

# **Large Filing Separator Sheet**

**Case Number : 08-170-EL-BTX**

**File Date : 12/30/2008**

**Section : 2 of 2**

**Number of Pages : 66**

**Description of Document :  
Application**

Route and 6.0-mile Alternate Route. The Preferred Route crosses 161.6 feet of PEM wetland and 0.728 acre of wetland within a 200-foot corridor. The ORAM score for the wetland indicated a Category I PEM wetland within the Preferred Route corridor. The Alternate Route corridor encompasses 0.437 acre of wetland within a 200-foot corridor and crosses 64 feet of one PEM/PFO/POW wetland. The ORAM scores for the wetlands indicated three Category I PEM wetlands, one Category II PFO wetland, and one Category I PEM/PFO/POW wetland within the Alternate Route corridor. No Category III wetlands were identified within either route corridor.

Field surveys along the Preferred Route and Alternate Route identified the following rivers: the Scioto River and the Olentangy River. These rivers were not assessed for habitat quality.

Four primary headwater streams were surveyed within the Preferred Route corridor and included three Modified Class II streams and one Modified Class I stream. Field surveys along the Alternate Route identified two Modified Class II headwater streams. Both of the Modified Class II streams (S01 and S03) intersect both the Preferred and Alternate Routes.

There is no record of plant species of concern within the project corridors. One protected mussel was recorded by the ODNR-DNAP within 1,000 feet of the transmission line corridors. This species, pondhorn, is threatened in the state of Ohio and was last observed in February, 1983. No plant or animal species of concern was observed during field surveys.

One natural feature, a cave, was identified within 1,000 feet of the Preferred Route, northeast of the quarry along the Scioto River.

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TABLE 6

**WETLAND VEGETATION AND INDIVIDUAL  
SPECIES WETLAND DESIGNATION**

| Scientific Name                   | Common Name             | Wetland Status | Upland | Wetland |
|-----------------------------------|-------------------------|----------------|--------|---------|
| <i>Acer negundo</i>               | Box elder               | FAC+           | X      | X       |
| <i>Acer rubrum</i>                | Red maple               | FAC            | X      | X       |
| <i>Acer saccharinum</i>           | Silver maple            | FACW           | X      | X       |
| <i>Achillea millefolium</i>       | Yarrow                  | FACU           | X      |         |
| <i>Acorus calamus</i>             | Calamus                 | OBL            |        | X       |
| <i>Agrimonia parviflora</i>       | Small-flowered agrimony | FAC            | X      | X       |
| <i>Agrostis alba (gigantea)</i>   | Redtop                  | FACW           | X      | X       |
| <i>Ailanthus altissima</i>        | Tree of heaven          | NI             | X      |         |
| <i>Alliaria petiolata</i>         | Garlic mustard          | FACU-          | X      |         |
| <i>Allium canadense</i>           | Wild onion              | FACU           | X      |         |
| <i>Amaranthus retroflexus</i>     | Redroot amaranth        | FACU           | X      |         |
| <i>Ambrosia artemisiifolia</i>    | Common ragweed          | FACU           | X      |         |
| <i>Ambrosia trifida</i>           | Giant ragweed           | FAC            | X      | X       |
| <i>Andropogon virginicus</i>      | Broomsedge              | FACU           | X      |         |
| <i>Aristida spp.</i>              | Wiregrass               | NO             | X      | X       |
| <i>Artemisia vulgaris</i>         | Wormwood                | UPL            | X      |         |
| <i>Asclepias incarnata</i>        | Swamp milkweed          | OBL            |        | X       |
| <i>Asclepias syriaca</i>          | Common milkweed         | FACU-          | X      |         |
| <i>Aster spp.</i>                 | Heath aster             | NI             | X      |         |
| <i>Bidens frondosa</i>            | Devil's beggartick      | FACW           | X      | X       |
| <i>Boehmeria cylindrica</i>       | False nettle            | FACW+          | X      | X       |
| <i>Brassica rapa</i>              | Field mustard           | NI             | X      |         |
| <i>Calamagrostis canadensis</i>   | Bluejoint               | FACW+          | X      | X       |
| <i>Carex blanda</i>               | Eastern woodland sedge  | FAC            | X      |         |
| <i>Carex canosa</i>               | Longhair sedge          | FACW           |        | X       |
| <i>Carex frankii</i>              | Frank's sedge           | OBL            |        | X       |
| <i>Carex lurida</i>               | Shallow sedge           | OBL            |        | X       |
| <i>Carex spp.</i>                 | Sedges                  | FAC-OBL        |        | X       |
| <i>Carex stricta</i>              | Upright sedge           | OBL            |        | X       |
| <i>Carya cordiformis</i>          | Bitternut hickory       | FACU+          | X      |         |
| <i>Carya glabra</i>               | Pignut hickory          | FACU-          | X      |         |
| <i>Carya ovata</i>                | Shagbark hickory        | FACU-          | X      |         |
| <i>Celtis occidentalis</i>        | Hackberry               | FACU           | X      |         |
| <i>Centaurea maculosa</i>         | Spotted knapweed        | NI             | X      |         |
| <i>Cephalanthus occidentalis</i>  | Buttonbush              | OBL            |        | X       |
| <i>Cercis canadensis</i>          | Redbud                  | FACU-          | X      |         |
| <i>Chelone glabra</i>             | White turtlehead        | OBL            |        | X       |
| <i>Chenopodium album</i>          | Lambsquarter            | FACU+          | X      |         |
| <i>Chrysanthemum leucanthemum</i> | Oxeye daisy             | NI             | X      |         |
| <i>Cichorium intybus</i>          | Chicory                 | NI             | X      |         |
| <i>Cirsium arvense</i>            | Canada thistle          | FACU           | X      |         |
| <i>Cirsium vulgare</i>            | Bull thistle            | FACU-          | X      |         |
| <i>Convolvulus sepium</i>         | Hedge bindweed          | FAC            | X      | X       |
| <i>Cornus stolonifera</i>         | Flowering dogwood       | NI             | X      |         |
| <i>Cyperus esculentus</i>         | Yellow nutsedge         | FACW           | X      | X       |
| <i>Dactylis glomerata</i>         | Orchardgrass            | FACU           | X      |         |
| <i>Daucus carota</i>              | Queen Anne's lace       | NI             | X      |         |
| <i>Dipsacus sylvestris</i>        | Teasel                  | NI             | X      |         |
| <i>Elaeagnus umbellata</i>        | Autumn olive            | NI             | X      |         |
| <i>Eleocharis acicularis</i>      | Needle spikerush        | OBL            |        | X       |

TABLE 6 - CONTINUED

WETLAND VEGETATION AND INDIVIDUAL  
SPECIES WETLAND DESIGNATION

| Scientific Name                    | Common Name              | Wetland Status | Upland | Wetland |
|------------------------------------|--------------------------|----------------|--------|---------|
| <i>Eleocharis obiusa</i>           | Blunt spikerush          | OBL            |        | X       |
| <i>Epilobium coloratum</i>         | Purple leaf willowherb   | OBL            |        | X       |
| <i>Erigeron annuus</i>             | Fleabane                 | FACU           | X      |         |
| <i>Eupatorium maculatum</i>        | Spotted joeypyeweed      | FACW           | X      | X       |
| <i>Eupatorium perfoliatum</i>      | Common boneset           | FACW+          | X      | X       |
| <i>Eupatorium purpureum</i>        | Sweetscented joeypyeweed | FAC            | X      | X       |
| <i>Eupatorium sessilifolium</i>    | Upland boneset           | NO             | X      |         |
| <i>Fagus grandifolia</i>           | American beech           | FACU           | X      |         |
| <i>Festuca arundinacea</i>         | Tall fescue              | FACU           | X      |         |
| <i>Festuca pratensis</i>           | Meadow ryegrass          | FACU           | X      |         |
| <i>Festuca subverticillata</i>     | Nodding fescue           | FACU           | X      |         |
| <i>Fragaria virginiana</i>         | Virginia strawberry      | FACU           | X      |         |
| <i>Fraxinus pennsylvanica</i>      | Green ash                | FACW           | X      | X       |
| <i>Galium aparine</i>              | Catchweed bedstraw       | FACU           | X      |         |
| <i>Geum canadense</i>              | White avens              | FACU           | X      |         |
| <i>Glechoma hederacea</i>          | Ground ivy               | FACU           | X      |         |
| <i>Gleditsia triacanthos</i>       | Honeylocust              | FAC-           | X      |         |
| <i>Glycine max</i>                 | Soybean                  | NI             | X      |         |
| <i>Impatiens capensis</i>          | Jewelweed                | FACW           | X      | X       |
| <i>Juglans nigra</i>               | Black walnut             | FACU           | X      |         |
| <i>Juncus effusus</i>              | Soft rush                | FACW+          | X      | X       |
| <i>Juncus tenuis</i>               | Path rush                | FAC-           | X      |         |
| <i>Leersia oryzoides</i>           | Ricecut grass            | OBL            |        | X       |
| <i>Leersia virginica</i>           | White grass              | FACW           | X      | X       |
| <i>Lemna minor</i>                 | Common duckweed          | OBL            |        | X       |
| <i>Ligustrum vulgare</i>           | Privet                   | FACU           | X      |         |
| <i>Lindera benzoin</i>             | Northern spicebush       | FACW-          | X      | X       |
| <i>Liriodendron tulipifera</i>     | Tuliptree                | FACU           | X      |         |
| <i>Lolium multiflorum</i>          | Italian ryegrass         | FACU-          | X      |         |
| <i>Lolium perenne</i>              | Perennial ryegrass       | FACU-          | X      |         |
| <i>Lonicera japonica</i>           | Japanese honeysuckle     | FAC-           | X      |         |
| <i>Lonicera spp.</i>               | Honeysuckle              | FAC to FACU    | X      |         |
| <i>Ludwigia alternifolia</i>       | Seedbox                  | FACW+          | X      | X       |
| <i>Ludwigia palustris</i>          | Marsh seedbox            | OBL            |        | X       |
| <i>Lysimachia nummularia</i>       | Creeping jenny           | OBL            |        | X       |
| <i>Lythrum salicaria</i>           | Purple loosestife        | FACW+          | X      | X       |
| <i>Malva neglecta</i>              | Common mallow            | NI             | X      |         |
| <i>Medicago sativa</i>             | Alfalfa                  | NO             | X      |         |
| <i>Melilotus officinalis</i>       | Yellow sweetclover       | FACU           | X      |         |
| <i>Mentha spicata</i>              | Spearmint                | FACW+          | X      | X       |
| <i>Nymphaea odorata</i>            | American white waterlily | OBL            |        | X       |
| <i>Oenothera biennis</i>           | Common evening primrose  | FACU-          | X      |         |
| <i>Onoclea sensibilis</i>          | Sensitive fern           | FACW           | X      | X       |
| <i>Panicum dichotomiflorum</i>     | Fall panicgrass          | FACW-          | X      | X       |
| <i>Panicum spp.</i>                |                          |                |        |         |
| <i>Panicum virgatum</i>            | Switchgrass              | FAC            | X      | X       |
| <i>Parthenocissus quinquefolia</i> | Virginia creeper         | FACU           | X      |         |
| <i>Penthorum sedoides</i>          | Ditch stonewort          | OBL            |        | X       |
| <i>Phalaris arundinacea</i>        | Reed canary grass        | FACW+          | X      | X       |

TABLE 6 - CONTINUED

WETLAND VEGETATION AND INDIVIDUAL  
SPECIES WETLAND DESIGNATION

| Scientific Name                  | Common Name                | Wetland Status | Upland | Wetland |
|----------------------------------|----------------------------|----------------|--------|---------|
| <i>Phleum pratense</i>           | Timothy                    | FACU           | X      |         |
| <i>Physolacca americana</i>      | Common pokeweed            | FACU+          | X      |         |
| <i>Plantago lanceolata</i>       | Common plantain            | UPL            | X      |         |
| <i>Plantago major</i>            | Broadleaf plantain         | FACU           | X      |         |
| <i>Platanus occidentalis</i>     | Eastern sycamore           | FACW-          | X      | X       |
| <i>Poa pratensis</i>             | Kentucky bluegrass         | FACU           | X      |         |
| <i>Polygonum hydropiperoides</i> | Swamp smartweed            | OBL            |        | X       |
| <i>Polygonum pennsylvanicum</i>  | Pennsylvania smartweed     | FACW           | X      | X       |
| <i>Polygonum persicaria</i>      | Spotted ladythumb          | FACW           | X      | X       |
| <i>Polygonum sagittatum</i>      | Arrowleaf tearthumb        | OBL            |        | X       |
| <i>Populus deltoides</i>         | Cottonwood                 | FAC            | X      | X       |
| <i>Potamogeton spp.</i>          |                            | OBL            |        | X       |
| <i>Prunus serotina</i>           | Black cherry               | FACU           | X      |         |
| <i>Quercus alba</i>              | White oak                  | FACU-          | X      |         |
| <i>Quercus macrocarpa</i>        | Bur oak                    | FAC-           | X      |         |
| <i>Quercus palustris</i>         | Pin oak                    | FACW           | X      | X       |
| <i>Quercus rubra</i>             | Northern red oak           | FACW-          | X      | X       |
| <i>Rhus radicans</i>             | Poison Ivy                 | FAC            | X      | X       |
| <i>Robinia pseudoacacia</i>      | Black locust               | FACW-          | X      | X       |
| <i>Rosa carolina</i>             | Pasture rose               | UPL            | X      |         |
| <i>Rosa multiflora</i>           | Multiflora rose            | FACU           | X      |         |
| <i>Rubus allegheniensis</i>      | Allegheny blackberry       | FACU-          | X      |         |
| <i>Rumex acetosella</i>          | Sheep sorrel               | UPL            | X      |         |
| <i>Rumex crispus</i>             | Yellow curlydock           | FACU           | X      | X       |
| <i>Rumex obtusifolius</i>        | Bitter Dock                | FACU-          | X      |         |
| <i>Salix nigra</i>               | Black willow               | FACW+          | X      | X       |
| <i>Sambucus canadensis</i>       | Elderberry                 | FACW-          | X      | X       |
| <i>Scirpus atrovirens</i>        | Green bulrush              | OBL            |        | X       |
| <i>Scirpus cyperinus</i>         | Woolgrass                  | FACW+          | X      | X       |
| <i>Scirpus validus</i>           | Softstem bulrush           | OBL            |        | X       |
| <i>Setaria glauca</i>            | Pearl millet (foxtail)     | FAC            | X      | X       |
| <i>Setaria spp.</i>              | Foxtail                    | FAC            | X      | X       |
| <i>Styrinchium angustifolium</i> | Narrowleaf blue-eyed grass | FACW-          | X      | X       |
| <i>Smilax rotundifolia</i>       | Roundleaf greenbrier       | FAC            | X      | X       |
| <i>Solidago altissima</i>        | Shorthair goldenrod        | FACU-          | X      |         |
| <i>Solidago canadensis</i>       | Canada goldenrod           | FACU           | X      |         |
| <i>Solidago nitida</i>           | Flat-topped goldenrod      | FAC            | X      | X       |
| <i>Solidago spp.</i>             | Goldenrod                  | FACU           | X      |         |
| <i>Sorghum halepense</i>         | Johnsongrass               | FACU           | X      |         |
| <i>Taraxaci, pffocomaze</i>      | Common dandelion           | FACU-          | X      |         |
| <i>Toxicodendron radicans</i>    | Poison ivy                 | FAC            | X      |         |
| <i>Trifolium hybridum</i>        | Alsike clover              | FACU-          | X      |         |
| <i>Trifolium pratense</i>        | Red clover                 | FACU-          | X      |         |
| <i>Typha angustifolia</i>        | Narrow leaf cattail        | OBL            |        | X       |
| <i>Typha latifolia</i>           | Broad leaf cattail         | OBL            |        | X       |
| <i>Ulmus rubra</i>               | Slippery elm               | FAC            | X      | X       |
| <i>Urtica dioica</i>             | Stinging nettle            | FACU           | X      |         |
| <i>Verbascum thapsus</i>         | Common mullein             | NI             | X      |         |
| <i>Verbesina alternifolia</i>    | Wingstem                   | FAC            | X      | X       |
| <i>Vernonia gigantea</i>         | Giant ironweed             | FAC            | X      | X       |

TABLE 6 - CONTINUED

WETLAND VEGETATION AND INDIVIDUAL  
SPECIES WETLAND DESIGNATION

| Scientific Name                | Common Name        | Wetland Status | Upland | Wetland |
|--------------------------------|--------------------|----------------|--------|---------|
| <i>Vicia cracca tenuifolia</i> | Cow vetch          | NO             | X      |         |
| <i>Viola papilionacea</i>      | Common blue violet | FAC            | X      | X       |
| <i>Vitis aestivalis</i>        | Summer grape       | FACU           | X      |         |
| <i>Vitis riparia</i>           | River grape        | FACW           | X      | X       |
| <i>Vitis labrusca</i>          | Fox grape          | FACU           | X      |         |
| <i>Xanthium strumarium</i>     | Common cocklebur   | FAC            | X      | X       |
| <i>Zea Mays</i>                | Corn               | NI             | X      |         |

*Obl* = Occurs in wetlands almost always (>99 percent) under favorable conditions

*Facw* = Usually occurs in wetlands (67 - 99 percent) but occasionally found in non-wetlands

*Fac* = Equally likely to occur in wetlands and non-wetlands (34 - 66 percent)

*Facu* = Usually occurs in non-wetlands (67 - 99 percent) but occasionally found in wetlands

*Upl* = Occurs in uplands almost always (>99 percent) under favorable conditions

*NI* = Not indicated (no agreement as to designation)

*NO* = No listings

National Wetlands Inventory, U.S. Fish and Wildlife Service, Biological Report 88(24)

Region 1 listings



**TABLE 7**  
**ANIMAL SPECIES IDENTIFIED OR LIKELY TO OCCUR IN**  
**THE STUDY AREA**

| <b>Amphibians</b>             | <b>Reptiles</b>            | <b>Birds</b>            | <b>Mammals</b>            |
|-------------------------------|----------------------------|-------------------------|---------------------------|
| American toad                 | Black rat snake            | American crow           | American beaver           |
| Bullfrog                      | Broad-headed skink         | American kestrel        | Big brown bat             |
| Dusky salamander              | Copperhead                 | American redstart       | Coyote                    |
| Fowler's toad                 | Eastern box turtle         | American robin          | Deer mouse                |
| Gray treefrog                 | Eastern garter snake       | American woodcock       | Eastern chipmunk          |
| Green frog                    | Eastern hognose snake      | Baltimore oriole        | Eastern cottontail rabbit |
| Jefferson salamander          | Eastern milk snake         | Belted kingfisher       | Eastern gray squirrel     |
| Longtail salamander           | Eastern worm snake         | Blue jay                | Eastern mole              |
| Marbled salamander            | Five-lined skink           | Broad-winged hawk       | Eastern pipistrel         |
| Mountain chorus frog          | Ground skink               | Brown thrasher          | Fox squirrel              |
| Northern leopard frog         | Midland painted turtle     | Brown-headed cowbird    | Gray fox                  |
| Northern red salamander       | Northern black racer       | Carolina chickadee      | Hairytail mole            |
| Northern slimy salamander     | Northern brown snake       | Carolina wren           | Hoary bat                 |
| Northern spring peeper        | Northern fence lizard      | Common flicker          | House mouse               |
| Northern spring salamander    | Northern ring-necked snake | Downy woodpecker        | Least weasel              |
| Pickeral frog                 | Northern water snake       | Eastern bluebird        | Little brown bat          |
| Ravine salamander             | Rough green snake          | Eastern kingbird        | Long-tailed weasel        |
| Redback salamander            |                            | Eastern meadowlark      | Meadow jumping mouse      |
| Red-spotted newt              |                            | European starling       | Meadow vole               |
| Southern tow-lined salamander |                            | Hairy woodpecker        | Opossum                   |
| Spotted salamander            |                            | House sparrow           | Pine vole                 |
| Wood frog                     |                            | Indigo bunting          | Pygmy shrew               |
|                               |                            | Kentucky warbler        | Raccoon                   |
|                               |                            | Killdeer                | Red bat                   |
|                               |                            | Mockingbird             | Red fox                   |
|                               |                            | Mourning dove           | Red squirrel              |
|                               |                            | Northern cardinal       | Short-tailed shrew        |
|                               |                            | Osprey                  | Silver-haired bat         |
|                               |                            | Pileated woodpecker     | Southern flying squirrel  |
|                               |                            | Red-eyed vireo          | Striped skunk             |
|                               |                            | Red-tailed hawk         | White-footed mouse        |
|                               |                            | Red-winged blackbird    | White-tailed deer         |
|                               |                            | Rock dove               | Woodchuck                 |
|                               |                            | Mallard duck            |                           |
|                               |                            | Tufted titmouse         |                           |
|                               |                            | Turkey vulture          |                           |
|                               |                            | Whip-poor-will          |                           |
|                               |                            | White-breasted nuthatch |                           |
|                               |                            | Wild turkey             |                           |
|                               |                            | Wood thrush             |                           |
|                               |                            | Yellow warbler          |                           |
|                               |                            | Yellow-throated vireo   |                           |

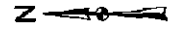


- LEGEND:**
- Preferred Route Overhead Build
  - Preferred Route Underground Build
  - Alternate Route Overhead Build
  - Alternate Route Underground Build
  - ⊙ Substation
  - ▭ Preferred Route 2000 ft. Corridor
  - ▭ Alternate Route 2000 ft. Corridor



0 4,000 8,000  
Scale in Feet

BASE MAP DATA SOURCE:  
USGS 7.5 Minute Topographic Quadrangles  
Northwest Columbus, OH (published 1984)  
Southwest Columbus, OH (published 1983)





**LEGEND:**

- Preferred Route Overhead Build
- Preferred Route Underground Build
- Alternate Route Overhead Build
- Alternate Route Underground Build
- Substation
- Preferred Route 2000 ft. Corridor
- Alternate Route 2000 ft. Corridor
- NWI Boundary

**Scale In Feet**

0      2,000      4,000

**Locator Map**

**BASE MAP DATA SOURCE:**  
USGS 7.5 Minute Topographic Quadrangles  
Northwest Columbus, OH (published 1984)  
Southwest Columbus, OH (published 1985)

**Roberts-OSU 138kV Project**

**FIGURE 2**

**NATIONAL WETLAND INVENTORY MAP**

JOB NO. 14947383

**URS**

**North Arrow**

N



**LEGEND:**

- ⊙ Substation
- ▬ Preferred Route Overhead Build
- ▬ Preferred Route Underground Build
- ▬ Alternate Route Overhead Build
- ▬ Alternate Route Underground Build

Preferred Route 2000 ft. Corridor

Alternate Route 2000 ft. Corridor

OWI

**Scale In Feet**

0 2,000 4,000

BASE MAP DATA SOURCE:  
USGS 7.5 Minute Topographic Quadrangles  
Southwest Columbus, OH (published 1983)  
Southwest Columbus, OH (published 1983)

**Locator Map**

**North Arrow**

N

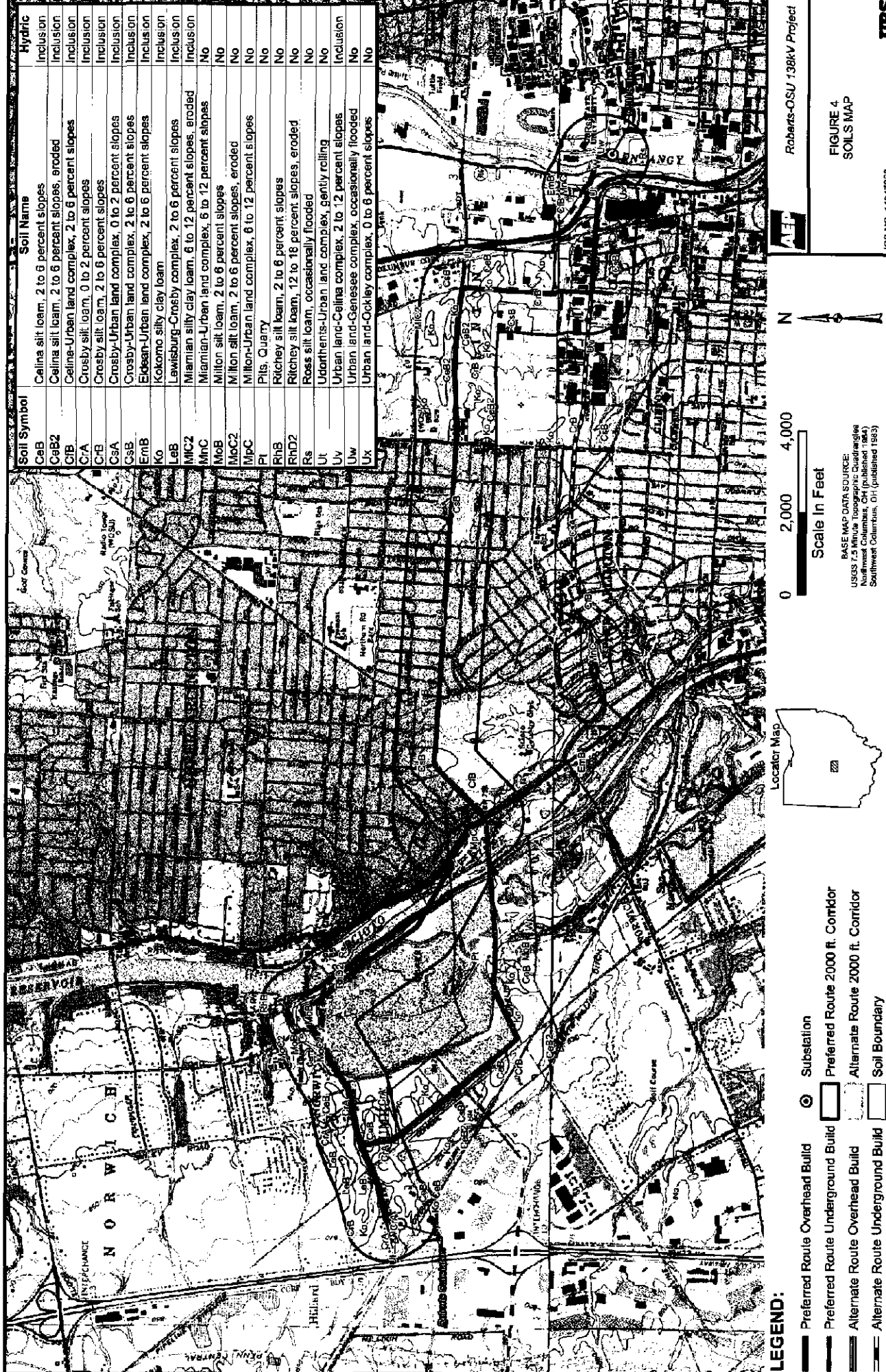
**Roberts-OSU 138KV Project**

**FIGURE 3**

**OHIO WETLAND INVENTORY MAP**

JOB NO. 14547388









**LEGEND:**

- Preferred Route Overhead Build
- Preferred Route Underground Build
- Preferred Route 200 ft. Corridor
- Alternate Route Overhead Build
- Alternate Route Underground Build
- Alternate Route 200ft. Corridor
- Substation
- Roadside Ditch
- Delineated Stream
- Delineated Wetland
- Pond
- Natural Feature

0 1,000 2,000

Scale In Feet

BASE MAP DATA SOURCE:  
Franklin County Auditor Aerials, 2007

Locator Map

Robert's OSU 138kV Project

**FIGURE 5B**

WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 14047388

**URS**

OSU Substation

**APPENDIX A**

**U.S. ARMY CORPS OF ENGINEERS  
WETLAND DELINEATION FORMS**



**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
 (1987 COE Wetlands Delineation Manual)

|  |  |
|--|--|
| Project/Site: <u>Roberts- ASU</u><br>Applicant/Owner: <u>AEP</u><br>Investigator: <u>Sarah Brewer / Ben Otto</u>   | Date: <u>3/29/08</u><br>County: <u>Franklin</u><br>State: <u>Ohio</u>    |
| Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No<br>Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No<br>Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No<br>(If needed, explain on reverse.) | Community ID: <u>PEM</u><br>Transect ID: <u>Wet</u><br>Plot ID: <u>1</u> |

**VEGETATION**

| Dominant Plant Species         | Stratum  | Indicator   | Dominant Plant Species | Stratum | Indicator |
|--------------------------------|----------|-------------|------------------------|---------|-----------|
| 1. <u>Phragmites australis</u> | <u>H</u> | <u>FACW</u> | 9. _____               | _____   | _____     |
| 2. <u>Typha angustifolia</u>   | <u>H</u> | <u>OBL</u>  | 10. _____              | _____   | _____     |
| 3. _____                       | _____    | _____       | 11. _____              | _____   | _____     |
| 4. _____                       | _____    | _____       | 12. _____              | _____   | _____     |
| 5. _____                       | _____    | _____       | 13. _____              | _____   | _____     |
| 6. _____                       | _____    | _____       | 14. _____              | _____   | _____     |
| 7. _____                       | _____    | _____       | 15. _____              | _____   | _____     |
| 8. _____                       | _____    | _____       | 16. _____              | _____   | _____     |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

**HYDROLOGY**

|   |  |
|---|--|
| ___ Recorded Data (Describe in Remarks):<br>___ Stream, Lake, or Tide Gauge<br>___ Aerial Photographs<br>___ Other<br>___ No Recorded Data Available      | Wetland hydrology Indicators:<br>Primary Indicators:<br><input checked="" type="checkbox"/> Inundated<br>___ Saturated in Upper 12 Inches<br><input checked="" type="checkbox"/> Water Marks<br>___ Drift Lines<br>___ Sediment Deposits<br>___ Drainage Patterns in Wetlands<br>Secondary Indicators (2 or more required):<br>___ Oxidized Root Channels in Upper 12"<br>___ Water-Stained Leaves<br>___ Local Soil Survey Data<br><input checked="" type="checkbox"/> FAC-Neutral Test<br>___ Other (Explain in Remarks) |
| Field Observations:<br><br>Depth of Surface Water: _____ (in.)<br><br>Depth to Free Water in Pit: _____ (in.)<br><br>Depth to Saturated Soil: _____ (in.) | Remarks: <u>Hydrology due to water pump from Quarry, draining to Scioto River</u>  |

# SOILS

|   |  |  |  |
|---|--|--|--|
| Map Unit Name<br>(Series and Phase): <u>Pt (Pits, Quarry)</u> |  | Drainage Class: <u>—</u>   |  |
| Taxonomy (Subgroup): <u>—</u>                                 |  | Field Observations<br>Confirm Mapped Type? Yes <input type="radio"/> No <input checked="" type="radio"/> |  |

| Profile Description: |         |                                 |                                  |                              |  |
|----------------------|---------|---------------------------------|----------------------------------|------------------------------|--|
| Depth<br>(inches)    | Horizon | Matrix Color<br>(Munsell Moist) | Mottle Colors<br>(Munsell Moist) | Mottle<br>Abundance/Contrast | Texture, Concretions,<br>Structure, etc. |
|                      |         |                                 |                                  |                              |  |
|                      |         |                                 |                                  |                              |  |
|                      |         |                                 |                                  |                              |  |
|                      |         |                                 |                                  |                              |  |
|                      |         |                                 |                                  |                              |  |
|                      |         |                                 |                                  |                              |  |
|                      |         |                                 |                                  |                              |  |

Hydric Soil Indicators:

|  |  |
|--|--|
| <input type="checkbox"/> Histosol<br><input type="checkbox"/> Histic Epipedon<br><input checked="" type="checkbox"/> Sulfidic Odor<br><input checked="" type="checkbox"/> Aquic Moisture Regime<br><input checked="" type="checkbox"/> Reducing Conditions<br><input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Concretions<br><input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils<br><input type="checkbox"/> Organic Streaking in Sandy Soils<br><input type="checkbox"/> Listed on Local Hydric Soils List<br><input type="checkbox"/> Listed on National Hydric Soils List<br><input checked="" type="checkbox"/> Other (Explain in Remarks) |
|--|--|

*are likely occurring*

Remarks: NO sample / gravelly  
Coarse gravel precluded a full soil profile  
due to irregularity However reducing conditions  
are likely occurring  
due to regular inundation

## WETLAND DETERMINATION

|  |  |
|--|--|
| Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle) | Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No |
| Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No               |  |
| Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No                    |  |

Remarks: possibly NOT a wetland  
due to in

**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
 (1987 COE Wetlands Delineation Manual)

|   |  |
|---|--|
| Project/Site: <u>Roberts-DSU</u><br>Applicant/Owner: <u>AEP</u><br>Investigator: <u>Sarah Brown</u>   | Date: <u>3/28/08</u><br>County: <u>Franklin</u><br>State: <u>Ohio</u>            |
| Do Normal Circumstances Exist on the site? <span style="float: right;"><input checked="" type="radio"/> Yes <input type="radio"/> No</span><br>Is the site significantly disturbed (Atypical Situation)? <span style="float: right;"><input type="radio"/> Yes <input checked="" type="radio"/> No</span><br>Is the area a potential Problem Area? <span style="float: right;"><input type="radio"/> Yes <input checked="" type="radio"/> No</span><br>(If needed, explain on reverse.) | Community ID: <u>PEN/PTD/POW</u><br>Transect ID: <u>Wet</u><br>Plot ID: <u>3</u> |

**VEGETATION**

| Dominant Plant Species           | Stratum  | Indicator   | Dominant Plant Species | Stratum | Indicator |
|----------------------------------|----------|-------------|------------------------|---------|-----------|
| 1. _____                         | _____    | _____       | 9. _____               | _____   | _____     |
| 2. <u>Typha angustifolia</u>     | <u>H</u> | <u>OBL</u>  | 10. _____              | _____   | _____     |
| 3. <u>Phragmites australis</u>   | <u>H</u> | <u>FACW</u> | 11. _____              | _____   | _____     |
| 4. <u>Fraxinus pennsylvanica</u> | <u>T</u> | <u>FACW</u> | 12. _____              | _____   | _____     |
| 5. _____                         | _____    | _____       | 13. _____              | _____   | _____     |
| 6. _____                         | _____    | _____       | 14. _____              | _____   | _____     |
| 7. _____                         | _____    | _____       | 15. _____              | _____   | _____     |
| 8. _____                         | _____    | _____       | 16. _____              | _____   | _____     |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: \_\_\_\_\_

**HYDROLOGY**

|  |  |
|--|--|
| Recorded Data (Describe in Remarks):<br>_____ Stream, Lake, or Tide Gauge<br><input checked="" type="checkbox"/> Aerial Photographs<br>_____ Other<br>_____ No Recorded Data Available | Wetland hydrology Indicators:<br>Primary Indicators:<br><input checked="" type="checkbox"/> Inundated<br><input checked="" type="checkbox"/> Saturated in Upper 12 Inches<br><input checked="" type="checkbox"/> Water Marks<br><input checked="" type="checkbox"/> Drift Lines<br>_____ Sediment Deposits<br>_____ Drainage Patterns in Wetlands<br>Secondary Indicators (2 or more required):<br>_____ Oxidized Root Channels in Upper 12"<br>_____ Water-Stained Leaves<br>_____ Local Soil Survey Data<br><input checked="" type="checkbox"/> FAC-Neutral Test<br>_____ Other (Explain in Remarks) |
| Field Observations:<br>Depth of Surface Water: <u>72</u> (in.)<br>Depth to Free Water in Pit: _____ (in.)<br>Depth to Saturated Soil: _____ (in.)                                      | Remarks: <u>Adjacent to Quarry; Deep surface water</u>   |

# SOILS

|   |         |  |                                  |                              |  |
|---|---------|--|----------------------------------|------------------------------|--|
| Map Unit Name<br>(Series and Phase): <u>P+ (Pits, Quarry)</u> |         | Drainage Class: <u>—</u><br>Field Observations<br>Confirm Mapped Type? Yes <input type="radio"/> No <input checked="" type="radio"/> |                                  |                              |  |
| Taxonomy (Subgroup): <u>—</u>                                 |         |  |                                  |                              |  |
| <b>Profile Description:</b>                                   |         |  |                                  |                              |  |
| Depth<br>(inches)   | Horizon | Matrix Color<br>(Munsell Moist)  | Mottle Colors<br>(Munsell Moist) | Mottle<br>Abundance/Contrast | Texture, Concretions,<br>Structure, etc. |
|   |         |  |                                  |                              |  |
|   |         |  |                                  |                              |  |
|   |         |  |                                  |                              |  |
|   |         |  |                                  |                              |  |
|   |         |  |                                  |                              |  |
|   |         |  |                                  |                              |  |
|   |         |  |                                  |                              |  |

**Hydric Soil Indicators:**

|  |   |
|--|---|
| <input type="checkbox"/> Histosol<br><input type="checkbox"/> Histic Epipedon<br><input checked="" type="checkbox"/> Sulfidic Odor<br><input type="checkbox"/> Aquic Moisture Regime<br><input type="checkbox"/> Reducing Conditions<br><input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Concretions<br><input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils<br><input type="checkbox"/> Organic Streaking in Sandy Soils<br><input type="checkbox"/> Listed on Local Hydric Soils List<br><input type="checkbox"/> Listed on National Hydric Soils List<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|

**Remarks:** Sample NOT available due to inundation, however reducing conditions are likely present due to permanent inundation

## WETLAND DETERMINATION

|   |   |
|---|---|
| Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)<br>Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No<br>Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No | Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle) |
| <b>Remarks:</b> <u>Hydric soils likely present. Soil is ponded for long duration of growing season</u>  |   |

**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
(1987 CQE Wetlands Delineation Manual)

|   |  |
|---|--|
| Project/Site: <u>Roberts-OSU</u><br>Applicant/Owner: <u>AEP</u><br>Investigator: <u>Sarah Brewer / Craig Straub</u>   | Date: <u>4/10/08</u><br>County: <u>Franklin</u><br>State: <u>Ohio</u>    |
| Do Normal Circumstances Exist on the site? <span style="margin-left: 20px;"><input checked="" type="radio"/> Yes</span> <span style="margin-left: 20px;"><input type="radio"/> No</span><br>Is the site significantly disturbed (Atypical Situation)? <span style="margin-left: 20px;"><input type="radio"/> Yes</span> <span style="margin-left: 20px;"><input checked="" type="radio"/> No<br/>         Is the area a potential Problem Area? <span style="margin-left: 20px;"><input type="radio"/> Yes</span> <span style="margin-left: 20px;"><input checked="" type="radio"/> No<br/>         (If needed, explain on reverse.)       </span></span> | Community ID: <u>DEM</u><br>Transect ID: <u>Wet</u><br>Plot ID: <u>4</u> |

**VEGETATION**

| Dominant Plant Species         | Stratum  | Indicator   | Dominant Plant Species | Stratum | Indicator |
|--------------------------------|----------|-------------|------------------------|---------|-----------|
| 1. <u>Phragmites australis</u> | <u>H</u> | <u>FACW</u> | 9. _____               | _____   | _____     |
| 2. _____                       | _____    | _____       | 10. _____              | _____   | _____     |
| 3. _____                       | _____    | _____       | 11. _____              | _____   | _____     |
| 4. _____                       | _____    | _____       | 12. _____              | _____   | _____     |
| 5. _____                       | _____    | _____       | 13. _____              | _____   | _____     |
| 6. _____                       | _____    | _____       | 14. _____              | _____   | _____     |
| 7. _____                       | _____    | _____       | 15. _____              | _____   | _____     |
| 8. _____                       | _____    | _____       | 16. _____              | _____   | _____     |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

**HYDROLOGY**

|  |  |
|--|--|
| <p>___ Recorded Data (Describe in Remarks):</p> <p style="margin-left: 20px;">___ Stream, Lake, or Tide Gauge</p> <p style="margin-left: 20px;">___ Aerial Photographs</p> <p style="margin-left: 20px;">___ Other</p> <p>___ No Recorded Data Available</p> | <p>Wetland hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Inundated</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p style="margin-left: 20px;">___ Water Marks</p> <p style="margin-left: 20px;">___ Drift Lines</p> <p style="margin-left: 20px;">___ Sediment Deposits</p> <p style="margin-left: 20px;">___ Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12"</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Water-Stained Leaves</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> FAC-Neutral Test</p> <p style="margin-left: 20px;">___ Other (Explain in Remarks)</p> |
| <p>Field Observations:</p> <p>Depth of Surface Water: _____ (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: _____ (in.)</p>   | <p>Remarks:</p>  |



**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
 (1987 COE Wetlands Delineation Manual)

|  |  |
|--|--|
| Project/Site: <u>Roberts-OSU</u><br>Applicant/Owner: <u>AEP</u><br>Investigator: <u>Sarah Brewer / Craig Straub</u>  | Date: <u>4/10/08</u><br>County: <u>Franklin</u><br>State: <u>Ohio</u>    |
| Do Normal Circumstances Exist on the site? <span style="margin-left: 20px;"><input checked="" type="radio"/> Yes</span> <span style="margin-left: 20px;"><input type="radio"/> No</span><br>Is the site significantly disturbed (Atypical Situation)? <span style="margin-left: 20px;"><input type="radio"/> Yes</span> <span style="margin-left: 20px;"><input checked="" type="radio"/> No</span><br>Is the area a potential Problem Area? <span style="margin-left: 20px;"><input type="radio"/> Yes</span> <span style="margin-left: 20px;"><input checked="" type="radio"/> No</span><br>(If needed, explain on reverse.) | Community ID: <u>DEM</u><br>Transect ID: <u>WET</u><br>Plot ID: <u>5</u> |

**VEGETATION**

| Dominant Plant Species         | Stratum  | Indicator   | Dominant Plant Species | Stratum | Indicator |
|--------------------------------|----------|-------------|------------------------|---------|-----------|
| 1. <u>Phragmites australis</u> | <u>H</u> | <u>FACW</u> | 9. _____               | _____   | _____     |
| 2. _____                       | _____    | _____       | 10. _____              | _____   | _____     |
| 3. _____                       | _____    | _____       | 11. _____              | _____   | _____     |
| 4. _____                       | _____    | _____       | 12. _____              | _____   | _____     |
| 5. _____                       | _____    | _____       | 13. _____              | _____   | _____     |
| 6. _____                       | _____    | _____       | 14. _____              | _____   | _____     |
| 7. _____                       | _____    | _____       | 15. _____              | _____   | _____     |
| 8. _____                       | _____    | _____       | 16. _____              | _____   | _____     |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

**HYDROLOGY**

|  |   |
|--|---|
| ___ Recorded Data (Describe in Remarks):<br>___ Stream, Lake, or Tide Gauge<br>___ Aerial Photographs<br>___ Other<br>___ No Recorded Data Available             | <b>Wetland hydrology Indicators:</b><br><b>Primary Indicators:</b><br>___ Inundated<br><input checked="" type="checkbox"/> Saturated in Upper 12 Inches<br>___ Water Marks<br>___ Drift Lines<br>___ Sediment Deposits<br>___ Drainage Patterns in Wetlands<br><b>Secondary Indicators (2 or more required):</b><br><input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12"<br><input checked="" type="checkbox"/> Water-Stained Leaves<br>___ Local Soil Survey Data<br><input checked="" type="checkbox"/> FAC-Neutral Test<br>___ Other (Explain in Remarks) |
| <b>Field Observations:</b><br><br>Depth of Surface Water: _____ (in.)<br><br>Depth to Free Water in Pit: _____ (in.)<br><br>Depth to Saturated Soil: _____ (in.) | Remarks:  |





**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
 (1987 COE Wetlands Delineation Manual)

|  |  |
|--|--|
| Project/Site: <u>Roberts- OSU</u><br>Applicant/Owner: <u>AEP</u><br>Investigator: <u>Sarah Brewer / Ben Otto</u>   | Date: <u>3/28/08</u><br>County: <u>Franklin</u><br>State: <u>OHIO</u>    |
| Do Normal Circumstances Exist on the site? <span style="margin-left: 20px;"><input checked="" type="radio"/> Yes</span> <span style="margin-left: 20px;"><input type="radio"/> No</span><br>Is the site significantly disturbed (Atypical Situation)? <span style="margin-left: 20px;"><input checked="" type="radio"/> Yes</span> <span style="margin-left: 20px;"><input type="radio"/> No</span><br>Is the area a potential Problem Area? <span style="margin-left: 20px;"><input checked="" type="radio"/> Yes</span> <span style="margin-left: 20px;"><input type="radio"/> No</span><br>(If needed, explain on reverse.) | Community ID: <u>PEM</u><br>Transect ID: <u>Wet</u><br>Plot ID: <u>6</u> |

**VEGETATION**

| Dominant Plant Species       | Stratum  | Indicator  | Dominant Plant Species | Stratum | Indicator |
|------------------------------|----------|------------|------------------------|---------|-----------|
| 1. <u>Typha angustifolia</u> | <u>H</u> | <u>OBL</u> | 9. _____               | _____   | _____     |
| 2. _____                     | _____    | _____      | 10. _____              | _____   | _____     |
| 3. _____                     | _____    | _____      | 11. _____              | _____   | _____     |
| 4. _____                     | _____    | _____      | 12. _____              | _____   | _____     |
| 5. _____                     | _____    | _____      | 13. _____              | _____   | _____     |
| 6. _____                     | _____    | _____      | 14. _____              | _____   | _____     |
| 7. _____                     | _____    | _____      | 15. _____              | _____   | _____     |
| 8. _____                     | _____    | _____      | 16. _____              | _____   | _____     |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 160%

Remarks: cattail stubs

**HYDROLOGY**

|  |  |
|--|--|
| Recorded Data (Describe in Remarks):<br><input type="checkbox"/> Stream, Lake, or Tide Gauge<br><input type="checkbox"/> Aerial Photographs<br><input type="checkbox"/> Other<br><input type="checkbox"/> No Recorded Data Available | Wetland hydrology Indicators:<br>Primary Indicators:<br><input checked="" type="checkbox"/> Inundated<br><input checked="" type="checkbox"/> Saturated in Upper 12 Inches<br><input type="checkbox"/> Water Marks<br><input type="checkbox"/> Drift Lines<br><input type="checkbox"/> Sediment Deposits<br><input checked="" type="checkbox"/> Drainage Patterns in Wetlands<br>Secondary Indicators (2 or more required):<br><input type="checkbox"/> Oxidized Root Channels in Upper 12"<br><input type="checkbox"/> Water-Stained Leaves<br><input checked="" type="checkbox"/> Local Soil Survey Data<br><input checked="" type="checkbox"/> FAC-Neutral Test<br><input type="checkbox"/> Other (Explain in Remarks) |
| Field Observations:<br>Depth of Surface Water: _____ (in.)<br>Depth to Free Water in Pit: _____ (in.)<br>Depth to Saturated Soil: _____ (in.)  | Remarks:   |



**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

|  |   |
|--|---|
| Project/Site: <u>OSU - Roberts</u><br>Applicant/Owner: <u>AEP</u><br>Investigator: <u>M. Thomayer</u>  | Date: <u>25 April 2008</u><br>County: <u>Franklin</u><br>State: <u>Ohio</u> |
| Do Normal Circumstances Exist on the site? <span style="margin-left: 20px;"><input checked="" type="radio"/> Yes <input type="radio"/> No</span><br>Is the site significantly disturbed (Atypical Situation)? <span style="margin-left: 20px;"><input type="radio"/> Yes <input checked="" type="radio"/> No</span><br>Is the area a potential Problem Area? <span style="margin-left: 20px;"><input type="radio"/> Yes <input checked="" type="radio"/> No</span><br>(If needed, explain on reverse.) | Community ID: <u>PFO</u><br>Transect ID: _____<br>Plot ID: <u>W7</u>        |

**VEGETATION**

| Dominant Plant Species           | Stratum  | Indicator   | Dominant Plant Species | Stratum | Indicator |
|----------------------------------|----------|-------------|------------------------|---------|-----------|
| 1. <u>Populus deltoides</u>      | <u>T</u> | <u>FAC</u>  | 9. _____               | _____   | _____     |
| 2. <u>Fraxinus pennsylvanica</u> | <u>T</u> | <u>FACW</u> | 10. _____              | _____   | _____     |
| 3. <u>Acer negundo</u>           | <u>T</u> | <u>FAC+</u> | 11. _____              | _____   | _____     |
| 4. _____                         | _____    | _____       | 12. _____              | _____   | _____     |
| 5. _____                         | _____    | _____       | 13. _____              | _____   | _____     |
| 6. _____                         | _____    | _____       | 14. _____              | _____   | _____     |
| 7. _____                         | _____    | _____       | 15. _____              | _____   | _____     |
| 8. _____                         | _____    | _____       | 16. _____              | _____   | _____     |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Fac Neutral 1:2 - fails Fac Neutral test

**HYDROLOGY**

|   |   |
|---|---|
| <p>___ Recorded Data (Describe in Remarks):<br/>         ___ Stream, Lake, or Tide Gauge<br/>         ___ Aerial Photographs<br/>         ___ Other<br/>         ___ No Recorded Data Available</p> | <p>Wetland hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input checked="" type="checkbox"/> Water Marks</p> <p><input checked="" type="checkbox"/> Drift Lines</p> <p>___ Sediment Deposits</p> <p>___ Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>___ Oxidized Root Channels in Upper 12"</p> <p><input checked="" type="checkbox"/> Water-Stained Leaves</p> <p>___ Local Soil Survey Data</p> <p>___ FAC-Neutral Test</p> <p><input checked="" type="checkbox"/> Other (Explain in Remarks)</p> |
| <p>Field Observations:</p> <p>Depth of Surface Water: <u>5</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>1</u> (in.)</p>                           | <p>Remarks: <u>Butressed trunks and fluted roots</u></p>  |

Map Unit Name  
(Series and Phase):

### Field Observations

Confirm Mapped Type?    Yes    No

[illegible]

|   |  |
|---|--|
| <input type="checkbox"/> Histosol                               | <input type="checkbox"/> Concretions                                       |
| <input type="checkbox"/> Histic Epipedon                        | <input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor                          | <input type="checkbox"/> Organic Streaking in Sandy Soils                  |
| <input type="checkbox"/> Aquic Moisture Regime                  | <input type="checkbox"/> Listed on Local Hydric Soils List                 |
| <input type="checkbox"/> Reducing Conditions                    | <input type="checkbox"/> Listed on National Hydric Soils List              |
| <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks)                        |

## WETLAND DETERMINATION

(Circle)

Is this Sampling Point Within a Wetland? ☒ Yes ☐ No

Remarks: Embankment along southern edge helps to impound water in wetland.

**APPENDIX B**

**OHIO EPA OHIO RAPID ASSESSMENT METHOD (ORAM)  
FOR WETLANDS V5.0 FORMS**

2     

### 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) (2 pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1     

### 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), shrubland, 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     

### 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 one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☒ Pipe from quarry pumps water

3     

### 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

11

subtotal this page

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 5 Qualitative Rating (-10)

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

#### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

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

Select only one.

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

#### 6c. Coverage of invasive plants. Refer

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/mounds
- ☐ 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 1 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 2 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 3 vegetation and is of high quality   |

#### Narrative Description of Vegetation Quality

- |   |
|---|
| Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species   |
| Native spp are dominant component of the vegetation, mod 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 to |
| A predominance of native species, with nonnative spp high 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                                  |

GRAND TOTAL(max 100 pts)

CAT I.

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### 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) (2 pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

|          |  |
|----------|--|
| <u>2</u> |  |
|----------|--|

### 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), shrubland, 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)

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| <u>9</u> |  |
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### 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 one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

|          |  |
|----------|--|
| <u>4</u> |  |
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### 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

|            |
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| <u>116</u> |
|------------|



subtotal this page

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 5 Qualitative Rating (-10)

4  
max 20pts 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

#### 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 1 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 2 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 3 vegetation and is of high quality

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

Select only one.

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

#### Narrative Description of Vegetation Quality

- Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species  
 Native spp are dominant component of the vegetation, mod 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 to  
 A predominance of native species, with nonnative spp high 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

#### 6c. Coverage of invasive plants. Refer 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)

#### 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

#### 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

#### 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

20 GRAND TOTAL(max 100 pts)

CAA I

①

### 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

### 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), shrubland, 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)

5

### 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 one.

- ☐ >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

4

### 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

10

Subtotal this page

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 5 Qualitative Rating (-10)

max 20pts subtotal

### Metric 6. Plant communities, Interspersion, 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 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 1 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 2 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 3 vegetation and is of high quality   |

#### Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high 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                                  |

GRAND TOTAL(max 100 pts)

CAT. I

|   |   |
|---|---|
| 0 | 0 |
|---|---|

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

Select one size class and assign score.

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/>            | >50 acres (>20.2ha) (6 pts)                |
| <input type="checkbox"/>            | 25 to <50 acres (10.1 to <20.2ha) (5 pts)  |
| <input type="checkbox"/>            | 10 to <25 acres (4 to <10.1ha) (4 pts)     |
| <input type="checkbox"/>            | 3 to <10 acres (1.2 to <4ha) (3 pts)       |
| <input type="checkbox"/>            | 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)   |
| <input type="checkbox"/>            | 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) |
| <input checked="" type="checkbox"/> | <0.1 acres (0.04ha) (0 pts)                |

|  |  |
|--|--|
|  |  |
|--|--|

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

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

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/>            | WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)           |
| <input type="checkbox"/>            | MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  |
| <input type="checkbox"/>            | NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) |
| <input checked="" type="checkbox"/> | VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)           |

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

- |                                     |   |
|-------------------------------------|---|
| <input type="checkbox"/>            | VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)                |
| <input type="checkbox"/>            | LOW. Old field (>10 years), shrubland, young second growth forest. (5)                          |
| <input type="checkbox"/>            | MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) |
| <input checked="" type="checkbox"/> | HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)                  |

|   |  |
|---|--|
| 5 |  |
|---|--|

**Metric 3. Hydrology.**

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

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/>            | High pH groundwater (5)                      |
| <input type="checkbox"/>            | Other groundwater (3)                        |
| <input checked="" type="checkbox"/> | Precipitation (1)                            |
| <input type="checkbox"/>            | Seasonal/intermittent surface water (3)      |
| <input type="checkbox"/>            | Perennial surface water (lake or stream) (5) |

3c. Maximum water depth. Select one.

- |                                     |                                  |
|-------------------------------------|----------------------------------|
| <input type="checkbox"/>            | >0.7 (27.6in) (3)                |
| <input type="checkbox"/>            | 0.4 to 0.7m (15.7 to 27.6in) (2) |
| <input checked="" type="checkbox"/> | <0.4m (<15.7in) (1)              |

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

- |                                     |                            |
|-------------------------------------|----------------------------|
| <input type="checkbox"/>            | None or none apparent (12) |
| <input type="checkbox"/>            | Recovered (7)              |
| <input type="checkbox"/>            | Recovering (3)             |
| <input checked="" type="checkbox"/> | Recent or no recovery (1)  |

3b. Connectivity. Score all that apply.

- |                                     |   |
|-------------------------------------|---|
| <input type="checkbox"/>            | 100 year floodplain (1)                           |
| <input checked="" type="checkbox"/> | Between stream/lake and other human use (1)       |
| <input type="checkbox"/>            | Part of wetland/upland (e.g. forest), complex (1) |
| <input type="checkbox"/>            | Part of riparian or upland corridor (1)           |

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

- |                                     |   |
|-------------------------------------|---|
| <input type="checkbox"/>            | Semi- to permanently inundated/saturated (4)  |
| <input type="checkbox"/>            | Regularly inundated/saturated (3)             |
| <input type="checkbox"/>            | Seasonally inundated (2)                      |
| <input checked="" type="checkbox"/> | Seasonally saturated in upper 30cm (12in) (1) |

Check all disturbances observed

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

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

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

- |                                     |                           |
|-------------------------------------|---------------------------|
| <input type="checkbox"/>            | None or none apparent (4) |
| <input type="checkbox"/>            | Recovered (3)             |
| <input checked="" type="checkbox"/> | Recovering (2)            |
| <input type="checkbox"/>            | Recent or no recovery (1) |

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

- |                                     |                     |
|-------------------------------------|---------------------|
| <input type="checkbox"/>            | Excellent (7)       |
| <input type="checkbox"/>            | Very good (6)       |
| <input type="checkbox"/>            | Good (5)            |
| <input type="checkbox"/>            | Moderately good (4) |
| <input type="checkbox"/>            | Fair (3)            |
| <input type="checkbox"/>            | Poor to fair (2)    |
| <input checked="" type="checkbox"/> | Poor (1)            |

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

- |                                     |                           |
|-------------------------------------|---------------------------|
| <input type="checkbox"/>            | None or none apparent (9) |
| <input type="checkbox"/>            | Recovered (6)             |
| <input type="checkbox"/>            | Recovering (3)            |
| <input checked="" type="checkbox"/> | 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 checked="" type="checkbox"/> | sedimentation                  |
| <input checked="" type="checkbox"/> | selective cutting    | <input type="checkbox"/>            | dredging                       |
| <input type="checkbox"/>            | woody debris removal | <input type="checkbox"/>            | farming                        |
| <input type="checkbox"/>            | toxic pollutants     | <input type="checkbox"/>            | nutrient enrichment            |

|    |
|----|
| 10 |
|----|

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: Wet 5

Rater(s): S. Brewer / C. Straub

Date: 4/10/08

subtotal this page

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|---|--|
| ① |  |
|---|--|

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 5 Qualitative Rating (-10)

|    |  |
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max 20 pts subtotal

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

Score all present using 0 to 3 scale.

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

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

Select only one.

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

**6c. Coverage of invasive plants. Refer**

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/mounds  
☒ 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 1 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 2 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 3 vegetation and is of high quality   |

**Narrative Description of Vegetation Quality**

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high 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                                  |

7 GRAND TOTAL(max 100 pts)

CAT I

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### 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) (2 pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

|  |  |  |
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### 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), shrubland, 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 |  |  |
|---|--|--|

### 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 one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

|   |  |  |
|---|--|--|
| 3 |  |  |
|---|--|--|

### 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 checked="" type="checkbox"/> dredging            |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming                        |
| <input type="checkbox"/> toxic pollutants     | <input type="checkbox"/> nutrient enrichment            |

|  |  |  |
|--|--|--|
|  |  |  |
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subtotal this page

max 10 pls      subtotal

**Metric 5. Special Wetlands.**

Check all that apply and score as indicated.

- |  |  |
|--|--|
|  | Bag (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 Praires (10)  |
|  | Known occurrence state/federal threatened or endangered species (10) |
|  | Significant migratory songbird/water fowl habitat or usage (10)      |
|  | Category 1 Wetland. See Question 5 Qualitative Rating (-10)          |

**Metric 6. Plant communities, interspersion, microtopography.**

### 6a. Wetland Vegetation Communities.

### Vegetation Community Cover Scale

Score all present using 0 to 3 scale.

- |   |             |
|---|-------------|
|   | Aquatic bed |
| 1 | Emergent    |
|   | Shrub       |
|   | Forest      |
|   | Mudflats    |
|   | Open water  |
|   | Other       |

- |   |   |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area   |
| 1 | Present and either comprises small part of wetland's 1 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 2 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 3 vegetation and is of high quality   |

6b. horizontal (plan view) Interspersion.

Select only one.

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

**8c. Coverage of invasive plants.** Refer

**Table 1 ORAM long form for list. Add or deduct points for coverage**

- |                                     |                             |
|-------------------------------------|-----------------------------|
| <input type="checkbox"/>            | Extensive >75% cover (-5)   |
| <input checked="" type="checkbox"/> | Moderate 25-75% cover (-3)  |
| <input type="checkbox"/>            | Sparse 5-25% cover (-1)     |
| <input type="checkbox"/>            | Nearly absent <5% cover (0) |
| <input type="checkbox"/>            | Absent (1)                  |

#### 6d. Microtopography.

Score all present using 0 to 3 scale.

- |                       |                                 |
|-----------------------|---------------------------------|
| <input type="radio"/> | Vegetated hummocks/tussucks     |
| <input type="radio"/> | Coarse woody debris >15cm (6in) |
| <input type="radio"/> | Standing dead >25cm (10in) dbh  |
| <input type="radio"/> | Amphibian breeding pools        |

### Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high 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                                  |

|                          |                          |                                 |
|--------------------------|--------------------------|---------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <b>GRAND TOTAL(max 100 pts)</b> |
|--------------------------|--------------------------|---------------------------------|

CAT I

|                 |                              |                            |
|-----------------|------------------------------|----------------------------|
| Site: <u>W7</u> | Rater(s): <u>M. Thomaier</u> | Date: <u>25 April 2006</u> |
|-----------------|------------------------------|----------------------------|

|           |          |
|-----------|----------|
| 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)

|            |          |
|------------|----------|
| 9          | 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), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

|            |          |
|------------|----------|
| 16         | 26       |
| max 30 pts | subtotal |

### Metric 3. Hydrology.

3a. Sources of Water. Score all that apply

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> ditch</li> <li><input type="checkbox"/> tile</li> <li><input type="checkbox"/> dike</li> <li><input type="checkbox"/> weir</li> <li><input type="checkbox"/> stormwater input</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> point source (nonstormwater)</li> <li><input checked="" type="checkbox"/> filling/grading</li> <li><input checked="" type="checkbox"/> road bed/RR track</li> <li><input type="checkbox"/> dredging</li> <li><input checked="" type="checkbox"/> other <u>embankment</u></li> </ul> |
|--|---|

|            |          |
|------------|----------|
| 14         | 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

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> mowing</li> <li><input type="checkbox"/> grazing</li> <li><input type="checkbox"/> clearcutting</li> <li><input type="checkbox"/> selective cutting</li> <li><input checked="" type="checkbox"/> woody debris removal</li> <li><input type="checkbox"/> toxic pollutants</li> </ul> | <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> shrub/sapling removal</li> <li><input type="checkbox"/> herbaceous/aquatic bed removal</li> <li><input checked="" type="checkbox"/> sedimentation</li> <li><input type="checkbox"/> dredging</li> <li><input type="checkbox"/> farming</li> <li><input type="checkbox"/> nutrient enrichment</li> </ul> |
|---|--|

|                    |
|--------------------|
| 40                 |
| subtotal this page |



Site: W7 Rater(s): M. Thayer Date: 25 April 2008

9  
subtotal this page  
0 0  
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 9  
max 20 pts subtotal

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

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

#### Vegetation Community Cover Scale

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

#### Narrative Description of Vegetation Quality

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

#### Mudflat and Open Water Class Quality

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

#### Microtopography Cover Scale

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

CAT II

49 GRAND TOTAL(max 100 pts)

**APPENDIX C**

**HEADWATER HABITAT EVALUATION INDEX (HHEI)  
STREAM CHANNEL ASSESSMENT FORMS**



## Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

64

SITE NAME/LOCATION Roberts - OSUSITE NUMBER 501RIVER BASIN Scioto RiverDRAINAGE AREA (mi<sup>2</sup>) 20.5LENGTH OF STREAM REACH (ft) 200 ftLAT. 40.01LONG. -83.11

RIVER CODE \_\_\_\_\_

RIVER MILE \_\_\_\_\_

DATE 3-28-08 SCORER S. Brewer COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL

☐ NONE / NATURAL CHANNEL☒ RECOVERED☐ RECOVERING☐ RECENT OR NO RECOVERY

MODIFICATIONS:

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

| TYPE   | PERCENT    | TYPE  | PERCENT    |
|--|------------|---|------------|
| <input type="checkbox"/> BLDR SLABS [16 pts]                 |            | <input checked="" type="checkbox"/> SILT [3 pt]         | <u>40%</u> |
| <input type="checkbox"/> BOULDER (>256 mm) [16 pts]          | <u>5%</u>  | <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts] | <u>10%</u> |
| <input type="checkbox"/> BEDROCK [16 pt]                     |            | <input type="checkbox"/> FINE DETRITUS [3 pts]          |            |
| <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]         | <u>10%</u> | <input type="checkbox"/> CLAY or HARDPAN [0 pt]         | <u>10%</u> |
| <input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts] | <u>20%</u> | <input type="checkbox"/> MUCK [0 pts]                   |            |
| <input type="checkbox"/> SAND (<2 mm) [6 pts]                |            | <input type="checkbox"/> ARTIFICIAL [3 pts]             | <u>5%</u>  |

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock 15% (A)(B) 7HHEI  
Metric  
PointsSubstrate  
Max = 40

19

A + B

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12TOTAL NUMBER OF SUBSTRATE TYPES: 7

2. **Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

|   |  |
|---|--|
| <input type="checkbox"/> > 30 centimeters [20 pts]          | <input type="checkbox"/> > 5 cm - 10 cm [15 pts]           |
| <input type="checkbox"/> > 22.5 - 30 cm [30 pts]            | <input type="checkbox"/> < 5 cm [5 pts]                    |
| <input checked="" type="checkbox"/> > 10 - 22.5 cm [25 pts] | <input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts] |

Pool Depth  
Max = 30

25

COMMENTS \_\_\_\_\_

MAXIMUM POOL DEPTH (centimeters) ~20

3. **BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check ONLY one box):

|  |   |
|--|---|
| <input type="checkbox"/> > 4.0 meters (> 13') [30 pts]                         | <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] |
| <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]              | <input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]                  |
| <input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] |   |

Bankfull  
Width  
Max=30

20

COMMENTS avg 9 ftAVERAGE BANKFULL WIDTH (meters) ~3

This information must also be completed

## RIPARIAN ZONE AND FLOODPLAIN QUALITY

NOTE: River Left (L) and Right (R) as looking downstream

## RIPARIAN WIDTH

| L                                   | R                                   | (Per Bank)     |
|-------------------------------------|-------------------------------------|----------------|
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Wide >10m      |
| <input type="checkbox"/>            | <input type="checkbox"/>            | Moderate 5-10m |
| <input type="checkbox"/>            | <input type="checkbox"/>            | Narrow <5m     |
| <input type="checkbox"/>            | <input type="checkbox"/>            | None           |

## FLOODPLAIN QUALITY

| L                                   | R                                   | (Most Predominant per Bank)         |
|-------------------------------------|-------------------------------------|-------------------------------------|
| <input type="checkbox"/>            | <input type="checkbox"/>            | Mature Forest, Wetland              |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Immature Forest, Shrub or Old Field |
| <input type="checkbox"/>            | <input type="checkbox"/>            | Residential, Park, New Field        |
| <input type="checkbox"/>            | <input type="checkbox"/>            | Fenced Pasture                      |

| L                        | R                        |                        |
|--------------------------|--------------------------|------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Conservation Tillage   |
| <input type="checkbox"/> | <input type="checkbox"/> | Urban or Industrial    |
| <input type="checkbox"/> | <input type="checkbox"/> | Open Pasture, Row Crop |
| <input type="checkbox"/> | <input type="checkbox"/> | Mining or Construction |

COMMENTS \_\_\_\_\_

- FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

|   |  |
|---|--|
| <input checked="" type="checkbox"/> Stream Flowing                          | <input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent) |
| <input type="checkbox"/> Subsurface flow with isolated pools (Interstitial) | <input type="checkbox"/> Dry channel, no water (Ephemeral)                     |

COMMENTS heavy rainfall 3/27/08

- SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

|                               |   |                              |                              |
|-------------------------------|---|------------------------------|------------------------------|
| <input type="checkbox"/> None | <input checked="" type="checkbox"/> 1.0 | <input type="checkbox"/> 2.0 | <input type="checkbox"/> 3.0 |
| <input type="checkbox"/> 0.5  | <input type="checkbox"/> 1.5            | <input type="checkbox"/> 2.5 | <input type="checkbox"/> >3  |

## STREAM GRADIENT ESTIMATE

☒ Flat (0.5 ft/100 ft)☐ Flat to Moderate☐ Moderate (2 ft/100 ft)☐ Moderate to Severe☐ Severe (10 ft/100 ft)

**ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: Scioto River Distance from Evaluated Stream 0.70 mi  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: Northwest Columbus, OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_  
County: Franklin Township / City: Hilliard / Columbus

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): N Date of last precipitation: 3/27/08 Quantity: 1"

Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N): N If not, please explain: Stream varies extensively along its 1.0 mile reach

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

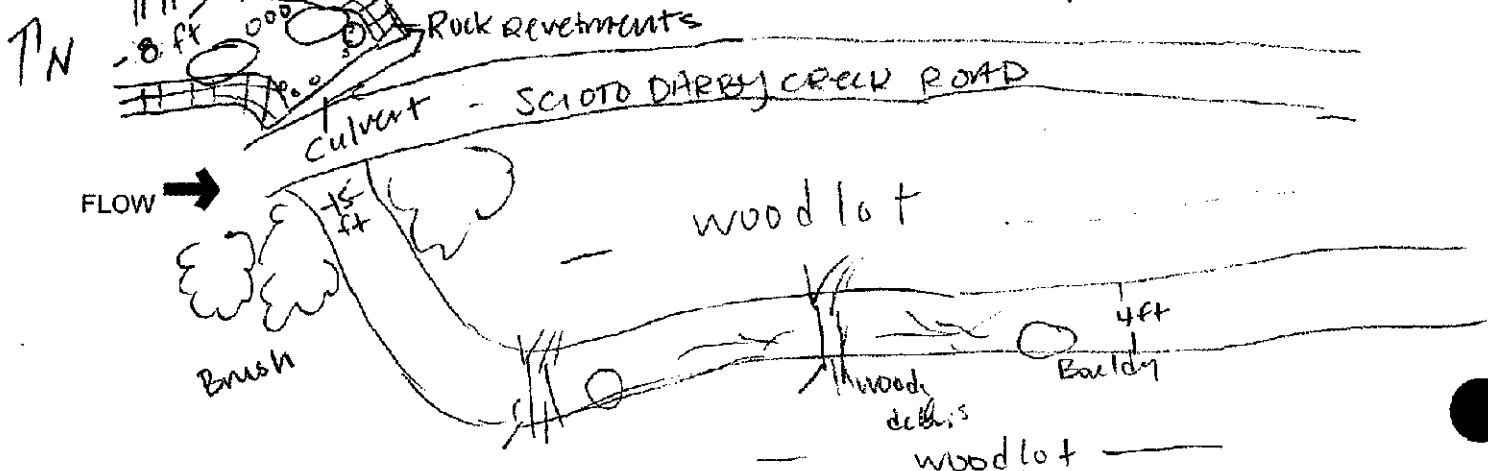
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_  
Frogs or Tadpoles Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





## Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

26

SITE NAME/LOCATION Roberts-OSUSITE NUMBER 502RIVER BASIN Scioto RiverDRAINAGE AREA (mi<sup>2</sup>) ~ 0.01LENGTH OF STREAM REACH (ft) 150LAT. 40.01LONG. -83.11

RIVER CODE \_\_\_\_\_

RIVER MILE \_\_\_\_\_

DATE 3-28-08SCORER S. Brewer

COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

## STREAM CHANNEL

☐ NONE / NATURAL CHANNEL☒ RECOVERED☐ RECOVERING☐ RECENT OR NO RECOVERY

## MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

| TYPE   | PERCENT    | TYPE  | PERCENT    |
|--|------------|---|------------|
| <input type="checkbox"/> BLDR SLABS [16 pts]                 | _____      | <input checked="" type="checkbox"/> SILT [3 pt]         | <u>25%</u> |
| <input type="checkbox"/> BOULDER (>256 mm) [16 pts]          | _____      | <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts] | <u>10%</u> |
| <input type="checkbox"/> BEDROCK [16 pt]                     | _____      | <input type="checkbox"/> FINE DETRITUS [3 pts]          | <u>10%</u> |
| <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]         | <u>10%</u> | <input type="checkbox"/> CLAY or HARDPAN [0 pt]         | _____      |
| <input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts] | <u>25%</u> | <input type="checkbox"/> MUCK [0 pts]                   | _____      |
| <input type="checkbox"/> SAND (<2 mm) [6 pts]                | <u>10%</u> | <input type="checkbox"/> ARTIFICIAL [3 pts]             | <u>10%</u> |

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 10% (A) 12(B) 7

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI  
Metric  
PointsSubstrate  
Max = 40

19

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

|  |  |
|--|--|
| <input type="checkbox"/> > 30 centimeters [20 pts] | <input type="checkbox"/> > 5 cm - 10 cm [16 pts]           |
| <input type="checkbox"/> > 22.5 - 30 cm [30 pts]   | <input checked="" type="checkbox"/> < 5 cm [5 pts]         |
| <input type="checkbox"/> > 10 - 22.5 cm [25 pts]   | <input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts] |

COMMENTS heavy rain fall 3/27/08

MAXIMUM POOL DEPTH (centimeters):

Pool Depth  
Max = 30

5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

|   |   |
|---|---|
| <input type="checkbox"/> > 4.0 meters (> 13') [30 pts]              | <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] |
| <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]   | <input checked="" type="checkbox"/> < 1.0 m (< 3' 3") [5 pts]       |
| <input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] |   |

COMMENTS 23

AVERAGE BANKFULL WIDTH (meters)

Bankfull  
Width  
Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream

## RIPARIAN WIDTH

| L                                   | R                                   | (Per Bank)     |
|-------------------------------------|-------------------------------------|----------------|
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Wide >10m      |
| <input type="checkbox"/>            | <input type="checkbox"/>            | Moderate 5-10m |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Narrow <5m     |
| <input type="checkbox"/>            | <input type="checkbox"/>            | None           |

COMMENTS \_\_\_\_\_

## FLOODPLAIN QUALITY

| L                                   | R                        | (Most Predominant per Bank)         |
|-------------------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/>            | <input type="checkbox"/> | Mature Forest, Wetland              |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Immature Forest, Shrub or Old Field |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Residential, Park, New Field        |
| <input type="checkbox"/>            | <input type="checkbox"/> | Fenced Pasture                      |

| L                        | R                        |                        |
|--------------------------|--------------------------|------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Conservation Tillage   |
| <input type="checkbox"/> | <input type="checkbox"/> | Urban or Industrial    |
| <input type="checkbox"/> | <input type="checkbox"/> | Open Pasture, Row Crop |
| <input type="checkbox"/> | <input type="checkbox"/> | Mining or Construction |

- FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

|   |  |
|---|--|
| <input checked="" type="checkbox"/> Stream Flowing                          | <input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent) |
| <input type="checkbox"/> Subsurface flow with isolated pools (Interstitial) | <input type="checkbox"/> Dry channel, no water (Ephemeral)                     |

COMMENTS heavy rain fall 3/27/08

- SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

|  |                              |                              |                              |
|--|------------------------------|------------------------------|------------------------------|
| <input checked="" type="checkbox"/> None | <input type="checkbox"/> 1.0 | <input type="checkbox"/> 2.0 | <input type="checkbox"/> 3.0 |
| <input type="checkbox"/> 0.5             | <input type="checkbox"/> 1.5 | <input type="checkbox"/> 2.5 | <input type="checkbox"/> >3  |

## STREAM GRADIENT ESTIMATE

☒ Flat (0.5 ft/100 ft)☐ Flat to Moderate☐ Moderate (2 ft/100 ft)☐ Moderate to Severe☐ Severe (10 ft/100 ft)

**ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: Northwest Columbus, OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_

County: Franklin Township / City: Hilliard

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 3/27/08 Quantity: 1"

Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

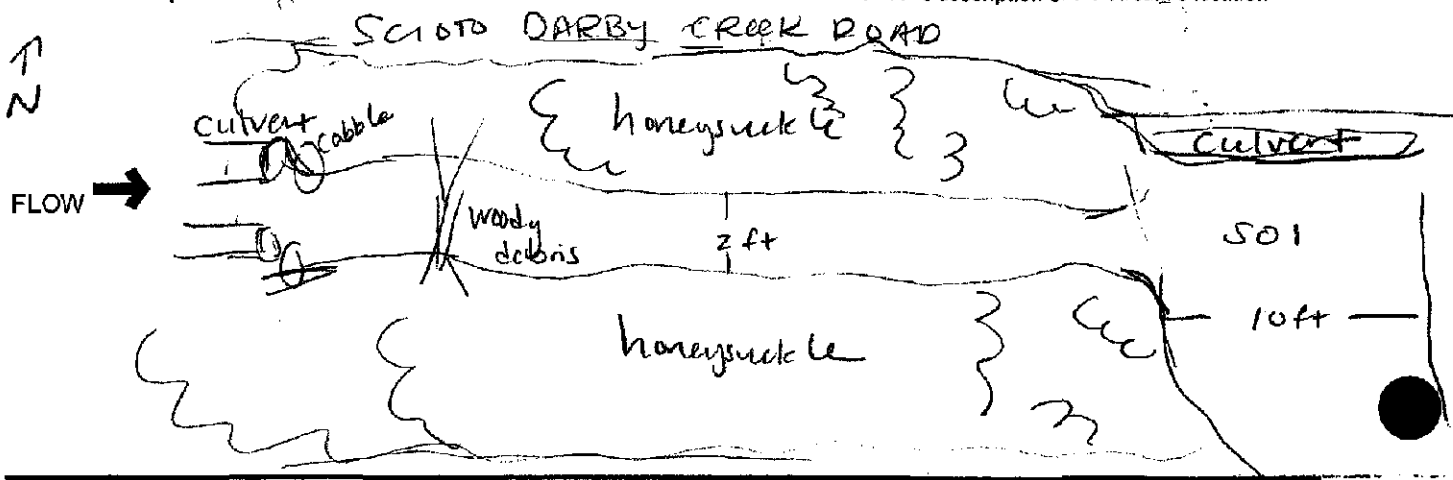
Fish Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Frogs or Tadpoles Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





## Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

39

SITE NAME/LOCATION Roberts - OSU  
 SITE NUMBER 503 RIVER BASIN Scioto River DRAINAGE AREA (mi<sup>2</sup>) 0.25  
 LENGTH OF STREAM REACH (ft) 200 LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_  
 DATE 04/10/02 SCORER S. Brewer COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS:

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

| TYPE   | PERCENT | TYPE  | PERCENT |
|--|---------|---|---------|
| <input type="checkbox"/> BLDR SLABS [16 pts]         | _____   | <input type="checkbox"/> SILT [3 pts]                   | _____   |
| <input type="checkbox"/> BOULDER (>256 mm) [16 pts]  | _____   | <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts] | _____   |
| <input type="checkbox"/> BEDROCK [16 pts]            | _____   | <input type="checkbox"/> FINE DETRITUS [3 pts]          | _____   |
| <input type="checkbox"/> COBBLE (66-256 mm) [12 pts] | _____   | <input type="checkbox"/> CLAY or HARDPAN [0 pts]        | _____   |
| <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]    | _____   | <input type="checkbox"/> MUCK [0 pts]                   | _____   |
| <input type="checkbox"/> SAND (<2 mm) [6 pts]        | _____   | <input checked="" type="checkbox"/> ARTIFICIAL [3 pts]  | 100%    |

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0% (A) 3 (B) 1

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: \_\_\_\_\_ TOTAL NUMBER OF SUBSTRATE TYPES: \_\_\_\_\_

2. **Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

|  |   |
|--|---|
| <input type="checkbox"/> > 30 centimeters [20 pts] | <input type="checkbox"/> > 5 cm - 10 cm [15 pts]                      |
| <input type="checkbox"/> > 22.5 - 30 cm [30 pts]   | <input type="checkbox"/> < 5 cm [5 pts]                               |
| <input type="checkbox"/> > 10 - 22.5 cm [25 pts]   | <input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts] |

COMMENTS concrete bottom MAXIMUM POOL DEPTH (centimeters): 0

3. **BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check ONLY one box):

|   |   |
|---|---|
| <input checked="" type="checkbox"/> > 4.0 meters (> 13') [30 pts]   | <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] |
| <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]   | <input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]                  |
| <input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] |   |

COMMENTS ≈ 2.0' AVERAGE BANKFULL WIDTH (meters) 6

**HHEI Metric Points**

Substrate Max = 40  
**4**

A + B

Pool Depth Max = 30  
**5**

Bankfull Width Max = 30  
**30**

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream

| RIPARIAN WIDTH                                 |  | FLOODPLAIN QUALITY                              |   |
|--|--|---|---|
| L  | R  | L   | R   |
| <input type="checkbox"/> Wide >10m             | <input type="checkbox"/> (Most Predominant per Bank)             | <input type="checkbox"/> Mature Forest, Wetland | <input type="checkbox"/> Conservation Tillage |
| <input type="checkbox"/> Moderate 5-10m        | <input type="checkbox"/> Immature Forest, Shrub or Old Field     | <input type="checkbox"/> Urban or Industrial    |   |
| <input checked="" type="checkbox"/> Narrow <5m | <input checked="" type="checkbox"/> Residential, Park, New Field | <input type="checkbox"/> Open Pasture, Row Crop |   |
| <input type="checkbox"/> None                  | <input type="checkbox"/> Fenced Pasture                          | <input type="checkbox"/> Mining or Construction |   |

COMMENTS \_\_\_\_\_

4. **FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

|   |  |
|---|--|
| <input checked="" type="checkbox"/> Stream Flowing                          | <input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent) |
| <input type="checkbox"/> Subsurface flow with isolated pools (Interstitial) | <input type="checkbox"/> Dry channel, no water (Ephemeral)                     |

COMMENTS \_\_\_\_\_

5. **SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

|                               |   |                              |
|-------------------------------|---|------------------------------|
| <input type="checkbox"/> None | <input checked="" type="checkbox"/> 1.0 | <input type="checkbox"/> 2.0 |
| <input type="checkbox"/> 0.5  | <input type="checkbox"/> 1.5            | <input type="checkbox"/> 2.5 |
|                               |   | <input type="checkbox"/> 3.0 |
|                               |   | <input type="checkbox"/> >3  |

6. **STREAM GRADIENT ESTIMATE**

|   |   |  |   |  |
|---|---|--|---|--|
| <input type="checkbox"/> Flat (0.5 ft/100 ft) | <input type="checkbox"/> Flat to Moderate | <input checked="" type="checkbox"/> Moderate (2 ft/100 ft) | <input type="checkbox"/> Moderate to Severe | <input type="checkbox"/> Severe (10 ft/100 ft) |
|---|---|--|---|--|

**ADDITIONAL STREAM INFORMATION (This information must also be completed):**

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: Northwest Columbus, OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_  
County: Franklin Township / City: Hilliard

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 3/27/08 Quantity: 1"

Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N): Y If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

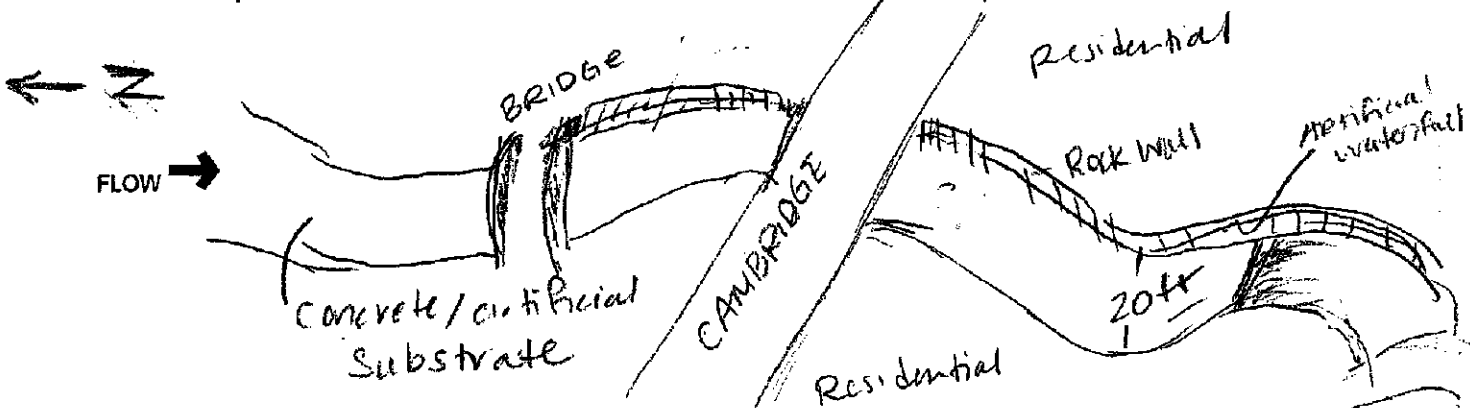
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_  
Frogs or Tadpoles Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: algae observed

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







## Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

41

SITE NAME/LOCATION Roberts-03u  
 SITE NUMBER 504 RIVER BASIN Scioto River DRAINAGE AREA (mi<sup>2</sup>) 0.01  
 LENGTH OF STREAM REACH (ft) 200 LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_  
 DATE 4/10-08 SCORER S. Brewer COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

| TYPE   | PERCENT    | TYPE  | PERCENT    |
|--|------------|---|------------|
| <input type="checkbox"/> BLDR SLABS [16 pts]                 |            | <input type="checkbox"/> SILT [3 pts]                   | <u>10%</u> |
| <input type="checkbox"/> BOULDER (>266 mm) [16 pts]          | <u>10%</u> | <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts] | <u>10%</u> |
| <input type="checkbox"/> BEDROCK [16 pts]                    |            | <input type="checkbox"/> FINE DETRITUS [3 pts]          |            |
| <input type="checkbox"/> COBBLE (85-256 mm) [12 pts]         | <u>20%</u> | <input type="checkbox"/> CLAY or HARDPAN [0 pts]        |            |
| <input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts] | <u>30%</u> | <input type="checkbox"/> MUCK [0 pts]                   |            |
| <input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]     | <u>20%</u> | <input type="checkbox"/> ARTIFICIAL [3 pts]             |            |

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 30% (A) 15 (B) 10  
 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

|  |   |
|--|---|
| <input type="checkbox"/> > 30 centimeters [20 pts] | <input type="checkbox"/> > 5 cm - 10 cm [15 pts]                      |
| <input type="checkbox"/> > 22.5 - 30 cm [30 pts]   | <input type="checkbox"/> < 5 cm [5 pts]                               |
| <input type="checkbox"/> > 10 - 22.5 cm [25 pts]   | <input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts] |

COMMENTS \_\_\_\_\_ MAXIMUM POOL DEPTH (centimeters): 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

|  |   |
|--|---|
| <input type="checkbox"/> > 4.0 meters (> 13') [30 pts]                         | <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] |
| <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]              | <input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]                  |
| <input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] |   |

COMMENTS 26' AVERAGE BANKFULL WIDTH (meters) 2

HHEI Metric Points

Substrate  
Max = 40

21

A + B

Pool Depth  
Max = 30

0

Bankfull  
Width  
Max = 30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY (NOTE: River Left (L) and Right (R) as looking downstream)

## RIPARIAN WIDTH

L R (Per Bank)  
☐ Wide >10m  
☐ Moderate 5-10m  
☒ Narrow <5m  
☐ None

COMMENTS \_\_\_\_\_

## FLOODPLAIN QUALITY

L R (Most Predominant per Bank)  
☐ Mature Forest, Wetland  
☐ Immature Forest, Shrub or Old Field  
☒ Residential, Park, New Field  
☐ Fenced Pasture

L R  
☐ Conservation Tillage  
☐ Urban or Industrial  
☐ Open Pasture, Row Crop  
☐ Mining or Construction

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

☐ Stream Flowing  
☐ Subsurface flow with isolated pools (Interstitial)  
☒ Moist Channel, isolated pools, no flow (Intermittent)  
☐ Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☒ None  
☐ 0.5  
☐ 1.0  
☐ 1.5  
☐ 2.0  
☐ 2.5  
☐ 3.0  
☐ >3

## STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☒ Moderate to Severe ☐ Severe (10 ft/100 ft)

**ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☐ WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
☐ EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quad/angle Name: Northwest Columbus, OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_

County: Franklin Township / City: Hilliard

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 3/27/08 Quantity: 1"

Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 45%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

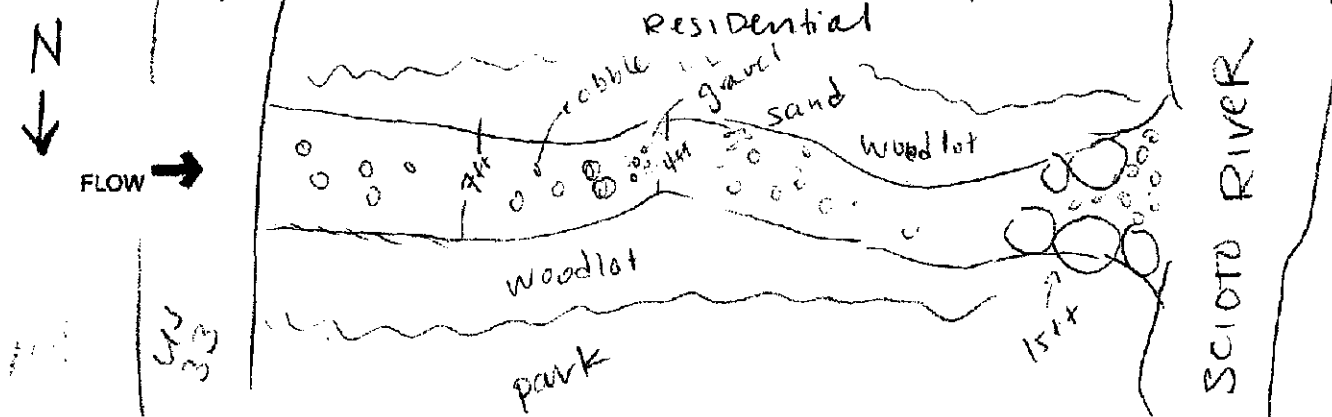
Fish Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Frogs or Tadpoles Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



**APPENDIX D**  
**SELECTED PHOTOGRAPHS**

**Client Name:**

AEP

**Site Location:**

Franklin County, OH

**Project No.**

14947388

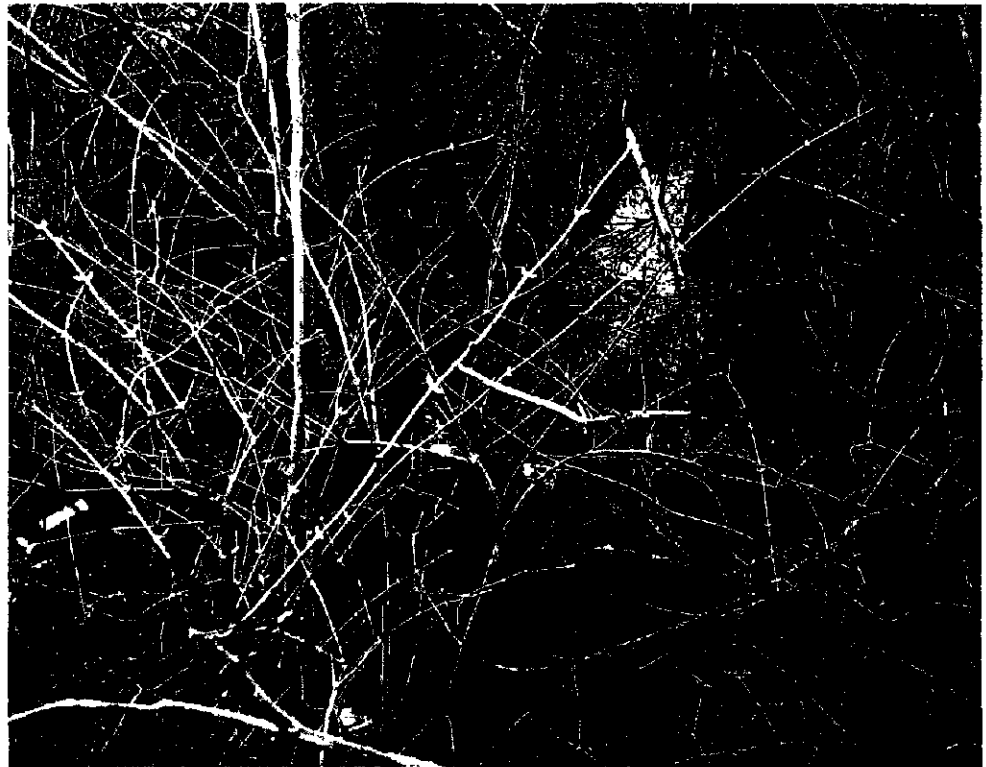
### Stream 1

Facing southeast.  
HHEI Score: 64  
Modified Class II



### Stream 2

Facing east.  
HHEI Score: 26  
Modified Class I





**PHOTOGRAPHIC RECORD**  
**Roberts – OSU 138 kV Transmission Line**

**Client Name:**

AEP

**Site Location:**

Franklin County, OH

**Project No.**

14947388

**Scioto River**

Facing southeast.



**Olentangy River**

Facing north.





**PHOTOGRAPHIC RECORD**  
**Roberts – OSU 138 kV Transmission Line**

**Client Name:**

AEP

**Site Location:**

Franklin County, OH

**Project No.**

14947388

**Stream 3**

Facing north.

HHEI Score: 39

Modified Class II



**Stream 4**

Facing south.

HHEI Score: 41

Modified Class II





**PHOTOGRAPHIC RECORD**  
**Roberts – OSU 138 kV Transmission Line**

**Client Name:**

AEP

**Site Location:**

Franklin County, OH

**Project No.**

14947388

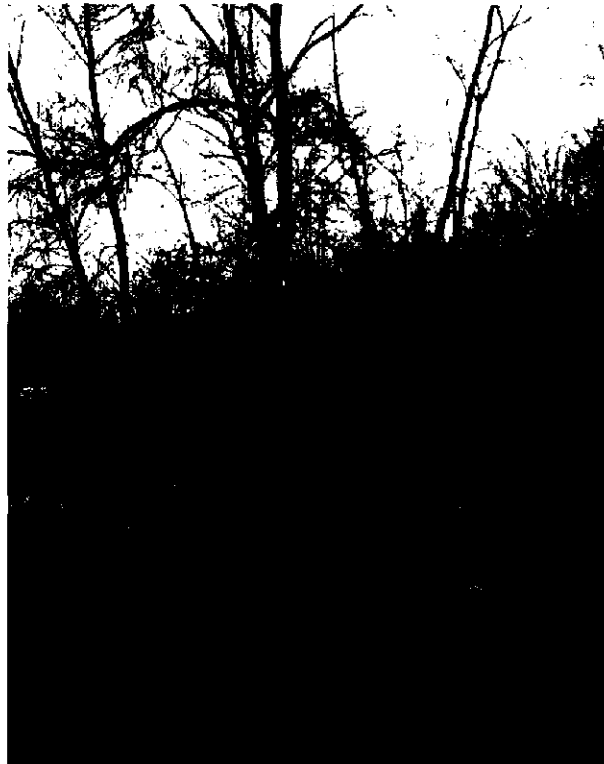
**Wetland 1**

Facing north.

ORAM Score: 14

Category 1

PEM



**Wetland 3**

Facing southwest.

ORAM Score: 20

Category 1

PEM/PFO/POW





**PHOTOGRAPHIC RECORD**  
**Roberts – OSU 138 kV Transmission Line**

**Client Name:**

AEP

**Site Location:**

Franklin County, OH

**Project No.**

14947388

**Wetland 4**

Facing east.  
ORAM Score: 7  
Category 1  
PEM



**Wetland 5**

Facing west.  
ORAM Score: 7  
Category 1  
PEM







**PHOTOGRAPHIC RECORD**  
**Roberts – OSU 138 kV Transmission Line**

**Client Name:**

AEP

**Site Location:**

Franklin County, OH

**Project No.**

14947388

**Wetland 6**

Facing south.  
ORAM Score: 10  
Category 1  
PEM



**Wetland 7**

Facing southeast  
ORAM Score: 49  
Category 2  
PFO





**PHOTOGRAPHIC RECORD**  
**Roberts – OSU 138 kV Transmission Line**

**Client Name:**

AEP

**Site Location:**

Franklin County, OH

**Project No.**

14947388

**Ditch 1**

Facing east



**Ditch 2**

Facing south





**PHOTOGRAPHIC RECORD**  
**Roberts – OSU 138 kV Transmission Line**

**Client Name:**

AEP

**Site Location:**

Franklin County, OH

**Project No.**

14947388

**APPENDIX E**  
**AGENCY CORRESPONDENCE**



# Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR

SEAN D. LOGAN, DIRECTOR

## Division of Natural Areas & Preserves

Steven D. Maurer, Chief

2045 Morse Road, F-1

Columbus, OH 43229-6693

Phone: (614) 265-6453 Fax: (614) 267-3096

July 24, 2007

Sarah Brewer  
URS Corporation  
36 E. 7<sup>th</sup> St., Suite 2300  
Cincinnati, OH 45202

Dear Ms. Brewer:

After reviewing our Natural Heritage maps and files, I find the Division of Natural Areas and Preserves has records of rare or endangered species within one mile of the URS Corporation AEP-Roberts OSU Underground Transmission project. The site is located in Perry Twp., Franklin Co., Southwest Columbus Quadrangle. *Epioblasma triquetra*, Snuffbox, is Endangered in Ohio and was last observed at this location in October of 1960. *Nyctanassa violacea*, Yellow-crowned Night Heron, is Threatened in Ohio and was last observed at this location in April of 1983. *Villosa fabalis*, Rayed Bean, is Endangered in Ohio and was last observed at this location July 11, 1964. Becky Jenkins of the Division of Wildlife should be contacted regarding possible impacts to rare animal species. She can be reached at (614) 265-6631.

There are no existing or proposed state nature preserves at the project site. We are also unaware of any geologic features, breeding or non-breeding animal concentrations, state parks, scenic rivers, state nature preserves, state forests, or wildlife areas within the project area. However, the site is near a cave or cavern and a waterfall. Best management practices should be employed to avoid impacting these unique natural features.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although we inventory all types of plant communities, we only maintain records on the highest quality areas. For National wetlands Inventory maps, please contact Madge Fitak in the Division of Geological Survey at (614) 265-6576. Aerial photos may be obtained from ODOT at (614) 275-1369. USGS maps can be requested directly from the U.S. Geological Survey at 1-888-275-8747.

Please contact me at (614) 265-6409 if I can be of further assistance.

Sincerely,

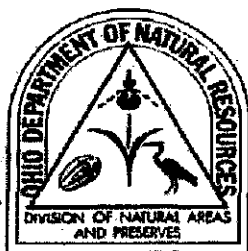
Butch Grieszmer, Data Specialist  
Resource Services Group

ohiodnr.com



50





## NATURAL HERITAGE DATA REQUEST

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF NATURAL AREAS AND PRESERVES  
OHIO NATURAL HERITAGE PROGRAM  
2045 MORSE ROAD, BUILDING F-1  
COLUMBUS, OHIO 43229  
PHONE: 614-265-6453; FAX: 614-267-3096

### INSTRUCTIONS:

Please fill out both sides of this data request form, sign it and return it to the address or fax number listed above along with: (1) a letter formally requesting data and describing your project, and (2) a map detailing the boundaries of your study area. A photocopy from the pertinent portion of a USGS 7.5 minute topographic map is preferred but other maps are acceptable. Our turnaround time is two weeks, although we can often respond more quickly.

### FEES:

Fees are determined by the amount of time it takes to complete your project. The charge is \$25.00 per ½ hour with a ½ hour minimum. We can perform a data search manually or by computer. The Heritage Data Services staff will determine the most cost-efficient method of doing your search. A cost estimate can be provided upon request. Unless otherwise specified, an invoice will accompany the data services response.

\*\*\*\*\*  
This request is being submitted by: ☒ fax ☐ mail ☐ both

Date: 7/16/07

Agency/Organization: URS Corporation

Name/Title: Sarah Brewer / Env. Scientist

Address: 36 East Seventh Street Suite 2300

City/State/Zip: Cincinnati, OH 45202

Phone/Fax: 613-419-3482 / Fax: 513-652-3452

Project Name/Number: AEP - Roberts OSU underground transmission

Project is located on the following USGS 7.5 minute topographic map(s): \_\_\_\_\_

Southwest Columbus, (OH)

If there is a program or contracting agency requiring this information, please give the name and phone number of a contact person:

\_\_\_\_\_

The Natural Heritage Data Base contains records for the categories of species and features listed below. Check the appropriate boxes to indicate your selection.

PLANTS: ☐ Federal Status Only  
☐ State Legal Status Only  
☐ Rare (non-legal status)  
☒ All of the above

ANIMALS: ☐ Federal Status Only  
☐ State Legal Status Only  
☐ Rare (non-legal status)  
☒ All of the above

PLANT COMMUNITIES: ☐ All  
☐ Wetlands Only  
☐ Other \_\_\_\_\_

OTHER FEATURES: ☐ Geologic Features  
☐ Breeding/Non-breeding Animal Concentrations  
☐ State Nature Preserves and Natural Areas  
☐ State Wild, Scenic and Recreational Rivers  
☐ State Parks, Forests, Wildlife Areas  
☒ All of the above  
☒ Other GIS Databases - species, managed areas, scenic rivers

Besides name, location and status, specify any additional information you need:

\* Please provide GIS shapefiles only\*

The area you want searched: ☐ study area as outlined on the map  
☐ study area plus 1/2 mile radius  
☐ study area plus 1 mile radius  
☒ other Study area plus 5 mile radius

How will the information be used:

Underground transmission line route selection  
and feasibility study

The information supplied above is complete and accurate. Any materials or digital data supplied by the Natural Heritage Database will not be published without prior written permission and without crediting the Division of Natural Areas and Preserves as the source. Electronic data sets may not be distributed to third parties without the written permission of the Division of Natural Areas and Preserves

Signature

Josh Brewer





Mr. David Graham, Chief  
Division of Wildlife  
Ohio Department of Natural Resources  
2045 Morse Rd., Building G  
Columbus, Ohio 43229

May 2, 2008

Dear Mr. Graham,

American Electric Power has a critical need to reinforce its transmission system in the greater Columbus, Ohio, and Ohio State University campus areas to meet increasing electric demand due to continued growth and development in those parts of its service area. To accomplish this, AEP is proposing to construct a new 138,000-volt approximate 6 – 6.5 mile overhead/underground transmission line from Roberts Station to OSU Station. Approximately 4 – 4.5 miles of the project is planned to be built underground primarily within existing road rights-of-way. Additionally, about 0.5 – 1.0 miles will be built aboveground within existing transmission line rights-of-way.

The new line is designed to prevent overloads of critical facilities and provide sufficient capacity for future growth and development in the area, whose load is projected to increase more than 2.3 percent each year for the next 10 years. Without these improvements, AEP engineers project the performance of the company's transmission system in the area will deteriorate to unacceptable levels, jeopardizing the reliability of electric service for customers in the Ohio State University and the greater Columbus areas.

The proposed project falls under the jurisdiction of the Ohio Power Siting Board (OPSB) and requires preparation of an application for a Certificate of Environmental Compatibility and Public Need (Application). OPSB rules require the applicant to present a Preferred and Alternate Route for consideration. The enclosed topographic maps show the study area where route alternatives are being considered.

AEP has retained URS, an engineering firm that specializes in utility site and route selection, to prepare an application to the OPSB for the proposed transmission line. As part of the application, URS is conducting a route selection study, which includes identification of potentially sensitive areas.

The purpose of this letter is to solicit any preliminary comments that you might have concerning the identified area, and the potential for impact, if any, to plant and/or animal species of concern in the area. If you have any questions regarding this request please do not hesitate to contact the undersigned.

Sincerely,  
URS

A handwritten signature in black ink, appearing to read "Matt Thomayer".

Matt Thomayer  
Environmental Scientist



Mr. Randy Sanders  
Division of Real Estate and Land Management  
Ohio Department of Natural Resources  
1952 Belcher Drive, Building C-4  
Columbus, Ohio 43224

May 2, 2008

Dear Mr. Sanders,

American Electric Power has a critical need to reinforce its transmission system in the greater Columbus, Ohio, and Ohio State University campus areas to meet increasing electric demand due to continued growth and development in those parts of its service area. To accomplish this, AEP is proposing to construct a new 138,000-volt approximate 6 – 6.5 mile overhead/underground transmission line from Roberts Station to OSU Station. Approximately 4 – 4.5 miles of the project is planned to be built underground primarily within existing road rights-of-way. Additionally, about 0.5 – 1.0 miles will be built aboveground within existing transmission line rights-of-way.

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The purpose of this letter is to solicit any preliminary comments that you might have concerning the identified area, and the potential for impact, if any, to sensitive land management resources in the area. If you have any questions regarding this request please do not hesitate to contact the undersigned.

Sincerely,  
URS

A handwritten signature in cursive script, reading "Matt Thomayer".

Matt Thomayer  
Environmental Scientist



Dr. Mary Knapp  
US Fish and Wildlife Service  
Division of Ecological Services  
6950 Americana Parkway, Suite H  
Reynoldsburg, Ohio 43068

May 2, 2008

Dear Dr. Knapp,

American Electric Power has a critical need to reinforce its transmission system in the greater Columbus, Ohio, and Ohio State University campus areas to meet increasing electric demand due to continued growth and development in those parts of its service area. To accomplish this, AEP is proposing to construct a new 138,000-volt approximate 6 – 6.5 mile overhead/underground transmission line from Roberts Station to OSU Station. Approximately 4 – 4.5 miles of the project is planned to be built underground primarily within existing road rights-of-way. Additionally, about 0.5 – 1.0 miles will be built aboveground within existing transmission line rights-of-way.

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Sincerely,  
URS

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Matt Thomayer  
Environmental Scientist