reservoir, and the Olentangy River. Based on 2009 floodplain GIS data obtained from Delaware County, none of the proposed replacement pole locations are located within 100-year flood zones. No changes in flood elevations are anticipated as a result of the Project.

### **3.2 Wetland Assessment**

A total of 36 wetlands (9.4 acres) were identified within the Project survey corridor. URS considers all 36 wetlands to be jurisdictional (i.e., "Waters of the U.S."). The 36 wetlands were of five wetland habitat types: 28 palustrine emergent (PEM) wetlands, four palustrine emergent/palustrine scrub-shrub (PEM/PSS) wetlands, two palustrine scrub-shrub (PSS) wetlands, one palustrine scrub-shrub/palustrine emergent (PSS/PEM) wetland, and one palustrine open water/palustrine emergent (POW/PEM) wetland. Wetlands identified within the Project survey corridor are summarized in Table 1. Based on ORAM v. 5.0 methodologies, 25 of the 36 wetlands within the Project survey corridor are Category 1 wetlands, and the remaining 11 wetlands are Category 2 wetlands. No Category 3 wetlands were identified in the Project survey corridor. Wetland 6 had the lowest ORAM score, 14.5, and Wetland 34 had the highest score, 53.5.



**Category 1 Wetlands** – The 25 Category 1 wetlands delineated within the Project survey corridor were identified as the following habitat types: 22 PEM wetlands, two PSS wetlands, and 1 POW/PEM wetland. The highest scoring Category 1 wetland was 29.5 (Wetland 32), and the lowest was 14.5 (Wetland 6). These wetlands typically exhibited narrow upland buffers and intensive use of surrounding upland areas (row cropping, residential, commercial, or existing rights-of-way), exhibited limited plant community development with a moderate to high percentage of invasive species, and characteristically had habitat and hydrology in the early stages of successional development, recovering from previous manipulation because of farming, ROW maintenance, or other disturbances.

**Category 2 Wetlands** – The 11 Category 2 wetlands delineated within the Project survey corridor were identified as the following habitat types: six PEM wetlands, four PEM/PSS wetlands, and one PSS/PEM wetland. The highest scoring Category 2 wetland was 53.5 (Wetland 34), and the lowest was 30 (Wetland 35). These wetlands exhibited a fair to moderately-high quality plant community, low to high intensity surrounding land use (row cropping, residential, existing rights-of-way, or wooded), and had recovered or were recovering from modification to substrate and habitat.

**Category 3 Wetlands** – No Category 3 wetlands were identified in the Project survey corridor.

The locations and approximate extents of the wetlands identified within the survey corridor are shown on Figures 2A through 2K. Completed ORAM forms are provided in Appendix A. Color photographs were taken of each wetland during the field survey and representative photos are provided in Appendix B.

**TABLE 1**  
**DELINEATED WETLANDS WITHIN THE**  
**TRENT-DELAWARE SECOND 138 kV CIRCUIT ECOLOGY SURVEY CORRIDOR**

Report Name	Cowardin Wetland Type <sup>a</sup>	ORAM Score	ORAM Category	Acreage within Survey Corridor	Approximate Length Crossed by Transmission Line (feet) <sup>b</sup>
Wetland 01	PEM	24.5	Category 1	0.09	NC
Wetland 02	PEM	19.5	Category 1	0.07	NC
Wetland 03	PEM	39	Category 2	0.75	177
Wetland 04	PEM	39	Category 2	0.24	8
Wetland 05	PEM	16.5	Category 1	0.12	56
Wetland 06	PEM	14.5	Category 1	0.14	74
Wetland 07	PEM	24.5	Category 1	0.46	115
Wetland 08	PEM	28.5	Category 1	1.04	263
Wetland 09	PEM	35	Category 2	0.48	126
Wetland 10	PEM	18.5	Category 1	0.25	172
Wetland 11	PEM	18.5	Category 1	0.09	NC
Wetland 12	PEM/PSS	41.5	Category 2	0.11	28
Wetland 13	PEM/PSS	34.5	Category 2	0.40	148
Wetland 14	PEM	21.5	Category 1	0.78	149
Wetland 15	PEM	21.5	Category 1	0.85	105
Wetland 16	PSS	20	Category 1	0.05	24
Wetland 17	PEM	17	Category 1	0.01	NC



**TABLE 1**  
**DELINEATED WETLANDS WITHIN THE**  
**TRENT-DELAWARE SECOND 138 kV CIRCUIT ECOLOGY SURVEY CORRIDOR**

Report Name	Cowardin Wetland Type <sup>a</sup>	ORAM Score	ORAM Category	Acreage within Survey Corridor	Approximate Length Crossed by Transmission Line (feet) <sup>b</sup>
Wetland 18	PEM	28.5	Category 1	0.10	NC
Wetland 19	PEM	24	Category 1	0.32	166
Wetland 20	PEM	32.5	Category 2	0.07	7
Wetland 21	PEM	28.5	Category 1	0.11	NC
Wetland 22	PEM	26.5	Category 1	0.24	NC
Wetland 23	PEM	34.5	Category 2	0.01	30
Wetland 24	POW/PEM	25	Category 1	0.54	130
Wetland 25	PEM	19.5	Category 1	0.05	NC
Wetland 26	PEM	26.5	Category 1	0.21	NC
Wetland 27	PEM	34.5	Category 2	0.37	154
Wetland 28	PEM/PSS	33.5	Category 2	0.72	221
Wetland 29	PEM	24.5	Category 1	0.08	NC
Wetland 30	PSS	27	Category 1	0.01	6
Wetland 31	PEM	24.5	Category 1	0.07	25
Wetland 32	PEM	29.5	Category 1	0.07	49
Wetland 33	PEM	23	Category 1	0.36	189
Wetland 34	PEM/PSS	53.5	Category 2	0.05	22
Wetland 35	PSS/PEM	30	Category 2	0.04	NC
Wetland 36	PEM	25.5	Category 1	0.06	37
<b>Total: 36 Wetlands</b>				<b>9.40</b>	<b>2,481</b>

Wetlands listed from East to West

Cowardin Wetland Type<sup>a</sup>: PEM- Palustrine emergent, PSS- Palustrine scrub-shrub, POW- Palustrine open water

Linear Feet Crossed by Centerline (feet)<sup>b</sup>: NC = Not Crossed by centerline

**Preliminary Soils Evaluation:** According to the *Web Soil Survey* for Delaware County, Ohio (USDA, 2012) and the Natural Resources Conservation Services Hydric Soils List of Ohio, 24 soil map units from 13 soil series are mapped within the survey corridor. Fourteen of these soil map units are considered hydric soils or contain hydric soil inclusions (USDA, 2011). Soil series located within the Project area are shown on Figures 2A through 2K. Table 2 provides a list of these soil map units along with their basic attributes.

**TABLE 2**  
**SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE SURVEY CORRIDOR**

Soil Series	Symbol	Map Unit Description	Percent of Survey Corridor by Series	Topographic Setting	Hydric	Hydric Component (%)
Amanda	AmD2	Amanda silt loam, 12 to 18 percent slopes, eroded	1.0	End moraines, ground moraines	no	n/a
	AmF	Amanda silt loam, 25 to 50 percent slopes	0.2	End moraines, ground moraines	no	n/a



**TABLE 2**  
**SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE SURVEY CORRIDOR**

Soil Series	Symbol	Map Unit Description	Percent of Survey Corridor by Series	Topographic Setting	Hydric	Hydric Component (%)
Bennington	BeA	Bennington silt loam, 0 to 2 percent slopes	9.7	Flats on ground moraines, rises on ground moraines, flats on end moraines, rises on end moraines	Inclusions	Pewamo (5), Condit (5)
	BeB	Bennington silt loam, 2 to 6 percent slopes	22.9	Flats on ground moraines, rises on ground moraines, flats on end moraines, rises on end moraines	Inclusions	Pewamo (2), Condit (3)
Blount	BoA	Blount silt loams, 0 to 2 percent slopes	5.4	Depressions, Ground moraines	Inclusions	Pewamo (10)
	BoB	Blount silt loams, 2 to 4 percent slopes	3.8	Depressions, Ground moraines	Inclusions	Pewamo (5)
Cardington	CaB	Cardington silt loam, 2 to 6 percent slopes,	16.6	Drainageways, Ground moraines	Inclusions	Pewamo (5)
	CaC2	Cardington silt loam, 6 to 12 percent slopes, eroded	2.0	End moraines, ground moraines	no	n/a
Gallman	GaC2	Gallman loam, loamy substratum, 6 to 12 percent slopes, eroded	0.1	Kames, outwash terraces	no	n/a
	GbA	Gallman silt loam, loamy substratum, 0 to 2 percent slopes	0.4	Depressions, Outwash terraces	Inclusions	Millgrove (5)
	GbB	Gallman silt loam, loamy substratum, 2 to 6 percent slopes	0.1	Outwash plains, kames, moraines, and outwash terraces	Inclusions	Millgrove (5)
Glynwood	GwB	Glynwood silt loam, 2 to 6 percent slopes	9.6	End moraines, ground moraines	no	n/a
	GwC2	Glynwood silt loam, 6 to 12 percent slopes, eroded	1.6	End moraines, ground moraines	no	n/a
Jimtown	JmA	Jimtown silt loam, 0 to 2 percent slopes	0.1	Depressions, Outwash terraces	Inclusions	Millgrove (10)
Latham-Brecksville	LbF	Latham-Brecksville complex, 25 to 70 percent slopes	3.0	Latham—dissected areas on till plains; Brecksville—valley sides of dissected till plains	no	n/a
Lybrand	LyD2	Lybrand silt loams, 12 to 18 percent slopes, eroded	0.2	Ground moraines, end moraines	no	n/a
	LyE2	Lybrand silt loams, 18 to 25 percent slopes, eroded	0.6	Ground moraines, end moraines	no	n/a
Millgrove	MfA	Millgrove silt loam, 0 to 2 percent slopes	0.5	Flats, Outwash terraces	yes	Millgrove (90)





TABLE 2

## SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Percent of Survey Corridor by Series	Topographic Setting	Hydric	Hydric Component (%)
Pewamo	PwA	Pewamo silty clay loam, 0 to 1 percent slopes	12.2	Depressions on ground moraines, flats on ground moraines, drainageways on ground moraines, depressions on end moraines, flats on end moraines, drainageways on end moraines	yes	Pewamo (85)
Sloan	SkA	Sloan silt loam, 0 to 2 percent slopes, occasionally flooded	0.7	Depressions, Flood plains	yes	Sloan (90)
	SnA	Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded	2.3	Depressions on ground moraines, flats on ground moraines, drainageways on ground moraines, depressions on end moraines, flats on end moraines, drainageways on end moraines	yes	Sloan (85), Millgrove (5) Pewamo (5)
	SoA	Sloan silty clay loam, till substratum, 0 to 2 percent slopes, occasionally flooded	<0.01	Flats, Flood plains, Depressions, Ground moraines	yes	Sloan (85), Pewamo (8)
Udorthents	Uc	Udorthents	0.3	Ground moraines, end moraines, outwash terraces		
	UdB	Udorthents, clayey-urban land complex, undulating	1.2	Drainageways, Ground moraines	Inclusions	Pewamo (5)

## NOTES:

(1) 5.5 % of study corridor is open water.

(2) Data sources include:

USDA, NRCS. 2011 Soil Survey Geographic (SSURGO) Database. Available online at: <http://soildatamart.nrcs.usda.gov/>USDA, NRCS. February 2011. National Hydric Soils List by State. Available online at: [ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric\\_Soils/Lists/hydric\\_soils.xlsx](ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/Lists/hydric_soils.xlsx)

USDA, NRCS. 2011. Soil Survey of Delaware County, Ohio.

**National Wetland Inventory Map Review:** National Wetland Inventory (NWI) wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. As a result, NWI maps do not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.



According to the NWI map of the Olive Green, Kilbourne, and Delaware, Ohio quadrangles, the survey corridor contained two mapped NWI wetlands, both being Palustrine Freshwater Emergent, seasonally flooded wetlands (PEM1C)<sup>1</sup>. There are also four Freshwater Ponds (two PUBGh, two PUBGx), and one Lake (L1UBHx). Portions of the two mapped NWI Palustrine Emergent wetlands were identified crossing Wetland 8 and Wetland 19. One NWI mapped Palustrine Unconsolidated Bottom wetland was shown covering the majority of Wetland 24. The NWI Lake feature was mapped on the western boundary of Wetland 20.

### 3.3 Stream and River Crossings

Streams within the survey survey corridor are provided in Table 3. The locations of streams identified within the survey corridor are shown on Figures 2A through 2K. Within the survey corridor, 36 streams, totaling 9,532 feet, were assessed: 12 ephemeral, 20 intermittent, and 4 perennial waterbodies. URS has preliminarily determined the streams appear to be jurisdictional (i.e., "Waters of the U.S."), as they all appear to be tributaries that flow into or combine with other streams. A representative sample of color photographs were taken of the streams during the field survey and are provided in Appendix B.

**TABLE 3**  
**STREAMS IDENTIFIED WITHIN THE**  
**TRENT-DELAWARE SECOND 138 kV CIRCUIT ECOLOGY SURVEY CORRIDOR<sup>1</sup>**

Report Name	Stream Name	Flow Type	Approximate Length Within Survey Corridor (feet)
Stream 01	Tributary to Big Walnut Creek	Ephemeral	52
Stream 02	Tributary to Big Walnut Creek	Ephemeral	81
Stream 03	Tributary to Big Walnut Creek	Intermittent	227
Stream 04	Tributary to Big Walnut Creek	Ephemeral	144
Stream 05	Tributary to Big Walnut Creek	Intermittent	221
Stream 06	Big Walnut Creek	Perennial	218
Stream 07	Tributary to Prairie Run	Ephemeral	35
Stream 08	Prairie Run	Perennial	216
Stream 09	Tributary to Little Walnut Creek	Intermittent	271
Stream 10	Tributary to Little Walnut Creek	Intermittent	531
Stream 11	Tributary to Little Walnut Creek	Intermittent	222
Stream 12	Little Walnut Creek	Perennial	995
Stream 13	Tributary to Little Walnut Creek	Intermittent	5
Stream 14	Tributary to Little Walnut Creek	Intermittent	298
Stream 15	Tributary to Little Walnut Creek	Ephemeral	120
Stream 16	Tributary to Little Walnut Creek	Intermittent	1155
Stream 17	Tributary to Little Walnut Creek	Ephemeral	153
Stream 18	Johnson Run	Intermittent	235
Stream 19	Tributary to Alum Creek Reservoir	Intermittent	290
Stream 20	Tributary to Alum Creek Reservoir	Ephemeral	201



**TABLE 3**  
**STREAMS IDENTIFIED WITHIN THE**  
**TRENT-DELAWARE SECOND 138 kV CIRCUIT ECOLOGY SURVEY CORRIDOR<sup>1</sup>**

Report Name	Stream Name	Flow Type	Approximate Length Within Survey Corridor (feet)
Stream 21	Tributary to Alum Creek Reservoir	Intermittent	836
Stream 22	Tributary to Alum Creek Reservoir	Intermittent	212
Stream 23	Tributary to Alum Creek Reservoir	Ephemeral	111
Stream 24	Tributary to Alum Creek Reservoir	Ephemeral	277
Stream 25	Tributary to Alum Creek Reservoir	Ephemeral	115
Stream 26	Tributary to Big Run	Intermittent	430
Stream 27	Tributary to Big Run	Intermittent	560
Stream 28	Tributary to Olentangy River	Intermittent	156
Stream 29	Tributary to Olentangy River	Ephemeral	151
Stream 30	Tributary to Olentangy River	Intermittent	362
Stream 31	Tributary to Olentangy River	Intermittent	113
Stream 32	Tributary to Olentangy River	Intermittent	101
Stream 33	Olentangy River	Perennial	102
Stream 34	Tributary to Olentangy River	Ephemeral	84
Stream 35	Tributary to Olentangy River	Intermittent	127
Stream 36	Tributary to Olentangy River	Intermittent	125
<b>Total: 36 Streams</b>			<b>9,532</b>

<sup>1</sup>Streams are listed from east to west

#### 4.0 PONDS

Two ponds, totaling 1.45 acres, were identified within the Project survey corridor. The two ponds appear to be man-made for recreational use or stormwater retention. The locations of ponds identified within the Project survey corridor are shown on Figures 2A through 2K.

#### 5.0 SUMMARY

No national forests or parks designated or proposed wilderness areas, National Wild and Scenic Rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries were identified within 1,000 feet of the proposed Project. Alum Creek State Park, the Olentangy River Ohio Scenic River, and the Jones/Logan Olentangy Scenic River easement are crossed by the Project corridor. Based on the nature of the construction within existing maintained right-of way, no or minimal temporary impacts to these areas are anticipated.

The proposed new circuit will cross multiple 100-year flood zone areas including in the vicinities of Big Walnut Creek, Little Walnut Creek, Alum Creek Reservoir, and the Olentangy River. Based on 2009 floodplain GIS data obtained from Delaware County, none of the proposed replacement pole locations are



located within 100-year flood zones. No changes in flood elevations are anticipated as a result of the Project.

During the field survey, a total of 36 wetlands were identified within the survey corridor. The 36 wetlands totaled 9.4 acres within the survey area. These wetlands are of five wetland habitat types: 28 PEM wetlands, four PEM/PSS wetlands, two PSS wetlands, one PSS/PEM wetland, and one POW/PEM wetland. Twenty-five of the 36 wetlands were classified as Category 1 wetlands, and the remaining 11 wetlands were classified as Category 2 wetlands.

Within the survey corridor, 36 streams, totaling 9,532 feet, were assessed: 12 ephemeral, 20 intermittent, and 4 perennial waterbodies.

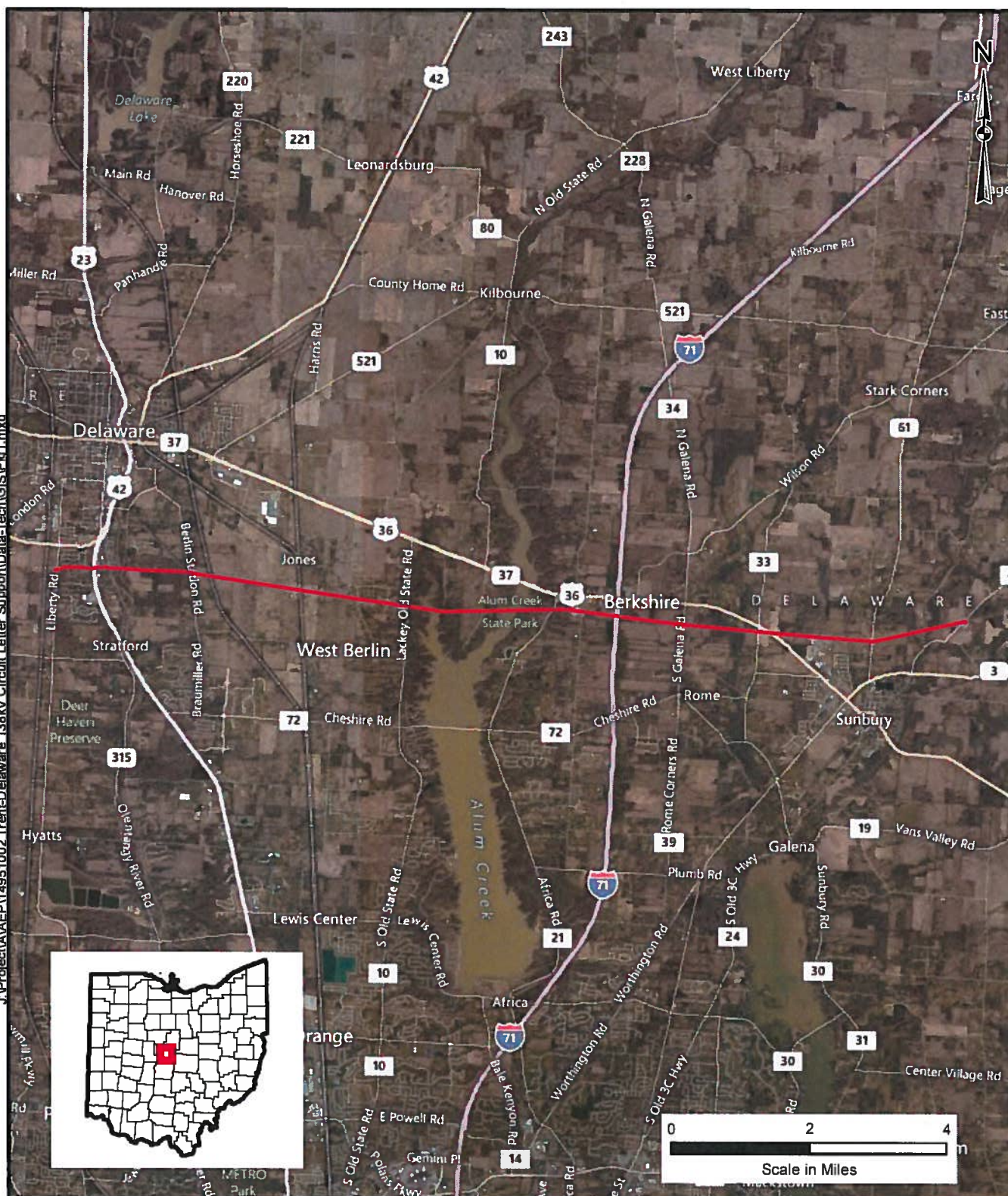
Two ponds, totaling 1.45 acres, were identified within the Project survey corridor. The two ponds appear to be man-made for recreational use or stormwater retention.

## **6.0 CONCLUSION**

This report will be used to assist AEP's efforts to avoid special status ecological areas, wetlands, and streams to the extent possible during construction of the Project, including the use of access roads, thereby minimizing impacts to these features identified along the length of the new circuit. While access roads have not yet been fully engineered to date, it is expected that most wetlands and streams can be spanned due to their locations, size, and infrequent occurrence. Surficial impacts to wetlands are not likely due to the placement of wetland matting if vehicular traffic is necessary during stringing and structure replacement. These locations will be provided in the final access plan. Erosion control methods including silt fencing are expected to be used where appropriate to minimize runoff related impacts to wetlands and stream channels. As a consequence, significant impacts to these "Waters of the U.S." are not anticipated. Notification or permit applications under Sections 401 and/or 404 of the Clean Water Act are not expected to be required by either the Ohio EPA or the USACE for this project.



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**LEGEND:**

— Proposed Trent-Delaware Second 138 kV Circuit

**BASE MAP SOURCE:**  
ArcGIS Map Service, Bing Maps Hybrid



*Trent-Delaware 138 kV Line  
Improvement Project*

**FIGURE 1  
PROJECT OVERVIEW**

Job No. 14951002











Figure Key

- LEGEND**
- Proposed Trent-Delaware 2nd 138 kV Circuit
  - Survey Corridor (Existing Right-of-Way)
  - Area Not Fully Surveyed (Flooded and Snow Cover)
  - Existing Structure to be Replaced
  - Proposed Replacement Pole Location
  - Field-Identified Stream
  - Field-Identified Wetland
  - Pond
  - NW
  - Managed Area Boundary
  - Soil Series Boundary

SYMBOL	MAP UNIT DESCRIPTION
Am22	Am22 all beam, 15-19% slopes, eroded
Am23	Am23 all beam, 20-24% slopes
Am24	Am24 all beam, 25-29% slopes
Am25	Am25 all beam, 30-34% slopes
Am26	Am26 all beam, 35-39% slopes
Am27	Am27 all beam, 40-44% slopes
Am28	Am28 all beam, 45-49% slopes
Am29	Am29 all beam, 50-54% slopes
Am30	Am30 all beam, 55-59% slopes
Am31	Am31 all beam, 60-64% slopes
Am32	Am32 all beam, 65-69% slopes
Am33	Am33 all beam, 70-74% slopes
Am34	Am34 all beam, 75-79% slopes
Am35	Am35 all beam, 80-84% slopes
Am36	Am36 all beam, 85-89% slopes
Am37	Am37 all beam, 90-94% slopes
Am38	Am38 all beam, 95-99% slopes
Am39	Am39 all beam, 100% slopes
Am40	Am40 all beam, 101-105% slopes
Am41	Am41 all beam, 106-110% slopes
Am42	Am42 all beam, 111-115% slopes
Am43	Am43 all beam, 116-120% slopes
Am44	Am44 all beam, 121-125% slopes
Am45	Am45 all beam, 126-130% slopes
Am46	Am46 all beam, 131-135% slopes
Am47	Am47 all beam, 136-140% slopes
Am48	Am48 all beam, 141-145% slopes
Am49	Am49 all beam, 146-150% slopes
Am50	Am50 all beam, 151-155% slopes
Am51	Am51 all beam, 156-160% slopes
Am52	Am52 all beam, 161-165% slopes
Am53	Am53 all beam, 166-170% slopes
Am54	Am54 all beam, 171-175% slopes
Am55	Am55 all beam, 176-180% slopes
Am56	Am56 all beam, 181-185% slopes
Am57	Am57 all beam, 186-190% slopes
Am58	Am58 all beam, 191-195% slopes
Am59	Am59 all beam, 196-199% slopes
Am60	Am60 all beam, 200% slopes
Am61	Am61 all beam, 201-205% slopes
Am62	Am62 all beam, 206-210% slopes
Am63	Am63 all beam, 211-215% slopes
Am64	Am64 all beam, 216-220% slopes
Am65	Am65 all beam, 221-225% slopes
Am66	Am66 all beam, 226-230% slopes
Am67	Am67 all beam, 231-235% slopes
Am68	Am68 all beam, 236-240% slopes
Am69	Am69 all beam, 241-245% slopes
Am70	Am70 all beam, 246-250% slopes
Am71	Am71 all beam, 251-255% slopes
Am72	Am72 all beam, 256-260% slopes
Am73	Am73 all beam, 261-265% slopes
Am74	Am74 all beam, 266-270% slopes
Am75	Am75 all beam, 271-275% slopes
Am76	Am76 all beam, 276-280% slopes
Am77	Am77 all beam, 281-285% slopes
Am78	Am78 all beam, 286-290% slopes
Am79	Am79 all beam, 291-295% slopes
Am80	Am80 all beam, 296-299% slopes
Am81	Am81 all beam, 300% slopes
Am82	Am82 all beam, 301-305% slopes
Am83	Am83 all beam, 306-310% slopes
Am84	Am84 all beam, 311-315% slopes
Am85	Am85 all beam, 316-320% slopes
Am86	Am86 all beam, 321-325% slopes
Am87	Am87 all beam, 326-330% slopes
Am88	Am88 all beam, 331-335% slopes
Am89	Am89 all beam, 336-340% slopes
Am90	Am90 all beam, 341-345% slopes
Am91	Am91 all beam, 346-350% slopes
Am92	Am92 all beam, 351-355% slopes
Am93	Am93 all beam, 356-360% slopes
Am94	Am94 all beam, 361-365% slopes
Am95	Am95 all beam, 366-370% slopes
Am96	Am96 all beam, 371-375% slopes
Am97	Am97 all beam, 376-380% slopes
Am98	Am98 all beam, 381-385% slopes
Am99	Am99 all beam, 386-390% slopes
Am100	Am100 all beam, 391-395% slopes
Am101	Am101 all beam, 396-399% slopes
Am102	Am102 all beam, 400% slopes
Am103	Am103 all beam, 401-405% slopes
Am104	Am104 all beam, 406-410% slopes
Am105	Am105 all beam, 411-415% slopes
Am106	Am106 all beam, 416-420% slopes
Am107	Am107 all beam, 421-425% slopes
Am108	Am108 all beam, 426-430% slopes
Am109	Am109 all beam, 431-435% slopes
Am110	Am110 all beam, 436-440% slopes
Am111	Am111 all beam, 441-445% slopes
Am112	Am112 all beam, 446-450% slopes
Am113	Am113 all beam, 451-455% slopes
Am114	Am114 all beam, 456-460% slopes
Am115	Am115 all beam, 461-465% slopes
Am116	Am116 all beam, 466-470% slopes
Am117	Am117 all beam, 471-475% slopes
Am118	Am118 all beam, 476-480% slopes
Am119	Am119 all beam, 481-485% slopes
Am120	Am120 all beam, 486-490% slopes
Am121	Am121 all beam, 491-495% slopes
Am122	Am122 all beam, 496-499% slopes
Am123	Am123 all beam, 500% slopes
Am124	Am124 all beam, 501-505% slopes
Am125	Am125 all beam, 506-510% slopes
Am126	Am126 all beam, 511-515% slopes
Am127	Am127 all beam, 516-520% slopes
Am128	Am128 all beam, 521-525% slopes
Am129	Am129 all beam, 526-530% slopes
Am130	Am130 all beam, 531-535% slopes
Am131	Am131 all beam, 536-540% slopes
Am132	Am132 all beam, 541-545% slopes
Am133	Am133 all beam, 546-550% slopes
Am134	Am134 all beam, 551-555% slopes
Am135	Am135 all beam, 556-560% slopes
Am136	Am136 all beam, 561-565% slopes
Am137	Am137 all beam, 566-570% slopes
Am138	Am138 all beam, 571-575% slopes
Am139	Am139 all beam, 576-580% slopes
Am140	Am140 all beam, 581-585% slopes
Am141	Am141 all beam, 586-590% slopes
Am142	Am142 all beam, 591-595% slopes
Am143	Am143 all beam, 596-599% slopes
Am144	Am144 all beam, 600% slopes
Am145	Am145 all beam, 601-605% slopes
Am146	Am146 all beam, 606-610% slopes
Am147	Am147 all beam, 611-615% slopes
Am148	Am148 all beam, 616-620% slopes
Am149	Am149 all beam, 621-625% slopes
Am150	Am150 all beam, 626-630% slopes
Am151	Am151 all beam, 631-635% slopes
Am152	Am152 all beam, 636-640% slopes
Am153	Am153 all beam, 641-645% slopes
Am154	Am154 all beam, 646-650% slopes
Am155	Am155 all beam, 651-655% slopes
Am156	Am156 all beam, 656-660% slopes
Am157	Am157 all beam, 661-665% slopes
Am158	Am158 all beam, 666-670% slopes
Am159	Am159 all beam, 671-675% slopes
Am160	Am160 all beam, 676-680% slopes
Am161	Am161 all beam, 681-685% slopes
Am162	Am162 all beam, 686-690% slopes
Am163	Am163 all beam, 691-695% slopes
Am164	Am164 all beam, 696-699% slopes
Am165	Am165 all beam, 700% slopes
Am166	Am166 all beam, 701-705% slopes
Am167	Am167 all beam, 706-710% slopes
Am168	Am168 all beam, 711-715% slopes
Am169	Am169 all beam, 716-720% slopes
Am170	Am170 all beam, 721-725% slopes
Am171	Am171 all beam, 726-730% slopes
Am172	Am172 all beam, 731-735% slopes
Am173	Am173 all beam, 736-740% slopes
Am174	Am174 all beam, 741-745% slopes
Am175	Am175 all beam, 746-750% slopes
Am176	Am176 all beam, 751-755% slopes
Am177	Am177 all beam, 756-760% slopes
Am178	Am178 all beam, 761-765% slopes
Am179	Am179 all beam, 766-770% slopes
Am180	Am180 all beam, 771-775% slopes
Am181	Am181 all beam, 776-780% slopes
Am182	Am182 all beam, 781-785% slopes
Am183	Am183 all beam, 786-790% slopes
Am184	Am184 all beam, 791-795% slopes
Am185	Am185 all beam, 796-799% slopes
Am186	Am186 all beam, 800% slopes
Am187	Am187 all beam, 801-805% slopes
Am188	Am188 all beam, 806-810% slopes
Am189	Am189 all beam, 811-815% slopes
Am190	Am190 all beam, 816-820% slopes
Am191	Am191 all beam, 821-825% slopes
Am192	Am192 all beam, 826-830% slopes
Am193	Am193 all beam, 831-835% slopes
Am194	Am194 all beam, 836-840% slopes
Am195	Am195 all beam, 841-845% slopes
Am196	Am196 all beam, 846-850% slopes
Am197	Am197 all beam, 851-855% slopes
Am198	Am198 all beam, 856-860% slopes
Am199	Am199 all beam, 861-865% slopes
Am200	Am200 all beam, 866-870% slopes
Am201	Am201 all beam, 871-875% slopes
Am202	Am202 all beam, 876-880% slopes
Am203	Am203 all beam, 881-885% slopes
Am204	Am204 all beam, 886-890% slopes
Am205	Am205 all beam, 891-895% slopes
Am206	Am206 all beam, 896-899% slopes
Am207	Am207 all beam, 900% slopes
Am208	Am208 all beam, 901-905% slopes
Am209	Am209 all beam, 906-910% slopes
Am210	Am210 all beam, 911-915% slopes
Am211	Am211 all beam, 916-920% slopes
Am212	Am212 all beam, 921-925% slopes
Am213	Am213 all beam, 926-930% slopes
Am214	Am214 all beam, 931-935% slopes
Am215	Am215 all beam, 936-940% slopes
Am216	Am216 all beam, 941-945% slopes
Am217	Am217 all beam, 946-950% slopes
Am218	Am218 all beam, 951-955% slopes
Am219	Am219 all beam, 956-960% slopes
Am220	Am220 all beam, 961-965% slopes
Am221	Am221 all beam, 966-970% slopes
Am222	Am222 all beam, 971-975% slopes
Am223	Am223 all beam, 976-980% slopes
Am224	Am224 all beam, 981-985% slopes
Am225	Am225 all beam, 986-990% slopes
Am226	Am226 all beam, 991-995% slopes
Am227	Am227 all beam, 996-999% slopes
Am228	Am228 all beam, 1000% slopes
Am229	Am229 all beam, 1001-1005% slopes
Am230	Am230 all beam, 1006-1010% slopes
Am231	Am231 all beam, 1011-1015% slopes
Am232	Am232 all beam, 1016-1020% slopes
Am233	Am233 all beam, 1021-1025% slopes
Am234	Am234 all beam, 1026-1030% slopes
Am235	Am235 all beam, 1031-1035% slopes
Am236	Am236 all beam, 1036-1040% slopes
Am237	Am237 all beam, 1041-1045% slopes
Am238	Am238 all beam, 1046-1050% slopes
Am239	Am239 all beam, 1051-1055% slopes
Am240	Am240 all beam, 1056-1060% slopes
Am241	Am241 all beam, 1061-1065% slopes
Am242	Am242 all beam, 1066-1070% slopes
Am243	Am243 all beam, 1071-1075% slopes
Am244	Am244 all beam, 1076-1080% slopes
Am245	Am245 all beam, 1081-1085% slopes
Am246	Am246 all beam, 1086-1090% slopes
Am247	Am247 all beam, 1091-1095% slopes





































**APPENDIX A**

**ORAM FORMS**

Site: AEP TRENT-DELAWARE Rater(s): BAO, JAC Date: 12/21/12

1	1
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

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)

2	3
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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)

10	13
max 30 pts.	subtotal

### Metric 3. Hydrology.

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)

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)

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)

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)

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)

Check all disturbances observed

- ☒ ditch
- ☒ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☒ other Row

8.5	21.5
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

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

2.5

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)

3

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

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

3

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

21.5
subtotal this page



WETLAND 1

W-BAO-122112-02

ORAM v. 5.0 Field Form Quantitative Rating

Site: AEP TRENT-DELMARE RIVER Rater(s): BAO, JAC Date: 12/21/12

21.5

subtotal first page

0 21.5

max 10 pls.

subtotal

**Metric 5. Special Wetlands.**

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)

3 24.5

max 20 pls.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed  
☒ 2 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)  
☒ -3 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.

- ☒ 2 Vegetated hummocks/tussocks  
☐ Coarse woody debris >15cm (6in)  
☐ Standing dead >25cm (10in) dbh  
☒ 4 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

**End of Quantitative Rating. Complete Categorization Worksheets.**



Site: AEP TRENT-DELAWARE

Rater(s): BAO, JAC

Date: 12/21/12

0	0
max 6 pts.	subtotal

**Metric 1. Wetland Area (size).**

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)

1	1
max 14 pts.	subtotal

**Metric 2. Upland buffers and surrounding land use.**

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)

13	14
max 30 pts.	subtotal

**Metric 3. Hydrology.**

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)

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)

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

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)

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)

7.5	21.5
max 20 pts.	subtotal

**Metric 4. Habitat Alteration and Development.**

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

21.5
subtotal this page

WETLAND 2

ORAM v. 5.0 Field Form Quantitative Rating

W-BAD-102112-05

Site: AEP TRENT-DELAWARE	Rater(s): BAD/JAC	Date: 10/21/12
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21.5

subtotal first page

0	21.5
max 10 pts.	subtotal

**Metric 5. Special Wetlands.**

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)

-2	19.5
max 20 pts.	subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 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 hummocks/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
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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

CATEGORY 1

19.5

**End of Quantitative Rating. Complete Categorization Worksheets.**

# WETLAND 03

ORAM v. 5.0 Field Form Quantitative Rating

W-BAD-12/11/12-04

Site: <u>AEP TRENT-DELAWARE</u>	Rater(s): <u>BAD, JAC</u>	Date: <u>12/21/12</u>
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2	2
max 6 pts.	subtotal

## Metric 1. Wetland Area (size).

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)

7	9
max 14 pts.	subtotal

## Metric 2. Upland buffers and surrounding land use.

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)

16	25
max 30 pts.	subtotal

## Metric 3. Hydrology.

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)

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)

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)

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)

3d. Duration of 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)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input checked="" type="checkbox"/> tile  | <input type="checkbox"/> filling/grading              |
| <input type="checkbox"/> dike             | <input type="checkbox"/> road bed/RR track            |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input checked="" type="checkbox"/> other <u>RDW</u>  |

10	35
max 20 pts.	subtotal

## Metric 4. Habitat Alteration and Development.

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

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> mowing               | <input checked="" type="checkbox"/> shrub/sapling removal          |
| <input checked="" type="checkbox"/> grazing              | <input checked="" type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting         | <input checked="" type="checkbox"/> sedimentation                  |
| <input checked="" type="checkbox"/> selective cutting    | <input checked="" type="checkbox"/> dredging                       |
| <input checked="" type="checkbox"/> woody debris removal | <input checked="" type="checkbox"/> farming                        |
| <input type="checkbox"/> toxic pollutants                | <input type="checkbox"/> nutrient enrichment                       |

35
subtotal this page

last revised 1 February 2001 jjm

WETLAND 3

W-BAD-12212-04

ORAM v. 5.0 Field Form Quantitative Rating

Site: AEP TRENT-DELAWARE	Rater(s): BAO, JAC	Date: 12/21/12
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35

subtotal first page

0	35
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max 10 pts.

subtotal

**Metric 5. Special Wetlands.**

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)

4	39
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max 20 pts.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 3 ☒ Emergent
- ☒ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

**6b. horizontal (plan view) Interspersions.**

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- 1 ☐ 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)
- 3 ☒ 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.

- 1 ☐ Vegetated hummocks/tussocks
- 1 ☐ Coarse woody debris >15cm (6in)
- 3 ☐ Standing dead >25cm (10in) dbh
- 1 ☐ 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

CAT. 2

39

**End of Quantitative Rating. Complete Categorization Worksheets.**

Site: AEP TRENT-DELAWARE	Rater(s): BAO, JAC	Date: 12/21/12
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2	2
max 6 pts.	subtotal

**Metric 1. Wetland Area (size).**

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)

8	10
max 14 pts.	subtotal

**Metric 2. Upland buffers and surrounding land use.**

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)

16	26
max 30 pts.	subtotal

**Metric 3. Hydrology.**

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)

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)

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)

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)

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)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input checked="" type="checkbox"/> other <u>low</u>  |

10	36
max 20 pts.	subtotal

**Metric 4. Habitat Alteration and Development.**

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

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> mowing            | <input checked="" type="checkbox"/> shrub/sapling removal          |
| <input checked="" type="checkbox"/> grazing           | <input checked="" type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting      | <input checked="" type="checkbox"/> sedimentation                  |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging                                  |
| <input type="checkbox"/> woody debris removal         | <input type="checkbox"/> farming                                   |
| <input type="checkbox"/> toxic pollutants             | <input type="checkbox"/> nutrient enrichment                       |

36
subtotal this page

# Wetland 4

ORAM v. 5.0 Field Form Quantitative Rating

W-BAO-12/21/12-05

Site: ACP Trent Delaware	Rater(s): BAO, JAC	Date: 12/21/12
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36
subtotal first page

0	36
max 10 pls.	subtotal

## Metric 5. Special Wetlands.

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)

3	39
max 20 pls.	subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 2 Emergent
- ☒ 3 1 Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

### 6b. horizontal (plan view) interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ 1 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)
- ☒ -3 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.

- ☒ 1 Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☒ 2 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

Cat. 2

39

End of Quantitative Rating. Complete Categorization Worksheets.

Site: AEP TRENT-DELAWARE

Rater(s): BAD, JAC

Date: 12/21/12

1	1
max 6 pts.	subtotal

**Metric 1. Wetland Area (size).**

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)

1	2
max 14 pts.	subtotal

**Metric 2. Upland buffers and surrounding land use.**

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)

8	10
max 30 pts.	subtotal

**Metric 3. Hydrology.**

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)

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)

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)

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)

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

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

Check all disturbances observed

- ☒ ditch  
☒ tile  
☐ dike  
☐ weir  
☐ stormwater input

point source (nonstormwater)

- ☒ filling/grading  
☐ road bed/RR track  
☐ dredging  
☒ other Row

7.5	17.5
max 20 pts.	subtotal

**Metric 4. Habitat Alteration and Development.**

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

17.5
subtotal this page



WETLAND 5

ORAM v. 5.0 Field Form Quantitative Rating

W-BAD 12012-01

Site: <u>ALP TRENT-DELAWARE</u>	Rater(s): <u>BAD, JAK</u>	Date: <u>10/21/12</u>
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17.5

subtotal first page

0	17.5
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max 10 pts.

subtotal

**Metric 5. Special Wetlands.**

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)

-1	16.5
----	------

max 20 pts.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- 2 ☒ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

**6b. horizontal (plan view) Interspersion.**

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- 1 ☐ 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**

- 5 ☒ 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.

- 1 ☐ Vegetated hummocks/tussocks
- ☐ 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

**End of Quantitative Rating. Complete Categorization Worksheets.**

Site: AEP TRENT - DELAWARE Rater(s): BRO, JAC Date: 12/20/12

1	1
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

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)

2	3
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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)

6	9
max 30 pts.	subtotal

### Metric 3. Hydrology.

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)

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)

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)

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)

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

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

Check all disturbances observed

- ☒ ditch
- ☒ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☒ other Row

7.5	16.5
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

16.5
subtotal this page

WETLANDS

ORAM v. 5.0 Field Form Quantitative Rating

W-BAD-12-2012-06

Site: AEP Trent-Delaware	Rater(s): BAD, JAC	Date: 12/20/12
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16.5

subtotal first page

0	16.5	<b>Metric 5. Special Wetlands.</b>
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max 10 pts.

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)

-2	14.5	<b>Metric 6. Plant communities, interspersions, microtopography.</b>
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max 20 pts.

subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 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 hummocks/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

CAT. 1

14.5

End of Quantitative Rating. Complete Categorization Worksheets.

Site: AEP TRENT-DELAWARE	Rater(s): BAD, JAC	Date: 12/20/12
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2	2
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

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)

7	9
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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)

12	21
max 30 pts.	subtotal

### Metric 3. Hydrology.

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)

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)

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)

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)

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)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input checked="" type="checkbox"/> tile	<input checked="" type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input checked="" type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input checked="" type="checkbox"/> other Row

7.5	28.5
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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	
<input checked="" type="checkbox"/> mowing	<input checked="" type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input checked="" type="checkbox"/> herbaceous/aquatic bed removal
<input checked="" type="checkbox"/> clearcutting	<input checked="" type="checkbox"/> sedimentation
<input checked="" type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input checked="" type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

28.5
subtotal this page

WETLAND 7

N-BAD-122012-07

ORAM v. 5.0 Field Form Quantitative Rating

Site: AEP TRIENT-DELAWARE	Rater(s): BAD, YAC	Date: 12/20/12
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28.5

subtotal first page

0	28.5
max 10 pts.	subtotal

**Metric 5. Special Wetlands.**

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)

-4	24.5
max 20 pts.	subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

**6b. horizontal (plan view) interspersions.**

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 hummocks/tussocks
- ☐ 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

CAT. 1

24.5

**End of Quantitative Rating. Complete Categorization Worksheets.**

Site: ACP TRONT-DELAWARE

Rater(s): BAO, JAC

Date: 12/20/12

2	2
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

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)

8	10
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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)

15	25
max 30 pts.	subtotal

### Metric 3. Hydrology.

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)

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)

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)

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)

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input checked="" type="checkbox"/> dredging          |
| <input type="checkbox"/> stormwater input | <input checked="" type="checkbox"/> other <u>ROW</u>  |

1.5	32.5
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> mowing            | <input checked="" type="checkbox"/> shrub/sapling removal          |
| <input checked="" type="checkbox"/> grazing           | <input checked="" type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting      | <input checked="" type="checkbox"/> sedimentation                  |
| <input checked="" type="checkbox"/> selective cutting | <input checked="" type="checkbox"/> dredging                       |
| <input type="checkbox"/> woody debris removal         | <input type="checkbox"/> farming                                   |
| <input type="checkbox"/> toxic pollutants             | <input type="checkbox"/> nutrient enrichment                       |

32.5
subtotal this page

WETLAND 8

ORAM v. 5.0 Field Form Quantitative Rating

W-BAO-122012-08

Site: AEP TRENT-DELAWARE

Rater(s): BAO, JAC

Date: 12/20/12

32.5

subtotal first page

0

32.5

max 10 pls.

subtotal

**Metric 5. Special Wetlands.**

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)

-4

28.5

max 20 pls.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed  
☒ 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 hummocks/tussocks  
☐ 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

CAT. 2

28.5

**End of Quantitative Rating. Complete Categorization Worksheets.**



Site: AEP TRENT- DELAWARE

Rater(s): BAD, VAC

Date: 12/20/12

2	2
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

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)

7	9
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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)

14	23
max 30 pts.	subtotal

### Metric 3. Hydrology.

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)

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)

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)

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)

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)

Check all disturbances observed

- ☐ ditch
- ☒ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☒ other row

10	33
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

33
subtotal this page

WETLAND 9

ORAM v. 5.0 Field Form Quantitative Rating

W. BAD-102012-10

Site: AEP TALENT-DELAWARE

Rater(s): BAD, JAC

Date: 12/20/12

33

subtotal first page

0 33

max 10 pts.

subtotal

**Metric 5. Special Wetlands.**

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)

2 35

max 20 pts.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed  
☒ Emergent  
 2 ☐ Shrub  
☐ Forest  
☐ Mudflats  
☐ Open water  
☐ Other

**6b. horizontal (plan view) Interspersion.**

Select only one.

- ☐ High (5)  
☐ Moderately high (4)  
☐ Moderate (3)  
 0 ☐ 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)  
 -3 ☒ 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.

- 3 ☒ Vegetated hummocks/tussocks  
☐ 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

CAT. 2

35

**End of Quantitative Rating. Complete Categorization Worksheets.**

Site: <u>APP- TRENT- DEWAR</u>	Rater(s): <u>BAO, VAC</u>	Date: <u>12/20/12</u>
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1	1
max 6 pts.	subtotal

**Metric 1. Wetland Area (size).**

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)

4	5
max 14 pts.	subtotal

**Metric 2. Upland buffers and surrounding land use.**

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)

8	13
max 30 pts.	subtotal

**Metric 3. Hydrology.**

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)

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)

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)

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)

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)

Check all disturbances observed

- ☐ ditch  
☒ tile  
☐ dike  
☐ weir  
☐ stormwater input

- ☐ point source (nonstormwater)  
☒ filling/grading  
☐ road bed/RR track  
☐ dredging  
☒ other Row

1.5	20.5
max 20 pts.	subtotal

**Metric 4. Habitat Alteration and Development.**

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

20.5
------

subtotal this page

WETLAND 10

W-BAD-122012-09

ORAM v. 5.0 Field Form Quantitative Rating

Site: HEP TRENT-DRAWARE

Rater(s): BAO, JAC

Date: 10/20/12

20.5

subtotal first page

0

20.5

max 10 pts.

subtotal

**Metric 5. Special Wetlands.**

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)

-2

18.5

max 20 pts.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed  
☒ 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 hummocks/tussocks  
☐ 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

CAT. 1

18.5

**End of Quantitative Rating. Complete Categorization Worksheets.**



Site: AEP TRIENT- DELAWARE

Rater(s): BAO, VAC

Date: 12/20/12

0	0
max 6 pts.	subtotal

**Metric 1. Wetland Area (size).**

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)

1	1
max 14 pts.	subtotal

**Metric 2. Upland buffers and surrounding land use.**

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)

8	9
max 30 pts.	subtotal

**Metric 3. Hydrology.**

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)

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)

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)

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)

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)

Check all disturbances observed

- ☒ ditch  
☒ tile  
☐ dike  
☐ weir  
☐ stormwater input

- ☐ point source (nonstormwater)  
☒ filling/grading  
☐ road bed/RR track  
☐ dredging  
☒ other Farming

6.5	15.5
max 20 pts.	subtotal

**Metric 4. Habitat Alteration and Development.**

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

15.5
subtotal this page

# WETLAND 11

ORAM v. 5.0 Field Form Quantitative Rating

W-BAD 122012-01

Site: AEP TRIBUTARY DELAWARE	Rater(s): BAD, JAC	Date: 12/20/12
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15.5

subtotal first page

0	15.5
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max 10 pts.

subtotal

## Metric 5. Special Wetlands.

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)

3	18.5
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max 20 pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

### 6b. horizontal (plan view) Interspersions.

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 hummocks/tussocks
- ☐ 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

CAT 1

18.5

End of Quantitative Rating. Complete Categorization Worksheets.

Site: APTMENT-DELAWARE	Rater(s): BAD, JAC	Date: 12/20/12
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1	1
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

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)

4	5
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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)

15	20
max 30 pts.	subtotal

### Metric 3. Hydrology.

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)

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)

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

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)

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)

- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☒ road bed/RR track
- ☒ dredging
- ☒ other Road

10.5	30.5
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

30.5
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subtotal this page

WETLAND 12

ORAM v. 5.0 Field Form Quantitative Rating

W. BAO 122012-02

Site: AEP Trent-Dezaware

Rater(s): BAO, JAL

Date: 12/20/12

30.5

subtotal first page

0

30.5

max 10 pts.

subtotal

**Metric 5. Special Wetlands.**

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)

11

41.5

max 20 pts.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed  
 2 ☐ Emergent  
 5 3 ☒ Shrub  
☐ Forest  
☐ Mudflats  
☐ Open water  
☐ Other

**6b. horizontal (plan view) Interspersion.**

Select only one.

- ☐ High (5)  
☐ Moderately high (4)  
 3 ☒ 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)  
 1 ☒ Sparse 5-25% cover (-1)  
☐ Nearly absent <5% cover (0)  
☐ Absent (1)

**6d. Microtopography.**

Score all present using 0 to 3 scale.

- 1 ☒ Vegetated hummocks/tussocks  
 4 ☐ Coarse woody debris >15cm (6in)  
☐ Standing dead >25cm (10in) dbh  
 3 ☒ 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

**End of Quantitative Rating. Complete Categorization Worksheets.**



Site: APP TILLOT-DELAWARE Rater(s): BAD, JAC Date: 12/20/12

2	2
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

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)

4	6
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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)

12	18
max 30 pts.	subtotal

### Metric 3. Hydrology.

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)

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)

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)

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)

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)

Check all disturbances observed

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input checked="" type="checkbox"/> tile  | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input checked="" type="checkbox"/> other <u>row</u>  |

9.5	27.5
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> mowing               | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input checked="" type="checkbox"/> grazing              | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting         | <input type="checkbox"/> sedimentation                    |
| <input checked="" type="checkbox"/> selective cutting    | <input type="checkbox"/> dredging                         |
| <input checked="" type="checkbox"/> woody debris removal | <input checked="" type="checkbox"/> farming               |
| <input type="checkbox"/> toxic pollutants                | <input type="checkbox"/> nutrient enrichment              |

27.5
subtotal this page

WETLAND 13

ORAM v. 5.0 Field Form Quantitative Rating

W-BAD 12 2012 - 03

Site: ACP TRONT - DEADWAGE	Rater(s): BAD, JAC	Date: 12/20/12
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27.5

subtotal first page

0	27.5
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max 10 pts.

subtotal

**Metric 5. Special Wetlands.**

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)

7	34.5
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max 20 pts.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 4 ☒ 2 Emergent
- ☒ 2 Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

**6b. horizontal (plan view) Interspersion.**

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- 3 ☒ 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)
- 3 ☒ 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.

- 3 ☒ 1 Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☒ 2 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

CAT. 2

34.5

**End of Quantitative Rating. Complete Categorization Worksheets.**

Site: ATP TRONT-DELAWARE Rater(s): BAO, JAC Date: 12/20/12

2 2  
 max 6 pts. subtotal

### Metric 1. Wetland Area (size).

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)

4 6  
 max 14 pts. subtotal

### Metric 2. Upland buffers and surrounding land use.

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)

7 13  
 max 30 pts. subtotal

### Metric 3. Hydrology.

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)

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)

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)

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)

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)

Check all disturbances observed

- ☒ ditch  
☒ tile  
☐ dike  
☐ weir  
☐ stormwater input

- ☐ point source (nonstormwater)  
☒ filling/grading  
☐ road bed/RR track  
☐ dredging

☒ other (ROW, PIPELINE & TRANS)

7.5 20.5  
 max 20 pts. subtotal

### Metric 4. Habitat Alteration and Development.

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

20.5  
 subtotal this page

Wetland 14

W-BAO-122012-ON

ORAM v. 5.0 Field Form Quantitative Rating

Site: <u>HEP TRN-DELAWARE</u>	Rater(s): <u>BAO, JAC</u>	Date: <u>12/20/04</u>
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20.5

subtotal first page

0 20.5

max 10 pts.

subtotal

**Metric 5. Special Wetlands.**

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)

1 21.5

max 20 pts.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 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 hummocks/tussocks
- ☐ 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

CAT. 1

21.5

**End of Quantitative Rating. Complete Categorization Worksheets.**



# WETLAND 15

ORAM v. 5.0 Field Form Quantitative Rating

W-BAD-122012-05

Site: <u>AEP PRENT - DEVAUARE</u>	Rater(s): <u>BAD, JAC</u>	Date: <u>12/20/12</u>
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2	2
max 6 pts.	subtotal

## Metric 1. Wetland Area (size).

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)

7	9
max 14 pts.	subtotal

## Metric 2. Upland buffers and surrounding land use.

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)

7	16.
max 30 pts.	subtotal

## Metric 3. Hydrology.

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)

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)

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)

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)

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)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input type="checkbox"/> road bed/RR track            |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input checked="" type="checkbox"/> other <u>ROW</u>  |

7.5	23.5
max 20 pts.	subtotal

## Metric 4. Habitat Alteration and Development.

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

- |   |   |
|---|---|
| <input type="checkbox"/> mowing               | <input type="checkbox"/> shrub/sapling removal          |
| <input type="checkbox"/> grazing              | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting         | <input type="checkbox"/> sedimentation                  |
| <input type="checkbox"/> selective cutting    | <input type="checkbox"/> dredging                       |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming                        |
| <input type="checkbox"/> toxic pollutants     | <input type="checkbox"/> nutrient enrichment            |

23.5
subtotal this page

last revised 1 February 2001 jjm

WETLAND 15

ORAM v. 5.0 Field Form Quantitative Rating

W-BAD-122012-05

Site: AEP TRENT-DELAWARE	Rater(s): BAD, JAC	Date: 12/20/12
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23.5

subtotal first page

0	23.5
max 10 pts.	subtotal

**Metric 5. Special Wetlands.**

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)

-2	21.5
max 20 pts.	subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 2 ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

**6b. horizontal (plan view) Interspersion.**

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- 0 ☐ 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**

- 5 ☒ 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.

- 1 ☐ Vegetated hummocks/tussocks
- ☐ 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

CAT. 1

21.5

**End of Quantitative Rating. Complete Categorization Worksheets.**

Site: AEP TRIENT-DELAWARE

Rater(s): BAO, JAC

Date: 12/19/12

0	0
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

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)

1	1
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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)

9	10
max 30 pts.	subtotal

### Metric 3. Hydrology.

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)

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)

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)

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)

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)

Check all disturbances observed

- ☒ ditch
- ☒ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☒ road bed/RR track
- ☐ dredging
- ☐ other

8	18
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

18
subtotal this page

# WETLAND 16

ORAM v. 5.0 Field Form Quantitative Rating

W-BAO 12/19/12-10

Site: <u>AEP TRENT-DELAWARE</u>	Rater(s): <u>BAO, JAC</u>	Date: <u>12/19/12</u>
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18
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subtotal first page

0	18
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max 10 pts.

subtotal

## Metric 5. Special Wetlands.

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)

2	20
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max 20 pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☒ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

### 6b. horizontal (plan view) Interspersions.

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 hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☒ Amphibian breeding pools

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### 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

CAT. 1

20
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End of Quantitative Rating. Complete Categorization Worksheets.



**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**1/22/2013 2:44:54 PM**

**in**

**Case No(s). 13-0171-EL-BLN**

Summary: Letter of Notification Trent-Delaware 138kV Line Improvement Project - Part 1  
electronically filed by Mr. Yazen Alami on behalf of AEP Ohio Transmission Company