

APPENDIX A: USACE WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/17/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A1
 Investigator(s): JMM KMP Section, Township, Range: T1N R17E S12
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 2-4 Lat: 41.056935 Long: -82.846773 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes (Ble1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B) | | | | | | | | | | | | | | |
|--|------------------|-------------------|------------------|--|-------------------|--------------|----------------------|----------------|------------------------|------------------|-----------------------|-----------------|------------------------|-----------------|----------------------|----------------|-------------------------------|----------------|
| 1. <u>Juglans nigra</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>250</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.27</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>90</u> | x 2 = <u>180</u> | FAC species <u>10</u> | x 3 = <u>30</u> | FACU species <u>10</u> | x 4 = <u>40</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>110</u> (A) | <u>250</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>90</u> | x 2 = <u>180</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>10</u> | x 3 = <u>30</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>10</u> | x 4 = <u>40</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>110</u> (A) | <u>250</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | | | | | | | | | | | | | | | |
| 1. <u>Rosa multiflora</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | | | | | | | | | | | | | | | |
| 1. <u>Phalaris arundinacea</u> | <u>65</u> | <u>X</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Polygonum pensylvanicum</u> | <u>25</u> | <u>X</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 3. <u>Vernonia gigantea</u> | <u>10</u> | _____ | <u>FAC</u> | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | Remarks: (Include photo numbers here or on a separate sheet.) | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: <u>15'</u>) | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| _____ = Total Cover | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: W-A1

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/2 | 90 | 7.5YR 5/6 | 10 | C | M | SIL | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|---|---|
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/17/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A1-UP
 Investigator(s): JMM KMP Section, Township, Range: T1N R17E S12
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex
 Slope (%): 0-3 Lat: 41.057015° Long: -82.846392° Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes (Ble1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Glycine max</u> 90 X UPL 2. <u>Setaria faberi</u> 10 FACU 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

Sampling Point: W-A1-UP

HYDROLOGY

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

- Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A4
 Investigator(s): JMM KMP Section, Township, Range: T2N R17E S32
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 0-5 Lat: 41.089937 Long: -82.929647 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes (Ble1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B) | | | | | | | | | | | | | | |
|---|------------------|-------------------|------------------|--|-------------------|--------------|----------------------|----------------|------------------------|------------------|----------------------|-----------------|-----------------------|-----------------|----------------------|----------------|-------------------------------|----------------|
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| = Total Cover | | | | Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>215</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.15</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>90</u> | x 2 = <u>180</u> | FAC species <u>5</u> | x 3 = <u>15</u> | FACU species <u>5</u> | x 4 = <u>20</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>100</u> (A) | <u>215</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>90</u> | x 2 = <u>180</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>5</u> | x 3 = <u>15</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>5</u> | x 4 = <u>20</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> (A) | <u>215</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | | | | | | | | | | | | | | | |
| 1. <u>Rosa multiflora</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | |
| 1. <u>Phalaris arundinacea</u> | <u>75</u> | <u>X</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Solidago gigantea</u> | <u>15</u> | _____ | <u>FACW</u> | | | | | | | | | | | | | | | |
| 3. <u>Symphyotrichum lanceolatum</u> | <u>5</u> | _____ | <u>FAC</u> | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: W-A4

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 5/2 | 95 | 7.5YR 5/6 | 5 | C | M/PL | SIL | |
| 8-16 | 10YR 4/2 | 90 | 7.5YR 5/6 | 10 | C | M/PL | SICL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|--|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A4/5-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R17E S32
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.090126° Long: -82.929816° Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes (Ble1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Glycine max</u> 80 X UPL 2. <u>Setaria faberi</u> 10 FACU 3. <u>Echinochloa crus-galli</u> 10 FACW 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A4/5-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 5/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|--|
| Hydric Soil Indicators: <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|--|

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A5
 Investigator(s): JMM KMP Section, Township, Range: T2N R17E S32
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 0-5 Lat: 41.090003 Long: -82.927616 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes (Ble1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Rubus occidentalis</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>5</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Phalaris arundinacea</u> | <u>55</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Scirpus atrovirens</u> | <u>10</u> | | <u>OBL</u> | |
| 3. <u>Symphyotrichum lanceolatum</u> | <u>5</u> | | <u>FAC</u> | |
| 4. <u>Carex scoparia</u> | <u>5</u> | | <u>FACW</u> | |
| 5. <u>Juncus tenuis</u> | <u>20</u> | <u>X</u> | <u>FAC</u> | |
| 6. <u>Daucus carota</u> | <u>5</u> | | <u>UPL</u> | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>100</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A5

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-2 | 10YR 3/2 | 100 | | | | | SIL | |
| 2-8 | 10YR 5/2 | 80 | 7.5YR 4/6 | 10 | C | M/PL | CL | |
| | 7.5Y 5/6 | 10 | | | | | | |
| 8-16 | 10YR 5/2 | 70 | 7.5YR 4/6 | 15 | C | M/PL | C | |
| | 7.5Y 5/6 | 15 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| Restrictive Layer (if observed): | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|----------------------------------|--|
| Type: _____ | |
| Depth (inches): _____ | |

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|--|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| Field Observations: | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|-----------------------|--|
| Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/27/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A36
 Investigator(s): JMM KMP Section, Township, Range: T1N R17E S5
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.078587 Long: -82.926929 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Phalaris arundinacea</u> | <u>90</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Apocynum cannabinum</u> | <u>5</u> | | <u>FAC</u> | |
| 3. <u>Dipsacus fullonum</u> | <u>5</u> | | <u>FACU</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>100</u> = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Woody Vine Stratum (Plot size: <u>5'</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A36

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 95 | 7.5YR 5/6 | 5 | C | M | SIL | |
| 8-16 | 10YR 4/2 | 90 | 7.5YR 5/6 | 10 | C | M | SICL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | | |
|---|---|--|--|
| Primary Indicators (minimum of one is required; check all that apply) | | Secondary Indicators (minimum of two required) | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | | |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 2 Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A36-UP
 Investigator(s): JMM KMP Section, Township, Range: T1N R17E S5
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.078748 Long: -82.926923 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|------------------|-------------------|------------------|---|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Glycine max</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A36-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/27/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A35
 Investigator(s): JMM KMP Section, Township, Range: T2N R17E S31
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 3-5 Lat: 41.087859 Long: -82.942252 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Phalaris arundinacea</u> | <u>50</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Echinochloa crus-galli</u> | <u>30</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Cyperus esculentus</u> | <u>10</u> | | <u>FACW</u> | |
| 4. <u>Rumex crispus</u> | <u>10</u> | | <u>FAC</u> | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>100</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A35

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 5/2 | 97 | 7.5YR 5/6 | 3 | C | M | SIL | |
| 8-16 | 10YR 5/2 | 93 | 7.5YR 4/6 | 7 | C | M | SICL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| Restrictive Layer (if observed): | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--------------------------------------|--|
| Type: _____ Depth (inches): _____ | |

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|---|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) | |

| Field Observations: | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|-----------------------|--|
| Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/27/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A35
 Investigator(s): JMM KMP Section, Township, Range: T2N R17E S31
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 3-5 Lat: 41.087859 Long: -82.942252 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Phalaris arundinacea</u> | <u>50</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Echinochloa crus-galli</u> | <u>30</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Cyperus esculentus</u> | <u>10</u> | | <u>FACW</u> | |
| 4. <u>Rumex crispus</u> | <u>10</u> | | <u>FAC</u> | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| | | | | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A35

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 5/2 | 97 | 7.5YR 5/6 | 3 | C | M | SIL | |
| 8-16 | 10YR 5/2 | 93 | 7.5YR 4/6 | 7 | C | M | SICL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| Restrictive Layer (if observed): | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--------------------------------------|--|
| Type: _____ Depth (inches): _____ | |

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|---|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) | |

| Field Observations: | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|-----------------------|--|
| Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/18/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A2
 Investigator(s): JMM KMP Section, Township, Range: T2N R17E S27
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.104408 Long: -82.897392 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes (Ble1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PFO | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>88%</u> (A/B) |
|---|------------------|-------------------|------------------|---|
| 1. <u>Acer rubrum</u> | <u>5</u> | | <u>FAC</u> | |
| 2. <u>Quercus palustris</u> | <u>25</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Ulmus americana</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>45</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| 1. <u>Ulmus americana</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Rosa multiflora</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>15</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) <input type="checkbox"/> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Boehmeria cylindrica</u> | <u>25</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Microstegium vimineum</u> | <u>30</u> | <u>X</u> | <u>FAC</u> | |
| 3. <u>Toxicodendron radicans</u> | <u>15</u> | <u>X</u> | <u>FAC</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>70</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. <u>Toxicodendron radicans</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Sampling Point: W-A2

HYDROLOGY

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

- Secondary Indicators (minimum of two required)

- ☒ Surface Soil Cracks (B6)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/18/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A2-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R17E S27
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.104188° Long: -82.897140° Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes (Ble1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Glycine max</u> 85 X UPL 2. <u>Setaria faberi</u> 10 FACU 3. <u>Echinochloa crus-galli</u> 5 FACW 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 100 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A2-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09272018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B14
 Investigator(s): CV, JB Section, Township, Range: T2N R17E S27
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2 Lat: 41.101753 Long: -82.881445 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: PFO | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------------------------|------------------|--|
| 1. <u>Quercus palustris</u> | <u>20</u> | <input checked="" type="checkbox"/> | <u>FACW</u> | |
| 2. <u>Acer saccharinum</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FACW</u> | |
| 3. <u>Ulmus americana</u> | <u>5</u> | | <u>FACW</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>35</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| 1. <u>Ulmus americana</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>FACW</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>10</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 1. <u>Microstegium vimineum</u> | <u>30</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | |
| 2. <u>Phalaris arundinacea</u> | <u>25</u> | <input checked="" type="checkbox"/> | <u>FACW</u> | |
| 3. <u>Scirpus cyperinus</u> | <u>5</u> | | <u>FACW</u> | |
| 4. <u>Carex grayii</u> | <u>5</u> | | <u>FACW</u> | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>65</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. <u>Toxicodendron radicans</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | |
| 2. _____ | | | | |
| <u>5</u> = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B14

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | | Primary Indicators (minimum of one is required: check all that apply) | | Secondary Indicators (minimum of two required) | |
|--|---|--|---|--|--|---|
| <input type="checkbox"/> | Surface Water (A1) | | <input type="checkbox"/> | Water-Stained Leaves (B9) | <input checked="" type="checkbox"/> | Surface Soil Cracks (B6) |
| <input type="checkbox"/> | High Water Table (A2) | | <input type="checkbox"/> | Aquatic Fauna (B13) | <input checked="" type="checkbox"/> | Drainage Patterns (B10) |
| <input type="checkbox"/> | Saturation (A3) | | <input type="checkbox"/> | True Aquatic Plants (B14) | <input type="checkbox"/> | Dry-Season Water Table (C2) |
| <input type="checkbox"/> | Water Marks (B1) | | <input type="checkbox"/> | Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> | Crayfish Burrows (C8) |
| <input type="checkbox"/> | Sediment Deposits (B2) | | <input type="checkbox"/> | Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> | Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> | Drift Deposits (B3) | | <input type="checkbox"/> | Presence of Reduced Iron (C4) | <input type="checkbox"/> | Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> | Algal Mat or Crust (B4) | | <input type="checkbox"/> | Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> | Geomorphic Position (D2) |
| <input type="checkbox"/> | Iron Deposits (B5) | | <input type="checkbox"/> | Thin Muck Surface (C7) | <input checked="" type="checkbox"/> | FAC-Neutral Test (D5) |
| <input type="checkbox"/> | Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> | Gauge or Well Data (D9) | | |
| <input checked="" type="checkbox"/> | Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> | Other (Explain in Remarks) | | |
| Field Observations: | | | | | | |
| Surface Water Present? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | Depth (inches): | | | |
| Water Table Present? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | Depth (inches): | | | |
| Saturation Present? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | Depth (inches): | | | |
| (includes capillary fringe) | | | | | | |
| | | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | | | |
| Remarks: | | | | | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/27/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B14 UP
 Investigator(s): CV, JB Section, Township, Range: T2N R17E S27
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Linear
 Slope (%): 0-2 Lat: 41.101924 Long: -82.881315 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) | |
|---|------------------|-------------------|------------------|--|--|
| 1. <u>Ulmus americana</u> | <u>20</u> | <u>X</u> | <u>FACW</u> | | |
| 2. _____ | _____ | _____ | _____ | | |
| 3. _____ | _____ | _____ | _____ | | |
| 4. _____ | _____ | _____ | _____ | | |
| <u>20</u> = Total Cover Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ | |
| 1. <u>Ulmus americana</u> | <u>5</u> | <u>X</u> | <u>FACW</u> | | |
| 2. _____ | _____ | _____ | _____ | | |
| 3. _____ | _____ | _____ | _____ | | |
| 4. _____ | _____ | _____ | _____ | | |
| <u>5</u> = Total Cover Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 1. <u>Microstegium vimineum</u> | <u>30</u> | <u>X</u> | <u>FAC</u> | | |
| 2. <u>Phalaris arundinacea</u> | <u>20</u> | <u>X</u> | <u>FACW</u> | | |
| 3. <u>Carex grayi</u> | <u>5</u> | _____ | <u>FACW</u> | | |
| 4. _____ | _____ | _____ | _____ | | |
| 5. _____ | _____ | _____ | _____ | | |
| 6. _____ | _____ | _____ | _____ | | |
| 7. _____ | _____ | _____ | _____ | | |
| 8. _____ | _____ | _____ | _____ | | |
| 9. _____ | _____ | _____ | _____ | | |
| <u>55</u> = Total Cover Woody Vine Stratum (Plot size: _____) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| 1. _____ | _____ | _____ | _____ | | |
| 2. _____ | _____ | _____ | _____ | | |
| <u>_____</u> = Total Cover Remarks: (Include photo numbers here or on a separate sheet.) | | | | | |

SOIL

Sampling Point: W-B14 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/2 | 100 | | | | | SIL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09272018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B13
 Investigator(s): CV, JB Section, Township, Range: Reed
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 1-3 Lat: 41.103526 Long: -82.877788 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: PFO | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Acer rubrum</u> | <u>20</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Tilia americana</u> | <u>5</u> | | <u>FACU</u> | |
| 3. <u>Ulmus americana</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>35</u> = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Fraxinus americana</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Cornus florida</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>10</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Microstegium vimineum</u> | <u>30</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Pilea pumila</u> | <u>25</u> | <u>X</u> | <u>FACW</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>55</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Sampling Point: W-B13

HYDROLOGY

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

Field Observations:

Wetland Hydrology Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B13 UP
 Investigator(s): CV, JB Section, Township, Range: Bloom
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Linear
 Slope (%): 0 Lat: 41.033599 Long: -83.058844 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Acer saccharum</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Acer rubrum</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>10</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Fraxinus americana</u> | <u>10</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 5. _____ | _____ | _____ | _____ | |
| <u>10</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Ageratina altissima</u> | <u>20</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Pilea pumila</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Microstegium vimineum</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 4. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 10. _____ | _____ | _____ | _____ | |
| <u>45</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| <u>_____</u> = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B13 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 3/2 | 100 | | | | | SIL | |
| 6-16 | 10YR 4/2 | 100 | | | | | SICL | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|---|---|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09272018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B12
 Investigator(s): CV, JB Section, Township, Range: Reed
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 2-5 Lat: 41.102735 Long: -82.878477 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Microstegium vimineum</u> 35 X FAC 2. <u>Symphotrichum pilosum</u> 25 X FAC 3. <u>Pilea pumila</u> 15 FACW 4. <u>Phalaris arundinacea</u> 20 X FACW 5. <u>Impatiens capensis</u> 5 FACW 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 100 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-B12

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-2 | 10YR 3/2 | 100 | | | | | Mk | |
| 2-4 | 10YR 4/2 | 90 | 2.5YR 5/8 | 10 | C | M | SIL | |
| 4-16 | 10YR 5/1 | 85 | 2.5YR 5/8 | 15 | C | M | SIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Coast Prairie Redox (A16) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Dark Surface (S7) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Iron-Manganese Masses (F12) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input checked="" type="checkbox"/> 2 cm Muck (A10) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |
| <input type="checkbox"/> Loamy Mucky Mineral (F1) | |
| <input type="checkbox"/> Loamy Gleyed Matrix (F2) | |
| <input checked="" type="checkbox"/> Depleted Matrix (F3) | |
| <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Redox Depressions (F8) | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| Restrictive Layer (if observed): | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|----------------------------------|--|
| Type: _____ | |
| Depth (inches): _____ | |

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|--|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Iron Deposits (B5) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

| Field Observations: | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|----------------------------|--|
| Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Depth (inches): <u>0.5</u> | |
| Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Depth (inches): <u>0</u> | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Depth (inches): <u>0</u> | |

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B12 UP
 Investigator(s): CV, JB Section, Township, Range: Bloom
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Linear
 Slope (%): 0 Lat: 41.102848 Long: -82.878402 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Acer saccharum</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Celtis occidentalis</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>10</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Fraxinus americana</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>5</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Ageratina altissima</u> | <u>20</u> | <u>X</u> | <u>FACU</u> | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 2. <u>Pilea pumila</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Microstegium vimineum</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>45</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B12 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-4 | 10YR 3/2 | 100 | | | | | SIL | |
| 4-16 | 10YR 4/2 | 100 | | | | | SIL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u> X </u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u> X </u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/18/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A3
 Investigator(s): JMM KMP Section, Township, Range: T2N R17E S21
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.124201 Long: -82.916656 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded (Sh) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2*</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|--------------------------|-------------------|------------------|--|
| 1. <u>Crataegus sp.</u> | <u>5</u> | <u>X</u> | <u>ND</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | <u>5</u> = Total Cover | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Salix nigra</u> | <u>5</u> | <u>X</u> | <u>OBL</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | <u>5</u> = Total Cover | _____ | _____ | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Phalaris arundinacea</u> | <u>75</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Cirsium vulgare</u> | <u>5</u> | _____ | <u>FACU</u> | |
| 3. <u>Boehmeria cylindrica</u> | <u>10</u> | _____ | <u>OBL</u> | |
| 4. <u>Equisetum pratense</u> | <u>5</u> | _____ | <u>FACW</u> | |
| 5. <u>Solidago gigantea</u> | <u>5</u> | _____ | <u>FACW</u> | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | <u>100</u> = Total Cover | _____ | _____ | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | _____ = Total Cover |

Remarks: (Include photo numbers here or on a separate sheet.)
 ND- Not Determined
 *Vegetation not ID'd down to species level not included in dominance test

SOIL

Sampling Point: W-A3

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-7 | 10YR 5/2 | 95 | 7.5YR 4/6 | 5 | C | M/PL | SL | |
| 7-16 | 10YR 5/2 | 85 | 7.5 YR 4/6 | 15 | C | M/PL | LS | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input checked="" type="checkbox"/> Sandy Gleyed Matrix (S4) <input checked="" type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required: check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/18/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A3-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R17E S21
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex
 Slope (%): 0-5 Lat: 41.124413° Long: -82.916565° Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded (Sh) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Taraxacum officinale</u> 25 X FACU 2. <u>Phleum pratense</u> 20 X FACU 3. <u>Dactylis glomerata</u> 15 X FACU 4. <u>Trifolium pratense</u> 15 X FACU 5. <u>Aueen annes lace</u> 10 UPL 6. <u>Achillea millefolium</u> 5 FACU 7. _____ 8. _____ 9. _____ 10. _____ 90 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A3-UF

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/3 | 100 | | | | | SIL | |
| 8-16 | 10YR 5/4 | 100 | | | | | SIL | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u> X </u> |
|---|--|

Remarks: _____

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u> X </u> Depth (inches): _____ Water Table Present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation Present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u> X </u> |
|--|--|

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

Remarks: _____

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A8
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S25
 Landform (hillslope, terrace, etc.): Linear Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.110156 Long: -82.970844 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded (Sh) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PSS | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|------------------|-------------------|------------------|--|
| 1. <u>Populus deltoides</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>10</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Salix nigra</u> | <u>15</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Cornus racemosa</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 3. <u>Rubus occidentalis</u> | <u>5</u> | _____ | <u>FACU</u> | |
| 4. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 5. _____ | _____ | _____ | _____ | |
| <u>30</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Ambrosia trifida</u> | <u>15</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Eupatorium perfoliatum</u> | <u>10</u> | <u>X</u> | <u>OBL</u> | |
| 3. <u>Verbena hastata</u> | <u>5</u> | _____ | <u>FACW</u> | |
| 4. <u>Solidago gigantea</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | Remarks: (Include photo numbers here or on a separate sheet.) |
| <u>45</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |

SOIL

Sampling Point: W-A8

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 4/2 | 100 | | | | | SIL | |
| 6-16 | 10YR 4/2 | 95 | 7.5YR 5/6 | 5 | C | M | SIL | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | | | Indicators for Problematic Hydric Soils ³ : | | |
|--|--|---|--|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Coast Prairie Redox (A16) | | | |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Dark Surface (S7) | | | |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Iron-Manganese Masses (F12) | | | |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) | | | |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Other (Explain in Remarks) | | | |
| <input type="checkbox"/> 2 cm Muck (A10) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | | | | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | | | | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | | | | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | | | | |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | | | | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks: _____ | |

HYDROLOGY

| Wetland Hydrology Indicators: | | | |
|--|---|---|--|
| Primary Indicators (minimum of one is required; check all that apply) | | Secondary Indicators (minimum of two required) | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input checked="" type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | | |
| Field Observations: | | | |
| Surface Water Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): | |
| Water Table Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): | |
| Saturation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): | |
| (includes capillary fringe) | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A8-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S25
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.110189 Long: -82.970769 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| _____ = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Trifolium pratense</u> | <u>20</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Setaria faberi</u> | <u>5</u> | | <u>FACU</u> | |
| 3. <u>Dactylis glomerata</u> | <u>10</u> | <u>X</u> | <u>FACU</u> | |
| 4. <u>Phleum pratense</u> | <u>15</u> | <u>X</u> | <u>FACU</u> | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A8-UF

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|---|---|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/18/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A7
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S24
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.113430 Long: -82.967275 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded (Sh) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|------------------|-------------------|------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Cornus amomum</u> | <u>10</u> | <u>X</u> | <u>OBL</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Typha latifolia</u> | <u>35</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Leersia oryzoides</u> | <u>25</u> | <u>X</u> | <u>OBL</u> | |
| 3. <u>Solidago gigantea</u> | <u>5</u> | | <u>FACW</u> | |
| 4. <u>Ambrosia trifida</u> | <u>5</u> | | <u>FAC</u> | |
| 5. <u>Echinochloa crus-galli</u> | <u>5</u> | | <u>FACW</u> | |
| 6. <u>Phalaris arundinacea</u> | <u>25</u> | <u>X</u> | <u>FACW</u> | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | Remarks: (Include photo numbers here or on a separate sheet.) |

SOIL

Sampling Point: W-A7

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 90 | 7.5YR 4/6 | 10 | C | M/PL | SL | |
| 8-16 | 10YR 4/2 | 85 | 7.5YR 4/6 | 15 | C | M/PL | SCL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input checked="" type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|--|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) |
| <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 2 Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 0 | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A6&7-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S24
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.090126° Long: -82.929816° Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes (Ble1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Glycine max</u> 80 X UPL 2. <u>Setaria faberi</u> 10 FACU 3. <u>Echinochloa crus-galli</u> 10 FACW 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A4/5-l

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 5/4 | 100 | | | | | SIL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|--|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|--|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u> X </u> |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|--|--|
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <u> X </u> Depth (inches): _____ Water Table Present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation Present? Yes _____ No <u> X </u> Depth (inches): _____ <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes _____ No <u> X </u> |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/18/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A6
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S24
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.113464 Long: -82.967103 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Typha latifolia</u> | <u>45</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Leersia oryzoides</u> | <u>15</u> | <u>X</u> | <u>OBL</u> | |
| 3. <u>Solidago gigantea</u> | <u>10</u> | | <u>FACW</u> | |
| 4. <u>Ambrosia trifida</u> | <u>10</u> | | <u>FAC</u> | |
| 5. <u>Echinochloa crus-galli</u> | <u>5</u> | | <u>FACW</u> | |
| 6. <u>Phalaris arundinacea</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| | | | | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A6

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 90 | 7.5YR 4/6 | 10 | C | MPL | SL | |
| 8-16 | 10YR 4/2 | 85 | 7.5YR 4/6 | 15 | C | MPL | SCL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input checked="" type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|--|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A9
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S25
 Landform (hillslope, terrace, etc.): Linear Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.098722 Long: -82.972758 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded (Sh) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

| | | | | | |
|--|--------------|----------|--|--------------|----------|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No _____ | Is the Sampled Area within a Wetland? | Yes <u>X</u> | No _____ |
| Hydric Soil Present? | Yes <u>X</u> | No _____ | | | |
| Wetland Hydrology Present? | Yes <u>X</u> | No _____ | | | |
| Remarks: | | | | | |
| Cowardin: PEM | | | | | |
| Soils Continued: Glynwood clay loam, 6 to 12 percent slopes, eroded (GwD5C2) | | | | | |

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | |
|--|------------------|-------------------|------------------|---------------------|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| | | | | _____ = Total Cover |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| | | | | _____ = Total Cover |
| Herb Stratum (Plot size: 5' _____) | | | | |
| 1. Phalaris arundinacea | 45 | X | FACW | |
| 2. Apocynum cannabinum | 5 | | FAC | |
| 3. Leersia oryzoides | 25 | X | OBL | |
| 4. Solidago gigantea | 5 | | FACW | |
| 5. Ambrosia trifida | 5 | | FAC | |
| 6. Echinochloa crus-galli | 5 | | FACW | |
| 7. Polygonum sagittatum | 15 | | OBL | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| | | | | 105 = Total Cover |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| | | | | _____ = Total Cover |

| Dominance Test worksheet: | |
|--|---|
| Number of Dominant Species That Are OBL, FACW, or FAC: | 2 (A) |
| Total Number of Dominant Species Across All Strata: | 2 (B) |
| Percent of Dominant Species That Are OBL, FACW, or FAC: | (A/B) |
| Prevalence Index worksheet: | |
| Total % Cover of: | Multiply by: |
| OBL species _____ | x 1 = _____ |
| FACW species _____ | x 2 = _____ |
| FAC species _____ | x 3 = _____ |
| FACU species _____ | x 4 = _____ |
| UPL species _____ | x 5 = _____ |
| Column Totals: | (A) _____ (B) _____ |
| Prevalence Index = B/A = _____ | |
| Hydrophytic Vegetation Indicators: | |
| <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation | |
| <input checked="" type="checkbox"/> 2 - Dominance Test is >50% | |
| ___ 3 - Prevalence Index is ≤3.0 ¹ | |
| ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| ___ Problematic Hydrophytic Vegetation ¹ (Explain) | |
| ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| Hydrophytic Vegetation Present? | |
| Yes | <input checked="" type="checkbox"/> No <input type="checkbox"/> |

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-A9

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 95 | 7.5YR 4/6 | 5 | C | M | CL | |
| 8-16 | 10YR 4/2 | 85 | 7.5YR 4/6 | 15 | C | M | CL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|---|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A9-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S25
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.098468° Long: -82.972571° Datum: NAD 83
 Soil Map Unit Name: Glynwood clay loam, 6 to 12 percent slopes, eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Glycine max</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A9-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u> X </u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u> X </u> Depth (inches): _____ Water Table Present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation Present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u> X </u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A12
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S36
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 0-3 Lat: 41.089012 Long: -82.972068 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Scirpus atrovirens</u> | <u>15</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Juncus effusus</u> | <u>15</u> | <u>X</u> | <u>OBL</u> | |
| 3. <u>Echinochloa crus-galli</u> | <u>20</u> | <u>X</u> | <u>FACW</u> | |
| 4. <u>Panicum dichotomiflorum</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 5. <u>Carex frankii</u> | <u>20</u> | <u>X</u> | <u>OBL</u> | |
| 6. <u>Symphyotrichum racemosum</u> | <u>10</u> | | <u>FACW</u> | |
| 7. <u>Euthamia graminifolia</u> | <u>5</u> | | <u>FACW</u> | |
| 8. <u>Agrimonia parviflora</u> | <u>5</u> | | <u>FACW</u> | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>105</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A12

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 95 | 7.5YR 4/6 | 5 | C | MPL | SIL | |
| 8-16 | 10YR 4/2 | 90 | 7.5YR 4/6 | 10 | C | MPI | SIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|--|---|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A12-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S36
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.109140° Long: -83.028380° Datum: NAD 83
 Soil Map Unit Name: Glynwood clay loam, 6 to 12 percent slopes, eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Glycine max</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

Sampling Point: W-A12-UP

HYDROLOGY

Wetland Hydrology Indicators:

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A13
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S35
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 41.085575 Long: -82.986255 Datum: NAD 83
 Soil Map Unit Name: Chagrin silt loam, occasionally flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---------------------------------|---|--|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Cowardin: PEM | | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. <u>Salix nigra</u> | <u>10</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Rosa multiflora</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | | | Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) <input type="checkbox"/> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Phalaris arundinacea</u> | <u>45</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Impatiens capensis</u> | <u>15</u> | | <u>FACW</u> | |
| 3. <u>Polygonum setaceum</u> | <u>5</u> | | <u>OBL</u> | |
| 4. <u>Ambrosia trifida</u> | <u>5</u> | | <u>FAC</u> | |
| 5. <u>Leersia oryzoides</u> | <u>20</u> | <u>X</u> | <u>OBL</u> | |
| 6. <u>Boehmeria cylindrica</u> | <u>10</u> | | <u>OBL</u> | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| | | | | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Sampling Point: W-A13

HYDROLOGY

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

- Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A13-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S35
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex
 Slope (%): 0-3 Lat: 41.085598° Long: -82.986407° Datum: NAD 83
 Soil Map Unit Name: Chagrin silt loam, occasionally flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|--|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. <u>Rubus allegheniensis</u> <u>5</u> <u></u> <u>FACU</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Maiz</u> <u>75</u> <u>X</u> <u>UPL</u> 2. <u>Setaria faberi</u> <u>10</u> <u></u> <u>FACU</u> 3. <u>Solodago canadensis</u> <u>5</u> <u></u> <u>FACU</u> 4. <u>Dactylis glomerata</u> <u>5</u> <u></u> <u>FACU</u> 5. <u>Phleum pratense</u> <u>5</u> <u></u> <u>FACU</u> 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ | | | | |
| _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A13 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u> X </u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u> X </u> Depth (inches): _____ Water Table Present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation Present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u> X </u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A11
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S36
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 0-5 Lat: 41.083834 Long: -82.974342 Datum: NAD 83
 Soil Map Unit Name: Glynwood silt loam, end moraine, 2 to 6 percent slopes (Gwe1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Euthamia graminifolia</u> 30 X FACW 2. <u>Solidago gigantea</u> 15 X FACW 3. <u>Symphyotrichum racemosum</u> 15 X FACW 4. <u>Juncus effusus</u> 15 X OBL 5. <u>Scirpus atrovirens</u> 5 OBL 6. <u>Carex vulpinoidea</u> 5 FACW 7. <u>Echinochloa crus-galli</u> 5 FACW 8. _____ 9. _____ 10. _____ 90 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

Sampling Point: W-A11

HYDROLOGY

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

| | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input checked="" type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A11 UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S36
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): None
 Slope (%): 0 Lat: 41.083858° Long: -82.974109° Datum: NAD 83
 Soil Map Unit Name: Glynwood silt loam, end moraine, 2 to 6 percent slopes (Gwe1B1) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| _____ = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Zea mays</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A11-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|--|
| Hydric Soil Indicators: <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|--|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u> X </u> |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|--|--|
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <u> X </u> Depth (inches): _____ Water Table Present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation Present? Yes _____ No <u> X </u> Depth (inches): _____ <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes _____ No <u> X </u> |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A14
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S35
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.090248 Long: -82.993673 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PFO | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Acer rubrum</u> | <u>20</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Quercus palustris</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Populus deltoides</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>45</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Cornus amomum</u> | <u>25</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Rosa multiflora</u> | <u>5</u> | _____ | <u>FACU</u> | |
| 3. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| <u>30</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Carex intumescens</u> | <u>20</u> | <u>X</u> | <u>FACW</u> | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Boehmeria cylindrica</u> | <u>25</u> | <u>X</u> | <u>OBL</u> | |
| 3. <u>Apocynum cannabinum</u> | <u>5</u> | _____ | <u>FAC</u> | |
| 4. <u>Impatiens capensis</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 5. <u>Toxicodendron radicans</u> | <u>15</u> | <u>X</u> | <u>FAC</u> | |
| 6. <u>Lysimachia nummularia</u> | <u>5</u> | _____ | <u>FACW</u> | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 7. <u>Onoclea sensibilis</u> | <u>5</u> | _____ | <u>FACW</u> | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>90</u> = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Woody Vine Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Toxicodendron radicans</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A14

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 3/2 | 95 | 7.5YR 4/6 | 5 | C | M | SIL | |
| 6-16 | 10YR 4/1 | 90 | 7.5 YR 5/6 | 10 | C | M | SICL | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Coast Prairie Redox (A16) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Dark Surface (S7) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Iron-Manganese Masses (F12) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2 cm Muck (A10) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| Restrictive Layer (if observed): | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|----------------------------------|--|
| Type: _____ | |
| Depth (inches): _____ | |

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|--|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | <input checked="" type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Saturation (A3) | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Iron Deposits (B5) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

| Field Observations: | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--|---|--|
| Surface Water Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | |
| Water Table Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | |
| Saturation Present? (includes capillary fringe) | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | |

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A14-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S35
 Landform (hillslope, terrace, etc.): Linear Local relief (concave, convex, none): Convex
 Slope (%): 0-2 Lat: 41.090534° Long: -82.993308° Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. <u>Acer saccharum</u> | <u>20</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Acer saccharum</u> | <u>15</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Ulmus rubra</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 5. _____ | _____ | _____ | _____ | |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Potentilla simplex</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Polygonum virginianum</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 3. <u>Ageratina altissima</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 4. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | Woody Vine Stratum (Plot size: <u>15'</u>) |
| 10. _____ | _____ | _____ | _____ | |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Parthenocissus quinquefolia</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A14-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|--|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|--|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u> X </u> |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|---|---|
| <u>Primary Indicators (minimum of one is required: check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <u> X </u> Depth (inches): _____ Water Table Present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation Present? Yes _____ No <u> X </u> Depth (inches): _____ <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes _____ No <u> X </u> |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A15 PEM
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S35
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 0-5 Lat: 41.091054 Long: -82.994955 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B) |
|--|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Echinochloa crus-galli</u> 15 X FACW 2. <u>Panicum dichotomiflorum</u> 20 X FACW 3. <u>Cyperus esculentus</u> 5 FACW 4. <u>Ambrosia artemisiifolia</u> 15 X FACU 5. <u>Toxicodendron radicans</u> 15 X FAC 6. <u>Polygonum pensylvanicum</u> 5 FACW 7. _____ 8. _____ 9. _____ 10. _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ = Total Cover | | | | |
| 75 = Total Cover | | | | |
| Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A15 PEM

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 90 | 7.5YR 4/6 | 10 | C | M | CL | |
| 8-16 | 10YR 4/2 | 85 | 7.5 YR 4/6 | 15 | C | M | C | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|---|
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A15-PFO
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S35
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 0-5 Lat: 41.090893 Long: -82.995067 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PFO | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---------------------------------------|------------------|-------------------|-------------------------|--|
| 1. <u>Quercus palustris</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Ulmus americana</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Quercus rubrus</u> | <u>5</u> | | <u>FACU</u> | |
| 4. <u></u> | | | | |
| | | | <u>30</u> = Total Cover | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | <u>20</u> = Total Cover | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | <u>70</u> = Total Cover | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | <u>5</u> = Total Cover | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-A14 PFO

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 95 | 7.5YR 4/6 | 5 | C | M | SICL | |
| 8-16 | 10YR 4/2 | 85 | 7.5YR 4/6 | 15 | C | M | CL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Coast Prairie Redox (A16) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Dark Surface (S7) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Iron-Manganese Masses (F12) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2 cm Muck (A10) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|--|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | <input checked="" type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Saturation (A3) | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Iron Deposits (B5) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A15-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S35
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.090969 Long: -82.995333 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Glycine max</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A15-UP

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | | Primary Indicators (minimum of one is required: check all that apply) | | Secondary Indicators (minimum of two required) | |
|--|---|--|---|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) | <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) | <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | | |
| Field Observations: | | | | | | |
| Surface Water Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Water Table Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | | | | |
| Saturation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | | | | |
| (includes capillary fringe) | | | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | | | |
| Remarks: | | | | | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A16-PEM
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S34
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 0-5 Lat: 41.088672 Long: -83.006344 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: -) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: -) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Leersia oryzoides</u> 30 X OBL 2. <u>Impatiens capensis</u> 25 X FACW 3. <u>Boehmeria cylindrica</u> 10 OBL 4. <u>Polygonum sagittatum</u> 25 X OBL 5. <u>Solidago gigantea</u> 5 FACW 6. <u>Bidens frondosa</u> 5 FACW 7. _____ 8. _____ 9. _____ 10. _____ 100 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: -) 1. _____ 2. _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A16-PEM

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|--|---|
| Primary Indicators (minimum of one is required check all that apply) | | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B8) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | |
| Remarks: | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A16 PFO
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S34
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 0-5 Lat: 41.088406 Long: -83.006678 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PFO | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>78%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Quercus palustris</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Ulmus americana</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Carya ovata</u> | <u>5</u> | | <u>FACU</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>35</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| 1. <u>Ulmus americana</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Carya ovata</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>15</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Microstegium vimineum</u> | <u>20</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Panicum virginiana</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 3. <u>Toxicodendron radicans</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>35</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. <u>Parthenocissus quinquefolia</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Toxicodendron radicans</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| <u>10</u> = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Sampling Point: W-A16 PFO

HYDROLOGY

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

- Secondary Indicators (minimum of two required)

- ☒ Surface Soil Cracks (B6)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A16-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S34
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.088700° Long: -83.006260° Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>1'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>1'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Glycine max</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>1'</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

Sampling Point: W-A16-UP

HYDROLOGY

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A17
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S34
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 0-3 Lat: 41.092129 Long: -83.011530 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Cornus amomum</u> | <u>5</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Lindera benzoin</u> | <u>5</u> | <u>X</u> | <u>FACW</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Impatiens capensis</u> | <u>50</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Carex frankii</u> | <u>10</u> | _____ | <u>OBL</u> | |
| 3. <u>Microstegium vimineum</u> | <u>15</u> | _____ | <u>FAC</u> | |
| 4. <u>Symphytotrichum racemosum</u> | <u>5</u> | _____ | <u>FACW</u> | |
| 5. <u>Agrimonia parviflora</u> | <u>15</u> | _____ | <u>FACW</u> | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A17

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 5/2 | 95 | 7.5YR 4/6 | 5 | C | M | SIL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|---|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A17-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S34
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.088700° Long: -83.006260° Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Glycine max</u> | <u>100</u> | <u>X</u> | <u>UPL</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A17-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/3 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A10
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S28
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.109086 Long: -83.028432 Datum: NAD 83
 Soil Map Unit Name: Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Phalaris arundinacea</u> 50 X FACW 2. <u>Apocynum cannabinum</u> 5 FAC 3. <u>Leersia oryzoides</u> 20 X OBL 4. <u>Solidago gigantea</u> 5 FACW 5. <u>Ambrosia trifida</u> 10 FAC 6. <u>Echinochloa crus-galli</u> 5 FACW 7. _____ 8. _____ 9. _____ 10. _____ 95 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A10

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|--|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 5/2 | 100 | | | | | SIL | |
| 6-16 | 10YR 4/2 | 97 | 7.5YR 4/6 | 3 | C | M | SIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:
☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

☒ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No ____ |
|---|---|

Remarks: _____

HYDROLOGY

| Wetland Hydrology Indicators: | | | Secondary Indicators (minimum of two required) | | |
|--|---|--|---|--|--|
| Primary Indicators (minimum of one is required: check all that apply) | | | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | | | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | | | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) | | | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) | | | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | | | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | | | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) | | | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | | | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | | | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | | | | |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | | |
| Remarks: | | | | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/19/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A10-UP
 Investigator(s): JMM KMP Section, Township, Range: T2N R16E S28
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.109140° Long: -83.028380° Datum: NAD 83
 Soil Map Unit Name: Glynwood clay loam, 6 to 12 percent slopes, eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Glycine max</u> | <u>100</u> | <u>X</u> | <u>UPL</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A10-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|--|---|
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Redox Depressions (F8) |
| | <input type="checkbox"/> Coast Prairie Redox (A16) |
| | <input type="checkbox"/> Dark Surface (S7) |
| | <input type="checkbox"/> Iron-Manganese Masses (F12) |
| | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| | <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| Restrictive Layer (if observed): | Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|----------------------------------|--|
| Type: _____ | |
| Depth (inches): _____ | |

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|---|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> FAC-Neutral Test (D5) | |

| Field Observations: | | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|--|-----------------------|--|
| Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe) | Depth (inches): _____ | |

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/21/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A20
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S032
 Landform (hillslope, terrace, etc.): Linear Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.081290 Long: -83.034451 Datum: NAD 83
 Soil Map Unit Name: Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Typha angustifolia</u> 40 X OBL 2. <u>Leersia oryzoides</u> 30 X OBL 3. <u>Polygonum sagittatum</u> 25 X OBL 4. <u>Ambrosia trifida</u> 5 FACW 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 100 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A20

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|---------|---------|--|
| Depth (inches) | Matrix | | Redox Features | | | Texture | Remarks | |
| | Color (moist) | % | Color (moist) | % | Type ¹ | | | |
| 0-8 | 10YR 4/2 | 90 | 7.5HR 4/6 | 10 | C | MPI | SCL | |
| 8-16 | 10YR 4/2 | 80 | 7.5YR 4/6 | 20 | C | MPL | SCL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks: _____

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|--|
| Primary Indicators (minimum of one is required check all that apply) | Secondary Indicators (minimum of two required) |
| <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks: _____

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A20-UP
 Investigator(s): C. Vilen, K. Pulver Section, Township, Range: T002N R016E S004
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.081545 Long: -83.034469 Datum: NAD 83
 Soil Map Unit Name: Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Glycine max</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

Sampling Point: W-A20-UP

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (minimum of two required)

- | | |
|---|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Other (Explain in Remarks) | |

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/24/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A21
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S004
 Landform (hillslope, terrace, etc.): Linear Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.076216 Long: -83.025858 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Echinochloa crus-galli</u> <u>20</u> <u>X</u> <u>FACW</u> 2. <u>Ambrosia trifida</u> <u>5</u> <u></u> <u>FAC</u> 3. <u>Symphyotrichum pilosum</u> <u>5</u> <u></u> <u>FACU</u> 4. <u>Panicum dichotomiflorum</u> <u>20</u> <u>X</u> <u>FACW</u> 5. <u>Impatiens capensis</u> <u>20</u> <u>X</u> <u>FACW</u> 6. <u>Leersia oryzoides</u> <u>10</u> <u></u> <u>OBL</u> 7. <u>Polygonum sagittatum</u> <u>10</u> <u></u> <u>OBL</u> 8. <u>Scirpus atrovirens</u> <u>5</u> <u></u> <u>OBL</u> 9. <u>Euthamia graminifolia</u> <u>5</u> <u></u> <u>FACW</u> 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

Sampling Point: W-A21

HYDROLOGY

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

| | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input checked="" type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/24/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A21-UP
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S004
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.076283 Long: -83.025567 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| _____ = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Glycine max</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A21-UP

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | | |
|--|---|---|--|
| Primary Indicators (minimum of one is required: check all that apply) | | Secondary Indicators (minimum of two required) | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | | |
| Field Observations: | | | |
| Surface Water Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): | |
| Water Table Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): | |
| Saturation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): | |
| (includes capillary fringe) | | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/24/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A22
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S005
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 3-5 Lat: 41.075462 Long: -83.035367 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| _____ = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Leerzia oryzoides</u> | <u>45</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Panicum dichotomiflorum</u> | <u>20</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Bidens frondosa</u> | <u>5</u> | | <u>FACW</u> | |
| 4. <u>Polygonum pensylvanicum</u> | <u>25</u> | <u>X</u> | <u>FACW</u> | |
| 5. <u>Carex lurida</u> | <u>5</u> | | <u>OBL</u> | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A22

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 90 | 7.5YR 4/6 | 10 | C | M/PL | SICL | |
| 8-16 | 10YR 4/2 | 80 | 7.5YR 4/6 | 20 | C | M/PL | CL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|--|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/24/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A23-PEM
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S005
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 3-5 Lat: 41.075370 Long: -83.036555 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Eupatorium perfoliatum</u> 25 X OBL 2. <u>Polygonum sagittatum</u> 30 X OBL 3. <u>Juncus tenuis</u> 20 X FAC 4. <u>Scirpus atrovirens</u> 5 OBL 5. <u>Bidens fondosa</u> 5 FACW 6. <u>Echinochloa crus-galli</u> 5 FACW 7. <u>Panicum dichotomiflorum</u> 10 FACW 8. _____ 9. _____ 10. _____ 100 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A23-PEM

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 85 | 7.5YR 4/6 | 15 | C | MPL | SICL | |
| 8-16 | 10YR 4/2 | 75 | 7.5YR 4/6 | 25 | C | MPL | SICL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|--|---|
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/24/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A23-PFO
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S005
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 3-5 Lat: 41.075483 Long: -83.037243 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Quercus palustris</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Quercus macrocarpa</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 3. <u>Ulmus americana</u> | <u>5</u> | | <u>FACW</u> | |
| 4. _____ | | | | |
| <u>30</u> = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Ulmus americana</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| <u>15</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) |
| 1. <u>Symphytotrichum racemosum</u> | <u>10</u> | | <u>FACW</u> | |
| 2. <u>Juncus effusus</u> | <u>15</u> | <u>X</u> | <u>OBL</u> | |
| 3. <u>Scirpus atrovirens</u> | <u>5</u> | | <u>OBL</u> | |
| 4. <u>Microstegium vimineum</u> | <u>25</u> | <u>X</u> | <u>FAC</u> | |
| <u>55</u> = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Sampling Point: W-A23-PFO

HYDROLOGY

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

- Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/24/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A22,W-A23-UP
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S005
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.075605 Long: -83.035336 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|--|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot for W-A22 & W-A23 | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Glycine max</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

Sampling Point: W-A22,W-A23-UP

HYDROLOGY

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

- Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/24/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A24
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S005
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): 3-5 Lat: 41.075198 Long: -83.044168 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60%</u> (A/B) |
|--|------------------|-------------------|------------------|--|
| 1. <u>Tilia americana</u> | <u>10</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>10</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. <u>Rubus occidentalis</u> <u>5</u> <u>X</u> <u>FACU</u> | | | | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 5. _____ | _____ | _____ | _____ | |
| <u>5</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Phalaris arundinacea</u> <u>50</u> <u>X</u> <u>FACW</u> | | | | |
| 2. <u>Polygonum sagittatum</u> | <u>25</u> | <u>X</u> | <u>OBL</u> | |
| 3. <u>Impatiens capensis</u> | <u>20</u> | <u>X</u> | <u>FACW</u> | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. <u>Phytolacca americana</u> | <u>5</u> | _____ | <u>FACU</u> | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>100</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A24

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 95 | 7.5YR 5/6 | 5 | C | M | SIL | |
| 8-16 | 10YR 4/2 | 85 | 7.5YR 4/6 | 15 | C | M | SICL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| Restrictive Layer (if observed): | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|----------------------------------|--|
| Type: _____ | |
| Depth (inches): _____ | |

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|---|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) | |

| Field Observations: | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--|-----------------------|--|
| Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe) | Depth (inches): _____ | |

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/24/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A24-UP
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S005
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.075082 Long: -83.044309 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|--|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| _____ = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Zea mays</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| 100 = Total Cover _____ = Total Cover | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A24-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|--|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils³: |
|---------------------------------------|---|
| ___ Histosol (A1) | ___ Coast Prairie Redox (A16) |
| ___ Histic Epipedon (A2) | ___ Dark Surface (S7) |
| ___ Black Histic (A3) | ___ Iron-Manganese Masses (F12) |
| ___ Hydrogen Sulfide (A4) | ___ Very Shallow Dark Surface (TF12) |
| ___ Stratified Layers (A5) | ___ Other (Explain in Remarks) |
| ___ 2 cm Muck (A10) | |
| ___ Depleted Below Dark Surface (A11) | |
| ___ Thick Dark Surface (A12) | |
| ___ Sandy Mucky Mineral (S1) | |
| ___ 5 cm Mucky Peat or Peat (S3) | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes ____ No <input checked="" type="checkbox"/> |
| Remarks: | |

HYDROLOGY

| Wetland Hydrology Indicators: | | | | |
|--|---|--|---|--|
| Primary Indicators (minimum of one is required: check all that apply) | | | Secondary Indicators (minimum of two required) | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) | | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) | | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) | | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) | | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | | | |
| Field Observations: | | | | |
| Surface Water Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | | |
| Water Table Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | | |
| Saturation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | | |
| (includes capillary fringe) | | | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | |
| Remarks: | | | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A19-PEM
 Investigator(s): JMM KMP Section, Township, Range: T1N R16E S4
 Landform (hillslope, terrace, etc.): Linear Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.080254 Long: -83.018523 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Leersia oryzoides</u> | <u>30</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Echinochloa crus-galli</u> | <u>5</u> | | <u>FACW</u> | |
| 3. <u>Ambrosia trifida</u> | <u>5</u> | | <u>FAC</u> | |
| 4. <u>Solidago gigantea</u> | <u>15</u> | | <u>FACW</u> | |
| 5. <u>Phalaris arundinacea</u> | <u>25</u> | <u>X</u> | <u>FACW</u> | |
| 6. <u>Bidens frondosa</u> | <u>5</u> | | <u>FACW</u> | |
| 7. <u>Typha angustifolia</u> | <u>10</u> | | <u>OBL</u> | |
| 8. <u>Epilobium coloratum</u> | <u>5</u> | | <u>OBL</u> | |
| _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A19-PEM

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 5/2 | 97 | 7.5YR 5/6 | 3 | C | M | CL | |
| 8-16 | 10YR 4/2 | 90 | 7.5YR 4/6 | 10 | C | M | CL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|---|---|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required: check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A19-PSS
 Investigator(s): JMM KMP Section, Township, Range: T1N R16E S4
 Landform (hillslope, terrace, etc.): Linear Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.080173 Long: -83.018744 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PSS | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Salix nigra</u> | <u>30</u> | <u>X</u> | <u>OBL</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Leersia oryzoides</u> | <u>35</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Echinochloa crus-galli</u> | <u>15</u> | _____ | <u>FACW</u> | |
| 3. <u>Ambrosia trifida</u> | <u>5</u> | _____ | <u>FAC</u> | |
| 4. <u>Solidago gigantea</u> | <u>10</u> | _____ | <u>FACW</u> | |
| 5. <u>Phalaris arundinacea</u> | <u>30</u> | <u>X</u> | <u>FACW</u> | |
| 6. <u>Bidens frondosa</u> | <u>5</u> | _____ | <u>FACW</u> | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A19-PSS

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 5/2 | 97 | 10YR 5/6 | 3 | C | M | CL | |
| 8-16 | 10YR 4/2 | 90 | 10YR 4/6 | 5 | C | M | CL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| | | | |
|--|---|--|--|
| Wetland Hydrology Indicators: | | | |
| Primary Indicators (minimum of one is required; check all that apply) | | Secondary Indicators (minimum of two required) | |
| <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A19-UP
 Investigator(s): C. Vilen, K. Pulver Section, Township, Range: T1N R16E S4
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.080235 Long: -83.018446 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Glycine max</u> | <u>100</u> | <u>X</u> | <u>UPL</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>100</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A19-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|---|--|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | | <u>Secondary Indicators (minimum of two required)</u> |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/21/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A18
 Investigator(s): JMM KMP Section, Township, Range: T1N R16E S4
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.076525 Long: -83.019877 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Quercus palustris</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>10</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Rosa multiflora</u> | <u>10</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| <u>10</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Boehmeria cylindrica</u> | <u>35</u> | <u>X</u> | <u>OBL</u> | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Impatiens capensis</u> | <u>20</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Microstegium vimineum</u> | <u>20</u> | <u>X</u> | <u>FAC</u> | |
| 4. <u>Phalaris arundinacea</u> | <u>10</u> | _____ | <u>FACW</u> | |
| 5. <u>Lysimachia nummularia</u> | <u>5</u> | _____ | <u>FACW</u> | |
| 6. <u>Toxicodendron radicans</u> | <u>5</u> | _____ | <u>FAC</u> | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 7. <u>Scirpus atrovirens</u> | <u>5</u> | _____ | <u>OBL</u> | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>100</u> = Total Cover | | | | Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A18

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|--|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0–8 | 10YR 4/2 | 95 | 7.5YR 4/6 | 5 | C | M | CL | |
| 8-16 | 10YR 4/2 | 85 | 7.5YR 4/6 | 15 | C | M | CL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4)
- ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5)
- ☐ Black Histic (A3) ☐ Stripped Matrix (S6)
- ☐ Hydrogen Sulfide (A4) ☐ Loamy Mucky Mineral (F1)
- ☐ Stratified Layers (A5) ☐ Loamy Gleyed Matrix (F2)
- ☐ 2 cm Muck (A10) ☒ Depleted Matrix (F3)
- ☐ Depleted Below Dark Surface (A11) ☐ Redox Dark Surface (F6)
- ☐ Thick Dark Surface (A12) ☐ Depleted Dark Surface (F7)
- ☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8)
- ☐ 5 cm Mucky Peat or Peat (S3)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks: _____

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|---|---|
| Primary Indicators (minimum of one is required: check all that apply) | | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | |
| Remarks: | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/21/2018
 Applicant/Owner: Seneca Wind LLC State: OH Sampling Point: W-A18-UP
 Investigator(s): JMM KMP Section, Township, Range: T1N R16E S4
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex
 Slope (%): 3-5 Lat: 41.076685 Long: -83.02002 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>17%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Quercus montana</u> | <u>15</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Acer saccharum</u> | <u>15</u> | <u>X</u> | <u>FACU</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>30</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Acer saccharum</u> | <u>10</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Fraxinus pennsylvanica</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Rubus occidentalis</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| <u>25</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Carex pensylvanica</u> | <u>25</u> | <u>X</u> | <u>FACU</u> | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 2. <u>Symphotrichum lanceolatum</u> | <u>5</u> | _____ | <u>FAC</u> | |
| 3. <u>Ageratina altissima</u> | <u>5</u> | _____ | <u>FACU</u> | |
| 4. <u>Persicaria virginiana</u> | <u>5</u> | _____ | <u>FAC</u> | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>40</u> = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A18-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|-----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 5/3 | 100 | | SIL | | | | |
| | | | | | | | | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | | |
|--|---|--|--|
| Wetland Hydrology Indicators: | | | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> | | <u>Secondary Indicators (minimum of two required)</u> | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/25/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A25
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S007
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.054823 Long: -83.065006 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PFO | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Acer saccharinum</u> | <u>30</u> | <u>X</u> | <u>FACW</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| <u>30</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| 1. <u>Cephalanthus occidentalis</u> | <u>15</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Rosa multiflora</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| <u>20</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Carex lupulina</u> | <u>15</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Carex squarrosa</u> | <u>5</u> | <u>X</u> | <u>OBL</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>20</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Sampling Point: W-A25

HYDROLOGY

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

| | | |
|---|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/25/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A25-UP
 Investigator(s): JMM KMP Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.054831 Long: -83.065011 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| _____ = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Zea mays</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A25-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|--|--|
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A33
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S013
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.042266 Long: -83.077844 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PFO | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>87%</u> (A/B) |
|--|------------------|-------------------|------------------|--|
| 1. <u>Ulmus americana</u> | <u>20</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Acer negundo</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 3. <u>Acer saccharum</u> | <u>10</u> | <u>X</u> | <u>FACU</u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u>40</u> | <u> </u> | <u> </u> | Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u> |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Ulmus americana</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Acer negundo</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 5. <u> </u> | <u>20</u> | <u> </u> | <u> </u> | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Boehmeria cylindrica</u> | <u>15</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Microstegium vimineum</u> | <u>30</u> | <u>X</u> | <u>FAC</u> | |
| 3. <u>Toxicodendron radicans</u> | <u>10</u> | <u> </u> | <u>FAC</u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Woody Vine Stratum (Plot size: <u>15'</u>) 1. <u>Toxicodendron radicans</u> <u>5</u> <u>X</u> <u>FAC</u> 2. <u> </u> <u>5</u> <u> </u> <u> </u> <u>5</u> = Total Cover |
| 10. <u> </u> | <u>55</u> | <u> </u> | <u> </u> | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A33

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|---------|---------|--|
| Depth (inches) | Matrix | | Redox Features | | | Texture | Remarks | |
| | Color (moist) | % | Color (moist) | % | Type ¹ | | | |
| 0-3 | 10YR 3/2 | 97 | 7.5YR 5/6 | 3 | C | M | SIL | |
| 3-8 | 10YR 4/2 | 90 | 7.5YR 4/4 | 10 | C | M | SICL | |
| 8-16 | 10YR 4/2 | 85 | 7.5YR 4/6 | 15 | C | M | SICL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks: _____

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|---|
| Primary Indicators (minimum of one is required, check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks: _____

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A33-UP
 Investigator(s): JMM KMP Section, Township, Range: T1NR15E S13
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.04214 Long: -83.078564 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Glycine max</u> | <u>80</u> | <u>X</u> | <u>UPL</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-33-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B6-PEM
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S16
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2 Lat: 41.04581 Long: -83.027315 Datum: NAD 83
 Soil Map Unit Name: Tiro silt loam, 2 to 6 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B) |
|--|------------------|-------------------------------------|------------------|--|
| 1. <u>Acer rubrum</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | |
| 2. <u>Acer negundo</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>15</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Fraxinus americana</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FACU</u> | |
| 2. <u>Cornus florida</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FACU</u> | |
| 3. <u>Acer rubrum</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>25</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 2. _____ | _____ | _____ | _____ | |
| <u>_____</u> = Total Cover | | | | Remarks: (Include photo numbers here or on a separate sheet.) |
| | | | | |

SOIL

Sampling Point: W-B6-PEM

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 3/2 | 85 | 2.5YR 4/8 | 15 | C | M | SICL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| | | | |
|---|---|--|--|
| Wetland Hydrology Indicators: | | | |
| Primary Indicators (minimum of one is required; check all that apply) | | Secondary Indicators (minimum of two required) | |
| <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0.25</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>14</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B6 UP
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S16
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Linear
 Slope (%): 0-2 Lat: 41.045861 Long: -83.027378 Datum: NAD 83
 Soil Map Unit Name: Tiro silt loam, 2 to 6 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B) |
|---|------------------|-------------------|---|--|
| 1. <u>Acer rubrum</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Acer negundo</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 3. <u>Fraxinus americana</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>15</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Fraxinus americana</u> | <u>20</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Cornus florida</u> | <u>10</u> | <u>X</u> | <u>FACU</u> | |
| 3. <u>Acer rubrum</u> | <u>5</u> | _____ | <u>FAC</u> | |
| 4. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 5. _____ | _____ | _____ | _____ | |
| <u>35</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Pilea pumila</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 2. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>10</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> | |
| 1. _____ | _____ | _____ | | _____ |
| 2. _____ | _____ | _____ | | _____ |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B6 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 3/2 | 100 | | | | | SICL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B6-PFO
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S16
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2 Lat: 41.045866 Long: -83.027695 Datum: NAD 83
 Soil Map Unit Name: Tiro silt loam, 2 to 6 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Acer rubrum</u> | <u>25</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Acer negundo</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>35</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Fraxinus americana</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. <u>Lindera benzoin</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>10</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Microstegium vimineum</u> | <u>20</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Pilea pumila</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| <u>30</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B6-PFO

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/2 | 90 | 2.5YR 4/8 | 10 | C | M | SICL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | | |
|--|---|---|--|
| Primary Indicators (minimum of one is required; check all that apply) | | Secondary Indicators (minimum of two required) | |
| <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0.25 Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 10 Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

 Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B7
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S19
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.033535 Long: -83.058779 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Leersia oryzoides</u> 80 X OBL 2. <u>Panicum pensylvanicum</u> 15 FACW 3. <u>Pilea pumila</u> 5 FACW 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-B7

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-3 | 10YR 4/1 | 100 | | | | | SIL | |
| 3-16 | 10YR 4/1 | 75 | 7.5YR 5/4 | 25 | C | M/PL | SIL | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|---|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B7 UP
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S19
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Linear
 Slope (%): 0 Lat: 41.033599 Long: -83.058844 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|------------------|-------------------|------------------|---|
| 1. <u>Juglans nigra</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>5</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Andropogon virginicus</u> | <u>40</u> | <u>X</u> | <u>UPL</u> | |
| 2. <u>Ageratina altissima</u> | <u>20</u> | <u>X</u> | <u>FACU</u> | |
| 3. <u>Persicaria virginiana</u> | <u>15</u> | _____ | <u>FAC</u> | |
| 4. <u>Pilea pumila</u> | <u>10</u> | _____ | <u>FAC</u> | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| <u>85</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B7 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|---|--|
| Wetland Hydrology Indicators: | | |
| <u>Primary Indicators (minimum of one is required: check all that apply)</u> | | <u>Secondary Indicators (minimum of two required)</u> |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B5-PEM1
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S19
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.033016 Long: -83.060169 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Leersia oryzoides</u> 50 X OBL 2. <u>Panicum pensylvanicum</u> 30 X FACW 3. <u>Pilea pumila</u> 15 FACW 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 95 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-B5-PEM1

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 4/2 | 95 | 7.5YR 5/4 | 5 | C | M/PL | SIL | |
| 6-13 | 10YR 4/2 | 80 | 7.5YR 5/4 | 20 | C | M | SIL | |
| 13-16 | 10YR 4/2 | 80 | 7.5YR 5/4 | 20 | C | M | GRSIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|--|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 6 Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B5 UP
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S19
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Linear
 Slope (%): 0 Lat: 41.033599 Long: -83.058844 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. <u>Juglans nigra</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| <u>5</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. <u>Andropogon virginicus</u> | <u>40</u> | <u>X</u> | <u>UPL</u> | |
| 2. <u>Ageratina altissima</u> | <u>20</u> | <u>X</u> | <u>FACU</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>60</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B5 UP

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | | Primary Indicators (minimum of one is required: check all that apply) | | Secondary Indicators (minimum of two required) | |
|--|---|--|---|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) | <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) | <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | | |
| Field Observations: | | | | | | |
| Surface Water Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Water Table Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | | | | |
| Saturation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ | | | | |
| (includes capillary fringe) | | | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | | | |
| Remarks: | | | | | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B5-PEM2
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S19
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex
 Slope (%): 0-3 Lat: 41.033555 Long: -83.058283 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Leersia virginica</u> 35 X FACW 2. <u>Panicum sagittata</u> 30 X OBL 3. <u>Pilea pumila</u> 10 FACW 4. <u>Impatiens capensis</u> 20 X FACW 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 95 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-B5-PEM2

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-3 | 10YR 4/2 | 100 | | | | | SIL | |
| 3-16 | 10YR 4/2 | 90 | 2.5YR 4/8 | 10 | C | M | SIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|---|---|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ <small>(includes capillary fringe)</small> | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09262018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B5-PFO
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S19
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): 0-3 Lat: 41.033075 Long: -83.05993 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: PFO | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Acer negundo</u> | <u>25</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Juglans nigra</u> | <u>5</u> | | <u>FACU</u> | |
| 3. <u>Gleditsia triacanthos</u> | <u>5</u> | | <u>FAC</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>35</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| 1. <u>Acer negundo</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>5</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Leersia oryzoides</u> | <u>50</u> | <u>X</u> | <u>OBL</u> | |
| 2. <u>Persicaria pensylvanica</u> | <u>30</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Pilea pumila</u> | <u>15</u> | | <u>FACW</u> | |
| 4. <u>Ageratina altissima</u> | <u>5</u> | | <u>FACU</u> | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>100</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B5-PFO

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 4/2 | 95 | 7.5YR 5/4 | 5 | C | M/PL | SIL | |
| 6-13 | 10YR 4/2 | 80 | 7.5YR 5/4 | 20 | C | M | SIL | |
| 13-16 | 10YR 4/2 | 80 | 7.5YR 5/4 | 20 | C | M | GRSIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | | | Indicators for Problematic Hydric Soils ³ : | | |
|--|--|---|--|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Coast Prairie Redox (A16) | | | |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Dark Surface (S7) | | | |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Iron-Manganese Masses (F12) | | | |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) | | | |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Other (Explain in Remarks) | | | |
| <input type="checkbox"/> 2 cm Muck (A10) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | | | | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | | | | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | | | | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | | | | |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | | | | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| Restrictive Layer (if observed): | | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
|----------------------------------|--|--|--|
| Type: _____ | | | |
| Depth (inches): _____ | | | |

Remarks: _____

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|--|--|
| Primary Indicators (minimum of one is required: check all that apply) | | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |
| Field Observations: | | |
| Surface Water Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): <input type="text"/> |
| Water Table Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): <input type="text"/> |
| Saturation Present? (includes capillary fringe) | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Depth (inches): <input type="text" value="0"/> |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | |
| Remarks: | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B4
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S19
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.032896 Long: -83.063504 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Ludwigia alternifolia</u> 60 X FACW 2. <u>Glycine max</u> 10 UPL 3. <u>Panicum dichotomiflorum</u> 5 FACW 4. <u>Xanthium strumarium</u> 5 FAC 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 80 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-B4

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-14 | 10YR 4/2 | 95 | 7.5YR 5/4 | 5 | C | M/PL | SIL | |
| 14-16 | 10YR 4/2 | 95 | 7.5YR 5/4 | 5 | C | M | GRCL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|--|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 1.5 Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/26/2018
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B4 UP
 Investigator(s): CV, JB Section, Township, Range: T1N R16E S19
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Linear
 Slope (%): 0 Lat: 41.03286 Long: -83.0636 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Glycine max</u> | <u>80</u> | <u>X</u> | <u>UPL</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>80</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B4 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/24/18
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B2
 Investigator(s): CV, RA Section, Township, Range: T1N R15E S24
 Landform (hillslope, terrace, etc.): Floodplain/Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.033596 Long: -83.078721 Datum: NAD 83
 Soil Map Unit Name: Chagrin silt loam, occasionally flooded (Ch) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|------------------|-------------------|------------------|---|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. <u>Acer negundo</u> 5 X FAC 2. _____ 3. _____ 4. _____ 5. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Saururus cernuus</u> 15 X OBL 2. <u>Elymus riparius</u> 10 X FACW 3. <u>Polygonum pensylvanicum</u> 10 X FACW 4. <u>Pilea pumila</u> 10 X FACW 5. <u>Symplocarpus foetidus</u> 5 OBL 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ | | | | |
| _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Sampling Point: W-B2

HYDROLOGY

Wetland Hydrology Indicators:

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/24/18
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B2 UP
 Investigator(s): CV, RA Section, Township, Range: T1N R15E S24
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear
 Slope (%): 0 Lat: 41.033544 Long: -83.078496 Datum: NAD 83
 Soil Map Unit Name: Chagrin silt loam, occasionally flooded (Ch) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|--|-------------------------|-------------------|------------------|--|
| 1. <u>Juglans nigra</u> | <u>5</u> | | <u>FACU</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | <u>5</u> = Total Cover | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 5. _____ | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Glycine max</u> | <u>40</u> | <u>X</u> | <u>UPL</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | Woody Vine Stratum (Plot size: <u>-</u>) |
| 9. _____ | | | | |
| 10. _____ | <u>40</u> = Total Cover | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-B2 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/4 | 100 | | | | | SICL | |
| 8-16 | 10YR 5/4 | 100 | | | | | CL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A34
 Investigator(s): JMM KMP Section, Township, Range: T1N R15E S24
 Landform (hillslope, terrace, etc.): Linear Local relief (concave, convex, none): Concave
 Slope (%): 2-3 Lat: 41.032194 Long: -83.080509 Datum: NAD 83
 Soil Map Unit Name: Chagrin silt loam, occasionally flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PFO | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>86%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Acer negundo</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Ulmus americana</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Acer saccharum</u> | <u>15</u> | <u>X</u> | <u>FACU</u> | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>40</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Ulmus americana</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Acer negundo</u> | <u>5</u> | <u>X</u> | <u>FAC</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 5. _____ | _____ | _____ | _____ | |
| <u>20</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Phalaris arundinacea</u> | <u>40</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Pilea pumilia</u> | <u>10</u> | _____ | <u>FACW</u> | |
| 3. <u>Microstegium vimineum</u> | <u>20</u> | <u>X</u> | <u>FAC</u> | |
| 4. <u>Lysimachia nummularia</u> | <u>10</u> | _____ | <u>FACW</u> | |
| 5. <u>Verbesina alternifolia</u> | <u>10</u> | _____ | <u>FACW</u> | |
| 6. <u>Ageratina altissima</u> | <u>5</u> | _____ | <u>FACU</u> | |
| 7. <u>Symphytotrichum racemosum</u> | <u>5</u> | _____ | <u>FACW</u> | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>100</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A34

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-3 | 10YR 4/2 | 97 | 7.5YR 5/6 | 3 | C | M | SIL | |
| 3-16 | 10YR 5/2 | 95 | 7.5YR 5/8 | 5 | C | M | SIL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|---|--|
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A34-UP
 Investigator(s): JMM KMP Section, Township, Range: T1N R15E S24
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex
 Slope (%): 3-5 Lat: 41.032434 Long: -83.08041 Datum: NAD 83
 Soil Map Unit Name: Milton variant loam, 2 to 6 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. <u>Celtis occidentalis</u> | <u>15</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Prunus serotina</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>20</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Acer saccharum</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>5</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Polygonum virginianum</u> | <u>15</u> | <u>X</u> | <u>FAC</u> | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 2. <u>Ageratina altissima</u> | <u>10</u> | <u>X</u> | <u>FACU</u> | |
| 3. <u>Verbesina alternifolia</u> | <u>5</u> | _____ | <u>FAC</u> | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| <u>30</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A34 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|--|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 5/2 | 100 | | | | | SIL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: _____

HYDROLOGY

| Wetland Hydrology Indicators: | | | |
|--|--|---|--|
| Primary Indicators (minimum of one is required: check all that apply) | | Secondary Indicators (minimum of two required) | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | | |
| Field Observations: | | | |
| Surface Water Present? | Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Water Table Present? | Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ | | |
| Saturation Present? (includes capillary fringe) | Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/24/18
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B1-PEM
 Investigator(s): CV, RA Section, Township, Range: T1N R15E S24
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.030759 Long: -83.080429 Datum: NAD 83
 Soil Map Unit Name: Chagrin silt loam, occasionally flooded (Ch) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15</u>) | | | | |
| 1. <u>Salix nigra</u> | <u>5</u> | <u>X</u> | <u>OBL</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5</u>) | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Phalaris arundinacea</u> | <u>95</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Impatiens capensis</u> | <u>20</u> | | <u>FACW</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 115 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B1-PEM

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 5Y 3/1 | 95 | 7.5YR 5/4 | 5 | C | M/PL | SaCL | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|--|--|
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/24/18
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B1-UP
 Investigator(s): CV, RA Section, Township, Range: T1N R15E S24
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear
 Slope (%): 0 Lat: 41.030671 Long: -83.080942 Datum: NAD 83
 Soil Map Unit Name: Chagrin silt loam, occasionally flooded (Ch) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
|---|-------------------------|-------------------|------------------|--|
| 1. <u>Juglans nigra</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | <u>5</u> = Total Cover | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15</u>) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ = Total Cover | _____ | _____ | |
| Herb Stratum (Plot size: <u>5</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Glycine max</u> | <u>40</u> | <u>X</u> | <u>UPL</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | <u>40</u> = Total Cover | _____ | _____ | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | _____ = Total Cover |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B1-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/4 | 100 | | | | | SICL | |
| 8-16 | 10YR 5/4 | 100 | | | | | CL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/24/18
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B1-PFOa
 Investigator(s): CV, RA Section, Township, Range: T1N R15E S24
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Linear
 Slope (%): 0 Lat: 41.030787 Long: -83.080914 Datum: NAD 83
 Soil Map Unit Name: Chagrin silt loam, occasionally flooded (Ch) NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: PFOa | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>77</u> (A/B) |
|---|------------------|-------------------------------------|------------------|--|
| 1. <u>Acer rubrum</u> | <u>15</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | |
| 2. <u>Ulmus americana</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FACW</u> | |
| 3. <u>Juglans nigra</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FACU</u> | |
| 4. <u>Populus deltoides</u> | <u>5</u> | | <u>FAC</u> | |
| 5. _____ | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>40</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15</u>) | | | | |
| 1. <u>Acer negundo</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | |
| 2. <u>Fraxinus pennsylvanica</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FACW</u> | |
| 3. <u>Rosa multiflora</u> | <u>5</u> | <input checked="" type="checkbox"/> | <u>FACU</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>15</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5</u>) | | | | |
| 1. <u>Elymus riparius</u> | <u>15</u> | <input checked="" type="checkbox"/> | <u>FACW</u> | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 2. <u>Pilea pumila</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FACW</u> | |
| 3. <u>Polygonum pensylvanicum</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FACW</u> | |
| 4. <u>Saururus cernuus</u> | <u>5</u> | | <u>OBL</u> | |
| 5. <u>Symphotrichum pilosum</u> | <u>5</u> | | <u>FACU</u> | |
| 6. _____ | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>45</u> = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B1-PFOa

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/2 | 98 | 7.5YR 5/4 | 2 | C | M | SaCL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | | |
|---|---|---|--|
| Primary Indicators (minimum of one is required: check all that apply) | | Secondary Indicators (minimum of two required) | |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind City/County: Seneca Sampling Date: 09/24/18
 Applicant/Owner: Seneca Wind, LLC State: OH Sampling Point: W-B1-PFOb
 Investigator(s): CV, RA Section, Township, Range: T1N R15E S24
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Linear
 Slope (%): 0 Lat: 41.031301 Long: -83.080186 Datum: NAD 83
 Soil Map Unit Name: Chagrin silt loam, occasionally flooded (Ch) NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: <u>PFOa</u> | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>77</u> (A/B) |
|---|------------------|-------------------|--|--|
| 1. <u>Acer rubrum</u> | <u>15</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Ulmus americana</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Juglans nigra</u> | <u>10</u> | <u>X</u> | <u>FACU</u> | |
| 4. <u>Populus deltoides</u> | <u>5</u> | | <u>FAC</u> | |
| 5. _____ | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| <u>40</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>15</u>) | | | | |
| 1. <u>Acer negundo</u> | <u>10</u> | <u>X</u> | <u>FAC</u> | |
| 2. <u>Fraxinus pennsylvanica</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Rosa multiflora</u> | <u>5</u> | <u>X</u> | <u>FACU</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | | | | |
| 5. _____ | | | | |
| <u>15</u> = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5</u>) | | | | |
| 1. <u>Elymus riparius</u> | <u>15</u> | <u>X</u> | <u>FACW</u> | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 2. <u>Pilea pumila</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Polygonum pensylvanicum</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 4. <u>Saururus cernuus</u> | <u>5</u> | | <u>OBL</u> | |
| 5. <u>Symphotrichum pilosum</u> | <u>5</u> | | <u>FACU</u> | |
| 6. _____ | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>45</u> = Total Cover | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-B1-PFOb

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/2 | 98 | 7.5YR 5/4 | 2 | C | M | SaCL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) |
|---|---|

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|---|---|--|
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A28
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S014
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.044371 Long: -83.112750 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---------------------------------|---|--|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Cowardin: PEM | | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|---------------------|----------------------|---------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: 5') 1. <u>Typha latifolia</u> 50 X OBL 2. <u>Phalaris arundinacea</u> 20 X FACW 3. <u>Leersia oryzoides</u> 20 X OBL 4. <u>Scirpus atrovirens</u> 10 OBL 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 100 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

Sampling Point: W-A28

HYDROLOGY

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

| | | |
|--|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B8) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |

Surface Water Present? Yes X No _____ Depth (inches): 2
Water Table Present? Yes X No _____ Depth (inches): 0
Saturation Present? Yes X No _____ Depth (inches): 0
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/25/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A28-UP
 Investigator(s): JMM KMP Section, Township, Range: T002N R016E S014
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.048842 Long: -83.106344 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|--|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| _____ = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Glycine max</u> 85 X UPL 2. <u>Equisetum pratense</u> 10 FACW 3. <u>Ambrosia trifida</u> 5 FAC 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| 100 = Total Cover Remarks: (Include photo numbers here or on a separate sheet.) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A28-UP

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|---|---|---|
| Primary Indicators (minimum of one is required: check all that apply) | | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | |
| Remarks: | | |

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A29
 Investigator(s): JMM KMP Section, Township, Range: T1N R15E S14
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.050259 Long: -83.104481 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Symphotrichum racemosum</u> 5 FACW 2. <u>Phalaris arundinacea</u> 35 X FACW 3. <u>Leersia oryzoides</u> 50 X OBL 4. <u>Scirpus atrovirens</u> 10 OBL 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A29

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 90 | 7.5YR 4/4 | 10 | C | M/PL | SIL | |
| 8-16 | 10YR 4/1 | 80 | 7.5YR 4/4 | 20 | C | M/PL | SL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|--|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input checked="" type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|--|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 2 Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 0 | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/25/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A29-UP
 Investigator(s): JMM KMP Section, Township, Range: T1N R15E S14
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.050298 Long: -83.104225 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Glycine max</u> | <u>85</u> | <u>X</u> | <u>UPL</u> | |
| 2. <u>Equisetum pratense</u> | <u>10</u> | | <u>FACW</u> | |
| 3. <u>Ambrosia trifida</u> | <u>5</u> | | <u>FAC</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 100 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Sampling Point: W-A29-UP

HYDROLOGY

Wetland Hydrology Indicators:

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A29-PSS
 Investigator(s): JMM KMP Section, Township, Range: T1N R15E S14
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.049358 Long: -83.10562 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PSS | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|------------------|--|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Salix nigra</u> | <u>30</u> | <u>X</u> | <u>OBL</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Typha latifolia</u> | <u>10</u> | _____ | <u>OBL</u> | |
| 2. <u>Phalaris arundinacea</u> | <u>30</u> | <u>X</u> | <u>FACW</u> | |
| 3. <u>Leersia oryzoides</u> | <u>50</u> | <u>X</u> | <u>OBL</u> | |
| 4. <u>Scirpus atrovirens</u> | <u>10</u> | _____ | <u>OBL</u> | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Sampling Point: W-A29-PSS

HYDROLOGY

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

Field Observations:

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A37
 Investigator(s): JMM KMP Section, Township, Range: T1N R15E S15
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.044261 Long: -83.113037 Datum: NAD 83
 Soil Map Unit Name: Pandora silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---------------------------------|---|--|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Cowardin: PEM | | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>Salix nigra</u> | <u>10</u> | <u>X</u> | <u>FACW</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Phalaris arundinacea</u> | <u>50</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Leersia oryzoides</u> | <u>30</u> | <u>X</u> | <u>OBL</u> | |
| 3. <u>Scirpus atrovirens</u> | <u>20</u> | <u>X</u> | <u>OBL</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>100</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A37

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 90 | 7.5YR 4/4 | 10 | C | M/PL | SIL | |
| 8-16 | 10YR 4/1 | 80 | 7.5YR 4/4 | 20 | C | M/PL | SL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|--|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input checked="" type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|---|--|
| Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|---|--|
| Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 2 Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/25/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A37-UP
 Investigator(s): JMM KMP Section, Township, Range: T1N R15E S15
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.044371 Long: -83.113093 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Glycine max</u> | <u>85</u> | <u>X</u> | <u>UPL</u> | |
| 2. <u>Equisetum pratense</u> | <u>10</u> | | <u>FACW</u> | |
| 3. <u>Ambrosia trifida</u> | <u>5</u> | | <u>FAC</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>100</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A37-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u> X </u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u> X </u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/24/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A27
 Investigator(s): JMM KMP Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.040703 Long: -83.125579 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Phalaris arundinacea</u> | <u>60</u> | <u>X</u> | <u>FACW</u> | |
| 2. <u>Scirpus atrovirens</u> | <u>10</u> | | <u>OBL</u> | |
| 3. <u>Leersia oryzoides</u> | <u>30</u> | <u>X</u> | <u>OBL</u> | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| <u>100</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A27

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 4/2 | 90 | 7.5YR 4/6 | 10 | C | M | SL | |
| 8-16 | 10YR 4/2 | 80 | 7.5 YR 4/6 | 20 | C | M | LS | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input checked="" type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|---|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/25/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A27-UP
 Investigator(s): JMM KMP Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.040651 Long: -83.125427 Datum: NAD 83
 Soil Map Unit Name: Shoals silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|--|------------------|-------------------|------------------|---|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Zea mays</u> 100 X UPL 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A27-UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <u>X</u> |
|---|--|

Remarks:

HYDROLOGY

| | | |
|--|--|--|
| Wetland Hydrology Indicators: | | |
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <u>X</u> |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A31
 Investigator(s): JMM KMP Section, Township, Range: T1N R15E S16
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.036866 Long: -83.138714 Datum: NAD 83
 Soil Map Unit Name: Haskins loam, 2 to 6 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM Soils continued: Digby loam, 1 to 4 percent slopes | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) | |
|---|------------------|-------------------|------------------|--|--|
| 1. _____ | | | | | |
| 2. _____ | | | | | |
| 3. _____ | | | | | |
| 4. _____ | | | | | |
| 5. _____ | | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ | |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | | |
| 1. _____ | | | | | |
| 2. _____ | | | | | |
| 3. _____ | | | | | |
| 4. _____ | | | | | |
| 5. _____ | | | | | |
| = Total Cover | | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 1. <u>Phalaris arundinacea</u> | <u>35</u> | <u>X</u> | <u>FACW</u> | | |
| 2. <u>Leersia oryzoides</u> | <u>25</u> | <u>X</u> | <u>OBL</u> | | |
| 3. <u>Polygonum sagittatum</u> | <u>20</u> | <u>X</u> | <u>OBL</u> | | |
| 4. <u>Bidens frondosa</u> | <u>5</u> | | <u>FACW</u> | | |
| 5. <u>Pilea pumilia</u> | <u>15</u> | | <u>FACW</u> | | |
| 6. _____ | | | | | |
| 7. _____ | | | | | |
| 8. _____ | | | | | |
| 9. _____ | | | | | |
| 10. _____ | | | | | |
| <u>100</u> = Total Cover | | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| 1. _____ | | | | | |
| 2. _____ | | | | | |
| = Total Cover | | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | | |

SOIL

Sampling Point: W-A31

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 5/2 | 90 | 7.5YR 4/6 | 10 | C | M/PL | SL | |
| 6-18 | 10YR 4/1 | 80 | 7.5YT 4/ | 20 | C | M/PL | SCL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|--|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/26/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A32
 Investigator(s): JMM KMP Section, Township, Range: T1N R15E S21
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 0 Lat: 41.036735 Long: -83.138688 Datum: NAD 83
 Soil Map Unit Name: Haskins loam, 2 to 6 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: Cowardin: PEM | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|------------------|-------------------|------------------|---|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) 1. <u>Phalaris arundinacea</u> 35 X FACW 2. <u>Leersia oryzoides</u> 25 X OBL 3. <u>Polygonum sagittatum</u> 20 X OBL 4. <u>Bidens frondosa</u> 5 FACW 5. <u>Pilea pumilia</u> 15 FACW 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 100 = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) 1. _____ 2. _____ _____ = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |
| Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | |

SOIL

Sampling Point: W-A32

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 5/2 | 90 | 7.5YR 4/6 | 10 | C | M/PL | SL | |
| 6-18 | 10YR 4/1 | 80 | 7.5YT 4/ | 20 | C | M/PL | SCL | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: | Indicators for Problematic Hydric Soils ³ : |
|---|---|
| <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|--|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ |
|---|--|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | |
|--|--|
| Primary Indicators (minimum of one is required: check all that apply) | Secondary Indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) |

| | |
|--|--|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
|--|--|

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Seneca Wind Project City/County: Seneca Sampling Date: 9/20/2018
 Applicant/Owner: Seneca Wind State: OH Sampling Point: W-A31, W-A32 UP
 Investigator(s): JMM KMP Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Flat field Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 41.036874 Long: -83.138814 Datum: NAD 83
 Soil Map Unit Name: Blount silt loam, end moraine, 2 to 4 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|---|--|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Upland sample plot | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>-</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B) |
|---|---------------------|----------------------|---------------------|--|
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: <u>-</u>) | | | | |
| 1. _____ | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| = Total Cover | | | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Glycine max</u> | <u>100</u> | <u>X</u> | <u>UPL</u> | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u>-</u>) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | | | | |
| 2. _____ | | | | |
| = Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

SOIL

Sampling Point: W-A31, W-A32 UP

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR 4/4 | 100 | | | | | SIL | |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | |
|---|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) |
|---|---|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|---|---|
| Restrictive Layer (if observed): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|--|--|--|
| Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | |

| | |
|--|---|
| Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> |
|--|---|

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

Remarks:

APPENDIX B: ORAM FORMS

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/17/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A1 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.056943, -82.846777 |
| USGS Quad Name | Centerton |
| County | Seneca |
| Township | Venice |
| Section and Subsection | T1NR17E S12 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/17/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A1 | |
| Wetland Size (acres, hectares): 0.19 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 18 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|-------------------|----------------------------|-------------------------|
| Site: W-A1 | Rater(s): K. Pulver | Date: 09/17/2018 |
|-------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 5 | 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 | |
| <input type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input checked="" type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other <u>signs of fill</u> |

| | |
|-------------|-----------|
| 7 | 20 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 20 |
| subtotal this page |

| | | |
|-------------------|----------------------------|-------------------------|
| Site: W-A1 | Rater(s): K. Pulver | Date: 09/17/2018 |
|-------------------|----------------------------|-------------------------|

20

subtotal first page

| | |
|---|----|
| 0 | 20 |
|---|----|

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 |
|----|----|

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

18

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | | |
| | Metric 2. Buffers and surrounding land use | 5 | | |
| | Metric 3. Hydrology | 7 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersed, microtopography | -2 | | |
| | TOTAL SCORE | 18 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/19/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A4 & W-A5 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.090046, -82.928647 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Reed |
| Section and Subsection | T2NR17E S32 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/19/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|---|--------------------|
| Name of Wetland: W-A4 & W-A5 | |
| Wetland Size (acres, hectares): W-A4 (0.01 ac); W-A5 (0.02 ac) | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 14 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------------|----------------------------|-------------------------|
| Site: W-A4 & W-A5 | Rater(s): K. Pulver | Date: 09/19/2018 |
|--------------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 2 | 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)

| | |
|-------------|----------|
| 7 | 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 | |
| <input checked="" type="checkbox"/> ditch <input checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input checked="" type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 7 | 16 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 16 |
| subtotal this page |

| | | |
|--------------------------|----------------------------|-------------------------|
| Site: W-A4 & W-A5 | Rater(s): K. Pulver | Date: 09/19/2018 |
|--------------------------|----------------------------|-------------------------|

16

subtotal first page

16

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

14

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

14

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 2 | | |
| | Metric 3. Hydrology | 7 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersions, microtopography | -2 | | |
| | TOTAL SCORE | 14 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|-------------------------------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | <input checked="" type="checkbox"/> | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|---|----------------------|
| Name: K. Pulver | |
| Date: 09/27/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A36 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.07874, -82.927329 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Venice |
| Section and Subsection | T1NR17E S5 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/27/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A36 | |
| Wetland Size (acres, hectares): 0.15 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 12 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A36 | Rater(s): K. Pulver | Date: 09/27/2018 |
|--------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 6 | 8 |
| 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-----------|
| 7 | 15 |
| 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 type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 15 |
| subtotal this page |

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A36 | Rater(s): K. Pulver | Date: 09/27/2018 |
|--------------------|----------------------------|-------------------------|

15

subtotal first page

| | |
|---|----|
| 0 | 15 |
|---|----|

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 | 12 |
|----|----|

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

12

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 6 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersed, microtopography | -3 | | |
| | TOTAL SCORE | 12 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/27/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A35 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.087879, -82.942253 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Reed |
| Section and Subsection | T2NR17E S31 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/27/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A35 | |
| Wetland Size (acres, hectares): 0.21 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 8 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A35 | Rater(s): K. Pulver | Date: 09/27/2018 |
|--------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 4 | 6 |
| 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 checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-----------|
| 4 | 10 |
| 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 type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 10 |
| subtotal this page |

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A35 | Rater(s): K. Pulver | Date: 09/27/2018 |
|--------------------|----------------------------|-------------------------|

10

subtotal first page

10

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

8

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

8

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

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

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: K. Pulver | |
| Date: 09/18/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A2 | |
| Vegetation Communit(ies): PFO | |
| HGM Class(es): Depressional | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.10442, -82.897493 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Reed |
| Section and Subsection | T1NR17E S27 |
| Hydrologic Unit Code | 041000120502 |
| Site Visit | 9/18/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|----------------------|
| Name of Wetland: W-A2 | |
| Wetland Size (acres, hectares): 0.05 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 36 | Category: Modified 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

Site: W-A2

Rater(s): K. Pulver

Date: 09/18/2018

0

0

Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

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

4

4

Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

10

14

Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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 _____

15

29

Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

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

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

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

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

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

Check all disturbances observed

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

29

subtotal this page

last revised 1 February 2001 jjm

| | | |
|-------------------|----------------------------|-------------------------|
| Site: W-A2 | Rater(s): K. Pulver | Date: 09/18/2018 |
|-------------------|----------------------------|-------------------------|

29

subtotal first page

| | | |
|-------------|----------|--|
| 0 | 29 | |
| 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 | 36 | |
| max 20 pts. | subtotal | |

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 1

 Shrub
- 1

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 1

 Vegetated hummocks/tussucks
- 1

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

36

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 4 | | |
| | Metric 3. Hydrology | 10 | | |
| | Metric 4. Habitat | 15 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersion, microtopography | 7 | | |
| | TOTAL SCORE | 36 | | Category based on score breakpoints Modified 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|-------------------------------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | <input checked="" type="checkbox"/> | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: CV | |
| Date: 09/27/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-B14 PFO | |
| Vegetation Communit(ies): PFO | |
| HGM Class(es): Depressional | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.101753 -82.881445 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Reed |
| Section and Subsection | T2N R17E S27 |
| Hydrologic Unit Code | 04100011 |
| Site Visit | 9/27/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|----------------------|
| Name of Wetland: W-B14 PFO | |
| Wetland Size (acres, hectares): 0.351 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 41 | Category: Modified 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|------------------------|---------------------|-------------------------|
| Site: W-B14 PFO | Rater(s): CV | Date: 09/27/2018 |
|------------------------|---------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 5 | 7 |
| 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)

| | |
|-------------|-----------|
| 18 | 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 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-----------|
| 13 | 38 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 38 |
| subtotal this page |

| | | |
|------------------------|---------------------|-------------------------|
| Site: W-B14 PFO | Rater(s): CV | Date: 09/27/2018 |
|------------------------|---------------------|-------------------------|

38

subtotal first page

| | |
|---|----|
| 0 | 38 |
|---|----|

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 | 41 |
|---|----|

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 0

 Emergent
- 0

 Shrub
- 1

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

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End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 2 | | |
| | Metric 2. Buffers and surrounding land use | 5 | | |
| | Metric 3. Hydrology | 18 | | |
| | Metric 4. Habitat | 13 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersed, microtopography | 3 | | |
| | TOTAL SCORE | 41 | | Category based on score breakpoints Modified 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | ✓ | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: CV | |
| Date: 09/27/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-B12, W-B13-PFO | |
| Vegetation Communit(ies): PFO PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.102735 -82.878477 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Reed |
| Section and Subsection | T2N R17E S26 |
| Hydrologic Unit Code | 04100011 |
| Site Visit | 9/27/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|---|-----------------------------|
| Name of Wetland: W-B12, W-B13-PFO | |
| Wetland Size (acres, hectares): 0.1452 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 42 | Category: Modified 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|-------------------------------|---------------------|-------------------------|
| Site: W-B12, W-B13-PFO | Rater(s): CV | Date: 09/27/2018 |
|-------------------------------|---------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 5 | 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)

| | |
|-------------|-----------|
| 21 | 27 |
| 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-----------|
| 13 | 40 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 40 |
| subtotal this page |

| | | |
|-------------------------------|---------------------|-------------------------|
| Site: W-B12, W-B13-PFO | Rater(s): CV | Date: 09/27/2018 |
|-------------------------------|---------------------|-------------------------|

40

subtotal first page

| | |
|-------------|----------|
| 0 | 40 |
| 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 | 42 |
| 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 |

42

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|---------------------|---|--|--|
| Narrative Rating | Question 1 Critical Habitat | YES NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | |
| | Metric 2. Buffers and surrounding land use | 5 | |
| | Metric 3. Hydrology | 21 | |
| | Metric 4. Habitat | 13 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 2 | |
| | TOTAL SCORE | 42 | Category based on score breakpoints Modified 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|-------------------------------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | <input checked="" type="checkbox"/> | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/18/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A3 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Depressional | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.124229, -82.916708 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Reed |
| Section and Subsection | T2NR17E S21 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | 9/18/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A3 | |
| Wetland Size (acres, hectares): 0.05 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 22 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|-------------------|----------------------------|-------------------------|
| Site: W-A3 | Rater(s): K. Pulver | Date: 09/18/2018 |
|-------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 15 | 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 type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input checked="" type="checkbox"/> stormwater input | <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 7 | 23 |
| 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 checked="" type="checkbox"/> sedimentation |
| <input 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 |

| |
|--------------------|
| 23 |
| subtotal this page |

| | | |
|-------------------|----------------------------|-------------------------|
| Site: W-A3 | Rater(s): K. Pulver | Date: 09/18/2018 |
|-------------------|----------------------------|-------------------------|

23

subtotal first page

23

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

22

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

22

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 15 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersed, microtopography | -1 | | |
| | TOTAL SCORE | 22 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/19/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A8 | |
| Vegetation Communit(ies): PSS | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.110131, -82.970866 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S25 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | 9/19/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A8 | |
| Wetland Size (acres, hectares): 0.02 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 27 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|-------------------|----------------------------|-------------------------|
| Site: W-A8 | Rater(s): K. Pulver | Date: 09/19/2018 |
|-------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 16 | 17 |
| 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 checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 7 | 24 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input checked="" type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 24 |
| subtotal this page |

| | | |
|-------------------|----------------------------|-------------------------|
| Site: W-A8 | Rater(s): K. Pulver | Date: 09/19/2018 |
|-------------------|----------------------------|-------------------------|

24

subtotal first page

| | |
|-------------|----------|
| 0 | 24 |
| 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 | 27 |
| max 20 pts. | subtotal |

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 1

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

27

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|----------------------------------|---|--|--|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. | |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 16 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersion, microtopography | 3 | | |
| | TOTAL SCORE | 27 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
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| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A6 & W-A7 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.113465, -82.967093 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S24 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | 9/19/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|---|--------------------|
| Name of Wetland: W-A6 & W-A7 | |
| Wetland Size (acres, hectares): W-A6 (0.02 ac); W-A7 (0.15 ac) | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 21 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------------|----------------------------|-------------------------|
| Site: W-A6 & W-A7 | Rater(s): K. Pulver | Date: 09/19/2018 |
|--------------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 15 | 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 checked="" type="checkbox"/> ditch <input checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input checked="" type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 7 | 23 |
| 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 type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input checked="" type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 23 |
| subtotal this page |

| | | |
|--------------------------|----------------------------|-------------------------|
| Site: W-A6 & W-A7 | Rater(s): K. Pulver | Date: 09/19/2018 |
|--------------------------|----------------------------|-------------------------|

23

subtotal first page

23

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

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

21

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|----------------------------------|---|--|--|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. | |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 15 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersions, microtopography | -2 | | |
| | TOTAL SCORE | 21 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: K. Pulver | |
| Date: 09/19/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A9 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.098107, -82.97266 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S25 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | 9/19/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A9 | |
| Wetland Size (acres, hectares): 0.37 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 18 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

Site: W-A9

Rater(s): K. Pulver

Date: 09/19/2018

1

1

Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

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

1

2

Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

10

12

Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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

7

19

Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

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

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

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

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

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

Check all disturbances observed

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

19

subtotal this page

last revised 1 February 2001 jjm

| | | |
|-------------------|----------------------------|-------------------------|
| Site: W-A9 | Rater(s): K. Pulver | Date: 09/19/2018 |
|-------------------|----------------------------|-------------------------|

19

subtotal first page

19

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

18

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

18

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 10 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersions, microtopography | -1 | | |
| | TOTAL SCORE | 18 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: K. Pulver | |
| Date: 09/20/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A12 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.088856, -82.97238 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S36 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/20/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A12 | |
| Wetland Size (acres, hectares): 0.18 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 19 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A12 | Rater(s): K. Pulver | Date: 09/20/2018 |
|--------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 2 | 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)

| | |
|-------------|----------|
| 7 | 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 | |
| <input type="checkbox"/> ditch <input checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 7 | 16 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 16 |
| subtotal this page |

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A12 | Rater(s): K. Pulver | Date: 09/20/2018 |
|--------------------|----------------------------|-------------------------|

16

subtotal first page

16

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

19

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

19

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 2 | | |
| | Metric 3. Hydrology | 7 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersions, microtopography | 3 | | |
| | TOTAL SCORE | 19 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/20/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A13 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.085698, -82.985555 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S35 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/20/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A13 | |
| Wetland Size (acres, hectares): 0.43 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 23 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A13 | Rater(s): K. Pulver | Date: 09/20/2018 |
|--------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 14 | 15 |
| 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 checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 8 | 23 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 23 |
| subtotal this page |

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A13 | Rater(s): K. Pulver | Date: 09/20/2018 |
|--------------------|----------------------------|-------------------------|

23

subtotal first page

23

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)

0

23

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

23

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 14 | | |
| | Metric 4. Habitat | 8 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersions, microtopography | 0 | | |
| | TOTAL SCORE | 23 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|-------------------------------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | <input checked="" type="checkbox"/> | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: K. Pulver | |
| Date: 09/20/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A11 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.083814, -82.97432 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S36 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/20/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A11 | |
| Wetland Size (acres, hectares): 0.01 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 16 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A11 | Rater(s): K. Pulver | Date: 09/20/2018 |
|--------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 6 | 7 |
| 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 checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 7 | 14 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 14 |
| subtotal this page |

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A11 | Rater(s): K. Pulver | Date: 09/20/2018 |
|--------------------|----------------------------|-------------------------|

14

subtotal first page

14

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

16

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- 0

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- ✓

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

16

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 6 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersed, microtopography | 2 | | |
| | TOTAL SCORE | | 16 | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/20/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A14; W-A15 PEM; W-A15 PFO | |
| Vegetation Communit(ies): PFO PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.090845, -82.994332 |
| USGS Quad Name | Attica |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S35 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/20/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|---|-----------------------------|
| Name of Wetland: W-A14; W-A15 PEM; W-A15 PFO | |
| Wetland Size (acres, hectares): W-A14 (0.83 ac); W-A15 PFO (0.13 ac); W-A15 PEM (0.12 ac) | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: Modified 2 | |
| Final score : 44 | Category: Modified 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--|----------------------------|-------------------------|
| Site: W-A14; W-A15 PEM; W-A15 PFO | Rater(s): K. Pulver | Date: 09/20/2018 |
|--|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|-----------|
| 10 | 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)

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

| | |
|-------------|-----------|
| 12 | 32 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 32 |
| subtotal this page |

| | | |
|--|----------------------------|-------------------------|
| Site: W-A14; W-A15 PEM; W-A15 PFO | Rater(s): K. Pulver | Date: 09/20/2018 |
|--|----------------------------|-------------------------|

32

subtotal first page

32

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)

12

44

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ 0 Aquatic bed
- ☐ 1 Emergent
- ☐ 2 Shrub
- ☐ 2 Forest
- ☐ 0 Mudflats
- ☐ 0 Open water
- ☐ 0 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.

- ☐ 1 Vegetated hummocks/tussocks
- ☐ 1 Coarse woody debris >15cm (6in)
- ☐ 1 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 |

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End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 2 | | |
| | Metric 2. Buffers and surrounding land use | 8 | | |
| | Metric 3. Hydrology | 10 | | |
| | Metric 4. Habitat | 12 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersed, microtopography | 12 | | |
| | TOTAL SCORE | 44 | | Category based on score breakpoints Modified 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | ✓ | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|---|-----------------------|
| Name: K. Pulver | |
| Date: 09/20/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A16 PEM & PFO | |
| Vegetation Communit(ies): PFO PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.088817, -83.006405 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S34 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | 9/20/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|---|-----------------------------|
| Name of Wetland: W-A16 PEM & PFO | |
| Wetland Size (acres, hectares): W-A16 PEM (0.17 ac); W-A16 PFO (1.54) | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 40.5 | Category: Modified 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|------------------------------|----------------------------|-------------------------|
| Site: W-A16 PEM & PFO | Rater(s): K. Pulver | Date: 09/20/2018 |
|------------------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 3 | 3 |
| 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)

| | |
|-------------|----------|
| 5 | 8 |
| 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 | 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)

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

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

| |
|--------------------|
| 30.5 |
| subtotal this page |

| | | |
|------------------------------|----------------------------|-------------------------|
| Site: W-A16 PEM & PFO | Rater(s): K. Pulver | Date: 09/20/2018 |
|------------------------------|----------------------------|-------------------------|

30.5

subtotal first page

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)

10

40.5

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ 0 Aquatic bed
- ☐ 1 Emergent
- ☐ 1 Shrub
- ☐ 2 Forest
- ☐ 0 Mudflats
- ☐ 0 Open water
- ☐ 0 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.

- ☐ 0 Vegetated hummocks/tussocks
- ☐ 1 Coarse woody debris >15cm (6in)
- ☐ 1 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 |

40.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 3 | | |
| | Metric 2. Buffers and surrounding land use | 5 | | |
| | Metric 3. Hydrology | 12 | | |
| | Metric 4. Habitat | 10.5 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersed, microtopography | 10 | | |
| | TOTAL SCORE | 40.5 | | Category based on score breakpoints Modified 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|-------------------------------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | <input checked="" type="checkbox"/> | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/20/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A17 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.092136, -83.011508 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S34 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | 9/20/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A17 | |
| Wetland Size (acres, hectares): 0.03 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 23 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A17 | Rater(s): K. Pulver | Date: 09/20/2018 |
|--------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 2 | 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)

| | |
|-------------|----------|
| 12 | 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)

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

| | |
|-------------|----------|
| 7 | 21 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 21 |
| subtotal this page |

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A17 | Rater(s): K. Pulver | Date: 09/20/2018 |
|--------------------|----------------------------|-------------------------|

21

subtotal first page

| | |
|-------------|----------|
| 0 | 21 |
| 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 | 23 |
| max 20 pts. | subtotal |

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

23

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 2 | | |
| | Metric 3. Hydrology | 12 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersions, microtopography | 2 | | |
| | TOTAL SCORE | 23 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|---|----------------------|
| Name: K. Pulver | |
| Date: 09/19/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A10 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.10891, -83.028059 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S28 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | 9/19/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A10 | |
| Wetland Size (acres, hectares): 0.19 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 12 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A10 | Rater(s): K. Pulver | Date: 09/19/2018 |
|--------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 6 | 7 |
| 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 7 | 14 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 14 |
| subtotal this page |

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A10 | Rater(s): K. Pulver | Date: 09/19/2018 |
|--------------------|----------------------------|-------------------------|

14

subtotal first page

14

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

12

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ 0 Aquatic bed
- ☐ 1 Emergent
- ☐ 0 Shrub
- ☐ 0 Forest
- ☐ 0 Mudflats
- ☐ 0 Open water
- ☐ 0 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.

- ☐ 0 Vegetated hummocks/tussocks
- ☐ 0 Coarse woody debris >15cm (6in)
- ☐ 0 Standing dead >25cm (10in) dbh
- ☐ 0 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 |

12

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 6 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersed, microtopography | -2 | | |
| | TOTAL SCORE | 12 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|-------------------------------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | <input checked="" type="checkbox"/> | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: K. Pulver | |
| Date: 09/21/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A20 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.08138, -83.034535 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T2NR16E S32 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | 9/21/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A20 | |
| Wetland Size (acres, hectares): 0.05 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 21 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

Site: W-A20

Rater(s): K. Pulver

Date: 09/21/2018

0

0

Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

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

1

1

Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

14

15

Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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

7

22

Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

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

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

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

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

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

Check all disturbances observed

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

22

subtotal this page

last revised 1 February 2001 jjm

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A20 | Rater(s): K. Pulver | Date: 09/21/2018 |
|--------------------|----------------------------|-------------------------|

22

subtotal first page

22

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

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

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End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|----------------------------------|---|--|--|
| Narrative Rating | Question 1. Critical Habitat | YES NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO ✓ | If yes, Category 3 |
| Question 11. Relict Wet Prairies | YES NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. | |
| Quantitative Rating | Metric 1. Size | 0 | |
| | Metric 2. Buffers and surrounding land use | 1 | |
| | Metric 3. Hydrology | 14 | |
| | Metric 4. Habitat | 7 | |
| | Metric 5. Special Wetland Communities | | |
| | Metric 6. Plant communities, interspersion, microtopography | -1 | |
| | TOTAL SCORE | 21 | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/24/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A21 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.076208, -83.025845 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Bloom |
| Section and Subsection | T1NR16E S4 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/24/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A21 | |
| Wetland Size (acres, hectares): 0.02 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 11 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

Site: W-A21

Rater(s): K. Pulver

Date: 09/24/2018

0

0

Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

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

1

1

Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

4

5

Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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 riprap

4

9

Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

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

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

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

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

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

Check all disturbances observed

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

9

subtotal this page

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A21 | Rater(s): K. Pulver | Date: 09/24/2018 |
|--------------------|----------------------------|-------------------------|

9

subtotal first page

| | |
|---|---|
| 0 | 9 |
|---|---|

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 | 11 |
|---|----|

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

11

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

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

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: K. Pulver | |
| Date: 09/24/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A23 PFO | |
| Vegetation Communit(ies): PFO PEM | |
| HGM Class(es): Depressional | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.07533, -83.037089 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Scipio |
| Section and Subsection | T1NR16E S5 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|---|--------------------|
| Name of Wetland: W-A23 PFO | |
| Wetland Size (acres, hectares): W-A22 (0.07 ac); W-A23 PEM (0.11 ac); W-A23 PFO (0.15 ac) | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 30.5 | Category: 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|------------------------|----------------------------|-------------------------|
| Site: W-A23 PFO | Rater(s): K. Pulver | Date: 09/24/2018 |
|------------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 5 | 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)

| | |
|-------------|-----------|
| 9 | 15 |
| 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 checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-------------|
| 9.5 | 24.5 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input checked="" type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 24.5 |
| subtotal this page |

| | | |
|------------------------|----------------------------|-------------------------|
| Site: W-A23 PFO | Rater(s): K. Pulver | Date: 09/24/2018 |
|------------------------|----------------------------|-------------------------|

24.5

subtotal first page

24.5

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)

6

30.5

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 1

 Shrub
- 1

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

30.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|---|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | | |
| | Metric 2. Buffers and surrounding land use | 5 | | |
| | Metric 3. Hydrology | 9 | | |
| | Metric 4. Habitat | 9.5 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersed, microtopography | 6 | | |
| | TOTAL SCORE | 30.5 | | Category based on score breakpoints 1 or 2 Gray Zone |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | ✓ | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: K. Pulver | |
| Date: 09/24/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A24 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Slope | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| | |
| Lat/Long or UTM Coordinate | 41.075183, -83.04415 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Bloom |
| Section and Subsection | T1NR16E S5 |
| Hydrologic Unit Code | 041000111101 |
| Site Visit | 9/24/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A24 | |
| Wetland Size (acres, hectares): 0.04 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 15 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

Site: W-A24

Rater(s): K. Pulver

Date: 09/24/2018

0

0

Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

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

2

2

Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

7

9

Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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 _____

7

16

Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

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

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

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

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

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

Check all disturbances observed

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

16

subtotal this page

last revised 1 February 2001 jjm

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A24 | Rater(s): K. Pulver | Date: 09/24/2018 |
|--------------------|----------------------------|-------------------------|

16

subtotal first page

| | |
|---|----|
| 0 | 16 |
|---|----|

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 | 15 |
|----|----|

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

15

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 2 | | |
| | Metric 3. Hydrology | 7 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersions, microtopography | -1 | | |
| | TOTAL SCORE | 15 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: K. Pulver | |
| Date: 09/21/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A19 PSS | |
| Vegetation Communit(ies): PSS PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.08016, -83.018848 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Bloom |
| Section and Subsection | T1NR16E S4 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/21/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|---|--------------------|
| Name of Wetland: W-A19 PSS | |
| Wetland Size (acres, hectares): W-A19 PSS (0.10 ac); W-A19 PEM (0.19 ac) | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 25 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|------------------------|----------------------------|-------------------------|
| Site: W-A19 PSS | Rater(s): K. Pulver | Date: 09/21/2018 |
|------------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|-----------|
| 14 | 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 checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-----------|
| 7 | 23 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 23 |
| subtotal this page |

| | | |
|------------------------|----------------------------|-------------------------|
| Site: W-A19 PSS | Rater(s): K. Pulver | Date: 09/21/2018 |
|------------------------|----------------------------|-------------------------|

23

subtotal first page

23

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

25

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 1

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

25

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 14 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersions, microtopography | 2 | | |
| | TOTAL SCORE | 25 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/21/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A18 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Depressional | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.076531, -83.019871 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Bloom |
| Section and Subsection | T1NR16E S4 |
| Hydrologic Unit Code | 041000110805 |
| Site Visit | 9/21/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|----------------------|
| Name of Wetland: W-A18 | |
| Wetland Size (acres, hectares): 0.01 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 37 | Category: Modified 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A18 | Rater(s): K. Pulver | Date: 09/21/2018 |
|--------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 11 | 11 |
| 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 | 27 |
| 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 10 | 37 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input checked="" type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 37 |
| subtotal this page |

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A18 | Rater(s): K. Pulver | Date: 09/21/2018 |
|--------------------|----------------------------|-------------------------|

37

subtotal first page

37

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)

0

37

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

37

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 11 | | |
| | Metric 3. Hydrology | 16 | | |
| | Metric 4. Habitat | 10 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersions, microtopography | 0 | | |
| | TOTAL SCORE | 37 | | Category based on score breakpoints Modified 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | ✓ | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/25/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A27 | |
| Vegetation Communit(ies): PFO | |
| HGM Class(es): Depressional | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.054843, -83.065177 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Bloom |
| Section and Subsection | T1NR16E S7 |
| Hydrologic Unit Code | 041000110806 |
| Site Visit | 9/25/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A27 | |
| Wetland Size (acres, hectares): 0.82 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 52 | Category: 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

Site: W-A27

Rater(s): K. Pulver

Date: 09/25/2018

2

2

Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

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

8

10

Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

17

27

Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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

16

43

Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

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

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

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

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

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

Check all disturbances observed

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

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subtotal this page

last revised 1 February 2001 jjm

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A27 | Rater(s): K. Pulver | Date: 09/25/2018 |
|--------------------|----------------------------|-------------------------|

43

subtotal first page

| | |
|-------------|----------|
| 0 | 43 |
| 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)

| | |
|-------------|----------|
| 9 | 52 |
| max 20 pts. | subtotal |

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ 0 Aquatic bed
- ☐ 1 Emergent
- ☐ 1 Shrub
- ☐ 2 Forest
- ☐ 0 Mudflats
- ☐ 0 Open water
- ☐ 0 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.

- ☐ 0 Vegetated hummocks/tussocks
- ☐ 1 Coarse woody debris >15cm (6in)
- ☐ 0 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 |

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End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 2 | | |
| | Metric 2. Buffers and surrounding land use | 8 | | |
| | Metric 3. Hydrology | 17 | | |
| | Metric 4. Habitat | 16 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersions, microtopography | 9 | | |
| | TOTAL SCORE | 52 | | Category based on score breakpoints 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|-------------------------------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | <input checked="" type="checkbox"/> | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/26/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A33 | |
| Vegetation Communit(ies): PFO | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.042444, -83.077637 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Eden |
| Section and Subsection | T1NR15E S13 |
| Hydrologic Unit Code | 041000110806 |
| Site Visit | 9/26/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A33 | |
| Wetland Size (acres, hectares): 0.80 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 49.5 | Category: 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A33 | Rater(s): K. Pulver | Date: 09/26/2018 |
|--------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|-------------|
| 8.5 | 10.5 |
| 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)

| | |
|-------------|-------------|
| 16 | 26.5 |
| 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-------------|
| 16 | 42.5 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 42.5 |
| subtotal this page |

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A33 | Rater(s): K. Pulver | Date: 09/26/2018 |
|--------------------|----------------------------|-------------------------|

42.5

subtotal first page

42.5

Metric 5. Special Wetlands.

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)

7

49.5

max 20 pts.

subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 1

 Shrub
- 1

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 1

 Standing dead >25cm (10in) dbh
- 1

 Amphibian breeding pools

Metric 6. Plant communities, interspersions, microtopography.

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 |

49.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 2 | | |
| | Metric 2. Buffers and surrounding land use | 8.5 | | |
| | Metric 3. Hydrology | 16 | | |
| | Metric 4. Habitat | 16 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersions, microtopography | 7 | | |
| | TOTAL SCORE | 49.5 | | Category based on score breakpoints 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | ✓ | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|----------------------|
| Name: CV | |
| Date: 09/26/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-B6 | |
| Vegetation Communit(ies): PFO PEM | |
| HGM Class(es): Depressional | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.04581, -83.027315 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Bloom |
| Section and Subsection | T1N R16E S16 |
| Hydrologic Unit Code | 04100011 |
| Site Visit | 9/26/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|----------------------|
| Name of Wetland: W-B6 | |
| Wetland Size (acres, hectares): 0.120 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 37 | Category: Modified 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|-------------------|---------------------|-------------------------|
| Site: W-B6 | Rater(s): CV | Date: 09/26/2018 |
|-------------------|---------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 5 | 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)

| | |
|-------------|-----------|
| 16 | 22 |
| 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-----------|
| 13 | 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 type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 35 |
| subtotal this page |

| | | |
|-------------------|---------------------|-------------------------|
| Site: W-B6 | Rater(s): CV | Date: 09/26/2018 |
|-------------------|---------------------|-------------------------|

35

subtotal first page

| | |
|---|----|
| 0 | 35 |
|---|----|

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 | 37 |
|---|----|

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 |
| 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 |

37

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | | |
| | Metric 2. Buffers and surrounding land use | 5 | | |
| | Metric 3. Hydrology | 16 | | |
| | Metric 4. Habitat | 13 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersions, microtopography | 2 | | |
| | TOTAL SCORE | 37 | | Category based on score breakpoints Modified 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | ✓ | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|---|
| Name: CV | |
| Date: 09/26/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-B5 & W-B7 | |
| Vegetation Communit(ies): PFO PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| | |
| Lat/Long or UTM Coordinate | PEM1: 41.033016, -83.060169; PEM2: 41.033555, -83.058283; PFO: 41.033075 -83.05993 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Bloom |
| Section and Subsection | T1N R16E S19 |
| Hydrologic Unit Code | 04100011 |
| Site Visit | 9/25/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-B5 & W-B7 | |
| Wetland Size (acres, hectares): 0.303 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 46 | Category: 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|--------------------------|---------------------|-------------------------|
| Site: W-B5 & W-B7 | Rater(s): CV | Date: 09/26/2018 |
|--------------------------|---------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 2 | 4 |
| 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)

| | |
|-------------|-----------|
| 29 | 33 |
| 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-----------|
| 12 | 45 |
| 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 type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 45 |
| subtotal this page |

| | | |
|--------------------------|---------------------|-------------------------|
| Site: W-B5 & W-B7 | Rater(s): CV | Date: 09/26/2018 |
|--------------------------|---------------------|-------------------------|

45

subtotal first page

| | |
|-------------|----------|
| 0 | 45 |
| 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 | 46 |
| max 20 pts. | subtotal |

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 1

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

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End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 2 | | |
| | Metric 2. Buffers and surrounding land use | 2 | | |
| | Metric 3. Hydrology | 29 | | |
| | Metric 4. Habitat | 12 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersions, microtopography | 1 | | |
| | TOTAL SCORE | 46 | | Category based on score breakpoints 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|-------------------------------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | <input checked="" type="checkbox"/> | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: Jen Bittner | |
| Date: 09/26/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: jen.bittner@tetrattech.com | |
| Name of Wetland: W-B4 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Depressional | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.032896, -83.063504 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Bloom |
| Section and Subsection | T1N R16E S19 |
| Hydrologic Unit Code | 04100011 |
| Site Visit | 9/25/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-B4 | |
| Wetland Size (acres, hectares): 0.0530 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 17 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|-------------------|------------------------------|-------------------------|
| Site: W-B4 | Rater(s): Jen Bittner | Date: 09/26/2018 |
|-------------------|------------------------------|-------------------------|

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

| | |
|-------------|----------|
| 7 | 16 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input checked="" type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 16 |
| subtotal this page |

| | | |
|-------------------|------------------------------|-------------------------|
| Site: W-B4 | Rater(s): Jen Bittner | Date: 09/26/2018 |
|-------------------|------------------------------|-------------------------|

16

subtotal first page

| | | |
|-------------|----------|--|
| 0 | 16 | |
| 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 | 17 | |
| 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 |
| 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 |

17

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 8 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersions, microtopography | 1 | | |
| | TOTAL SCORE | 17 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: CV | |
| Date: 09/24/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-B2 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.033596, -83.078721 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Eden |
| Section and Subsection | T1N R15E S24 |
| Hydrologic Unit Code | 04100011 |
| Site Visit | 09/24/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|----------------------|
| Name of Wetland: W-B2 | |
| Wetland Size (acres, hectares): 0.14 ac. | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 37 | Category: Modified 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|-------------------|---------------------|-------------------------|
| Site: W-B2 | Rater(s): CV | Date: 09/24/2018 |
|-------------------|---------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|-----------|
| 20 | 22 |
| 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input checked="" type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-----------|
| 12 | 34 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 34 |
| subtotal this page |

| | | |
|-------------------|---------------------|-------------------------|
| Site: W-B2 | Rater(s): CV | Date: 09/24/2018 |
|-------------------|---------------------|-------------------------|

34

subtotal first page

| | |
|-------------|----------|
| 0 | 34 |
| 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 | 37 |
| max 20 pts. | subtotal |

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 0

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 1

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

37

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 20 | | |
| | Metric 4. Habitat | 12 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersed, microtopography | 3 | | |
| | TOTAL SCORE | 37 | | Category based on score breakpoints Modified 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|-------------------------------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | <input checked="" type="checkbox"/> | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/26/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A34 | |
| Vegetation Communit(ies): PFO | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.032205, -83.080361 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Eden |
| Section and Subsection | T1NR15E S24 |
| Hydrologic Unit Code | 041000110806 |
| Site Visit | 9/26/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A34 | |
| Wetland Size (acres, hectares): 0.47 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 49 | Category: 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

Site: W-A34

Rater(s): K. Pulver

Date: 09/26/2018

2

2

Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

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

5

7

Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

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

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

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

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

20

27

Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

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

16

43

Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

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

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

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

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

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

Check all disturbances observed

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

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subtotal this page

last revised 1 February 2001 jjm

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A34 | Rater(s): K. Pulver | Date: 09/26/2018 |
|--------------------|----------------------------|-------------------------|

43

subtotal first page

| | |
|-------------|----------|
| 0 | 43 |
| 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)

| | |
|-------------|----------|
| 6 | 49 |
| max 20 pts. | subtotal |

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 1

 Shrub
- 2

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 1

 Standing dead >25cm (10in) dbh
- 0

 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 |

49

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 2 | | |
| | Metric 2. Buffers and surrounding land use | 5 | | |
| | Metric 3. Hydrology | 20 | | |
| | Metric 4. Habitat | 16 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersed, microtopography | 6 | | |
| | TOTAL SCORE | 49 | | Category based on score breakpoints 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|-------------------------------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | <input checked="" type="checkbox"/> | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|---|
| Name: CV | |
| Date: 09/24/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-B1 | |
| Vegetation Communit(ies): PEM PFO | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.030759, -83.080429; 41.030787, -83.080914; 41.031301, -83.080186 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Eden |
| Section and Subsection | T1N R15E S24 |
| Hydrologic Unit Code | 04100011 |
| Site Visit | 09/24/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-B1 | |
| Wetland Size (acres, hectares): 1.18 ac. | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 45 | Category: 2 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|-------------------|---------------------|-------------------------|
| Site: W-B1 | Rater(s): CV | Date: 09/24/2018 |
|-------------------|---------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|-----------|
| 25 | 27 |
| 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"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|-----------|
| 16 | 43 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 43 |
| subtotal this page |

| | | |
|-------------------|---------------------|-------------------------|
| Site: W-B1 | Rater(s): CV | Date: 09/24/2018 |
|-------------------|---------------------|-------------------------|

43

subtotal first page

| | |
|-------------|----------|
| 0 | 43 |
| 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 | 45 |
| max 20 pts. | subtotal |

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ 0 Aquatic bed
- ☐ 1 Emergent
- ☐ 0 Shrub
- ☐ 1 Forest
- ☐ 0 Mudflats
- ☐ 0 Open water
- ☐ 0 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.

- ☐ 1 Vegetated hummocks/tussocks
- ☐ 0 Coarse woody debris >15cm (6in)
- ☐ 0 Standing dead >25cm (10in) dbh
- ☐ 0 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 |

45

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 25 | | |
| | Metric 4. Habitat | 16 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersed, microtopography | 2 | | |
| | TOTAL SCORE | 45 | | Category based on score breakpoints 2 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | | ✓ | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/26/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A28, W-A29 PEM, W-A29 PSS & W-A37 | |
| Vegetation Communit(ies): PEM PSS | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.047449, -83.108844 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Eden |
| Section and Subsection | T1NR16E S14,S15 |
| Hydrologic Unit Code | 041000110806 |
| Site Visit | 9/26/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|---|--------------------|
| Name of Wetland: W-A28, W-A29 PEM, W-A29 PSS & W-A37 | |
| Wetland Size (acres, hectares): W-A28 (1.03 ac); W-A29 PEM (0.42 ac); W-A29 PSS (0.08);W-A37 (0.60 ac) | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 21 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

Site: W-A28, W-A29 PEM, W-A29 PSS & W- Rater(s): K. Pulver

Date: 09/26/2018

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 13 | 15 |
| 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 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 type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 7 | 22 |
| 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 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 checked="" type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

22

subtotal this page

last revised 1 February 2001 jjm

| | | |
|---|----------------------------|-------------------------|
| Site: W-A28, W-A29 PEM, W-A29 PSS & W- | Rater(s): K. Pulver | Date: 09/26/2018 |
|---|----------------------------|-------------------------|

22

subtotal first page

22

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

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 1

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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 |

21

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 13 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersions, microtopography | -1 | | |
| | TOTAL SCORE | 21 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/25/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A27 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.040695, -83.125575 |
| USGS Quad Name | Bloomville |
| County | Seneca |
| Township | Bloom |
| Section and Subsection | T1NR16E S15 |
| Hydrologic Unit Code | 041000110806 |
| Site Visit | 9/25/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|--|-------------|
| Name of Wetland: W-A27 | |
| Wetland Size (acres, hectares): 0.04 ac | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 22 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

Site: W-A27

Rater(s): K. Pulver

Date: 09/25/2018

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)

14

15

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

7

22

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

22

subtotal this page

| | | |
|--------------------|----------------------------|-------------------------|
| Site: W-A27 | Rater(s): K. Pulver | Date: 09/25/2018 |
|--------------------|----------------------------|-------------------------|

22

subtotal first page

22

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)

0

22

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

22

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 14 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | | | |
| | Metric 6. Plant communities, interspersed, microtopography | 0 | | |
| | TOTAL SCORE | 22 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| | |
|--|-----------------------|
| Name: K. Pulver | |
| Date: 09/26/2018 | |
| Affiliation: Tetra Tech | |
| Address: 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220 | |
| Phone Number: (412) 921-7090 | |
| e-mail address: | |
| Name of Wetland: W-A31 & W-A32 | |
| Vegetation Communit(ies): PEM | |
| HGM Class(es): Riverine | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Attached. | |
| | |
| Lat/Long or UTM Coordinate | 41.036796, -83.138705 |
| USGS Quad Name | Tiffin South |
| County | Seneca |
| Township | Eden |
| Section and Subsection | T1NR15E S16,S21 |
| Hydrologic Unit Code | 041000110806 |
| Site Visit | 9/26/2018 |
| National Wetland Inventory Map | Fig. 3a |
| Ohio Wetland Inventory Map | Fig. 3b |
| Soil Survey | Fig. 2 |
| Delineation report/map | Attached |

| | |
|---|--------------------|
| Name of Wetland: W-A31 & W-A32 | |
| Wetland Size (acres, hectares): W-A31 (0.02 ac); W-A32 (0.03 ac) | |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Attached. | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| Final score : 21 | Category: 1 |

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

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

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

| | | |
|----------------------------|----------------------------|-------------------------|
| Site: W-A31 & W-A32 | Rater(s): K. Pulver | Date: 09/26/2018 |
|----------------------------|----------------------------|-------------------------|

| | |
|------------|----------|
| 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)

| | |
|-------------|----------|
| 14 | 15 |
| 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 checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |

| | |
|-------------|----------|
| 7 | 22 |
| 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"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |

| |
|--------------------|
| 22 |
| subtotal this page |

| | | |
|----------------------------|----------------------------|-------------------------|
| Site: W-A31 & W-A32 | Rater(s): K. Pulver | Date: 09/26/2018 |
|----------------------------|----------------------------|-------------------------|

22

subtotal first page

| | |
|---|----|
| 0 | 22 |
|---|----|

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 |
|----|----|

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 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

- 0

 Extensive >75% cover (-5)
- ✓

 Moderate 25-75% cover (-3)
- 0

 Sparse 5-25% cover (-1)
- 0

 Nearly absent <5% cover (0)
- 0

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 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 |

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End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | | Result |
|---------------------|---|--|---------|--|
| Narrative Rating | Question 1. Critical Habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES | NO ✓ | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES | NO ✓ | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES | NO ✓ | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES | NO ✓ | If yes, Category 1. |
| | Question 6. Bogs | YES | NO ✓ | If yes, Category 3. |
| | Question 7. Fens | YES | NO ✓ | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES | NO ✓ | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES | NO ✓ | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES | NO ✓ | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES | NO ✓ | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | | |
| | Metric 2. Buffers and surrounding land use | 1 | | |
| | Metric 3. Hydrology | 14 | | |
| | Metric 4. Habitat | 7 | | |
| | Metric 5. Special Wetland Communities | 0 | | |
| | Metric 6. Plant communities, interspersed, microtopography | -1 | | |
| | TOTAL SCORE | 21 | | Category based on score breakpoints 1 |

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

| Final Category | | | |
|----------------|------------|------------|------------|
| Choose one | Category 1 | Category 2 | Category 3 |
| | ✓ | | |

End of Ohio Rapid Assessment Method for Wetlands.

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Summary: Correspondence of Seneca Wind, LLC Submitting Aquatic Resource Report, Part 10 of 12 electronically filed by Teresa Orahod on behalf of Dylan F. Borchers