

Large Filing Separator Sheet

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investigations are presented in the wetland delineation and stream assessment reports and data sheets included in Appendix 07-1A-D. Table 07-5 lists major plant species observed, or likely to occur in the study area. Habitat descriptions, applicable to both the Preferred and Alternate Routes, are provided below.

Agricultural Land: Agricultural cropland and pastureland were viewed throughout the Preferred and Alternate Route study corridors. Croplands are primarily used for corn (*Zea mays*) and soybean (*Glycine max*) cultivation. Dominant vegetation in pastureland consisted of fescues and grasses (*Festuca* sp. and *Poa* sp., respectively), red clover (*Trifolium pretense*), alfalfa (*Medicago sativa*), and Queen Anne's lace (*Daucus carota*), and yarrow (*Achillia millefolium*).

Upland Woodland: Upland woodlands are common along the Preferred and Alternate Routes. Woodlands include extensive wooded parcels and narrow strips of land adjacent to wetlands, streams, agricultural fields, or residences. Red oak (*Quercus rubra*), white oak (*Quercus alba*), black cherry (*Prunus serotina*), red maple (*Acer rubrum*), and common hackberry (*Celtis occidentalis*) dominated the woodland tree species. The dominant herbaceous and shrub-layer communities within woodland areas included garlic mustard (*Alliaria petiolata*), poison ivy (*Toxicodendron radicans*), and Japanese honeysuckle (*Lonicera japonica*), and multiflora rose (*Rosa multiflora*).

Riparian Woodland: Riparian woodlands are limited to narrow bands along the edges of intermittent and perennial streams draining the study area. Woody species dominating the riparian zone generally include boxelder (*Acer negundo*), pin oak (*Quercus palustris*), silver maple (*Acer saccharinum*), American sycamore (*Platanus occidentalis*), green ash (*Fraxinus pennsylvanica*) and black willow (*Salix nigra*). The herbaceous and shrub layers included jewelweed (*Impatiens capensis*), multiflora rose (*Rosa multiflora*), and wild grape (*Vitis* spp.).

Scrub-Shrub: Upland scrub-shrub habitats were found throughout the study area. Dominant shrub-layer species observed in the scrub-shrub habitats along the Preferred and Alternate Routes included multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), brambles (*Rubus* spp.) and greenbriar (*Smilax* spp.).

Old Field: Species that dominated old-field areas included fescue (*Festuca* spp.), Queen Anne's lace (*Daucus carota*), foxtail (*Setaria* spp.), species of goldenrod (*Solidago* spp.),

wild onion (*Allium canadense*), Canada thistle (*Cirsium arvense*), ground ivy (*Glechoma hederaceae*) and teasel (*Dipsacus fullonum*).

(e) **Locations of Threatened and Endangered Species:** A literature review of available resources and correspondence with the USFWS, ODNR-DNAP, Ohio Department of Natural Resources-Division of Real Estate and Land Management (ODNR-DRELM), and ODNR-DOW, indicated that the Preferred and Alternate Routes are within the range of a number of species that are on federal and/or state listed threatened or endangered species, or are of high interest. Section 4906-15-06, Appendix 06-1, lists correspondence with respective agencies.

The USFWS reported that a portion of the study area lies within the range of five federally listed or specially protected flora and fauna species. The federally threatened Northern Monkshood (*Aconitum noveboracense*) is known to exist in Summit County. The Eastern Prairie Fringed Orchid (*Platanthera leucophaea*), found in Wayne County, is a federally threatened species. The Bald Eagle (*Haliaeetus leucocephalus*), protected by the Bald and Golden Eagle Protection Act, is known to nest in both Summit and Wayne counties. The Eastern Massasauga (*Sistrurus catenatus*) is a federal candidate species reported in Wayne County. Indiana Bat (*Myotis sodalis*) is a federally endangered species in all counties of Ohio.

Species recorded in the Natural Heritage Database, and noted by ODNR-DNAP and ODNR-DOW as being in or adjacent to the Preferred or Alternate Routes include the rails, Virginia Rail (*Rallus limicola*) and Sora (*Porzana carolina*). Both of these species have Ohio Status of Special Concern. The Golden-Winged Warbler (*Vermivora chrysoptera*) is an Ohio state endangered bird, whose range encompasses the project area in Summit County. Habitat exists within the project area that could potential provide niches for this bird species. The Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*) is a state endangered amphibian potentially located in the portion of the project within Wayne County within the riparian corridor.

There are five state endangered species, noted by the ODNR, potentially found in the project area, that are not expected to be impacted by the project due to the mobility of the species. These species include the bobcat (*Lynx rufus*), elfin skimmer (*Nannothemis bella*), racket-tailed emerald (*Dorocordulia libera*), chalk-fronted corporal (*Ladona julia*), and black bear (*Ursus americanus*).

The ranges of three state endangered species were noted within Wayne County that encompass the project boundaries, but are not expected to be impacted by the project due to lack of species-specific habitat requirements within the project area. These include the American Bittern (*Botaurus lentiginosus*), Trumpeter Swan (*Cygnus buccinator*), and Sandhill Crane (*Grus canadensis tabida*). The American Bittern is found primarily in large marshes thick with cattails and bulrushes or lakes and ponds surrounded by tall, dense vegetation, preferring wetlands larger than 25 acres in size. Sandhill Cranes primarily inhabit marshes, sedge meadows, swamp openings, and feed in open grasslands, upland fields. Sandhill Cranes roost in shallow, standing water and require breeding grounds of up to 200 acres of wetland for nesting. Trumpeter Swans prefer large, shallow wetlands 1-3 feet deep with a mix of heavy submergent and emergent vegetation and open water that is 40 to 150 acres in size. Due to specific hydrological conditions and the large tracts of wetlands needed for these three bird species, which do not match with the limited sizes of wetlands areas along the project area within Wayne County, this project is unlikely to affect critical habitat for these species.

The federal and state threatened or endangered animal species potentially present along the Preferred and Alternate Routes during any portion of the year are described below. It should be noted that while potentially suitable habitats for some of these species are available along the Preferred and Alternate Routes, these habitats are generally limited in nature and are unlikely to represent critical habitat.

In addition, regular disturbance in these areas further limits the opportunities for species of concern to become established. The entire length of the Preferred Route and the most of the Alternate Route are within or adjacent to an existing right-of-way (ROW). The Preferred and Alternate Routes also cross areas of routine disturbance such as pastures and agricultural farmland.

Potentially suitable habitat observed for the following Wayne and Summit County threatened, endangered, or protected species during field surveys, within the Preferred ROW, with regulatory agency comments, are as follows. Reference to original documentation appears in Appendix 06-1. Appendix 07-2 provides reports of field surveys for respective species.

- Eastern Prairie Fringed Orchid (*Platanthera leucophaea*): This perennial species is identified by the USFWS as a federally listed threatened species whose range falls within Wayne County. This species occurs in wet prairies, sedge meadows, and moist roadside ditches. A habitat assessment identified three areas within Wayne County that contain potentially suitable habitat for this species. USFWS-approved biologists did not find this species in the Project area during a presence/absence survey held at the time of the species flowering period.
- Northern Monkshood (*Aconitum noveboracense*): A portion of the project area within Summit County lies within the range of this USFWS federally threatened perennial plant. This plant is typically found on shaded to partially shaded cool, moist, talus slopes, cliff faces in wooded ravines, or on cool streamside sites. This plant species of concern was not identified during the May 2008 reconnaissance by GAI. There is one area of wooded ravine that is potential habitation sites for this species but, according to a survey coordinated with USFWS, the location of the boulder habitat falls 45 to 70 feet outside of the ROW and construction limits, and is not expected to be affected by the project. Thus, no presence/absence surveys for this species are proposed.
- Eastern Massasauga (*Sistrurus catenatus*) is a federal candidate species, and Ohio state endangered species, reported to live in Wayne County. This species is known to live near wet areas, including wetlands, wet prairie, or nearby woodland or shrub edge habitat. It is noted that massasauga snakes also occupy dry goldenrod meadows with early successional woody species such as dogwood or multiflora. A USFWS-approved herpetologist performed a survey for this species. It was noted that no occurrences of this species are known from Chippewa Township in northeastern Wayne County, and that a closer look at potential areas indicate that there does not appear to be suitable habitat for the Eastern massasauga. ODNR-DOW indicated that the project is unlikely to affect this species, but if an Eastern massasauga is encountered during project construction, work must immediately stop, and ODNR-DOW is to be contacted for further direction.

- Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*) is a state endangered amphibian potentially located in the portion of the project within Wayne County. The primary niche for the Eastern Hellbender is large, swift flowing streams with large rocks. The Tuscarawas River within a portion of the project ROW could potentially provide habitat for this species. The ODNR requested that projects that impact riparian corridor habitat, first determine the presence or absence of this species by a survey conducted by an approved herpetologist. A USFWS-approved herpetologist performed a survey for this species. It was noted that the Tuscarawas River at this location was sluggish and silt-laden, with no rocks available. It was determined that this location did not provide suitable habitat for the Eastern Hellbender.
- Bald Eagle (*Haliaeetus leucocephalus*) is known to nest in both Summit and Wayne counties. Due to recovery, this species has been removed from the Federal list of endangered and threatened species, yet continues to be protected under the Bald and Golden Eagle Protection Act, Migratory Bird Protection Act, and the State of Ohio. USFWS reports a known bald eagle nest approximately one mile from the proposed project location. Due to the land use between the project area and the nest, USFWS remarked that no impact from this project is expected to occur.
- Golden-Winged Warbler (*Vermivora chrysoptera*) is an Ohio state endangered bird, whose range encompasses the project area in Summit County. This species prefers patchy scrub-shrub habitat, forest edge, shrubby fields, and marshes. There are several areas along the project corridor that qualifies as Golden-Winged Warbler habitat. GAI field crews did not observe this species. An ODNR-approved biologist conducted a presence or absence survey for this species, and no golden-winged warblers were observed in the Project area.
- Virginia Rail (*Rallus limicola*) are wetland birds with Ohio Status of Special Concern. They are found in wetlands, preferring mixtures of open, shallow water with dense cover of aquatic vegetation. Virginia Rail's were recorded by the ODNR as inhabiting the area where the Preferred and Alternate Routes where they share commonality, near the Towpath and Tuscarawas River, in 1986. GAI field crews did not observe this species during field reconnaissance or during a walk-through bird survey and evaluation of the habitat extending approximately 200 feet from the route at the location indicated by ODNR. ODNR-DOW noted that this project would not likely impact this species due to the type of work proposed, species status, and date of the Natural Heritage Database records.

- Sora (*Porzana carolina*) are wetland rails with Ohio Status of Special Concern. Their niche is shallow freshwater wetlands with dense border vegetation, preferring dense cattail and sedge marshes. Sora's were recorded by the ODNR as inhabiting the same area along the Preferred and Alternate Routes as the Virginia Rail, near the Towpath and Tuscarawas River in 1986. GAI field crews did not observe this species during field reconnaissance or during a walk-through bird survey and evaluation of the habitat extending approximately 200 feet from the route at the location indicated by ODNR. ODNR-DOW noted that this project would not likely impact this species due to the type of work proposed, species status, and date of the Natural Heritage Database records.
- Indiana Bat (*Myotis sodalis*) is a federally endangered species in all counties of Ohio. Summer habitat needs are dead or live trees (including shagbark hickories and oaks) with peeling or exfoliating bark and split tree trunks or cavities for maternity roosts. Stream corridors, riparian areas, and upland woodlots are important for Indiana bat foraging. GAI found areas along the project ROW in both Summit and Wayne Counties that would provide habitat and foraging needs for this species and GPS was used to record areas of suitable trees within or adjacent to the project corridor. Davey Resource Group also conducted a study of the potential habitat for this species. They documented thirteen potential Indiana Bat maternity roosting trees throughout the ROW area. HDD will be utilized to avoid impacts to two of the 13 potential maternity trees, and the Preferred Route will avoid impacts to three other potential maternity trees. Through coordination with the USFWS, it was determined that emergence surveys should be conducted for the remaining eight trees before August 15. Emergence surveys were conducted within the specified timeframe. No bats were seen emerging from marked potential maternity roost trees. The Davey Tree Expert Company, with approval from USFWS, subsequently removed the trees.

A list of animal species observed or expected to occur within the general vicinity of the study area are provided in Table 07-6 through Table 07-8. The species lists were developed based upon the field survey and literature sources. No state or federal-listed flora or fauna were observed during field surveys, along the Preferred Route.

(4) Soil Associations in the Corridor

The Preferred and Alternate Routes cross the following soil associations: Melvin-Euclid-Orville, Mechanicsburg-Berks, Canfield-Wooster-Riddles, Chagrin-Holly-Lobdell, and Chili associations (U.S. Department of Agriculture, 2007). Discussions about association

characteristics are given below. Figures 04-3A and 04-3B provide representations of the associations.

Melvin-Euclid-Orville Association: These soils are characterized by nearly level, poorly drained and somewhat poorly drained, deep soils that formed in silty and loamy alluvium. These soils are found on floodplains and low stream terraces in valleys. The association makes up about 10% of Wayne County. Soils in this association are used for general farming and dairy farming, pasture and recreation uses. The main limitations for this association are seasonal ponding, wetness and flooding. The association has moderate organic content, which lends to the available water capacity being moderate to high. This association has several soils that are well drained, but they are a small percentage of the whole association.

Mechanicsburg-Berks Association: This association is characterized by gently sloping to very steep, well drained, deep and moderately deep soils that formed in loamy glacial till and in residuum of siltstone, shale, and fine-grained sandstone. These soils are found in found in deeply dissected areas characterized by narrow ridges and on side slopes adjacent to major drainageways. Some are on high knolls and broader ridges. This association makes up about 7% of Wayne County. These soils are used primarily for general farming and dairy farming. The soils in this association are not well suited to building site development, with the major limitations being slope, moderate depth to bedrock, erosion and very low available water capacity. Buildings in these areas should be designed to conform to the natural slope of the land.

Canfield-Wooster-Riddles Association: This association consists mostly of nearly level to moderately steep, moderately drained and well-drained, deep soils that formed mainly in glacial tills. These soils are found in areas dominated by broad, nearly level and gently sloping till plains that have low hills and ridges with broad bases. These soils are found in areas characterized by sloping and moderately steep hillsides and high ridges that have well defined local relief. These soils can also be found near major drainage ways. The association makes up about 27 percent of Wayne County, and is used mainly for general farming and dairy farming. This association has some minor soils that are poorly drained, and are situated along waterways and in floodplains. The main limitations for this soil association are erosion, seasonal wetness, and moderately slow or slow permeability.

Chagrin-Holly-Lobdell Association: This association consists of nearly level, well drained, poorly drained, and moderately well drained soils formed in medium-textured recent alluvium. This association is along the Cuyahoga River, Tuscarawas River, and other streams in Summit County, with the largest acreage being along the Cuyahoga River. Soils in this association are nearly level and subject to flooding, and occupy about 2% of the county. Chagrin and Lobdell soils are used mainly for cultivated crops, while Holly soils are used for pasture and trees, or crops if drained. Flooding is the dominant limitation with this association, with most areas being flooded at least once per year. The hazard of flooding is a limitation to construction, and construction also hinders the flow of floodwater through the valley and, in effect, raises the level of the floodwater.

Chili Association: These soils are formed in sandy, gravelly glacial outwash and found in nearly level to steep, well-drained areas. This association is in areas of complex topography and is mostly in the southern half of Summit County. These soils readily absorb rainwater and contribute seepage to a high water table in low-lying areas. Low-lying areas contain more poorly drained soils with pockets of organic soils. Chili soils make up about 50% of the association, with less extensive soils making up the rest. Much of the area within this association is farmed, but other land use designations compete with the farming. These soils are well suited to farming and irrigation. The well draining soils of this association gives some limitations to non-farm uses, such as septic tank filter fields contaminating groundwater or pollution of nearby low-lying area.

(C) STREAMS AND BODIES OF WATER

(1) Construction Impact

Dominion East Ohio has evaluated construction methods to minimize impacts to streams, to the extent possible. The majority of the larger streams within the project ROW will not be impacted, due to the planned HDD installation method for these areas. Tables 07-3 and 07-4 summarize the streams that will be crossed by the Preferred Route and the proposed crossing method. The field QHEI and HHEI data sheets for these stream crossings are provided in Appendix 07-1D. A further discussion of the streams, lakes and ponds along the Preferred and Alternate Routes can be found in Section (B) (3) of this chapter.

Dominion utilizes two methods of constructing and installing a pipeline across a stream. Each method has advantages and disadvantages depending on the site-specific

conditions. The most common method of stream crossing is open trench excavation for relatively low flow streams. A trench is excavated across the stream; the pipe is lifted and placed into the trench followed by backfilling, re-contouring, and restoration of the stream area. Restoration of the streambed involves replacing flagstones or cobblestones, if present, following trench backfilling in order to restore the stream to near its original condition as possible. Construction at each stream location can be scheduled during low flow conditions, independent of the remainder of the pipeline construction. A short time frame of construction activity at these stream-crossing locations minimizes potential erosion problems and stream impacts.

The second stream crossing method involves HDD under the channel. This method is frequently used to minimize impacts to roadways, railroads, and high-value ecological and archaeological resources that could not otherwise be avoided, and to avoid potential impacts from high-flow conditions or navigation on navigable waters. However, the evaluation process for use of HDD must take into consideration the transport of large drilling equipment to the drill site, the possibility of release of bentonite-based drilling fluids, and a longer installation process.

For sensitive locations where HDD is selected as the installation method, the HDD equipment will be set up on upland areas outside of the sensitive area (e.g., wetland). Silt fence or other erosion controls will be installed around the drill pipe entry point and exit point when necessary. HDD operations have a potential to release drilling fluids into the surface environment through existing fractures in the subsurface rock and soil; these releases of drilling fluid are referred to as "frac-outs". Generally, HDD usage is typically reserved for streams that have significant flow at the time of construction, or for sensitive habitats with high-quality biota.

Dominion East Ohio proposes to use a trench construction methodology to cross only five of the 12 stream channels on the Preferred Route. Streams S-1, S-2, S-4, S-6, S-7, S-10 and S-10d are planned for HDD for pipeline installation. Streams S-3a, S-3b, S-5, S-8, and S-9 are planned for trench excavation. These five streams include two intermittent headwater streams and three Class I or II streams. No long-term adverse impacts are expected to any stream to be crossed by trenching on the Preferred Route, based on the mitigation techniques and precautions to be employed during construction [refer to Section 4 (B)(1)(b)]. Care will be taken at stream crossings to avoid unnecessary soil erosion and sedimentation. Construction in streams and headwaters

will conform to the requirements of the state certification of the U.S. Army Corps of Engineers' Nationwide Permit (NWP) 12, National Pollutant Discharge Elimination System (NPDES) Stormwater permit for construction, the Storm Water Pollution Prevention Plan (SWP3), the Ohio Rainwater and Land Development sediment erosion guidelines and methods, and the requirements discussed on a case-by-case basis. An environmental inspector will be on site during all activities within high quality streams and headwaters to insure minimizations of impacts within these sensitive ecological areas.

There were no lakes, ponds, or reservoirs identified within 100 feet of the Preferred and Alternate Routes. The southwestern shore of Nimisila Reservoir is about 500 feet from where the Preferred and Alternate Routes end at Shoop Station. There are 24 and 29 ponds found within 1,000 feet of the Preferred and Alternate Route centerlines, respectively. None of these water bodies are expected to be impacted by the construction, operation, or maintenance of the Preferred or Alternate Route alignments.

(2) Operation and Maintenance Impact

Once the natural gas pipeline is in operation, and land restoration is complete, the project ROW will require only periodic woody species removal. Signage will be installed 25 feet from high quality stream and headwaters to prevent inadvertent clearing pre- and post-construction. No significant impact to streams or drainage channels along the Preferred or Alternate Route are expected from operation or maintenance of the line. No major lakes, ponds, or reservoirs will be affected by the operation or maintenance of the Preferred or Alternate Route.

(3) Mitigation Procedures

Tree and vegetation clearing within the project ROW will be reduced to a 30-foot width within the riparian zone of moderate and high quality streams and headwaters. Restoration of streambed and banks will be implemented following trenching across higher quality streams and headwaters. Dominion East Ohio will remove only select trees within 25 feet of high quality stream channels to minimize impacts. Prior to any clearing activities, these trees will be clearly identified and marked on construction drawings, and in the field, by Dominion East Ohio. An environmental inspector will be on site during construction activities within high quality streams and headwaters to ensure requirements near these sensitive ecological resources are met.

Containment measures taken during a frac-out event during HDD work will include reduction or elimination of pressure, straw bale containment, and removal of drilling mud from the surface. The area affected by any frac-out will be restored as closely as possible to original conditions. HDD will not continue until the frac-out is contained.

(D) WETLANDS IMPACT

(1) Construction Impact

Dominion East Ohio plans to drill beneath the majority of wetlands on the Preferred or Alternate Route, using HDD techniques to avoid impacts to these wetlands. Wetland acreage within the 60-foot construction corridor of these routes are 4.3 and 3.3, respectively. With HDD, the Preferred Route impact to wetlands will decrease to 0.4 acres. Table 06-2 lists the comparative impact of Preferred and Alternate Routes on wetlands within the project study area.

Table 07-2 lists construction methodology for wetland areas along the Preferred Route. Dominion East Ohio plans to use HDD techniques in major wetland complexes in an effort to minimize sensitive area impacts associated with the Preferred Route. The majority of wetlands slated to be trenched within the Preferred Route are relatively small and of poor quality. Additionally, construction activity within these few wetlands will be confined to a reduced corridor width. Due to considerable HDD of wetlands along the Preferred and Alternate Route, it is estimated that approximately 0.4 acres of wetland will be impacted within the 60-foot study corridor. Of the remaining wetlands, dredge materials will be stored in an upland location and unless saturated, the topsoil segregated so that at least the top 6 inches of backfill over the pipeline will consist of topsoil material removed from the trench, as per Ohio State Certification Requirements under U.S. Army Corps of Engineers' NWP 12. According to the U.S. Army Corps of Engineers, for linear projects each wetland and stream crossing is considered as a separate project.

HDD will be utilized to ensure that each wetland crossing does not exceed the U.S. Army Corps of Engineers' 0.5-acre wetland limitation and any Ohio EPA certification limitations, as provided under the NWP 12. The project's total impacts to the waters of the U.S. will be less than 1,500 linear feet.

Construction vehicles within wetland areas will be limited to those wetlands directly crossed by the project centerline and no excavated materials will be placed within delineated wetland areas. Timber matting will be used in wetland areas to limit vehicle wetland impacts.

(2) Operation and Maintenance Impact

It is not anticipated that wetland areas will be greatly affected by the operation or maintenance of the proposed natural gas pipeline along the Preferred or Alternate Routes. Seasonal mowing is currently affecting, and is anticipated to continue to impact, wetland areas along the pipeline.

(3) Mitigation Procedures

No permanent wetland impacts are anticipated for the project as proposed. Care will be taken to segregate topsoil from sub-soils to facilitate remedial measures after the pipeline is buried as per U.S. Army Corps of Engineers 404 permitting requirements. Natural re-vegetation in any disturbed wetland areas will begin immediately after construction has been completed in the area. Wetland mitigation will meet that required for the project by the U.S. Army Corps of Engineers and/or Ohio EPA.

(E) VEGETATION IMPACT

(1) Construction Impact

Dominion East Ohio selected a Preferred Route that avoids wooded areas to the most practical extent possible. For both the Preferred and Alternative Routes, the percent of route within or adjacent to existing ROW will be 100 percent for the Preferred, and 97% for the Alternate. Both routes also cross areas of routine disturbance such as pastures and agricultural farmland, and residential areas. Impacts to woodlots within the 60-foot project ROW are approximately 11.9 acres along the Preferred Route and approximately 11.8 acres along the Alternate Route. The reduced construction corridor width of 30 feet that Dominion East Ohio will establish in woodlot areas decreases the impacts to woodlots to 3.9 and 4.8 acres, for the Preferred and Alternate Route, respectively.

Vegetation management along the pipeline ROW is expected to be required only in those areas that are not currently in agricultural use or that are developed. Signage will

be placed 25 feet from high quality streams to prevent inadvertent riparian clearing in these areas. Seed mixes of species native to the area will be used to re-establish herbaceous and shrub vegetation. Temporary soil erosion and sedimentation control measures will be removed after vegetative cover has been established.

Mature trees will be identified and marked in the field and on construction drawings, if it is feasible to avoid clearing of these trees during construction. Potential construction impacts to vegetation along the Preferred and Alternate Routes include those described in the above sections.

(2) Operation and Maintenance Impact

Impacts on vegetated land during operation of the pipeline along either the Preferred or Alternate Routes will be negligible. Seasonal mowing along the ROW is not expected to result in a significant environmental impact to the vegetation.

(3) Mitigation Procedures

Areas that are temporarily disturbed will be re-vegetated as soon as practical within Ohio EPA Permit No. OHC000002 guidelines. These measures should preserve the aesthetic qualities along the route to the extent practical, prevent erosion, and promote habitat diversity. Seeding and mulching practices will be specified in the SWP3 plan and on construction drawings.

(F) COMMERCIAL, RECREATIONAL, AND THREATENED/ENDANGERED SPECIES IMPACT

The following descriptions are of major species either observed within and expected to inhabit or reported to have a range that includes the route corridors. It is expected that construction impact will be approximately the same for these species along the Preferred and Alternate Routes. While suitable habitats for these species are available along the Preferred and Alternate Routes, these habitats are generally limited in nature and do not represent critical habitat.

(a) Commercial Species: Commercially important species along the Preferred and Alternate Routes consist of those hunted or trapped for fur or other byproducts, including the following:

Red fox (*Vulpes vulpes*): The red fox occurs throughout Ohio and is most prevalent in areas of maximum interspersed woodland and agricultural lands. This species is expected to inhabit the Preferred and Alternate Routes, but was not observed during the field surveys.

Raccoon (*Procyon lotor*): The raccoon is abundant and widespread in Ohio, even in many suburban areas. Raccoons are found principally around aquatic and woodland habitats, with occasional forages into croplands. Tracks of this species were observed near streams along the Preferred Route.

Striped skunk (*Mephitis mephitis*): The skunk prefers a semi-open habitat of mixed woods, brush, farmland, open grassland, and small caves in proximity to water. These mammals are common statewide. Dead individuals of this species were observed along roadways within the vicinity of the Preferred and Alternate Routes.

Opossum (*Didelphis virginiana*): The opossum's preferred habitat is farmland, especially wooded pastures adjacent to woodland streams and ponds. Dead individuals of this species were observed along roadways within the vicinity of the Preferred and Alternate Routes.

Beaver (*Castor Canadensis*): Beavers are a common species in eastern and western Ohio. They occur in forested ponds, lakes, and rivers. No beavers were observed in the field, but they are expected to inhabit portions of the Preferred and Alternate Routes.

Mink (*Mustela vison*): Mink occur throughout Ohio. They are primarily found near streams and rivers, but can also be found near ponds and marshes. Minks are also found in or near wooded or brushy areas. No mink were observed in the field, but they are expected to inhabit portions of the Preferred and Alternate Routes.

River otters (*Lontra Canadensis*): River otters can be found in 66% of Ohio counties. In the years 2008-2009, trapping of river otters is allowed along the western portion of the Preferred and Alternate Routes (eastern Wayne County), but not in the eastern portion (Summit County). River otters live in aquatic habitats. No river otters were observed in the field, but they are expected to inhabit portions of the Preferred and Alternate Routes.

(b) Recreational Species: Recreational species consist of those hunted as game. Recreational species expected to inhabit areas along the Preferred and Alternate Routes include the following:

Eastern cottontail (*Sylvilagus floridanus*): The eastern cottontail is Ohio's number one game species. They are abundant in both rural and urban areas and prefer the field borders, brushy areas, and thicket habitats that can be found in the study area. This species was observed along the Preferred Route during field surveys, and is expected to be abundant along the Preferred and Alternate Routes.

Woodchuck (*Marmota monax*): The woodchuck or groundhog is a common ground squirrel found throughout Ohio. It prefers sloped areas at the fringe of wooded and open areas. This species was observed along the Preferred Route during field surveys, and is expected to be abundant along the Preferred and Alternate Routes.

Gray, red, and fox squirrels: These tree squirrels occur throughout Ohio. The fox squirrel (*Sciurus niger*) is primarily an inhabitant of small, typically isolated woodlots. The gray squirrel (*Sciurus carolinensis*) and red squirrel (*Tamiasurus hudsonicus*) prefer extensive woodland areas. Gray squirrels were observed along the Preferred and Alternate Routes during field surveys. These species are expected to be abundant along the Preferred and Alternate Routes.

White-tailed deer (*Odocoileus virginianus*): White-tailed deer occur throughout Ohio. Deer prefer wooded areas with occasional foraging into croplands. This species was observed along the Preferred Route during field surveys, and is expected to be abundant along the Preferred and Alternate Routes.

Wild turkey (*Meleagris gallopavo*): The Wild Turkey is a common recreational species throughout Ohio. They are typically found in upland areas with small to large woodlots near open areas for feeding. This species is expected to inhabit areas along the Preferred and Alternate Routes, but none were observed during field surveys.

(c) Game Fish: While the majority of streams will be HDD to reduce impacts to stream habitat, there will be five stream crossings where trenching will be used. Of these streams, one (Stream S-3a) has been classified as warmwater habitat (WWH), another stream (Stream S-3b) is classified as modified warmwater habitat (MWH), both of which could provide habitat for game fish.

Measures will be taken at stream crossings to minimize soil erosion and sedimentation. Construction in streams and headwaters will conform to the requirements of the state certification of the U.S. Army Corps of Engineers' NWP 12, NPDES Stormwater permit for construction, the SWP3 plan, the Ohio Rainwater and Land Development sediment erosion guidelines and methods, and the requirements discussed on a case-by-case basis. An environmental inspector will be on site during all activities within high quality streams and headwaters to insure minimization of impacts within these sensitive ecological areas.

(1) **Construction Impact**

(a) ***Commercial Species:***

Red fox: Similar suitable habitats for this species are readily available throughout the Preferred and Alternate Routes. This highly mobile species would be expected to leave during construction and return once the project is completed.

Raccoon: This species is very adaptable to changes in the habitats in which it occurs, and as a result, construction along the Preferred or Alternate Route are anticipated to have negligible impact on the raccoon population. Additionally, similar habitats suitable to this species are readily available throughout the study area.

Striped skunk: It is not anticipated that construction of either the Preferred or Alternate Route will alter a significant portion of this species' preferred habitat because of the presence of readily available similar habitats in the study area. Therefore, no impact on the striped skunk is anticipated.

Opossum: It is not anticipated that construction of either the Preferred or Alternate Route will alter a significant portion of this species' preferred habitat because of the presence of readily available similar habitats. Therefore, no impact on the opossum is anticipated.

Beaver: It is not anticipated that construction of either the Preferred or Alternate Routes will alter a significant portion of this species' habitat. All, or most, areas where this species is expected will be HDD to minimize impacts.

Mink: It is not anticipated that construction of either the Preferred or Alternate Route will alter a significant portion of this species' habitat. All, or most, areas where this species is expected, will be HDD to minimize impacts.

River otters: It is not anticipated that construction of either the Preferred or Alternate Route will alter a significant portion of this species' habitat. All, or most, areas where this species is expected will be HDD to minimize impacts.

(b) Recreational Species: Recreational species should experience different levels of impact, depending on the species' habitat and home range requirements.

Eastern cottontail: Cottontails will likely migrate from the ROW area during construction and move into adjacent areas that provide adequate cover and needed forage resources. After construction, this species' preferred habitat should be increased along the Preferred or Alternate Route as scrub/shrub and herbaceous growth will increase. Therefore, impacts to this species are expected to be minor.

Woodchuck: Any woodchucks present along the selected route will likely travel out of the ROW during construction to seek friable soil material in which to establish burrows. Suitable alternative habitats are available close to both the Preferred and Alternate Routes. Therefore, impacts to this species are expected to be minor.

Gray, red, and fox squirrels: The elimination of minimal quantities of the suitable habitat of these species within the ROW will cause the squirrels to move into nearby woodlands during construction. It is anticipated that additional squirrels can be assimilated into adjacent habitats without significant competition pressures from or on resident species. The loss of mast-producing trees offering a food source for the squirrels should be low. Thus, the impact of construction on the resident squirrels is anticipated to be minor, considering the availability of similar habitat and forage elsewhere.

White-tailed deer: White-tailed deer use the wooded portions along the Preferred and Alternate Routes for cover and concealment, and they forage in the croplands periodically. Deer normally have a home range of less than 3 square miles. The abundance of similar wooded and cropland habitat surrounding the study area indicates that the impact of construction should be minimal for this species. Additionally, maintaining a ROW in low growth vegetation provides a beneficial "edge habitat" for this species.

Wild Turkey: Wild Turkeys use the wooded portions along the Preferred and Alternate Routes for nesting, usually near open areas, and cover. Impact on this species should be minor, given that there is suitable woodlot in the surrounding area for them to nest and find cover. Maintaining a ROW in low growth vegetation provides more "edge habitat" for this species to nest.

(c) **Game Fish:** While the majority of streams will be HDD to reduce impacts to stream habitat, there will be five stream crossings where trenching will be used. Of these streams, one (Stream S-3a) has been classified as warmwater habitat (WWH), another stream (Stream S-3b) is classified as modified warmwater habitat (MWH), both of which could provide habitat for game fish.

Measures will be taken at stream crossings to minimize soil erosion and sedimentation. Construction in streams and headwaters will conform to the requirements of the state certification of the U.S. Army Corps of Engineers' Nationwide Permit 12, NPDES Stormwater permit for construction, the SWP3 plan, the Ohio Rainwater and Land Development sediment erosion guidelines and methods, and the requirements discussed on a case-by-case basis. An environmental inspector will be on site during all activities within high quality streams and headwaters to insure impacts are minimized within these sensitive ecological areas.

(d) **Protected Species:** Correspondence with the ODNR-DNAP, ODNR-DRELM, and the USFWS indicated that the Preferred and Alternate Routes are within the range of a number of species that are on federal and/or state listed threatened or endangered species, or are of high interest. No federally or state endangered, threatened, or potentially threatened species and no critical habitats were observed during the field surveys of the Preferred and Alternate Routes.

Protected Plants: Suitable habitat for the Eastern Prairie Fringed Orchid was found, but USFWS-approved biologists did not find this species in the Project area during the flowering period of the plant (Appendix 07-2). No other state or federal-listed plants were identified during the field surveys or need additional coordination with USFWS.

Protected Wildlife: The Indiana bat may occur in the Preferred and Alternate Route corridors due to project location within species range, as well as the suitable habitat provided as discussed in Section 4906-15-07(B)(3)(e) of this Application. Davey Resource Group documented thirteen potential Indiana Bat maternity roosting trees

throughout the ROW area. HDD will be utilized to avoid impacts to two of the 13 potential maternity trees, and the Preferred Route will avoid impacts to three other potential maternity trees. Through coordination with the USFWS, it was determined that emergence surveys should be conducted for the remaining eight trees before August 15. Emergence surveys were conducted within the specified timeframe. No bats were seen emerging from marked potential maternity roost trees. The Davey Tree Expert Company, with approval from USFWS, subsequently removed the trees.

No other wildlife species considered endangered or threatened by the State of Ohio or by the federal government should be significantly impacted by construction of the project along the Preferred Route. Either the project area does not provide the appropriate habitat, the pipeline corridor is outside of the range of such species, or natural history characteristics of potential species are such that any impact would be minimal.

(2) Operation and Maintenance Impact

Impacts on wildlife during operation and maintenance of the pipelines should be relatively minor. Seasonal mowing will be the primary impact, in order to prevent succession to forestland within the ROW. The surrounding area around the pipeline should revert to pre-construction habitat over time.

(3) Mitigation Procedures

Experienced ecologists, in conjunction with agency letters and advice, reviewed available maps and examined routes during field surveys. No significant problem areas that would require the use of special mitigation measures for protected wildlife, have been identified to date. If, at a later date, special mitigation procedures are recognized, measures will be implemented according to appropriate agency guidelines and advice.

(G) SLOPES AND ERODIBLE SOILS

(1) Construction Impact

In general, slope mechanics are not anticipated to present a significant concern for this project on either the Preferred or Alternate Route. Construction near stream channels will require extra care in erosion control planning and pipeline installation and restoration due to the high erosion potential and the possibility of sediment being

carried beyond the project ROW. Where possible clearing will be minimized on slopes and stumps will be left in place as extra precautions to help prevent hillside erosion. The SWP3 to be developed for the project will address these issues.

The soil associations crossed by the Preferred and Alternate Routes are discussed in Section 4906-15-07(B)(4) of this Application and are shown on Figures 04-3A and 04-3B. Any impacts to soils crossed are expected to be temporary in nature, as these soils will be replaced once construction is complete. Contours will be restored to stream and wetland areas in an effort to minimize soil erosion and degradation. Seed mixes of species native to the area will be used to re-establish herbaceous and shrub vegetation. Temporary soil erosion and sedimentation control measures will be removed after vegetative cover has been established.

(2) Operation and Maintenance Impact

No impacts are expected once the pipeline is in place, and restorative measures have been implemented. The area will return to its former land use. Maintenance activities that involve excavation are anticipated to be rare, but in these cases, standard measures will be used to prevent sedimentation into any nearby surface waters.

(3) Mitigation Procedures

Best Management Practices (BMP) will be used during construction and protective measures will be taken with construction adjacent to streams, ponds, and wetlands. The erosion and sedimentation control measures will be consistent with that described in the SWP3 for this project.

(H) OTHER ISSUES

Dominion East Ohio has determined that construction and operation of the pipeline following the Preferred Route would represent the least overall impact to the flora and fauna of undeveloped areas when all the impacts to streams and drainage channels, permanent bodies of water, wetland areas, and areas with natural vegetation are taken into consideration. For example, the linear distance of the project through woodlots is approximately 3,500 feet less for the Preferred Route, resulting in fewer trees to be removed. While the number of streams to be crossed by trenching is slightly greater for the Preferred Route, the crossing will take place at existing intrusions, and consequently will have little additional impact to the stream banks and riparian areas, particularly

with the mitigation and restoration measures to be employed. It is clear that the utilization of an existing, maintained pipeline ROW as opposed to the development of a pipeline following new ROW adjacent to public roadways for a significant portion of its length would result in fewer overall ecological impacts to the project area.

**TABLE 07-1
WETLAND AND STREAM IDENTIFICATION KEY**

IDENTIFIER	Environment & Archaeology, LLC's ID	GAI Consultants ID
Wetland 1	Wetland 1	WOH-JEN-001
Wetland 2	Wetland 2	WOH-JEN-002
Wetland 3	Wetland 3	WOH-JEN-003
Wetland 4	Wetland 4	WOH-JEN-004
Wetland 5	Wetland 5	Wetland 5
Wetland 6	Wetland 6	WOH-JEN-005 (well pad)
Wetland 7a	Wetland 7a	WOH-JEN-006
Wetland 7b Complex	Wetland 7b	WOH-JEN-007 thru -010
Wetland 7c	Did not assess	WOH-CRE-001
Wetland 7d	Did not assess	WOH-JEN-020
Wetland 8	Wetland 8	WOH-JEN-011
Wetland 9a	Wetland 9a	WOH-JEN-012; WOH-CRE-002
Wetland 9b	Wetland 9b	WOH-CRE-003
Wetland 9c	Did not assess	WOH-JEN-013
Wetland 9d	Did not assess	WOH-JEN-014
Wetland 10	Wetland 10	WOH-CRE-004
Wetland 10a	Did not assess	WOH-JEN-015
Wetland 10b	Did not assess	WOH-JEN-016
Wetland 10c	Did not assess	WOH-JEN-017
Wetland 10d	Did not assess	WOH-JEN-018
Wetland 11	Wetland 11	Wetland 6
Wetland 11a	Did not assess	WOH-JEN-019
Stream S-1	S-1	S-1
Stream S-2	S-2	S-2
Stream S-2a	Did not assess	SOH-JEN-001
Stream S-2b	Did not assess	SOH-LFS-001
Stream S-2c	Did not assess	SOH-JEN-002
Stream S-3	S-3	SOH-CRE-007
Stream S-4	S-4	S-4
Stream S-5	S-5	SOH-CRE-001
Stream S-6	S-6	SOH-LFS-002
Stream S-7	S-7	SOH-CRE-009 and 10
Stream S-7a	S-7a	SOH-CRE-009 and 10
Stream S-8	S-8	SOH-CRE-008
Stream S-9	S-9	S-12
Stream S-10	S-10	SOH-CRE-006 and S-13
Stream S-10a, b, c	S-10a	SOH-CRE-006 and S-13
Stream S-10d	Did not assess	SOH-CRE-005

Note: Due to a variety of consultant coding for streams and wetlands, a unique identifier was created to integrate information for this application.

TABLE 07-2
WETLANDS SURVEYED WITHIN THE 200-FT. STUDY CORRIDOR OF
THE PREFERRED ROUTE

IDENTIFIER	COWARDIN CLASSIFICATION ¹	ORAM ² SCORE	ORAM CLASSIFICATION ³	Crossing Methodology	Figure Key (Figure 07-1)
Wetland 1	PEM	22	Category 1	HDD	07-1A
Wetland 2	PEM	34	Category 2	HDD	07-1A
Wetland 3	PEM	33	Category 2	HDD	07-1A
Wetland 4	Vernal Pool	8.5	Category 1	Trench	07-1A
Wetland 5	PEM	25	Category 1	Trench	07-1B
Wetland 6	PEM	26	Category 1	Trench	07-1B
Wetland 7a	PEM/PSS	59	Category 2	HDD	07-1C
Wetland 7b Complex	PEM/PSS/PFO	68	Category 3	HDD	07-1C
Wetland 7c	PEM	23	Category 1	Not Crossed	07-1D
Wetland 7d	PEM	27	Category 1	Trench	07-1D
Wetland 8	PEM	25	Category 1	Trench	07-1D
Wetland 9a	PEM/PSS	36	Category 2	HDD	07-1D
Wetland 9b	PEM	29	Category 1	HDD	07-1D
Wetland 9c	PEM	32.5	Category 2	HDD	07-1D
Wetland 9d	POW	41	Category 2	Trench	07-1D
Wetland 10	PEM/PSS	49.5	Category 2	HDD	07-1E
Wetland 10a	PEM	38.5	Category 2	Trench	07-1E
Wetland 10b	PEM/PSS	45	Category 2	Not Crossed	07-1F
Wetland 10c	PEM/PFO	42.5	Category 2	Trench	07-1F
Wetland 10d	PEM/PFO	44.5	Category 2	Not Crossed	07-1F
Wetland 11	PEM	23	Category 1	Trench	07-1F
Wetland 11a	PEM/PSS/PFO	37.5	Category 2	Not Crossed	07-1F

¹ Wetland classifications based on Cowardin et al. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*:

PEM = palustrine emergent
PFO = palustrine forested
PSS = palustrine scrub-shrub

² OEPA's Ohio Rapid Assessment Method (ORAM) for evaluating wetlands.

³Wetland categories:

- 1 = low quality
- 2 = moderate quality
- 3 = high quality

TABLE 07-3
STREAM CONSTRUCTION METHODOLOGY SUMMARY ALONG THE PREFERRED ROUTE

QHEI Identifier	Surface Name ¹	Likely Flow Regime ²	QHEI Score	Expected Aquatic Use Designation	Figure Key (Figure 07-1)	Crossing Methodology
S-1	UT to Chippewa River	I	30.5	MWH	07-1A	Included in HDD of Archaeological Site 1.
S-2	Silver Creek	P	68.5	WWH	07-1A	Included in HDD of Archaeological Site 1.
S-3a	UT to Tuscarawas River	I	54	WWH	07-1C	Trench
S-3b	UT to Tuscarawas River	I	47	MWH	07-1C	Trench
S-3c	UT to Tuscarawas River	I	44.5	MWH	07-1C	Not Crossing
S-3d	UT to Tuscarawas River	I	47	MWH	07-1C	Not Crossing
S-4	Tuscarawas River	P	61	WWH	07-1C	HDD
S-7	UT to Nimisila Creek	P	57.75	WWH	07-1E	HDD

¹ UT : Unnamed Tributary, meaning that the stream is not named on the appropriate USGS 7.5-minute Topographic Quadrangle Map.

² Flow Regime: Intermittent (I), Perennial (P).

³ Provisional Aquatic Use Designation: Limited Resource Water (LRW), Modified Warmwater Habitat (MWH), Warmwater Habitat (WWH), Exceptional Warmwater Habitat (EWH)

TABLE 07-4
HEADWATER STREAM CONSTRUCTION METHODOLOGY SUMMARY
ALONG THE PREFERRED ROUTE

HHEI Identifier	HHEI Score	HHEI Class	Figure Key (Figure 07-1)	Crossing Methodology
S-2a	23	Modified Class I	07-1A	Not Crossing
S-2b	15	Modified Class I	07-1A	Not Crossing
S-2c	23	Class I	07-1B	Not Crossing
S-5	41	Modified Class II	07-1D	Trench
S-6	36	Modified Class II	07-1D	Included in HDD of Wetland 9b.
S-7a	36	Modified Class II	07-1E	Not Crossing
S-8	28	Modified Class I	07-1E	Trench
S-9	66	Modified Class II	07-1E	Trench
S-10a	23	Modified Class I	07-1F	Not Crossing
S-10b	22	Modified Class I	07-1F	Not Crossing
S-10c	59	Modified Class II	07-1F	Not Crossing
S-10	77	Modified Class III	07-1F	HDD
S-10d	41	Modified Class II	07-1F	Included in the HDD of Stream S-10.

TABLE 07-5
MAJOR PLANT SPECIES OBSERVED OR LIKELY TO OCCUR
IN THE STUDY AREA

<i>Acer negundo</i>	<i>Erigeron annuus</i>	<i>Polygonum saggitatum</i>
<i>Acer rubrum</i>	<i>Eupatorium maculatum</i>	<i>Populus deltoids</i>
<i>Acer saccharum</i>	<i>Eupatorium perfoliatum</i>	<i>Potentilla anserina</i>
<i>Acer saccharinum</i>	<i>Eupatorium purpureum</i>	<i>Prunus serotina</i>
<i>Achillea millefolium</i>	<i>Eupatorium sessilifolium</i>	<i>Quercus alba</i>
<i>Aesculus glabra</i>	<i>Fagus grandifolia</i>	<i>Quercus macrocarpa</i>
<i>Agrostis stolonifera</i>	<i>Festuca arundinacea</i>	<i>Quercus palustris</i>
<i>Alliaria petiolata</i>	<i>Fraxinus pennsylvanica</i>	<i>Quercus rubra</i>
<i>Allium canadense</i>	<i>Galium aparine</i>	<i>Robinia psuedoacacia</i>
<i>Allium schoenoprasum</i>	<i>Geum canadense</i>	<i>Rosa carolina</i>
<i>Alnus serrulata</i>	<i>Glycine max</i>	<i>Rosa multiflora</i>
<i>Ambrosia artemisiifolia</i>	<i>Impatiens capensis</i>	<i>Rubus allegheniensis</i>
<i>Ambrosia trifida</i>	<i>Iris pseudacorus</i>	<i>Rumex acetosella</i>
<i>Apocynum cannabinum</i>	<i>Juglans nigra</i>	<i>Rumex crispus</i>
<i>Artemisia vulgaris</i>	<i>Juncus effuses</i>	<i>Rumex obtusifolius</i>
<i>Asclepias incarnata</i>	<i>Juncus tenuis</i>	<i>Rumex verticillatus</i>
<i>Asclepias syriaca</i>	<i>Leersia oryzoides</i>	<i>Salix nigra</i>
<i>Aster spp.</i>	<i>Leersia virginica</i>	<i>Schizachyrium scoparium</i>
<i>Betula alba</i>	<i>Lindera benzoin</i>	<i>Scirpus atrovirens</i>
<i>Bidens frondosa</i>	<i>Liquidambar styraciflua</i>	<i>Scirpus cyperinus</i>
<i>Boehmeria cylindrical</i>	<i>Liriodendron tulipifera</i>	<i>Setaria spp.</i>
<i>Brassica rapa</i>	<i>Lolium perenne</i>	<i>Solidago canadensis</i>
<i>Calamagrostis canadensis</i>	<i>Lonicera japonica</i>	<i>Solidago gigantea</i>
<i>Cardamine bulbosa</i>	<i>Lysimachia nummularia</i>	<i>Symphotrichum novae-angliae</i>
<i>Carex lurida</i>	<i>Ludwigia alternifolia</i>	<i>Symplocarpus foetidus</i>
<i>Carex spp.</i>	<i>Ludwigia palustris</i>	<i>Toxicodendron radicans</i>
<i>Carex stricta</i>	<i>Lythrum salicaria</i>	<i>Trifolium pratense</i>
<i>Carya ovata</i>	<i>Malva neglecta</i>	<i>Typha angustifolia</i>
<i>Celtis occidentalis</i>	<i>Mentha spicata</i>	<i>Typha latifolia</i>
<i>Cerastium viscosum</i>	<i>Onoclea sensibilis</i>	<i>Typha glauca</i>
<i>Chrysanthemum leucanthemum</i>	<i>Panicum dichotomiflorum</i>	<i>Ulmus rubra</i>
<i>Cichorium intybus</i>	<i>Panicum virgatum</i>	<i>Urtica dioica</i>
<i>Cirsium arvense</i>	<i>Penthorum sedoides</i>	<i>Verbena hastata</i>
<i>Cirsium vulgare</i>	<i>Phalaris arundinacea</i>	<i>Verbesina alternifolia</i>
<i>Claytonia virginica</i>	<i>Phytolacca americana</i>	<i>Vernonia gigantea</i>
<i>Convolvulus sepium</i>	<i>Phleum pretense</i>	<i>Viola sororia</i>
<i>Cornus amomum</i>	<i>Phytolacca Americana</i>	<i>Vitis spp.</i>
<i>Cornus sericea</i>	<i>Pinus strobus</i>	<i>Xanthium strumarium</i>
<i>Cornus stolonifera</i>	<i>Plantago lanceolata</i>	
<i>Crataegus sp.</i>	<i>Plantago major</i>	
<i>Cyperus esculentus</i>	<i>Plantanus occidentalis</i>	
<i>Daucus carota</i>	<i>Poa pratensis</i>	
<i>Dichanthelium clandestinum</i>	<i>Polygonum amphibium</i>	
<i>Dipsacus sylvestris</i>	<i>Polygonum hydrpiper.</i>	
<i>Eleocharis obtusa</i>	<i>Polygonum pennsylvanicum</i>	
<i>Epilobium coloratum</i>	<i>Polygonum persicaria</i>	

SOURCES: <http://plants.usda.gov/>
 Chadde, S. 2002 *A Great Lakes Wetland Flora* (2nd ed.) Pocketflora Press.
 Petrides, G., Wehr, J., and R.T. Peterson. 1998. *A Field Guide to Eastern Trees*. Houghton Mifflin.

TABLE 07-6
BIRD SPECIES IDENTIFIED OR LIKELY TO OCCUR IN THE STUDY AREA

Common Name	Scientific Name
American Crow	<i>Corvus brachyrhynchos</i>
American Goldfinch	<i>Carduelis tristis</i>
American Kestrel	<i>Falco sparverius</i>
American Robin	<i>Turdus migratorius</i>
Baltimore Oriole	<i>Icterus galbula</i>
Belted Kingfisher	<i>Ceryle alcyon</i>
Black-capped Chickadee	<i>Poecile atricapilla</i>
Blue Jay	<i>Cyanocitta cristata</i>
Blue-gray Gnatcatcher	<i>Poliopitila caerulea</i>
Brown Thrasher	<i>Toxostoma rufum</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Canada Goose	<i>Branta canadensis</i>
Carolina Wren	<i>Thryothorus ludovicianus</i>
Common Grackle	<i>Quiscalus quiscula</i>
Common Yellowthroat	<i>Geothlypis trichas</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Eastern Bluebird	<i>Sialia sialis</i>
Eastern Kingbird	<i>Tyrannus tyrannus</i>
Eastern Meadowlark	<i>Sturnella magna</i>
Eastern Phoebe	<i>Sayornis phoebe</i>
Eastern Towhee	<i>Pipilo erythrophthalmus</i>
Field Sparrow	<i>Spizella pusilla</i>
Gray Catbird	<i>Dumetella carolinensis</i>
Great Blue Heron	<i>Ardea herodias</i>
Great Horned Owl	<i>Bubo virginianus</i>
Hairy Woodpecker	<i>Picoides villosus</i>
House Finch	<i>Carpodacus mexicanus</i>
House Sparrow	<i>Passer domesticus</i>
House Wren	<i>Troglodytes aedon</i>
Killdeer	<i>Charadrius vociferus</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning Dove	<i>Zenaida macroura</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
Northern Flicker	<i>Colaptes auratus</i>
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>
Red-eyed Vireo	<i>Vireo olivaceus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Song Sparrow	<i>Melospiza melodia</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Tufted Titmouse	<i>Parus bicolor</i>
Turkey Vulture	<i>Cathartes aura</i>
White Breasted Nuthatch	<i>Sitta carolinensis</i>
Wild Turkey	<i>Meleagris gallopavo</i>
Wood Thrush	<i>Hylocichia mustelina</i>
Yellow Warbler	<i>Dendroica petechia</i>

SOURCES: ODNR Ohio's Wildlife Species Guide:
http://www.dnr.state.oh.us/Home/species_a_to_z/speciesguide_default/tabid/6491/Default.aspx
 McCormac, J. and Kennedy, G. 2004. *Birds of Ohio*. Lone Pine Publishing.

TABLE 07-7
REPTILE AND AMPHIBIAN SPECIES IDENTIFIED OR LIKELY TO
OCCUR IN THE STUDY AREA

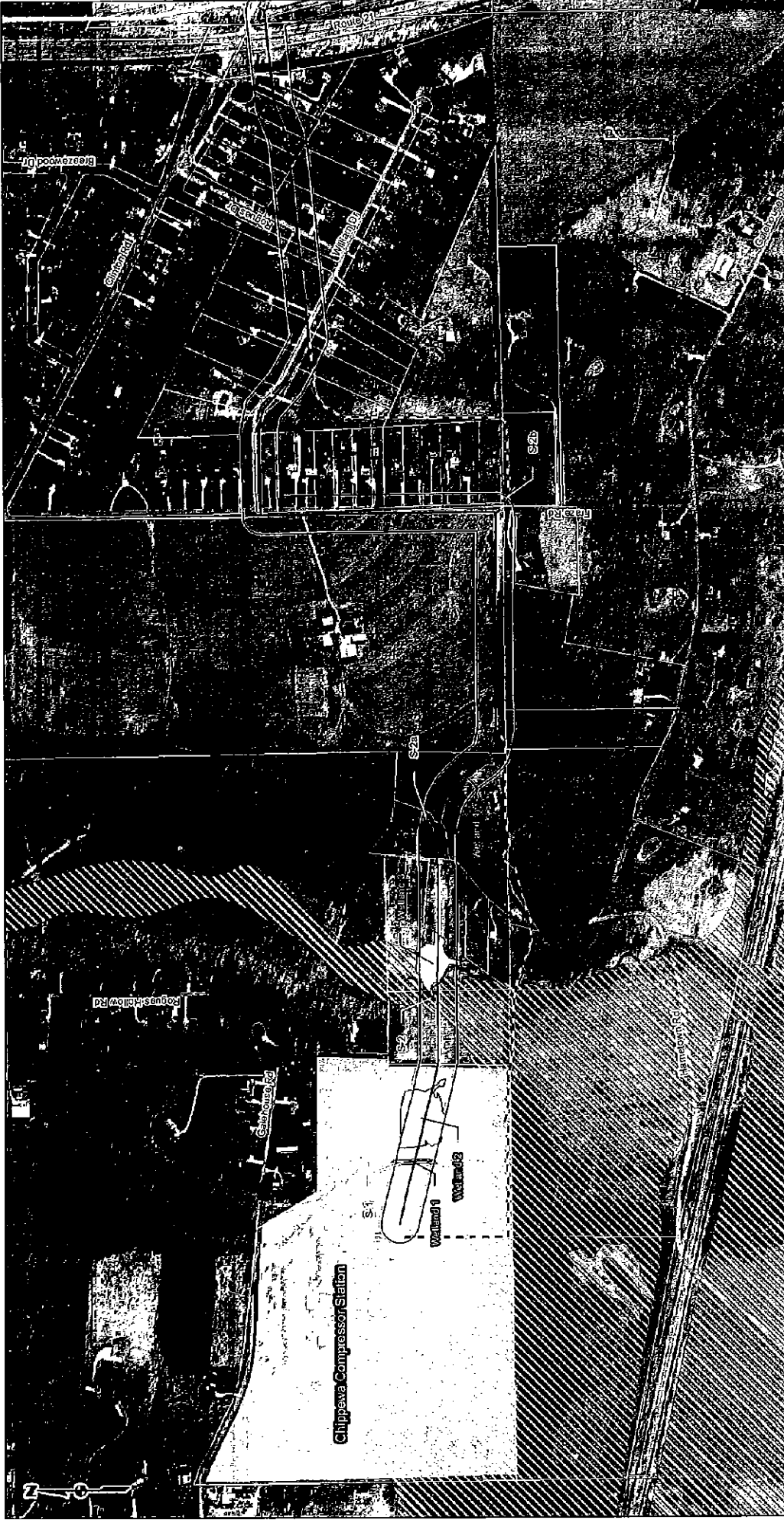
Common Name	Scientific Name
REPTILES	
Black Rat Snake	<i>Elaphe obsoleta obsoleta</i>
Eastern Garter Snake	<i>Thamnophis sirtalis sirtalis</i>
Eastern Milk Snake	<i>Lampropeltis triangulum triangulum</i>
Five-Lined Skink	<i>Eumeces fasciatus</i>
Northern Ring-necked Snake	<i>Diadophis punctatus edwardsii</i>
Queen Snake	<i>Regina septemvittata</i>
Red-eared Slider	<i>Trachemys scripta elegans</i>
Snapping turtle	<i>Chelydra serpentina</i>
AMPHIBIANS	
Bullfrog	<i>Rana catesbeiana</i>
Dusky Salamander	<i>Desmognathus fuscus</i>
Eastern American Toad	<i>Bufo americanus</i>
Fowler's Toad	<i>Bufo fowleri</i>
Gray Treefrog	<i>Hyla versicolor</i>
Green frog	<i>Rana clamitans melanota</i>
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>
Longtail Salamander	<i>Eurycea longicauda</i>
Northern Leopard Frog	<i>Rana pipiens</i>
Northern Spring Peeper	<i>Pseudacris crucifer crucifer</i>
Northern Two-Lined Salamander	<i>Eurycea bislineata</i>
Pickerel Frog	<i>Rana palustris</i>
Redback Salamander	<i>Plethodon cinereus</i>
Smallmouth Salamander	<i>Ambystoma texanum</i>
Spotted Salamander	<i>Ambystoma maculatum</i>
Western Chorus Frog	<i>Pseudacris triseriata</i>
Wood Frog	<i>Rana sylvatica</i>

SOURCES: Pflingsten, R., and Downs, F., ed. 1989. *Salamanders of Ohio* (Bulletin of the Ohio Biological Survey Ohio State University.
R. Conant, and J. Collins. 1998. *A Field Guide to Reptiles and Amphibians of Eastern and Central North America*.
Houghton Mifflin.

TABLE 07-8
MAMMAL SPECIES IDENTIFIED OR LIKELY TO OCCUR IN THE STUDY AREA

Common Name	Scientific Name
Big Brown Bat	<i>Eptesicus fuscus</i>
Coyote	<i>Canis latrans</i>
Deer Mouse	<i>Peromyscus maniculatus</i>
Eastern Chipmunk	<i>Tamias striatus</i>
Eastern Cottontail Rabbit	<i>Sylvilagus floridanus</i>
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>
Eastern Mole	<i>Scalopus aquaticus</i>
Eastern Pipistrelle Bat	<i>Pipistrellus subflavus</i>
Feral Cat	<i>Felis domesticus</i>
Fox Squirrel	<i>Sciurus niger</i>
Gray Fox	<i>Urocyon cinereoargenteus</i>
Groundhog/Woodchuck	<i>Marmota monax</i>
House Mouse	<i>Mus musculus</i>
Least Shrew	<i>Cryptotis parva</i>
Least Weasel	<i>Mustela nivalis</i>
Little Brown Bat	<i>Myotis lucifugus</i>
Meadow Jumping Mouse	<i>Zapus hudsonius</i>
Meadow Vole	<i>Microtus pennsylvanicus</i>
Mink	<i>Mustela vison</i>
Northern Long-eared Bat	<i>Myotis septentrionalis</i>
Northern Short-tailed Shrew	<i>Blarina brevicauda</i>
Raccoon	<i>Procyon lotor</i>
Red Bat	<i>Lasiurus borealis</i>
Red Fox	<i>Vulpes vulpes</i>
Red squirrel	<i>Tamiasciurus hudsonicus</i>
Star-nosed Mole	<i>Condylura cristata</i>
Striped Skunk	<i>Mephitis mephitis</i>
Virginia Opossum	<i>Didelphis virginiana</i>
White-footed Mouse	<i>Peromyscus leucopus</i>
White-tailed Deer	<i>Odocoileus virginianus</i>

SOURCES: ODNR Ohio's Wildlife Species Guide:
http://www.dnr.state.oh.us/Home/species_a_to_z/speciesguide_default/tabid/6491/Default.aspx
 Reid, Fiona. 2006. *Peterson Field Guide to Mammals of North America* (4th ed.) Houghton Mifflin.



Franklin 20" Natural Gas Pipeline Project

Dominion

**FIGURE 07-1A
WETLAND DELINEATION AND STREAM
ASSESSMENT MAP**

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FIGURE KEY

0 250 500 1,000
Scale in Feet

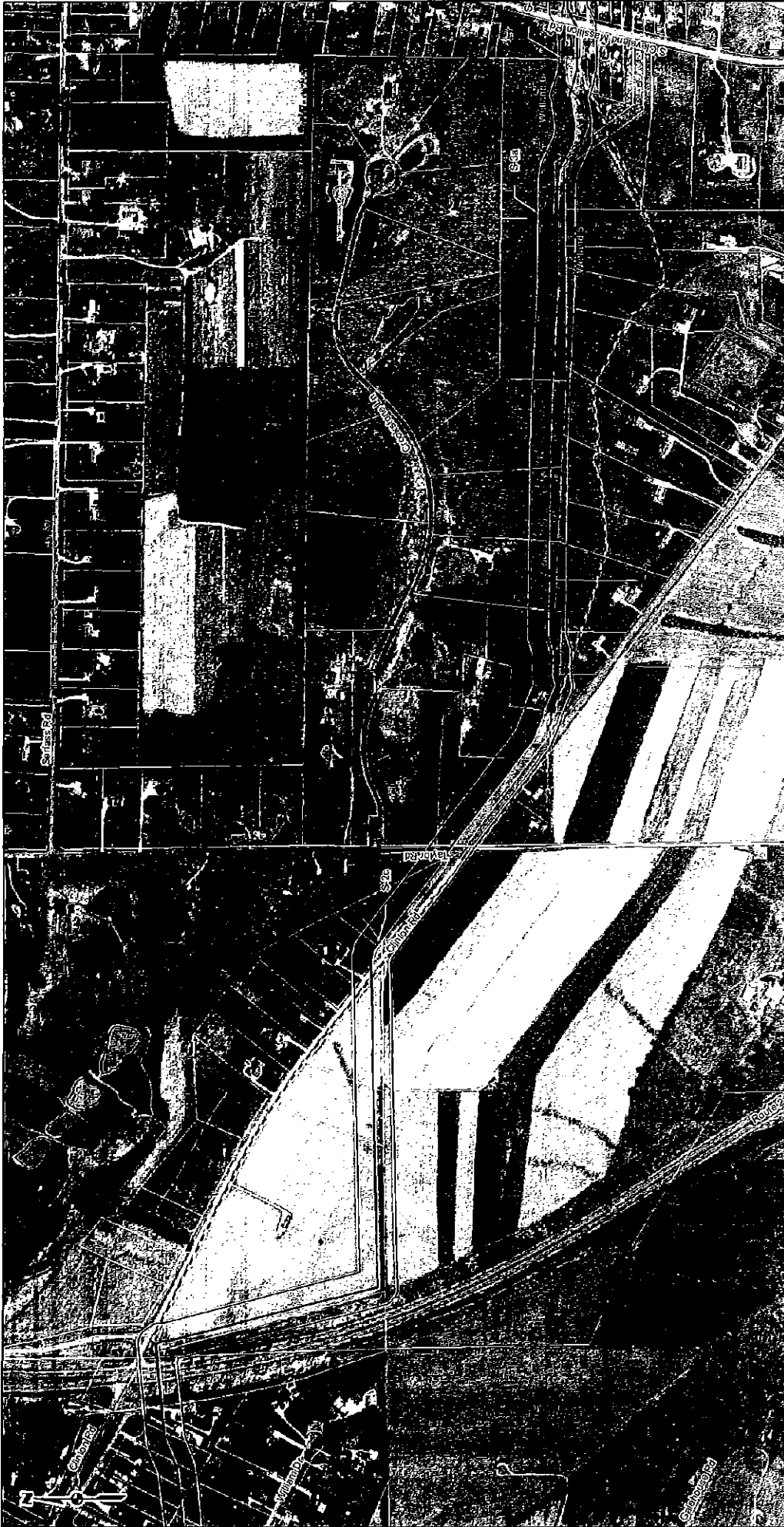
LEGEND

- Preferred Route
- Alternate Route
- 200-Foot Preferred Route Corridor
- Compressor or Valve Station
- Parcel Boundary
- Delimited Wetland
- Delimited Stream
- Pond
- FEMA 100-Year Floodplain
- Ohio Department of Natural Resources (ODNR) Managed Area
- Ohio Department of Natural Resources (ODNR) Species of Concern Record Location

Note: Wetland and stream delineations were completed for the Preferred Route and portions of the Alternate Route that share commonality with the Preferred Route.

gi consultants

Base Map Source: 2006 Ohio Statewide Imagery Program (OSIP) Aerial Photography of Wayne and Summit Counties, Ohio.



LEGEND

- Preferred Route
- Alternate Route
- 200-Foot Preferred Route Corridor
- Compressor or Valve Station
- Parcel Boundary
- Delineated Wetland
- Delineated Stream
- Pond
- FEMA 100-Year Floodplain
- Ohio Department of Natural Resources (ODNR) Managed Area
- Ohio Department of Natural Resources (ODNR) Species of Concern Record Location

FIGURE KEY

Scale in Feet

FIGURE 07-1B

WETLAND DELINEATION AND STREAM ASSESSMENT MAP

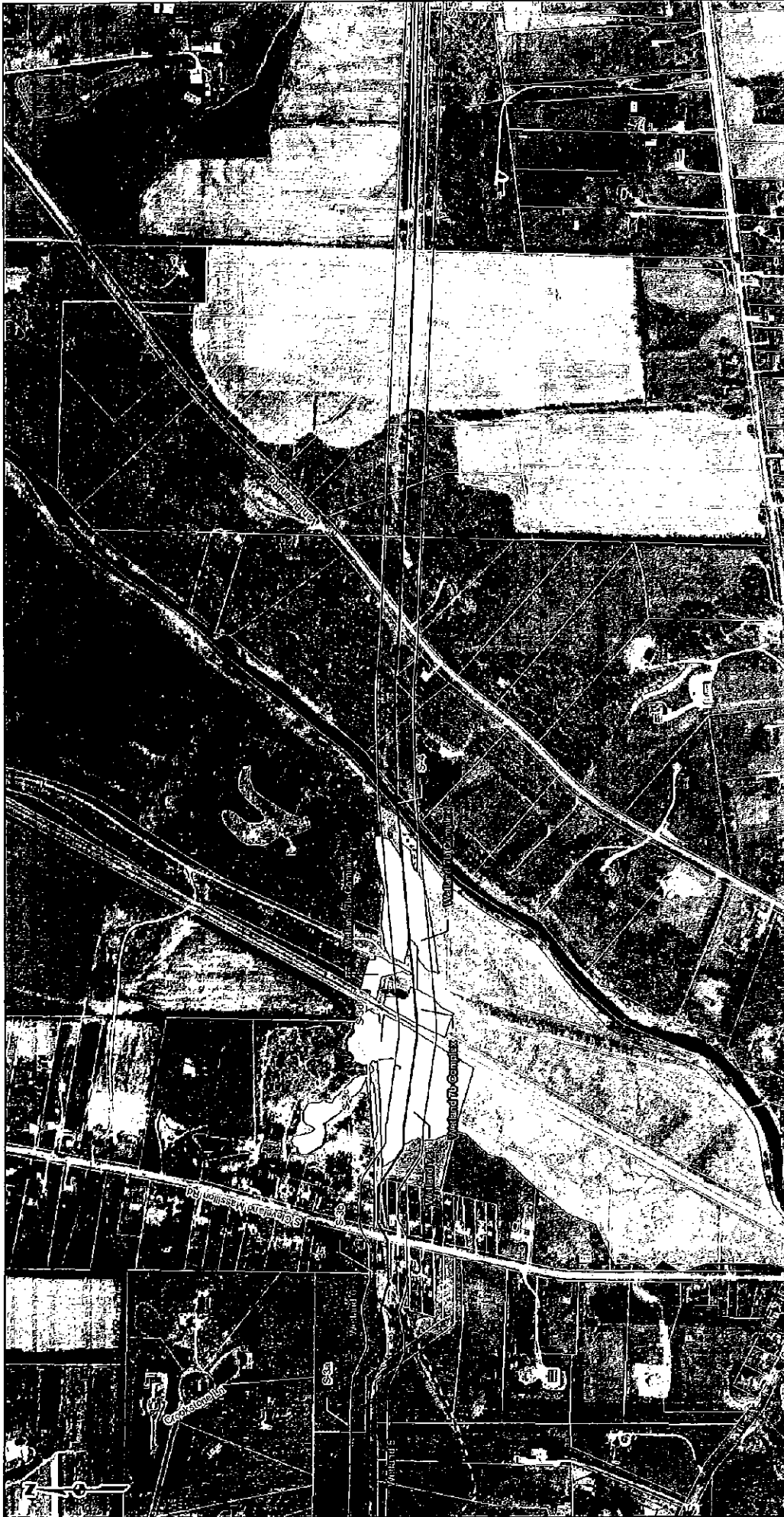
Franklin 20" Natural Gas Pipeline Project

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Note: Wetland and stream delineations were completed for the Preferred Route and portions of the Alternate Route that share commonality with the Preferred Route.

Base Map Source: 2008 Ohio Statewide Imagery Program (OSIP) Aerial Photography of Wayne and Summit Counties, Ohio.

JOB NO. G080283.00



Franklin 20" Natural Gas Pipeline Project

FIGURE 07-1C

WETLAND DELINEATION AND STREAM ASSESSMENT MAP

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FIGURE KEY

Scale in Feet

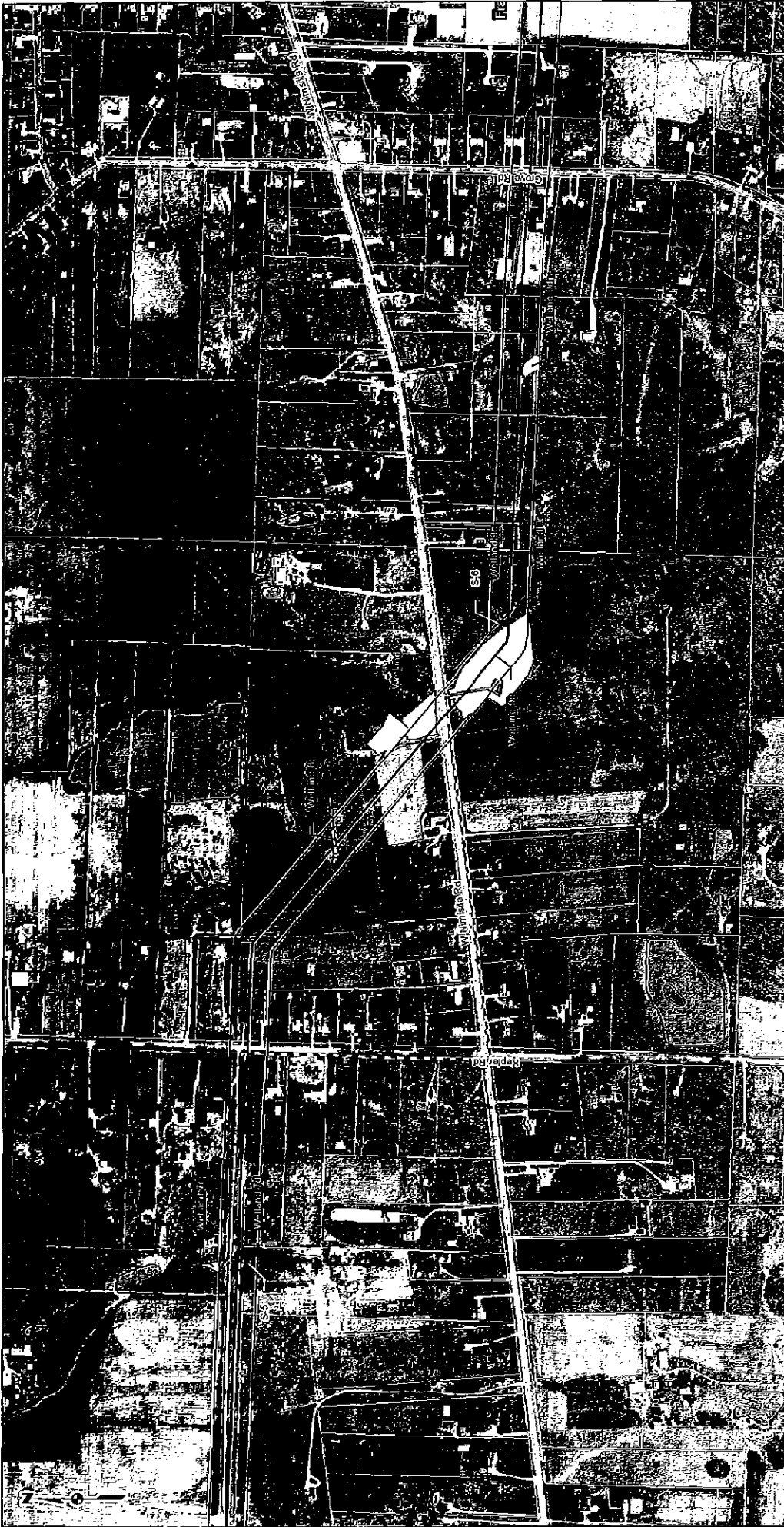
gial consultants

LEGEND

- Preferred Route
- Alternate Route
- 200-Foot Preferred Route Corridor
- Compressor or Valve Station
- Parcel Boundary
- Delineated Wetland
- Delineated Stream
- Pond
- FEMA 100-Year Floodplain
- Ohio Department of Natural Resources (ODNR) Managed Area
- Ohio Department of Natural Resources (ODNR) Species of Concern Record Location

Note: Wetland and stream delineations were completed for the Preferred Route and portions of the Alternate Route that share commonality with the Preferred Route.

Base Map Source: 2016 Ohio Statewide Imagery Program (OSIP) Aerial Photography of Wayne and Summit Counties, Ohio.



LEGEND

- Preferred Route
- - - Alternate Route
- ▭ 200-Foot Preferred Route Corridor
- ▭ Compressor or Valve Station
- ▭ Parcel Boundary
- ▭ Delineated Wetland

- Delineated Stream
- ▭ Pond
- ▨ FEMA 100-Year Floodplain
- ▭ Ohio Department of Natural Resources (ODNR) Managed Area
- ▭ Ohio Department of Natural Resources (ODNR) Species of Concern Record Location

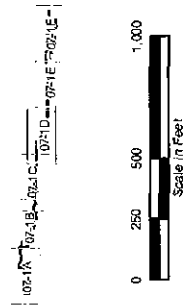
Note: Wetland and stream delineations were completed for the Preferred Route and portions of the Alternate Route that share commonality with the Preferred Route.

Basic Map Source: 2006 Ohio Statewide Imagery Program (OSIP) Aerial Photography of Wayne and Summit Counties, Ohio.



gal consultants

FIGURE KEY



Franklin 20" Natural Gas Pipeline Project

**FIGURE 07-1D
WETLAND DELINEATION AND STREAM
ASSESSMENT MAP**

APPENDIX 07-1A

ENVIRONMENT & ARCHAEOLOGY LLC WETLAND DELINEATION REPORT

WETLAND DELINEATION REPORT

East Ohio Gas Expansion Project

**Franklin 20" Diameter Gas Storage Pipeline
8.7-Miles
Summit and Wayne Counties, Ohio**

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1.0 INTRODUCTION

In conjunction with the East Ohio Gas Expansion Project (Project), Dominion East Ohio (DEO) has proposed the installation of approximately 8.7 miles of new, contiguous 20-inch diameter steel pipeline in Summit and Wayne Counties in northeast Ohio (Appendix A: Figures 1a-1c). The new pipeline installation will occur within an existing right-of-way (ROW) that is currently occupied by varying numbers of existing natural gas pipelines.

Dominion Resources, Inc. retained *Environment and Archaeology, LLC* to perform a wetland delineation of the proposed construction corridor for the Project. The survey area associated with the project consisted of a 75-foot wide by approximately 9-mile long, non-contiguous, linear corridor; the survey corridor widened to varying widths where multiple pipelines lay within a common, maintained easement. The additional survey mileage is attributed to three adjacent pipeline rights-of-ways that were investigated as potential alignment routes for the new installation and two proposed new corridor right-of-way alignments. This report does not include information regarding access roads, staging areas, pipeyards, or other additional temporary work spaces. An initial corridor survey was conducted on December 18-20, 2006. After the proposed pipeline centerline had been staked in the field, addendum field surveys were conducted on April 26 and 27, 2008 and May 14, 2008. Table 1 identifies the proposed Project components.

The field surveys performed by *Environment and Archaeology, LLC* were designed to identify any wetlands and waterbody encroachments within the project area in accordance with current state and federal regulations. The field survey identified 11 (eleven) wetlands and fourteen (14) stream encroachments of twelve (12) different stream channels along the proposed alignment corridor (Appendix A: Figures 1a-1d). This report details the methodology used during the survey and describes the survey findings.

2.0 METHODOLOGY

Environment and Archaeology, LLC utilized the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) to perform the delineations for this project. This methodology calls for a step-by-step approach to the delineation which identifies the presence or absence of three factors: hydrophytic vegetation, hydric soils, and wetland hydrology. Each factor must be present if a location is to be considered a jurisdictional wetland. Prior to visiting the site, all available resource information on the proposed project area was reviewed to determine the potential presence of wetlands. This information included U.S. Geological Survey 7.5' topographic maps, U.S. Department of Agriculture, Natural Resource Conservation Service (USDA, NRCS) soil surveys, National Wetlands Inventory maps, and Ohio Wetland Inventory Maps.

Table 1.
East Ohio Gas Expansion Project
Proposed Project Components
Summit and Wayne Counties, Ohio

Project Facilities	Construction Dimensions				Survey Dimensions				
	Diameter (in)	Length (ft)	Width (ft)	Disturbance (acres)	Comments for Acres Disturbed/Land Use	Length (ft)	Width (ft)	Acres Surveyed	Comments for Acres Surveyed/ Land Use
NEW PIPELINE INSTALLATION WITHIN EXISTING ROW EASEMENT									
Wayne and Summit Counties									
Chippewa Station to Shoop Station	20	48,640	60	67	Existing pipeline easement; line will be parallel to existing pipelines. Land use included urban/industrial turf, old field, pasture, agricultural field, upland scrub-shrub, upland mixed deciduous forest, palustrine emergent wetland, palustrine emergent scrub/shrub wetland, and palustrine emergent scrub/shrub forested wetland complex.	48,640	75	83.7	Additional acreage for survey accounts for splits in the existing ROWs and where alternative ROWs (5) were investigated.
SUBTOTAL	—	48,640	—	67	—	48,640	75	83.7	—

After a review of the agency resource information, *Environment and Archaeology, LLC* conducted a field delineation of the survey corridor. *Environment and Archaeology, LLC* utilized the routine on-site method for the delineation. Representative plots were taken within the project area wherever a change in the vegetation, soils, or hydrology became apparent. During sampling, a determination was made as to whether the plot was wetland or upland. If an area was determined to be wetland, additional sampling of soils, vegetation and hydrology was performed to determine the boundaries of the wetland area. Dominant vegetation was determined by estimating percent areal coverage for the most prevalent species which cumulatively totaled 50 percent of the areal coverage along with any other single species accounting for at least 20 percent coverage within a plot. Each species was assigned a wetland indicator status (Reed 1988).

If wetlands were identified during the field survey, the wetland/upland boundary of each wetland was marked with pink flagging tape. A handheld GPS unit was used to mark each flag location. Each wetland was described in accordance with characteristics assigned by the United States Fish and Wildlife Service (1979) and photo-documented. Total size of each identified wetland area was estimated based on field observations and ArcGIS mapping measurements.

3.0 AGENCY RESOURCE INFORMATION

Prior to initiation of the field survey, available agency resource information was reviewed to determine the likelihood of wetlands being present within the proposed survey corridor. The corresponding National Wetland Inventory Maps have been prepared by the United States Fish and Wildlife Service; the Ohio Wetland Inventory Maps have been prepared by the Ohio Department of Natural Resources; the USDA Soil Surveys for Summit and Wayne Counties, Ohio have also been published (USDA 1990 and 1984, respectively).

3.1 U.S. Geological Survey (USGS) Map

New Pipeline Installation

The survey areas associated with the new pipeline installation are located on the the Doylestown, Ohio and Canal Fulton, Ohio 7.5-minute USGS topographic maps (Appendix A: Figures 1a-1c). The alignment has been primarily routed along existing pipeline easements in the Clinton, Ohio and Manchester, Ohio vicinities; the pipeline kick-off occurs west of Silver Creek and terminates west of the Nimisila Reservoir. The elevation associated with the new pipeline installation ranged from approximately 585 feet to 1,200 feet above mean sea level (AMSL) and the terrain was comprised of a mix of open lands and forest across level to occasional areas of moderately steep slope aspects.

The entire pipeline installation portion of the proposed project is located within the Tuscarawas River Basin. The new pipeline installation will cross the following USGS-identified streams along its proposed alignment:

- Intermittent tributary to Chippewa Creek (S1)
- Silver Creek (S2)

- Intermittent tributary to Tuscarawas River (S3); three pipeline centerline crossings along proposed alignment and one additional crossing occurs along a proposed alternate route)
- Tuscarawas River (S4)
- Perennial tributary to the Tuscarawas River (S5)
- Perennial tributaries to Nimisila Creek (S6, S7, S10)
- (Stream S7a, S8, S9, and S10a were unmapped ephemeral stream channels)

Based on the field investigation, a total of six (6) perennial stream crossings, four (4) intermittent stream crossings of two intermittent streams, as well as four (4) ephemeral stream crossings were identified within the survey area associated with the new pipeline installation; the alternate route provided an additional crossing of an intermittent tributary to Tuscarawas River (S3). Additional information regarding the USGS-identified waterbodies has been outlined in Table 3 and Appendix A.

3.2 National Wetland Inventory (NWI) Map

New Pipeline Installation

The survey areas associated with the new pipeline installation and the addition of a building at the Chippewa Compressor Station are located on the following NWI maps: Doylestown and Canal Fulton (Appendix B: Figures 2a-2d). The NWI maps identified five (5) surface water complexes within or near the new pipeline construction corridor:

- R5OWZ (Canal Fulton, Ohio NWI Map) - Riverine, upper perennial, open water, regularly flooded water regime. Wetland W-1 and Silver Creek/Rogue Hollow corresponded with this mapped NWI location.
- *PSSIC/PEMC* (Canal Fulton, Ohio NWI Map) - Palustrine, scrub/shrub wetland system with broad-leaved deciduous vegetation and a seasonally flooded water regime. Wetland W-7a and W-7b was located in the vicinity of area mapped on the NWI as *PSSIC/PEMC*. Wetland W-7b also possessed a large palustrine forested component in this mapped area.
- R20WZ (Canal Fulton, Ohio NWI Map) - Riverine, lower perennial, open water, regularly flooded water regime. The Tuscarawas River (Stream 4) corresponded with this NWI-mapped waterbody location.
- *PSS1Y/PEMY* (Doylestown, Ohio NWI Map) - Wetland complex including a palustrine, scrub/shrub wetland system with broad-leaved deciduous vegetation and a saturated/semipermanent/seasonal water regime and a palustrine emergent wetland system with a seasonally flooded water regime. Wetland W-9a and W-9b was located in a portion of the area mapped on the NWI as *PSS1Y/PEMY*.

- *PSSIY/PEMY* (Doylestown, Ohio NWI Map) - Wetland complex including a palustrine, scrub/shrub wetland system with broad-leaved deciduous vegetation and a saturated/semipermanent/seasonal water regime and a palustrine emergent wetland system with a seasonally flooded water regime. Wetland W-10 was located immediately south of this NWI-mapped wetland complex.

The absence of NWI-identified wetlands in portions of the project area, however, does not preclude the possible existence of wetlands in the area. NWI maps utilize high altitude, stereoscopic, aerial photography, and is partially dependent on the conditions at the time of the photograph. In many cases, small wetlands may not be identified. The determination of the presence of wetlands is based on vegetation, hydrology, and topography. During the field surveys performed between December 2006 and May 2008, 11 wetlands/wetland complexes were identified within the pipeline survey area. Additional information regarding the field-delineated wetlands has been outlined in Table 3 and Appendices E and F.

3.2.1 Ohio Wetland Inventory Maps

New Pipeline Installation

Ohio Wetlands Inventory Maps have been published for Summit and Wayne Counties, Ohio and was downloaded for GIS mapping (<http://www.dnr.state.oh.us/dnap/wetlands/mapping>). The survey areas associated with the new pipeline installation are located in Appendix C: Figures 3a-3c. The OWI maps identified several wetlands (woods on hydric soils, scrub/shrub wetlands, wet meadow, and shallow marshes) within or near the new pipeline construction corridor. The following OWI wetlands corresponded approximately to those identified during the field survey.

- Woods on hydric soils - Wetland 7a;
- Woods on hydric soils/scrub-shrub/wet meadow - Wetland 7b;
- Woods on hydric soils - Wetland 9a;
- Shallow marsh/woods on hydric soils/wet meadow - Wetland 9b;
- Woods on hydric soils - Wetland 10

The Ohio Wetlands Inventory is based on analysis of satellite data and is intended solely as an indicator of wetland sites for which field review should be conducted. The satellite data reflects conditions during the specific year and season the data was acquired and all wetlands may not be indicated. The Ohio Wetlands Inventory for Summit and Wayne Counties were produced from April 1987 Landsat Thematic mapper data using ERDAS Image processing software.

3.3 Natural Resource Conservation Service (NRCS) Soil Survey

The U.S. Department of Agriculture publishes Soil Surveys for almost every county in the United States. The information in the surveys is used by planners and agrarians to determine the appropriate uses and limitations of a particular soil. Soil Surveys identify prime farmlands, slopes, waterways and hydric soils within the county. Hydric soils are soils which formed under saturated

conditions. The presence of hydric soils on a site indicates the historical presence of conditions which would favor the development of wetlands. The presence of hydric soil types on a site, however, does not guarantee the presence of wetlands. Due to changes in vegetational patterns, hydrology, and hydrophytic vegetation, wetlands may no longer be present within the area.

A brief description of each soil type located within the survey area, as well as its hydric status is located in Table 2 and Figures 4a-4c in Appendix D illustrate the location of the project.

4.0 SITE DESCRIPTION

The survey area for the new pipeline installation began at the Dominion EOG Chippewa Station in Wayne County and extended east to a facility tie-in at the Shoop Station north of Comet, Ohio in Summit County. The survey routes followed existing pipeline right-of-way easements which varied in their level of clearing maintenance. A survey width was defined to be a 75-foot width that widened to contain an entire maintained easement where multiple pipelines occupied a common corridor. A 60-foot width has been projected to be the required construction width to allow successful installation of the new 20-inch diameter pipeline.

At the time of the December field survey, Dominion East Ohio had not determined whether the new pipeline installation would be placed to the north or south side of the right-of-way. A 100-foot survey width was presumed to contain the entire necessary construction width and where easement limits were not easily discernable.

The April and May 2008 site visits narrowed the delineation boundaries to an approximate 60-foot width that was centered on the proposed and staked pipeline centerline. Again, right-of-way maintenance varied along the corridor, and as such, some delineation boundaries did extend beyond a 60 and up to a 100-foot width, in order to assure that all potential areas of impact were included.

Nine (9) land types were identified within the survey area associated with the new pipeline installation: 1) urban/industrial turf, 2) old field, 3) pasture, 4) agricultural field, 5) upland scrub-shrub, 6) upland mixed deciduous forest, 7) palustrine emergent wetland, 8) palustrine emergent scrub/shrub wetland, and 9) palustrine emergent scrub/shrub forested wetland complex. A brief description of each vegetational community is provided below.

Urban/industrial turf: Urban/industrial turf within the survey area was comprised of impervious and semi-impervious surfaces such as existing paved and/or gravel roadways and residential driveways. The proposed new alignment will cross numerous township, county and state maintained roads and one railroad grade - Hamctown Road, Frazee Drive, SR21, Clinton Road, CR 17, Township Road 31, Township Road 57, CR 221, CR235, CSX railroad, Steve Drive, Manchester Road, Weaver Road, Regay Drive, Canterbury Drive and CR50.

Table 2.
Soil Types Crossed by the East Ohio Gas Expansion Project
Summit and Wayne Counties, Ohio

Component	County	Soil Type	Symbol	Hydric Status
Chippewa Station to Shoop Station	Wayne	Berks silt loam, 18-25 percent slopes	BrE	Non-hydric
		Berks silt loam, 25-70 percent slopes	BrF	Non-hydric
		Bogart loam, 2-6 percent slopes	BtB	Non-hydric
		Canfield silt loam, 0-2 percent slopes	CdA	Non-hydric
		Canfield silt loam, 2-6 percent slopes	CdB	Non-hydric
		Canfield silt loam, 6-12 percent slopes, eroded	CdC2	Non-hydric
		Euclid silt loam, occasionally flooded	EuA	Hydric
		Loudonville silt loam, 2-6 percent slopes	LnB	Non-hydric
		Loudonville silt loam, 6-12 percent slopes, eroded	LnC2	Non-hydric
		Loudonville silt loam, 12-18 percent slopes	LnD	Non-hydric
		Melvin silt loam, frequently flooded	Md	Hydric
		Orrville silt loam, occasionally flooded	Or	Non-hydric
		Oshtemo sandy loam, 2-6 percent slopes	OtB	Non-hydric
		Wooster-Riddles silt loams, 2-6 percent slopes	WuB	Non-hydric
	Summit	Bogart loam, 2 to 6 percent slopes	BgB	Non-hydric
		Canfield silt loam, 2 to 6 percent slopes	CdB	Non-hydric
		Dekalb sandy loam, 12 to 18 percent slopes	DkD	Non-hydric
		Dekalb sandy loam, 18 to 25 percent slopes	DkE	Non-hydric
		Fitchville silt loam, 2 to 6 percent slopes	FeB	Non-hydric
		Frenchtown silt loam	Fr	Hydric
		Holly silt loam, alkaline	Hy	Hydric
		Lobdell silt loam	Le	Non-hydric
		Ravenna silt loam, 0 to 2 percent slopes	ReA	Hydric
		Sebring silt loam	Sb	Hydric
		Sloan silt loam	So	Hydric
		Wooster silt loam, 2 to 6 percent slopes	WuB	Non-hydric
Wooster silt loam, 6 to 12 percent slopes, moderately eroded	WuC2	Non-hydric		
Wooster silt loam, 12 to 18 percent, moderately eroded	WuD2	Non-hydric		
Wooster silt loam, 25 to 50 percent slopes, moderately eroded	WuF2	Non-hydric		

In addition to the impervious and semi-impervious surfaces, the urban/industrial turf also included maintained lawn vegetation identified around surrounding roadways, adjacent to existing residential properties, and within the existing pipeline ROW. The proposed alignment will also travel through the grounds of the Dominion EOG Franklin Station.

Old field: Old field vegetation was identified adjacent to and within the existing and proposed pipeline ROW. Dominant vegetation within these areas included fescue (*Festuca* spp.), tall ironweed (*Vernonia gigantea*), bottle brush grass (*Elymus hystrix*), yarrow (*Achillea millefolium*), Queen Anne's lace (*Daucus carota*), foxtail grass (*Setaria* spp.), ground ivy (*Glechoma hederaceae*), goldenrod (*Solidago* spp.), red clover (*Trifolium pratense*), yellow rocket (*Barbarea vulgaris*), white clover (*Trifolium repens*), dandelion (*Taraxacum officinale*), English plantain (*Plantago lanceolata*), ground ivy (*Glechoma hederacea*), chickweed (*Stellaria* spp.), curly dock (*Rumex crispus*), and pokeweed (*Phytolacca americana*).

Pasture: Pasture lands were noted adjacent to and within portions of the existing and proposed ROW in areas containing livestock. Typical species within the pasture included typical pasture grasses (*Festuca* spp., *Poa* spp.), goldenrod (*Solidago* spp.), red clover (*Trifolium pratense*), Queen Anne's lace (*Daucus carota*), burdock (*Arctium minus*), yarrow (*Achillea millefolium*), and field garlic (*Allium vineale*).

Agricultural field: Land utilized for the agricultural production of row crops was present adjacent to and within portions of the existing and proposed ROW. Based on the remnants of the 2006 crop season, it appeared that corn (*Zea mays*) and soybean (*Glycine max*) had been harvested.

Upland scrub-shrub: Upland scrub-shrub vegetation was located adjacent to and within portions of the existing and proposed ROW. Dominant vegetation within these areas included the following species: staghorn sumac (*Rhus typhina*), multiflora rose (*Rosa multiflora*), brambles (*Rubus* spp.), honey locust (*Gleditsia triacanthos*), wild senna (*Cassia hebecarpa*), honeysuckle (*Lonicera japonica*, *Lonicera* spp.), teasel (*Dipsacus sylvestric*), goldenrod (*Solidago* spp.), indian hemp (*Apocynum cannabinum*), greenbrier (*Smilax* spp.), and wild grape (*Vitis* spp.).

Upland mixed deciduous forest: Mixed deciduous forest was located adjacent to and within the survey corridor. This vegetational community consisted of a oak-maple canopy that was dominated by the following species: sugar maple (*Acer saccharum*), white oak (*Quercus alba*), American beech (*Fagus grandifolia*), and red oak (*Quercus rubra*). The most common sub-dominant species including the following: black cherry (*Prunus serotina*), sassafras (*Sassafras albidum*), serviceberry (*Amelanchier* sp.), flowering dogwood (*Cornus florida*), white pine (*Pinus strobus*), sweet gum (*Liquidambar styraciflua*), and common hackberry (*Celtis occidentalis*). The herbaceous understory mix included garlic mustard (*Allaria petiolata*), violets, (*Viola* spp.), multiflora rose (*Rosa multiflora*), Christmas fern (*Polystichum acrostichoides*), greenbrier, may apple (*Podophyllum peltatum*), trout lily (*Clintonia borealis*), poison ivy (*Toxicum radicans*), and spring beauty (*Claytonia virginica*).

Riparian growth along some stream included black willow (*Salix nigra*), box elder (*Acer negundo*), silver maple (*Acer saccharum*), and red maple (*Acer rubrum*) and stinging nettle (*Urtica dioica*).

Palustrine emergent wetland: Canary grass was predominant in many of the emergent wetlands (*Phalaris arundinacea*), as was skunk cabbage (*Symplocarpus foetida*). The following species were also common occurrences: soft rush (*Juncus effusus*), common cattail (*Typha latifolia*), yellow nut-sedge (*Cyperus esculentus*), Carex (*Carex* spp.), deer tongue grass (*Dichanthelium clandestinum*), ironweed (*Vernonia* spp.), moneywort (*Lysimachia nummularia*), foxtail grass (*Setaria* sp.), agrimony (*Agrimonia parviflora*), arrowhead (*Sagittaria latifolia*), spearmint (*Mentha spicata*), spike rush (*Eleocharis* sp.), lady's thumb (*Polygonum persicaria*), jewelweed (*Impatiens* spp.), rough-stemmed goldenrod (*Solidago rugosa*), creeping buttercup (*Ranunculus repens*), beggar ticks (*Bidens* sp.), and sensitive fern (*Onoclea sensibilis*).

Palustrine emergent scrub/shrub wetland: Complexes of palustrine emergent scrub/shrub wetlands possessed a wider diversity of hydrophytic vegetation. The wetland was dominated by common cattail (*Typha latifolia*), soft rush (*Juncus effusus*), yellow nut-sedge (*Cyperus esculentus*), ironweed (*Vernonia* spp.), greenbrier (*Smilax* spp.), Carex (*Carex* spp.), beggar ticks (*Bidens* spp.), rice cut grass (*Leersia oryzoides*), green bulrush (*Scirpus atrovirens*), moneywort (*Lysimachia nummularia*), multiflora rose (*Rosa multiflora*), deer tongue grass (*Dichanthelium clandestinum*), Viburnum (*viburnum dentatum*), rough-stemmed goldenrod (*Solidago rugosa*), boneset (*Eupatorium perfoliatum*), box elder saplings (*Acer negundo*), willow saplings (*Salix* spp.), speckled alder (*Alnus incana*), and hawthorn (*Crataegus* spp.).

Palustrine emergent scrub/shrub forested wetland complex: The forested component possessed the following tree species: sycamore (*Platanus occidentalis*), pin oak (*Quercus palustris*), slippery elm (*Ulmus rubra*), cottonwood (*Populus deltoides*), green ash (*Fraxinus pensnsylvanicus*), and sweet gum (*Liquidambar styraciflua*). The scrub/shrub component of the wetland area was supported by soft rush (*Juncus effusus*), yellow nut-sedge (*Cyperus esculentus*), ironweed (*Vernonia* spp.), greenbrier (*Smilax* spp.), Carex (*Carex* spp.), beggar ticks (*Bidens* spp.), rice cut grass (*Leersia oryzoides*), green bulrush (*Scirpus atrovirens*), moneywort (*Lysimachia nummularia*), multiflora rose (*Rosa multiflora*), deer tongue grass (*Dichanthelium clandestinum*), rough-stemmed goldenrod (*Solidago rugosa*), boneset (*Eupatorium perfoliatum*), willow saplings (*Salix* spp.), and hawthorn (*Crataegus* spp.).

5.0 DELINEATION RESULTS

The field delineation of the survey area identified eleven (11) wetlands and twelve (12) streams for a total of fourteen (14) stream crossing locations that occurred along one contiguous length of right-of-way beginning at Chippewa Station in Wayne County and ending at Shoop Station in Summit County. A photolog of each surface water and wetland is available in Appendix E. *Environment and Archaeology, LLC* also investigated five right-of-way easements that were considered by Dominion as alternate locations for the new pipeline installation. The alternate locations were situated in the following areas:

- possible new right-of-way acquisition, paralleling the west side of Frazee Road, crossing to the east side of Frazee Road and rejoining the Stor 3300 and L#3399 right-of-way;
- east of Frazee Road where new right-of-way acquisition would extend south and east of residential parcels, situated at an approximate 30-foot offset from residential property lines;
- west of Clinton Road continuing east to Cleveland Massillon Road (CR17) where an existing ROW containing pipelines Stor4700 and #Stor3300;
- east and west of the CSX railroad, where an existing right-of-way - Stor #4700- occurs north of the proposed route; and
- east of Nimisila Road at Wetland 9b and following the pipeline easement containing L#3399 and CS#3762

5.1 Surface Waters within the Primary Route Survey Area

During the field surveys, 12 surface waters were identified within the survey area.

New Pipeline Installation

The survey corridor associated with the new pipeline installation crossed or encroached upon a total of twelve (12) streams for a total of fourteen stream crossings; Stream 3 was crossed a total of three times. The twelve (12) streams crossed by the project consisted of:

- six (6) perennial stream crossings (S2, S4, S5, S6, S7, and S10);
- two (2) intermittent stream crossings (S1, S3); and
- four (4) ephemeral stream crossings (S7a, S8, S9, and S10a).

A detail of each stream crossing regarding the identified stream channels has been outlined in Table 3, identified on the Canal Fulton, Ohio and Doylestown, Ohio quadrangles in Appendix A and photodocumented in Appendix D.

5.2 Palustrine Wetlands within the Primary Route Area

During the field survey, a total of eleven (11) palustrine wetlands were identified within the survey areas. Approximate wetland acreages were determined based on the field investigation and ArcGIS mapping measurements (Table 3). The common vegetation identified within each wetland type is addressed in Section 4.0; species-specific information for each wetland, in addition to soil colors/textures data and hydrology criteria can be found in Appendix F: Routine Wetland Delineation Data Sheets. The Ohio Rapid Assessment Method for Wetlands was completed for each wetland identified during the field survey (Appendix G).

**Table 3.
Waterbodies within the proposed Franklin 20" Gas Storage Pipeline Corridor
Summit and Wayne Counties, Ohio**

<i>Environment and Archaeology, LLC</i> Waterbody #	Waterbody Type	NWI/ USGS-identified/ ORAM Category	Bank Dimensions (feet)	Water Dimensions	ROW Width Surveyed/ Construction Width (feet)	Length of Wetland Crossing (approx.)	Approx. Acreage (const. width)
PROPOSED NEW PIPELINE INSTALLATION							
W1 S1	PEM Wetland	Category 1	---	NA	100/60	20'	0.03
	Intermittent	Unnamed tributary to Chippewa Creek	1-2' deep x 7-8" wide	1-2'	100/60	---	---
W2	PEM Wetland	Category 1 or 2	---	0-3"	100/60	270'	0.43
S2 W3	Perennial	Silver Creek/Rogue Hollow	25-30' wide x 4' deep	2-3'	100/60	--	---
	PEM Wetland	Category 1 or 2	---	0"	100/60	210'	0.33
W4	Vernal Pool	Category 1	---	0-2"	100/60	30'	0.02
W5 S3	PEM Wetland (fringe wetland along stream channel)	Category 1	----	0"	100/60	10'	0.005
	Intermittent	Unnamed tributary to Tuscarawas River (1 st Crossing)	20' wide x 4' deep	0-5"	100/60	---	---
W6	PEM Wetland	Category 1	---	0-2"	100/60	110'	0.03
S3	Intermittent	Unnamed tributary to Tuscarawas River (2 nd Crossing)	20' wide x 4' deep	3"-2'	100/60	---	---
W7a	PEM/SS Wetland	Category 2	---	Depth Unavailable	100/60	750' west of railroad	0.94

**Table 3.
Waterbodies within the proposed Franklin 20" Gas Storage Pipeline Corridor
Summit and Wayne Counties, Ohio**

<i>Environment and Archaeology, LLC</i> Waterbody #	Waterbody Type	NWI/ USGS-identified/ ORAM Category	Bank Dimensions (feet)	Water Dimensions	ROW Width Surveyed/ Construction Width (feet)	Length of Wetland Crossing (apx. ox.)	Approx. Acreage (const. width)
		Unnamed tributary to Tuscarawas River (crossing)	1.5-2' wide x 2.5' deep	2'	100/60	---	---
W7b	PI	PSSIC-PEM/C/Category 2		Unavailable	100/60	170' railroad and east to Towpath	0.99
W7b		PSSIC/PEM/PO/Category 3					
S4	Perennial	Tuscarawas River (Section 10 Waterbody)	70' wide x 10' deep	Unavailable	100/60	---	---
S5	Perennial	Unnamed tributary to Tuscarawas River	5' wide x 2-3' deep	3-12"	100/60	---	---
W8	PEM Wetland	Category 1	---	---	100/60	35'	0.04
W9a	PEM Wetland	Modified Category 2	---	---	100/60	85'	0.12
W9b	PEM Wetland	PSSIY-PEMY/Category 1	---	1-2.5"	100/60	515'	0.66
S6	PEM fringe wetland	Unnamed tributary to Nimisila Creek	10-15' wide x 10' deep	1-8"	100/60	10'	
S7a	ephemeral	Unnamed tributary to Nimisila Creek	stream channel parallels ROW	4-10"	100/60	---	0.46
W10	PEM'SS Wetland	/ Category 2	---	0-3"	100/60	470'	---
S7	Perennial	Unnamed tributary to Nimisila Creek	10' wide x 3' deep	5-6"			

Table 3.
Waterbodies within the proposed Franklin 20" Gas Storage Pipeline Corridor
Summit and Wayne Counties, Ohio

<i>Environment and Archaeology, LLC</i> Waterbody #	Waterbody Type	NWI/ USGS -identified/ ORAM Category	Bank Dimensions (feet)	Water Dimensions	ROW Width Surveyed/ Construction Width (feet)	Length of Wetland Crossing (approx.)	Approx. Acreage (const. width)
S8	Ephemeral	Unnamed tributary to Nimisila Creek	4' wide x 2' deep	0-3" pooled	100/60	---	---
S9	Ephemeral	Unnamed tributary to Nimisila Creek	7' wide x 4' deep	0-7"	100/60	---	---
S10a	ephemeral	Unnamed tributary to Nimisila Creek	4' wide x 2' deep where stream channel parallels north side ROW 8' wide x 5' deep where stream channel parallel south side of ROW at confluence with S10	0-1	100/60	---	---
S10	Perennial	Unnamed tributary to Nimisila Creek	10-12' wide x 7-8' deep	0-6"			
W11	PEM Wetland	--- / Category 1	0-3"	---	100/60	9'	0.02
TOTAL WETLAND IMPACT AREA							4.07

New Pipeline Installation

The survey corridor associated with the new pipeline installation crossed a total of eleven (11) palustrine wetlands including:

- Eight (8) palustrine emergent wetlands (W1, W2, W3, W5, W6, W8, W9b, and W11);
- One (1) vernal pool (W4);
- Four palustrine wetland complexes:
 - palustrine emergent/forested/open water wetland complex (W7a);
 - palustrine emergent/scrub-shrub/forest/open water complex (W7b)
 - palustrine emergent/scrub-shrub (W9a); and
 - palustrine emergent/scrub-shrub/vernal pool wetland complex (W10).

The survey corridor typically exceeded the proposed 60-foot wide construction corridor. The construction corridor consisted of existing ROW that varied in maintenance level. Both the Routine Wetland Delineation Data Sheets and Ohio Rapid Assessment Method Data Sheets correspond only to those portions of the wetlands delineated within the construction corridor.

5.3 Surface Waters and Wetlands within the Alternate Segments

During the field surveys surface waters were identified within the alternate survey areas. These surface waters were extensions/continuations of streams and wetlands crossed by the primary route. A detail of each wetland and stream crossing has been outlined in Table 3, identified on the Canal Fulton, Ohio and Doylestown, Ohio quadrangles in Appendix A and photodocumented in Appendix F.

Alternate: West of and paralleling Frazee Road

Agricultural land comprised this proposed new alignment location that paralleled the west side of Frazee Road, crossed Frazee Road to the east, and then rejoined the existing pipeline ROW. No wetland or streams occurred along this alignment.

Alternate: East side of Frazee Road - South and East of existing residential area.

This route was denied survey access by the land owner. A mapping review indicated the potential for one stream channel.

Alternate: West of Clinton Road continuing east to Cleveland Massillon Road (CR17)/existing pipelines Stor4700 and Stor3300 right-of-way

Wetland conditions were not identified along this alternate segment. Stream 3 extends across this right-of-way and flows in a northwest direction.

Alternate: East and west of the CSX railroad following pipeline Stor#4700

This right-of-way segment contained Wetland 7a, 7b, and Stream 3. This route crossed a large wetland complex of a combination of palustrine emergent/scrub-shrub/forest that also included or was very near to open water areas.

Alternate: East of Nimisila Road at Wetland 9b and following the pipeline easements containing 20-inch L#3399/CS3762 and CS#4700/S2645

This right-of-way segment contained the large wetland complex of Wetland 9b and Stream 6. Stream 6 flows northwest across and beyond this easement. W9b as crossed by L#3399/CS3762 encompassed approximately 0.14 acre; W9b as crossed by CS#4700/S2645 encompassed approximately 0.37 acre.

6.0 CONCLUSIONS

In conjunction with the East Ohio Gas Expansion Project, Dominion East Ohio has proposed the installation of approximately 8.7 miles of the new Franklin 20-inch Storage Gas Pipeline in Summit and Wayne Counties in northeast Ohio. *Environment and Archaeology, LLC* has completed a wetland delineation of one contiguous length of survey corridor extending from the Chippewa Station to the Shoop Station, in addition to five segments of 'alternate' pipeline alignments that followed existing pipeline easements or new alignments. The survey, conducted on December 2006, and April-May 2008, identified eleven (11) wetlands and twelve (12) streams for a total of fourteen (14) stream crossings along the proposed alignment.

Successful construction of this project may require the coordination and clearance with the following agencies:

- Clearance from the Ohio Department of Natural Resources (ODNR);
- Clearance from the United States Fish and Wildlife Service;
- Clearance from the Ohio Historical Society;
- Clearance from the US Army Corp of Engineers, Huntington District, under Nationwide Permit 12 and Section 10 OR authorization under an Individual Permit application;
- Possible application of a Floodplain Permit Review/Development Permit from the Wayne County Planning Commission;
- 401 Water Quality Certification from the Ohio Environmental Protection Agency (OEPA) (see below).

OEPA has issued conditional 401 Water Quality Certification. General and Special Conditions applicable to the proposed project include (this is not a comprehensive list, but includes those most relevant to the project):

- The length of any buried utility line within any single waterbody shall not exceed twice the width of that waterbody at the location of the crossing;
- This Certification shall not authorize the installation of buried utility lines in more than five hundred (500) total linear feet (cumulative for the entire project) of forested wetlands (woody vegetation 6 meters or taller);
- Buried utility line stream crossings shall not exceed a total of three (3) per stream mile per stream;
- The total width of any mechanized land clearing or grading for buried utility lines shall not exceed twenty five (25) feet on either side of a utility line, or for a total width of fifty (50) feet on both sides of the utility line;
- All hydric topsoil removed from a trench shall be separated and saved for later placement as the topmost backfill layer when the trench is refilled;
- New buried utility lines crossing more than 1,500 feet (cumulative for the entire project) of surface waters (including isolated and non-isolated wetlands, and ephemeral, intermittent, and perennial streams (measured bank-to-bank) and with impacts located in three or more than two Ohio EPA 8-digit hydrologic units are not certified.
- Temporary or permanent wetland impacts to Category 1 or 2 wetlands for any single and complete project are limited to a maximum total of ½ acre.

Based on the final condition listed above, it appears that the proposed project would require at a minimum a Pre-Construction Notification (due to the need for a Section 10 permit) and Individual 401 Water Quality Certification. Note that the amount of wetland impact would need to be confirmed based on final construction drawings.

7.0 REFERENCES

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1. U.S. Army Corps of Engineers, Waterways Experiment Station. Vicksburg, Mississippi. 100 p. plus appendices.

Munsell. 1992. Soil color charts. Macbeth/Kollmorgan Instruments. Newburgh, NY.

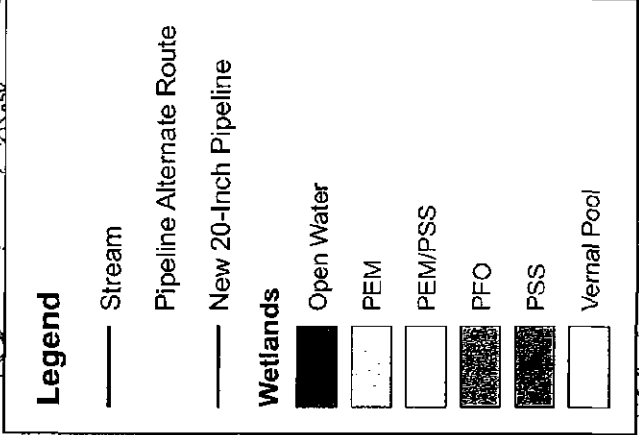
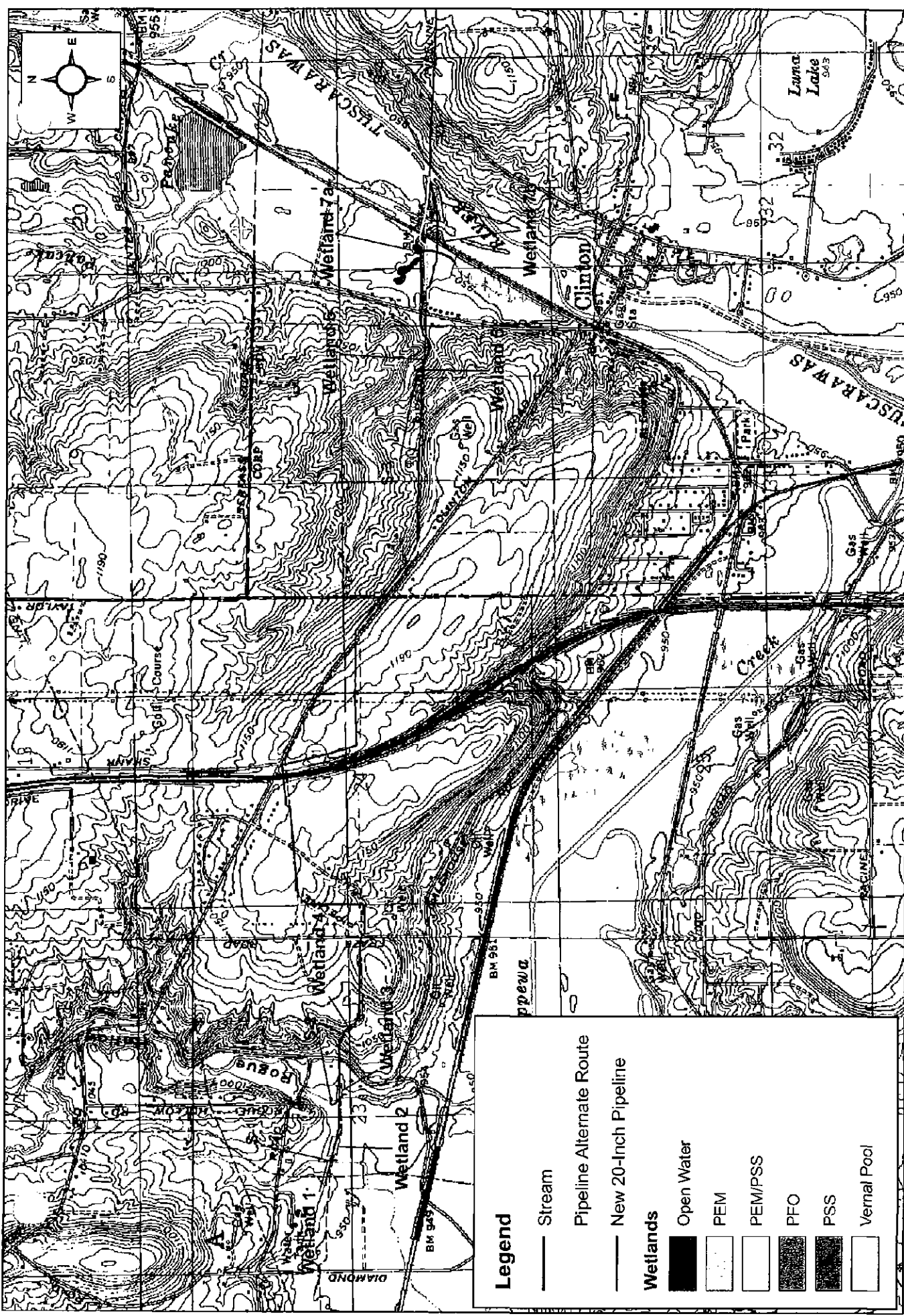
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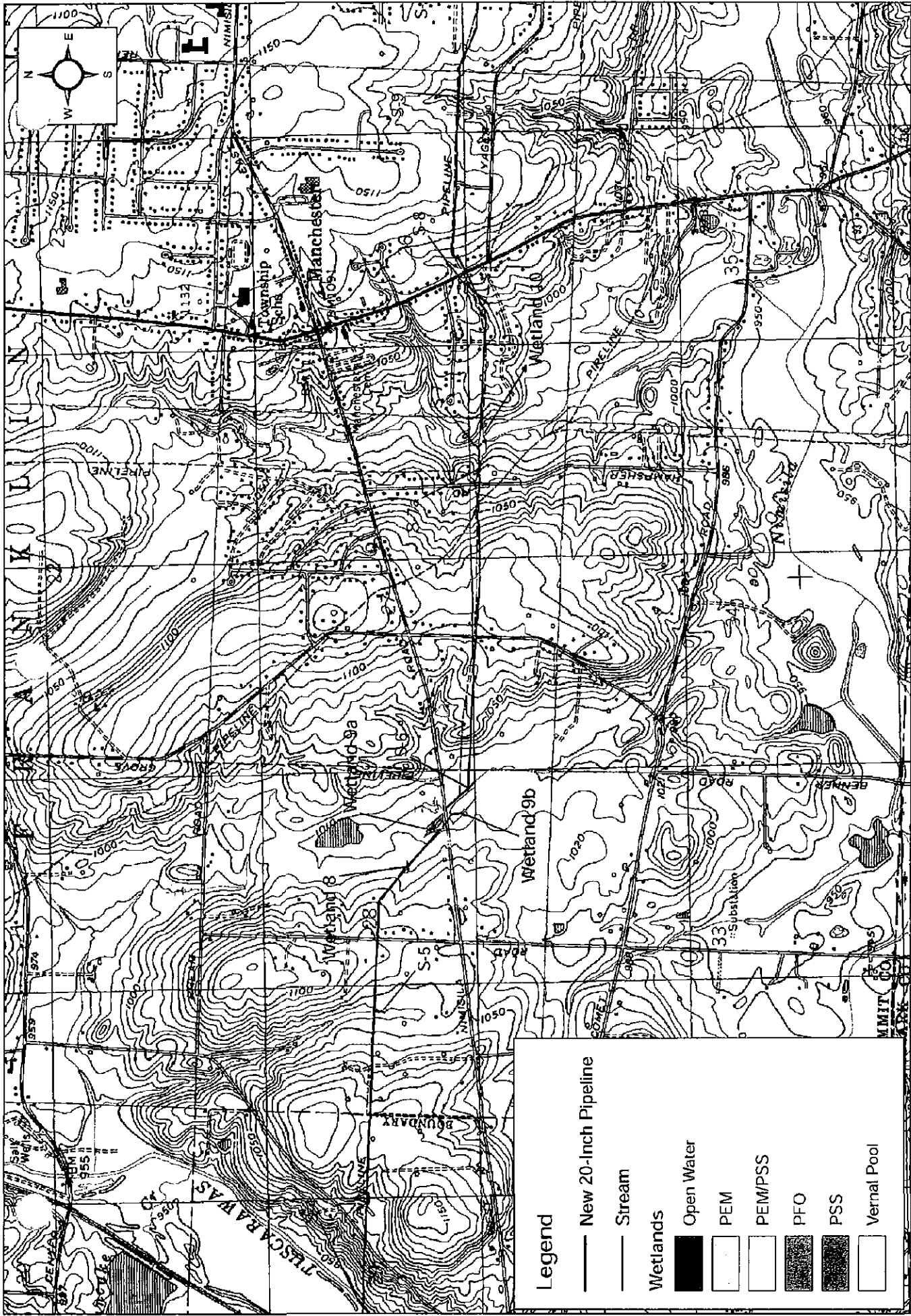
APPENDIX A
Figures 1a-1c USGS Topographic Maps



USGS 7.5' Topographic Map
 Doylestown, Ohio Quadrangle
 1:24,000
 Environment and Archaeology, LLC

East Ohio Gas Expansion
 Franklin 20-inch Gas Pipeline Project
 Project Location
 Summit and Wayne Counties, Ohio

Figure 1a

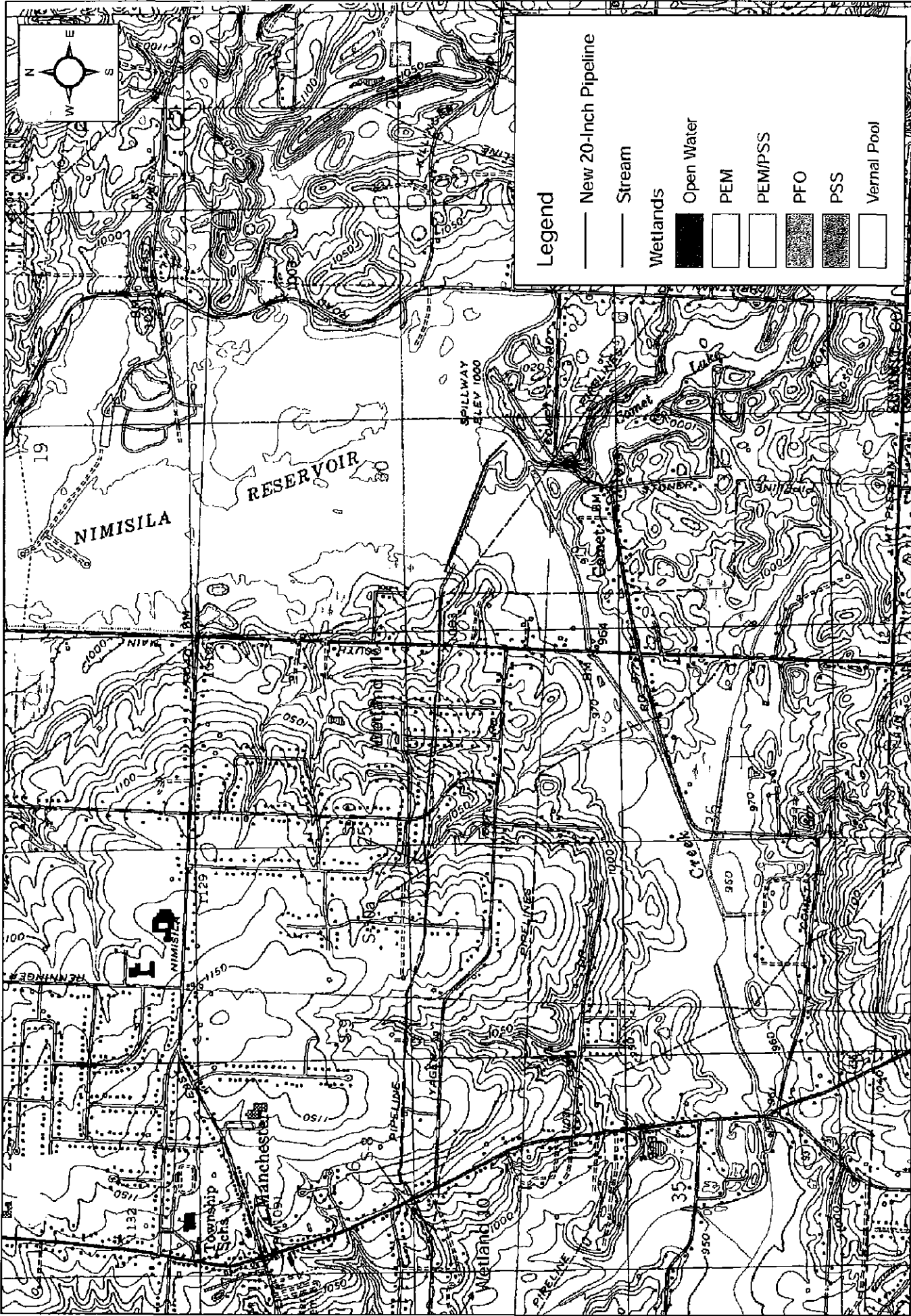


USGS 7.5 Topographic Map
 Doylestown, Ohio Quadrangle
 1:24,000
 Environment and Archaeology, LLC

East Ohio Gas Expansion
 Franklin 20-inch Gas Pipeline Project
 Project Location
 Summit and Wayne Counties, Ohio

Figure 1b

- Legend**
- New 20-Inch Pipeline
 - Stream
- Wetlands**
- Open Water
 - PEM
 - PEM/PSS
 - PFO
 - PSS
 - Vernal Pool

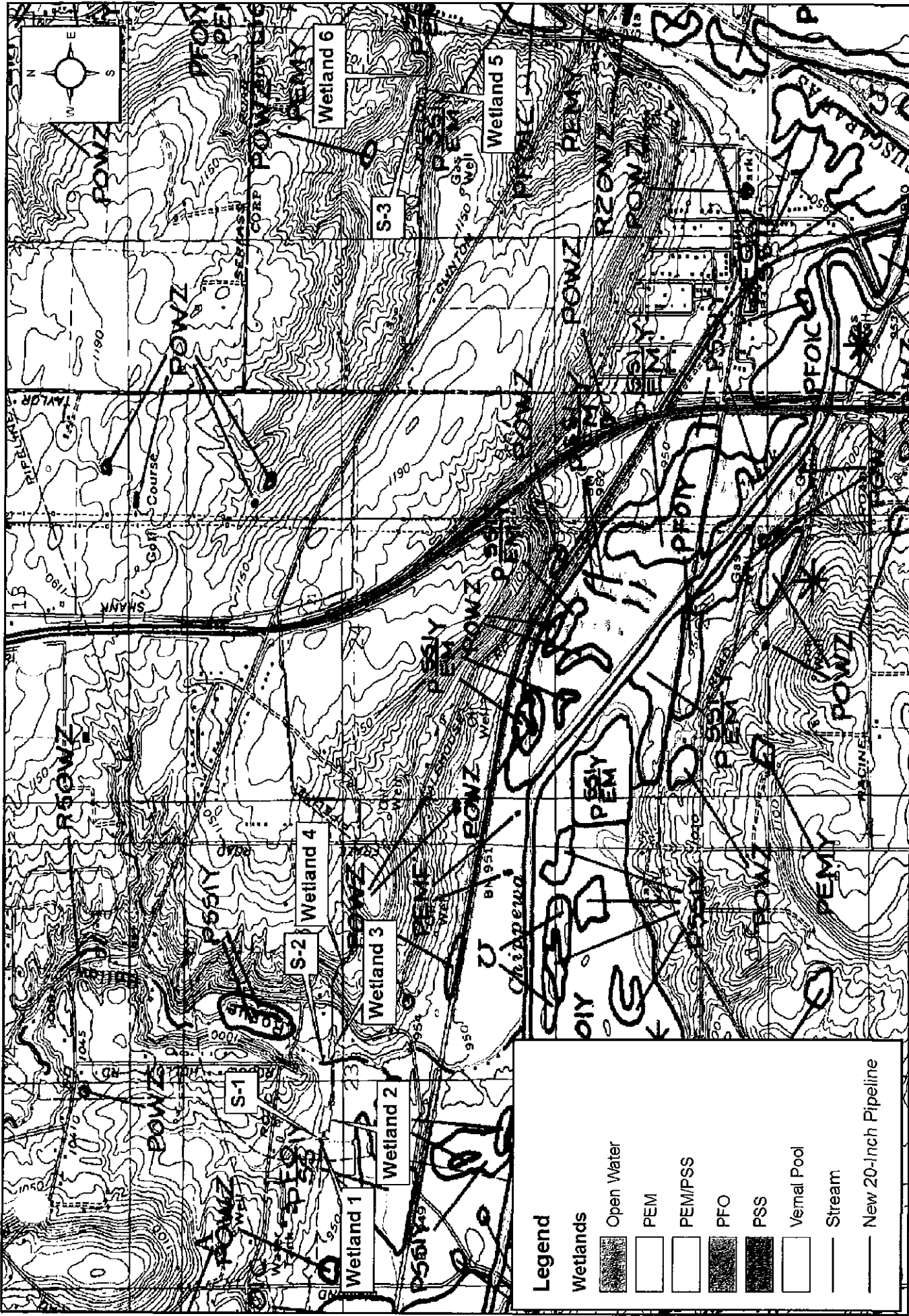


USGS 7.5 Topographic Map
 Doylestown, Ohio Quadrangle
 1:24,000
 Environment and Archaeology, LLC

East Ohio Gas Expansion
 Franklin 20-inch Gas Pipeline Project
 Project Location
 Summit and Wayne Counties, Ohio

Figure 1c

APPENDIX B
Figures 2a-2c National Wetlands Inventory Maps



Legend










-  Wetlands
-  Open Water
-  PEM
-  PEMPSS
-  PFO
-  PSS
-  Vernal Pool
-  Stream
-  New 20-inch Pipeline

Figure 2a

East Ohio Gas Expansion
Franklin 20-inch Gas Pipeline Project
Project Location
Summit and Wayne Counties, Ohio

USGS 7.5' Topographic Map with NWI Overlay
Doylestown, Ohio Quadrangle
1:24,000
Environment and Archaeology, LLC



USGS 7.5' Topographic Map with NWI Overlay
 Doylestown, Ohio Quadrangle
 1:24,000
 Environment and Archaeology, LLC

East Ohio Gas Expansion
 Franklin 20-inch Gas Pipeline Project
 Project Location
 Summit and Wayne Counties, Ohio

Figure 2b

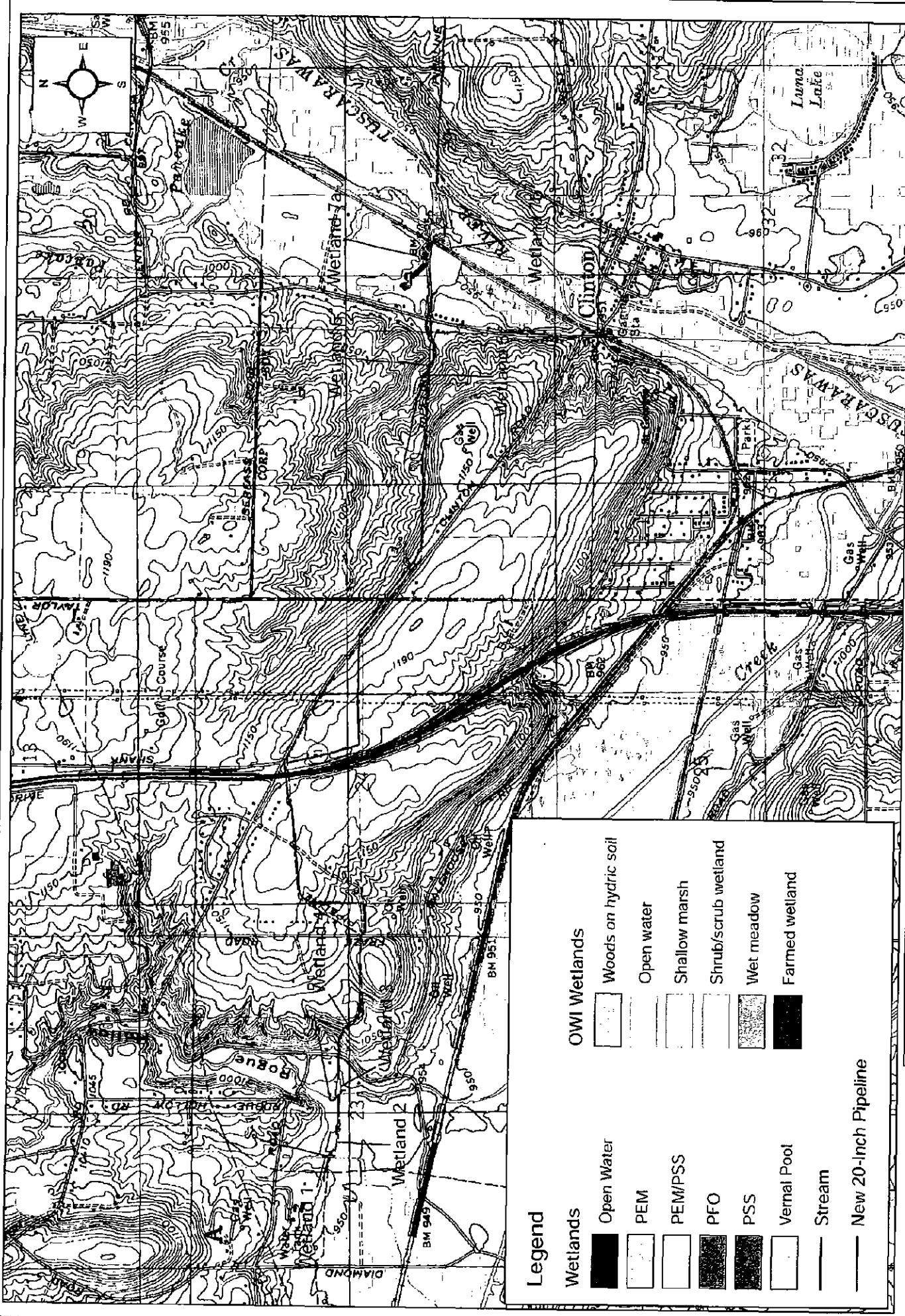


Figure 2c

East Ohio Gas Expansion
 Franklin 20-inch Gas Pipeline Project
 Project Location
 Summit and Wayne Counties, Ohio

USGS 7.5' Topographic Map with NWI Overlay
 Doylestown, Ohio Quadrangle
 1:24,000
 Environment and Archaeology, LLC

APPENDIX C
Figures 3a-3c Ohio Wetlands Inventory Maps



Legend

Wetlands

- Open Water
- PEM
- PEM/PSS
- PFO
- PSS
- Vernal Pool
- Stream
- New 20-inch Pipeline

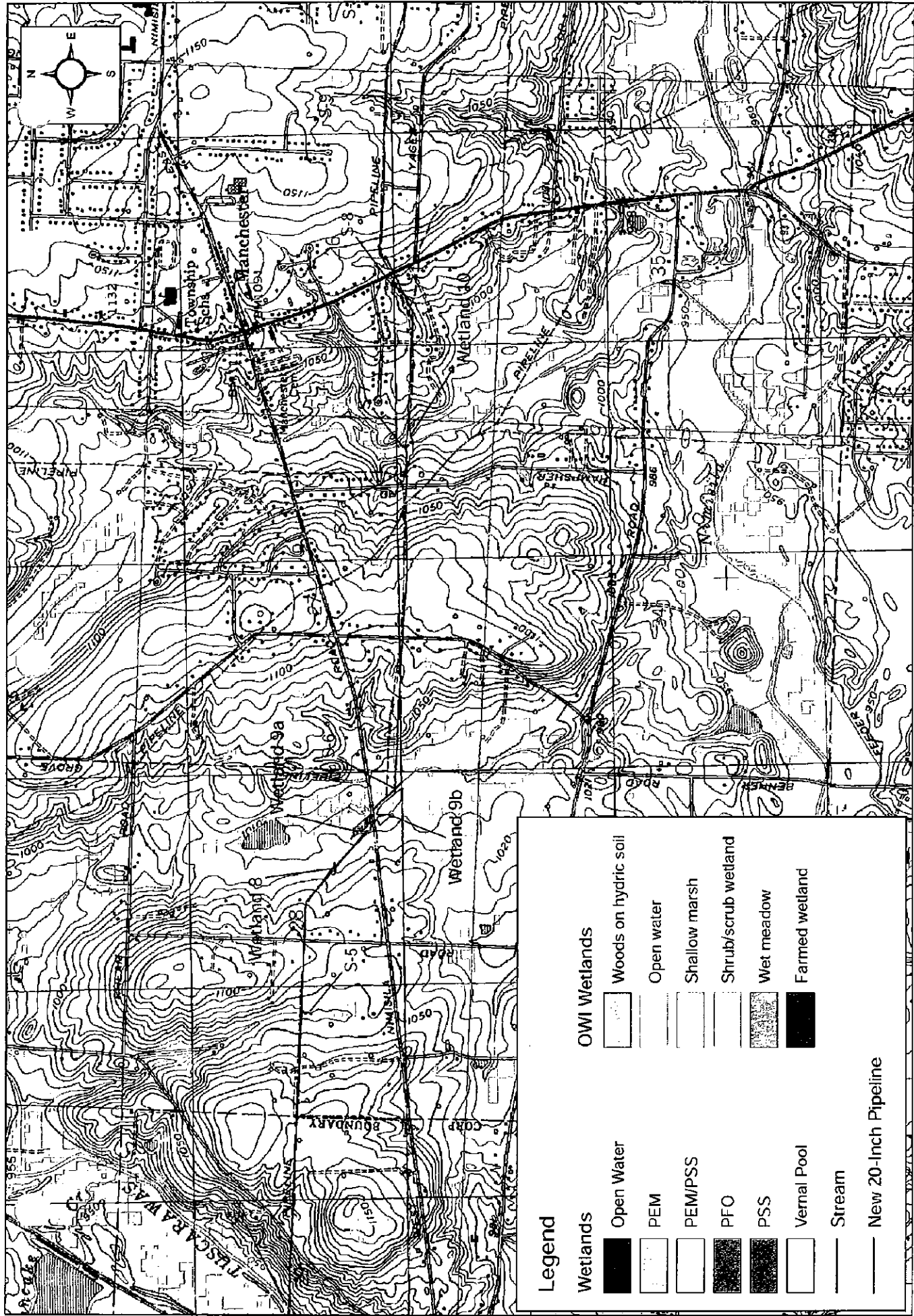
OWI Wetlands

- Woods on hydric soil
- Open water
- Shallow marsh
- Shrub/scrub wetland
- Wet meadow
- Farmed wetland

Figure 3a

East Ohio Gas Expansion
 Franklin 20-inch Gas Pipeline Project
 Project Location
 Summit and Wayne Counties, Ohio

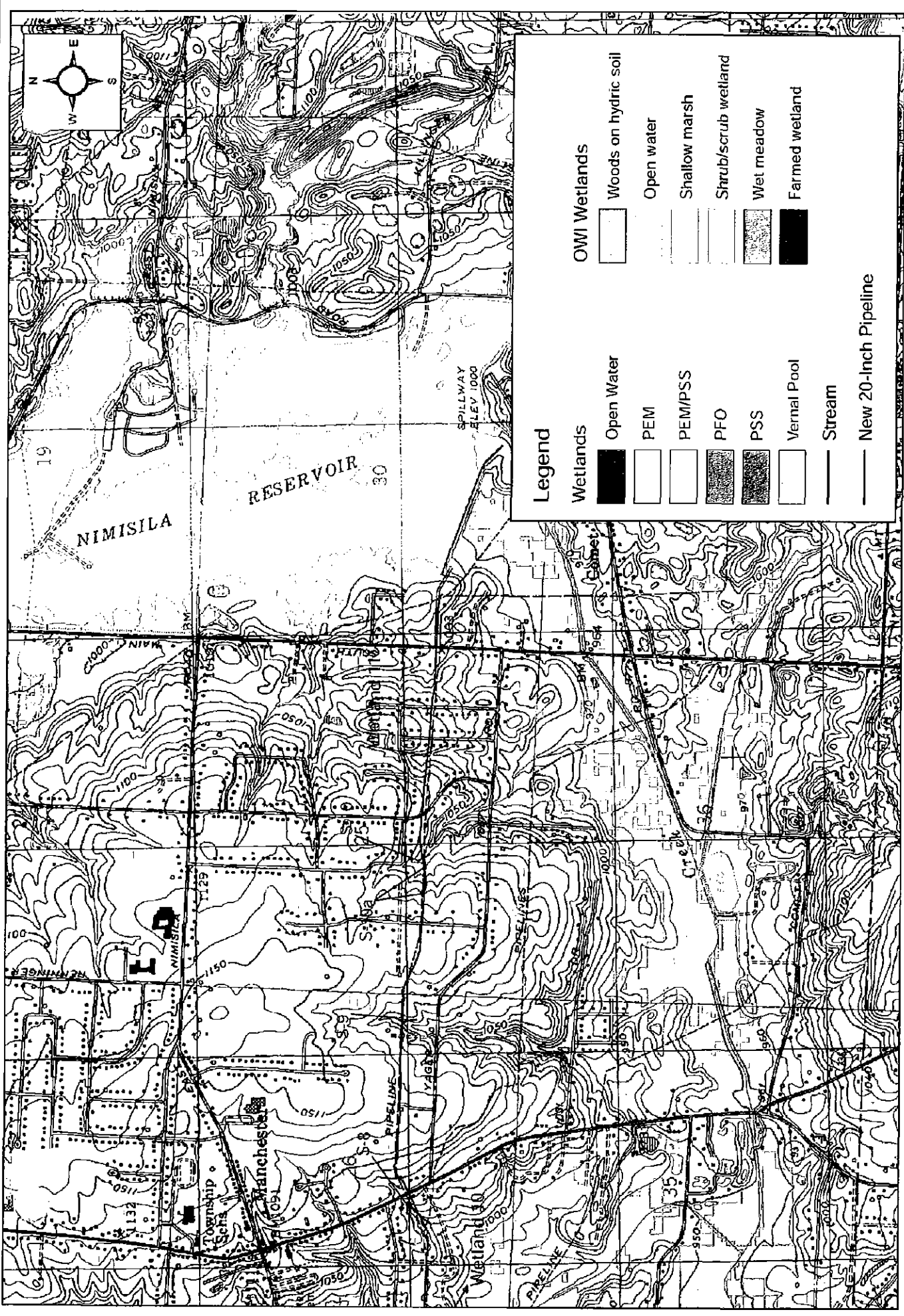
USGS 7.5' Topographic Map with OWI Overlay
 Doylestown, Ohio Quadrangle
 1:24,000
 Environment and Archaeology, LLC



USGS 7.5' Topographic Map with OWI Overlay
 Doylestown, Ohio Quadrangle
 1:24,000
 Environment and Archaeology, LLC

East Ohio Gas Expansion
 Franklin 20-inch Gas Pipeline Project
 Project Location
 Summit and Wayne Counties, Ohio

Figure 3b



Legend

- | | | |
|----------------------|---------------------|----------------------|
| Wetlands | Open Water | Woods on hydric soil |
| PEM | Open water | Farmed wetland |
| PEM/PSS | Shallow marsh | |
| PFO | Shrub/scrub wetland | |
| PSS | Wet meadow | |
| Vernal Pool | | |
| Stream | | |
| New 20-Inch Pipeline | | |

USGS 7.5' Topographic Map with OWI Overlay
 Doylestown, Ohio Quadrangle
 1:24,000
 Environment and Archaeology, LLC

East Ohio Gas Expansion
 Franklin 20-inch Gas Pipeline Project
 Project Location
 Summit and Wayne Counties, Ohio

Figure 3c

APPENDIX D
Figures 4a-4c USDA Soil Maps



Legend

USDA Soil

Wetlands

- Open Water
- PEM
- PEM/PSS
- PFO
- PSS
- Vernal Pool
- Stream
- New 20-Inch Pipeline

Figure 4a

**East Ohio Gas Expansion
Franklin 20-inch Gas Pipeline Project
Project Location**
Summit and Wayne Counties, Ohio

**USGS 7.5' Topographic Map with Soil Overlay
Doylestown, Ohio Quadrangle**
1:24,000
Environment and Archaeology, LLC



Figure 4b

**East Ohio Gas Expansion
Franklin 20-inch Gas Pipeline Project
Project Location
Summit and Wayne Counties, Ohio**

**USGS 7.5 Topographic Map with Soil Overlay
Doylestown, Ohio Quadrangle
1:24,000
Environment and Archaeology, LLC**



Legend

USDA Soil

Wetlands

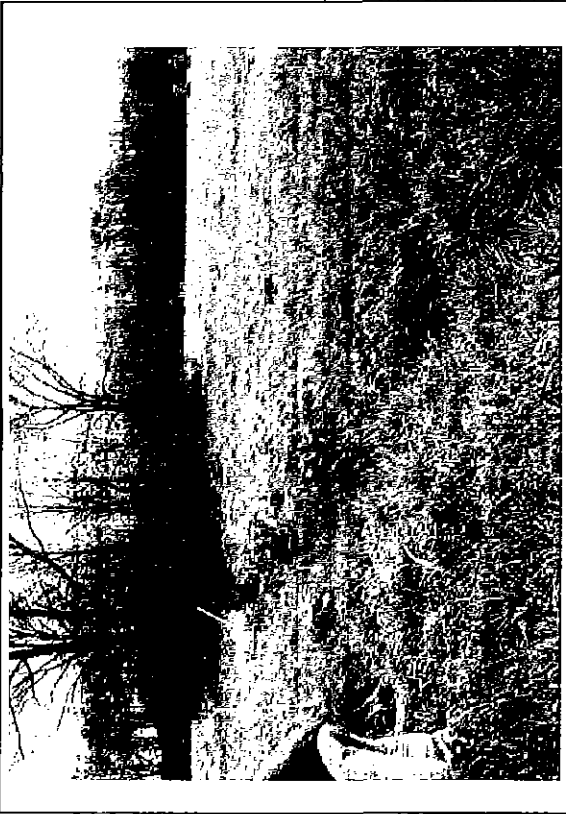
- Open Water
- PEM
- PEM/PSS
- PFO
- PSS
- Vernal Pool
- Stream
- New 20-Inch Pipeline

Figure 4c

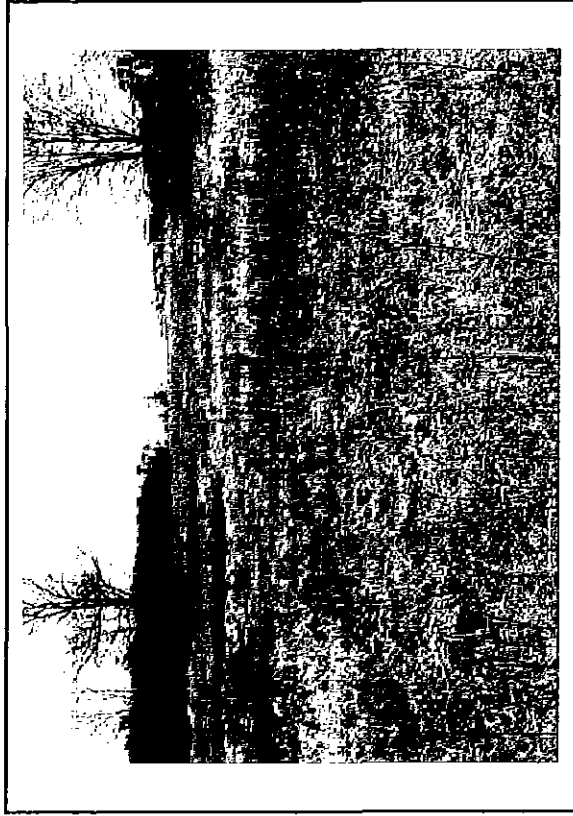
**East Ohio Gas Expansion
Franklin 20-inch Gas Pipeline Project
Project Location
Summit and Wayne Counties, Ohio**

**USGS 7.5' Topographic Map with Soil Overlay
Doylestown, Ohio Quadrangle
1:24,000
Environment and Archaeology, LLC**

APPENDIX E
Photolog



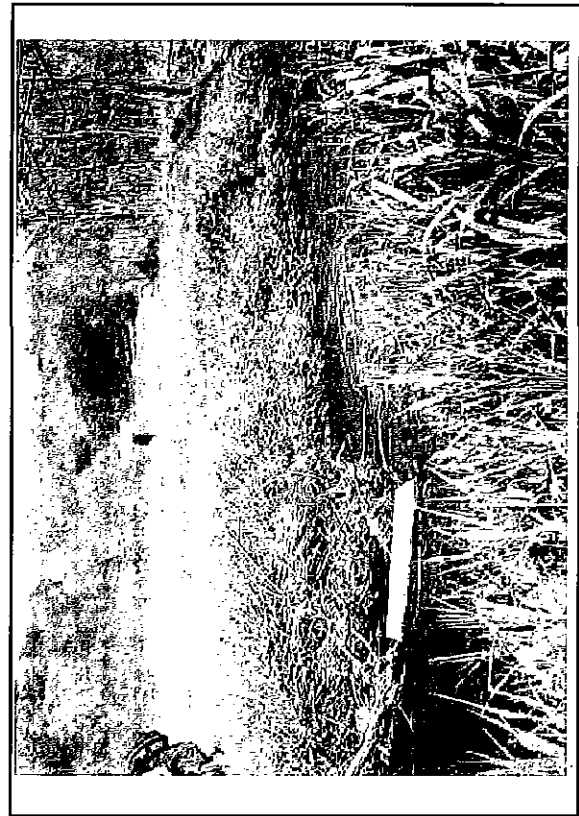
PHOTO#: 1 **DIRECTION: N** **DATE: 04-26-08**
COMMENTS: View of Wetland 1 surrounding Stream 1, an unnamed
intermittent tributary to Chippewa Creek



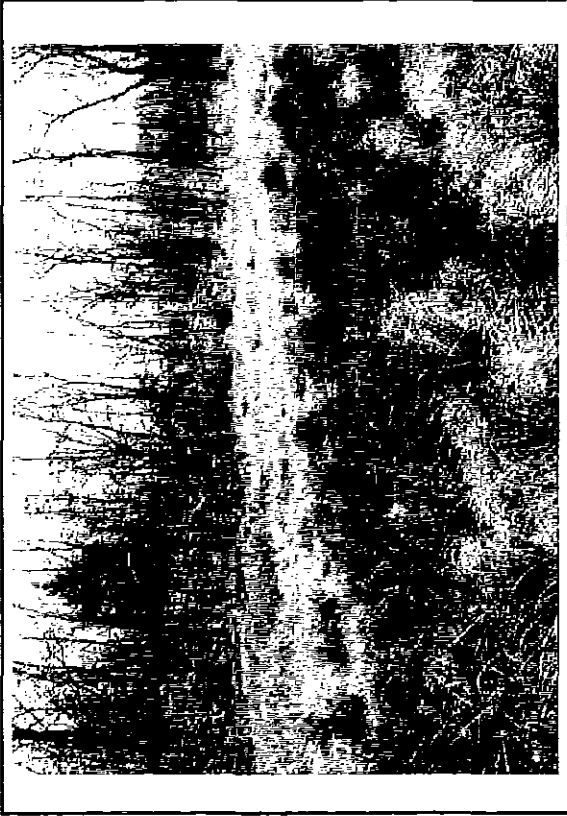
PHOTO#: 2 **DIRECTION: E** **DATE: 04-26-08**
COMMENTS: View of Wetland 2, looking west toward S1 and W1
(treeline area).



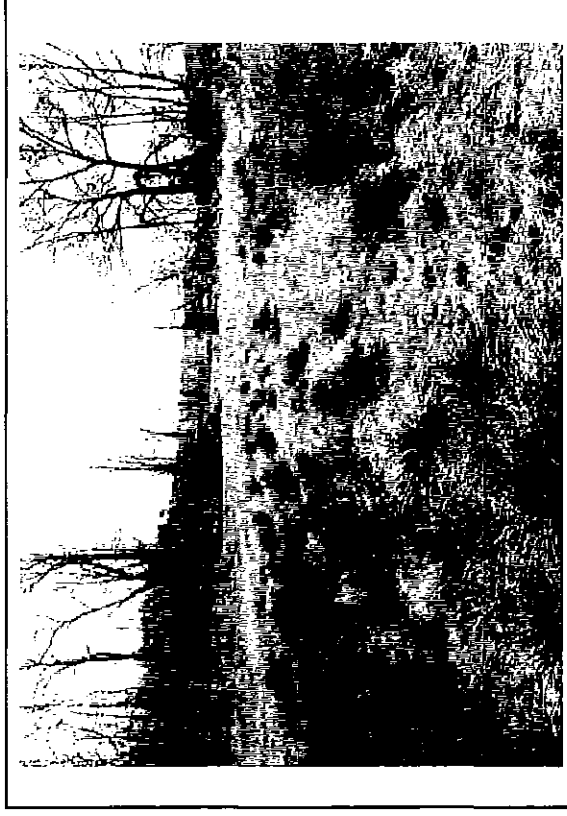
PHOTO#: 3 **DIRECTION: N** **DATE: 04-26-08**
COMMENTS: View of Stream 2 (perennial: Silver Creek/Rogue Hollow),
located west of Wetland 3.



PHOTO#: 4 **DIRECTION: E** **DATE: 04-26-08**
COMMENTS: Looking across Stream 2 and into Wetland 3.



PHOTO#: 5 **DIRECTION: SW** **DATE: 04-26-08**
COMMENTS: View of western portion of Wetland 3.



PHOTO#: 6 **DIRECTION: W** **DATE: 04-26-08**
COMMENTS: Looking west across Wetland 3, looking back toward Stream 2.



PHOTO#: 7 **DIRECTION: SW** **DATE: 04-26-08**
COMMENTS: View of vernal pool, representing Wetland 4.



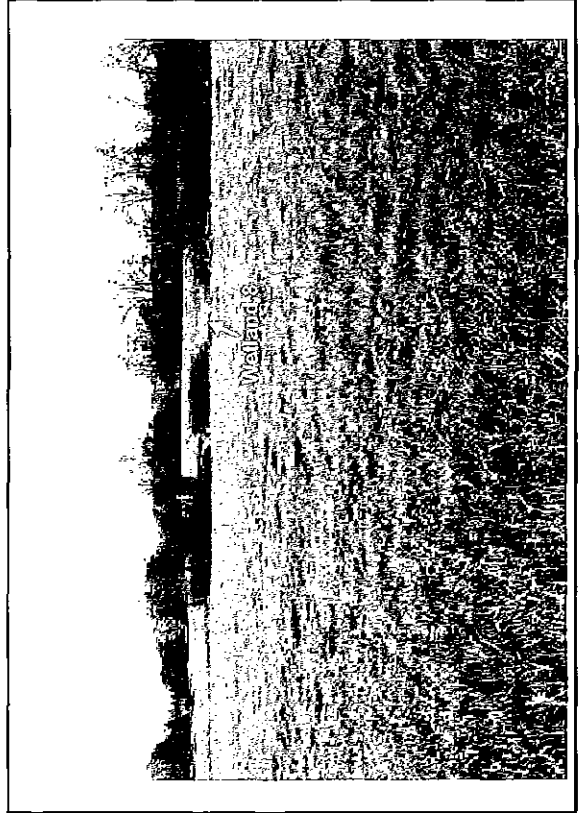
PHOTO#: 8 **DIRECTION: N** **DATE: 04-26-08**
COMMENTS: View of second crossing of Stream 3, an unnamed intermittent tributary to Tuscarawas River.

photo not available

PHOTO#: 9 **DIRECTION:** -- **DATE:** 04-26-08
COMMENTS: Second crossing of Stream 3.



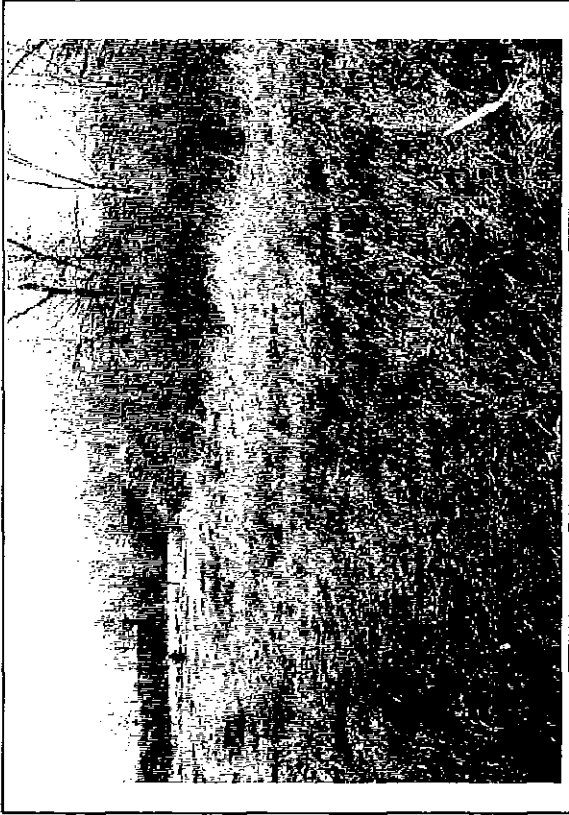
PHOTO#: 10 **DIRECTION:** W **DATE:** 04-26-08
COMMENTS: View of Wetland 6.



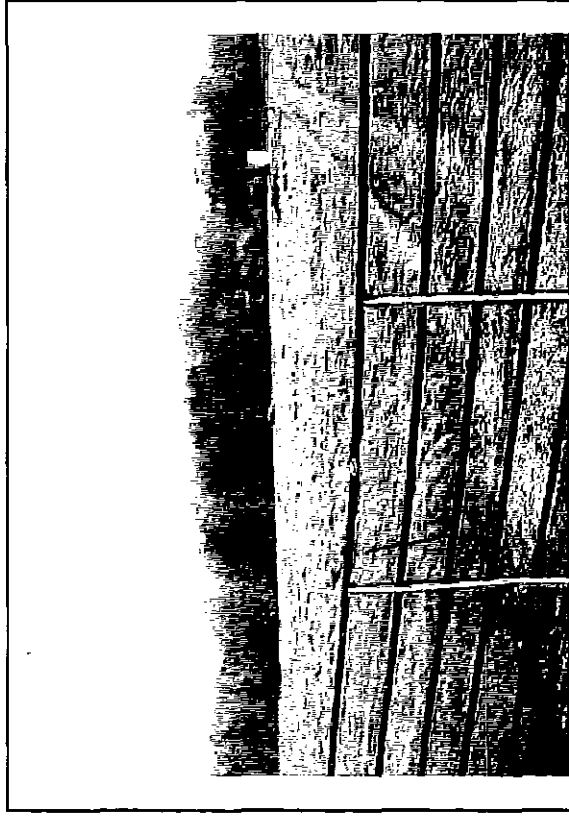
PHOTO#: 11 **DIRECTION:** W **DATE:** 04-26-08
COMMENTS: Standing near West Nimisila Road, looking back toward Wetland 8.



PHOTO#: 12 **DIRECTION:** WNW **DATE:** 04-26-08
COMMENTS: View of Wetland 9, located on north side of West Nimisila Road.



PHOTO#: 13 **DIRECTION:** NNW **DATE:** 04-26-08
COMMENTS: Looking toward PSS component of Wetland 9a.



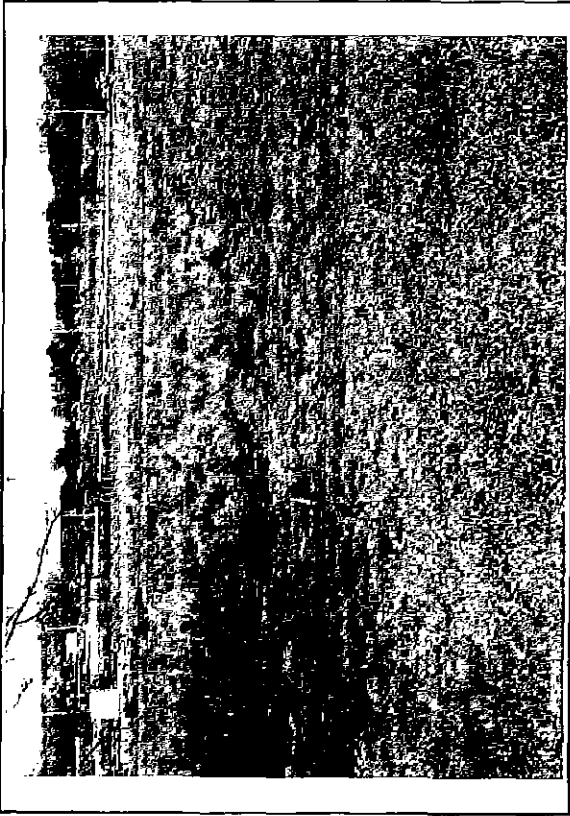
PHOTO#: 14 **DIRECTION:** SE **DATE:** 04-26-08
COMMENTS: Looking southeast from West Nimisila Road and across Wetland 9b.



PHOTO#: 15 **DIRECTION:** SW **DATE:** 04-26-08
COMMENTS: View of the vegetated Stream 6 (channelized), an unnamed perennial tributary to Nimisila Creek.



PHOTO#: 16 **DIRECTION:** N **DATE:** 04-26-08
COMMENTS: View of the culvert outfall of Stream 6, located downstream of the channelized portion of this perennial tributary to Nimisila Creek.



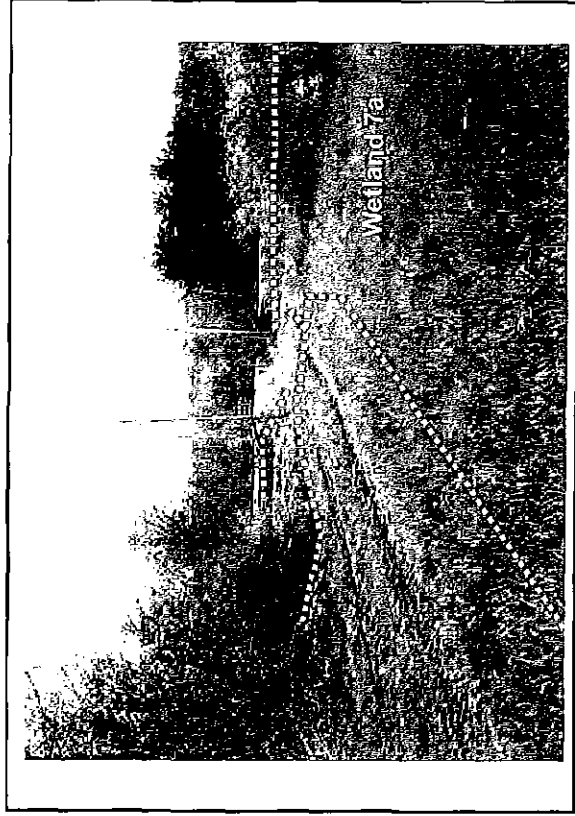
PHOTO#: 17 **DIRECTION:** W **DATE:** 04-27-08
COMMENTS: View of Wetland 9b, looking back toward
West Nimisila Road.



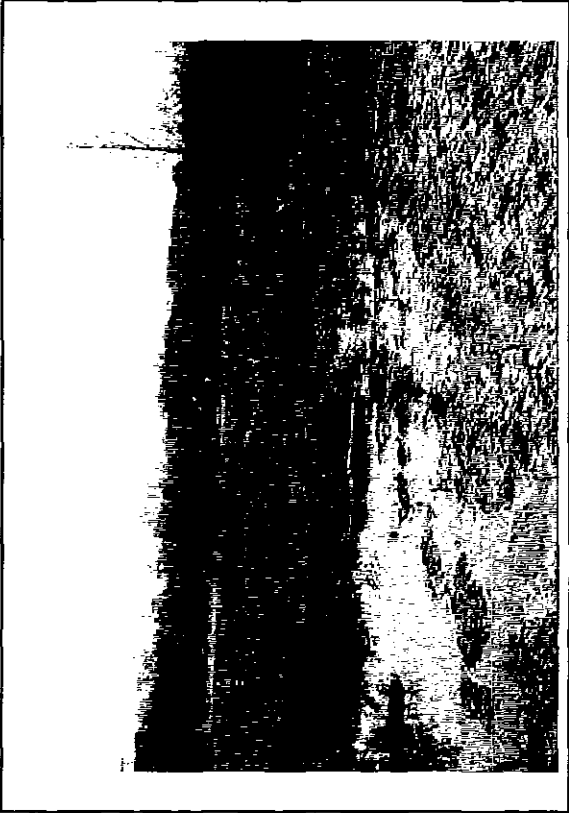
PHOTO#: 18 **DIRECTION:** E **DATE:** 04-27-08
COMMENTS: View of Wetland 7a, located on the south and north sides of
an access road (east) off of Cleveland-Massillon Road.



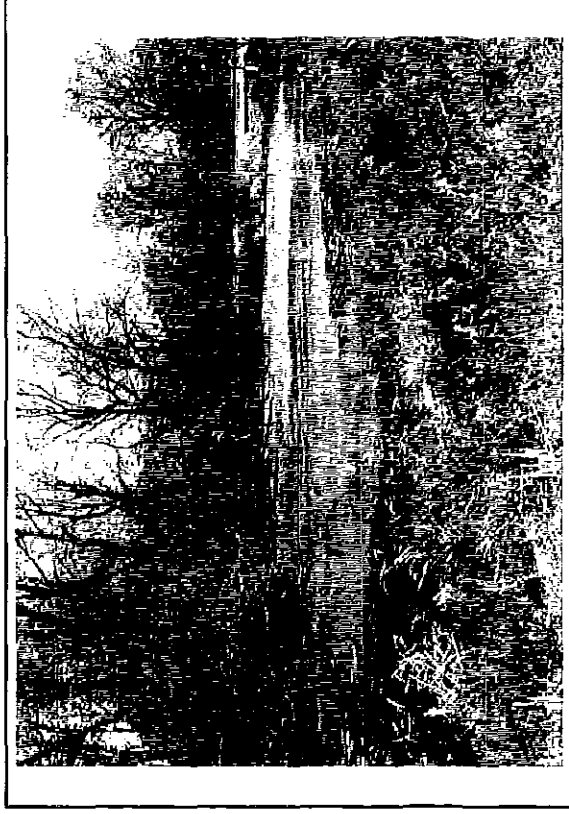
PHOTO#: 19 **DIRECTION:** W **DATE:** 04-27-08
COMMENTS: View of Stream 3 (looking upstream) and located on the north side of the
access road connected to Cleveland-Massillon Road.



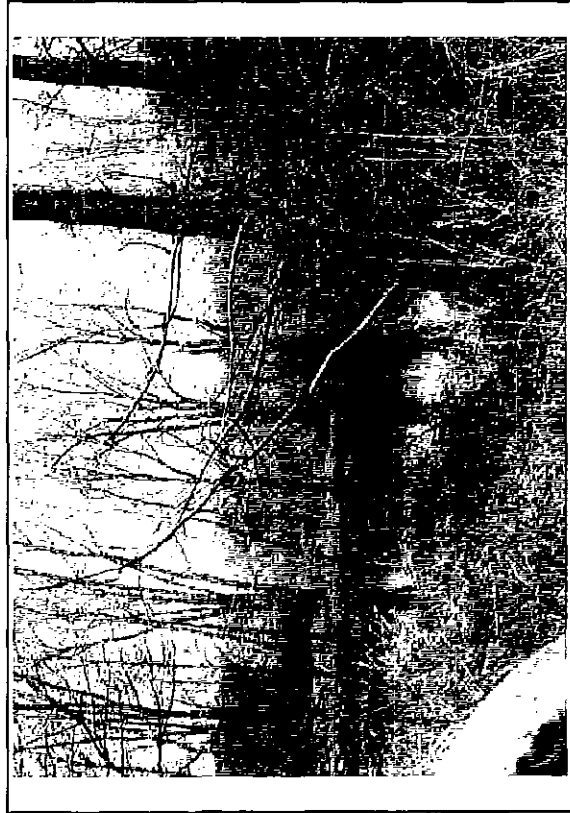
PHOTO#: 20 **DIRECTION:** E **DATE:** 04-27-08
COMMENTS: View of Wetland 7a, located east of the railroad tracks.



PHOTO#: 21 **DIRECTION: ESE** **DATE: 04-27-08**
COMMENTS: View of continuation of Wetland 7a, located east of the railroad tracks.



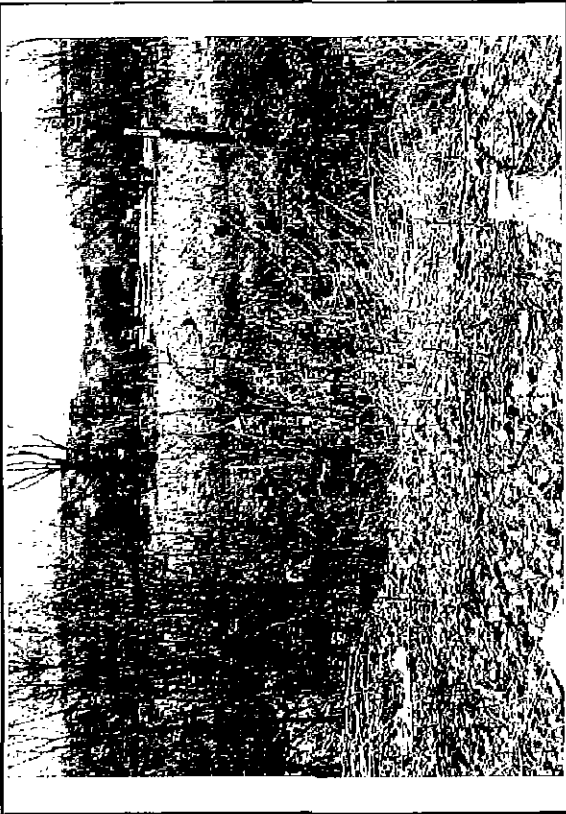
PHOTO#: 22 **DIRECTION: NE** **DATE: 04-27-08**
COMMENTS: View of open water portion of Wetland 7a, located north of the access road leading to the railroad tracks.



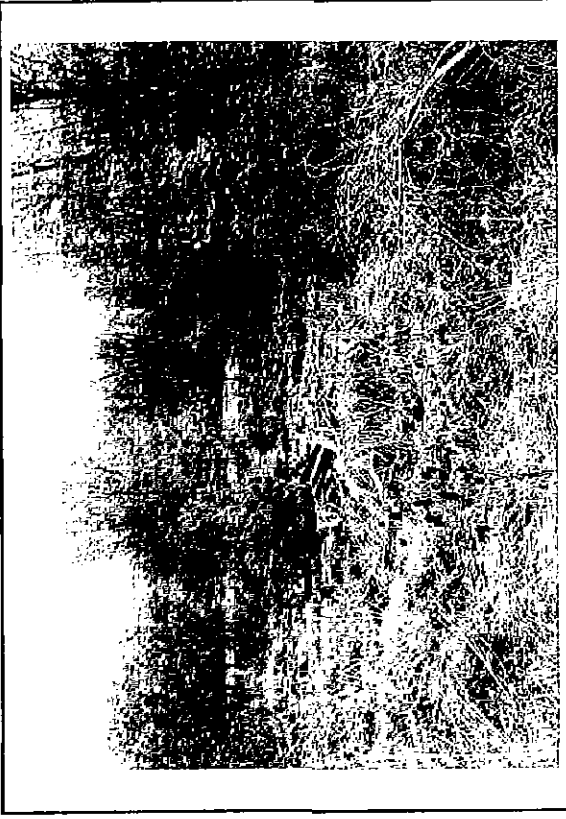
PHOTO#: 23 **DIRECTION: WNW** **DATE: 04-27-08**
COMMENTS: View of pond located north of the proposed alignment and north of the access road off of CR-17 (Cleveland-Massillon Road).



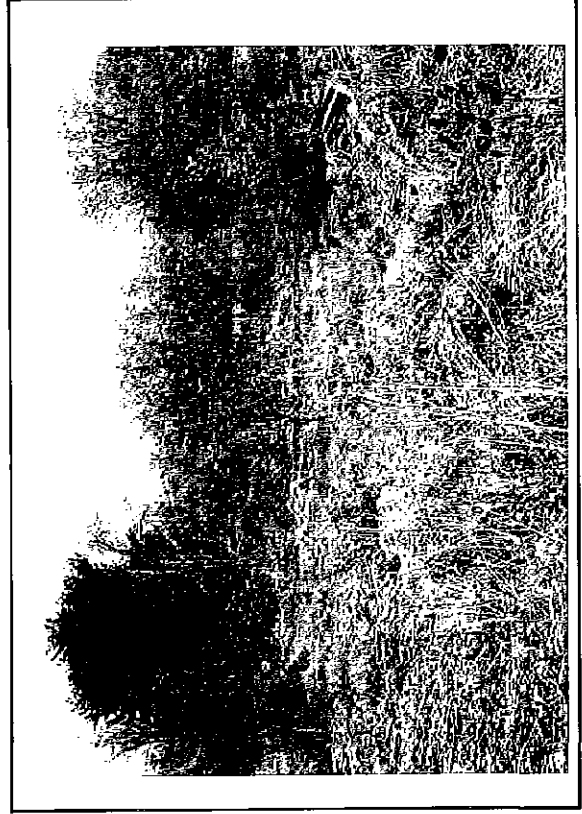
PHOTO#: 24 **DIRECTION: N** **DATE: 04-27-08**
COMMENTS: View of Stream 3 (crossing #3), located within Wetland 7a.



PHOTO#: 25 **DIRECTION:** W **DATE:** 04-27-08
COMMENTS: View of Wetland 7a, standing at the railroad tracks and looking back toward CR-17.



PHOTO#: 26 **DIRECTION:** E **DATE:** 04-27-08
COMMENTS: View of Wetland 7b, looking toward the Ohio Tow Path.



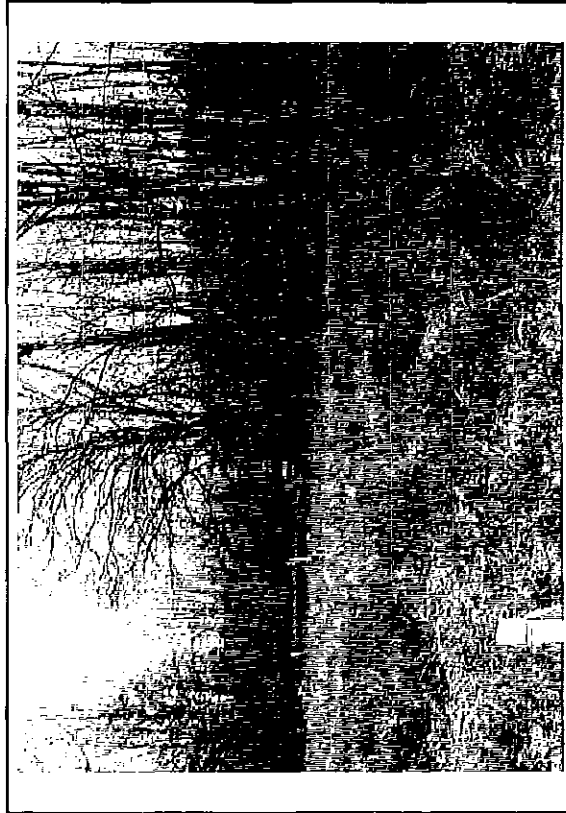
PHOTO#: 27 **DIRECTION:** ENE **DATE:** 04-27-08
COMMENTS: View of Wetland 7b, located on east side of the railroad tracks and west of the Ohio Tow Path.



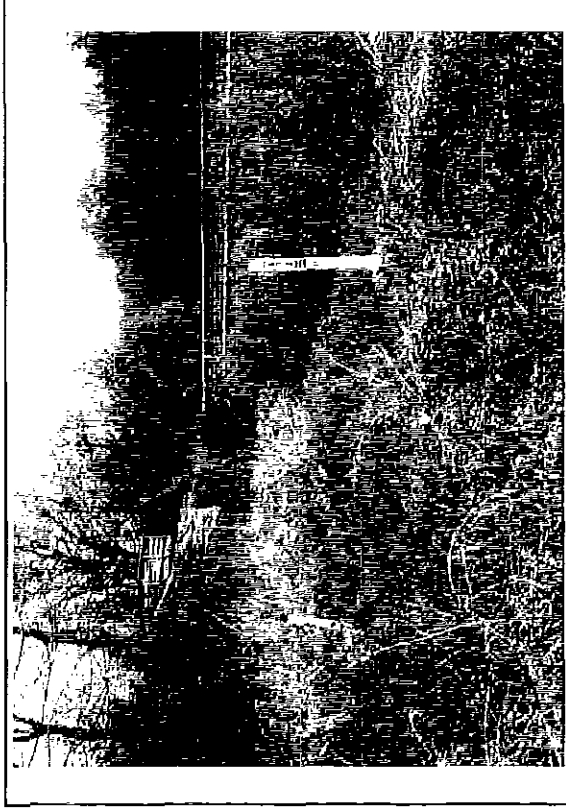
PHOTO#: 28 **DIRECTION:** S **DATE:** 04-27-08
COMMENTS: Standing near Ohio Tow Path and looking west toward a portion of Wetland 7b (railroad tracks are in background).



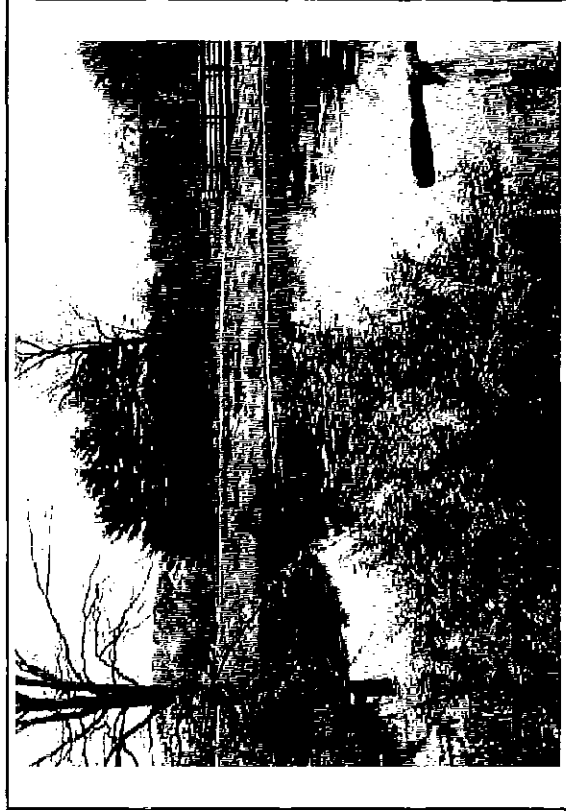
PHOTO#: 29 **DIRECTION:** NNW **DATE:** 04-27-08
COMMENTS: View of the continuation of Wetland 7b, located north of the proposed alignment and along a proposed alternate location.



PHOTO#: 31 **DIRECTION:** E **DATE:** 04-27-08
COMMENTS: View of Wetland 7b, looking into its PEM/PFO complex.



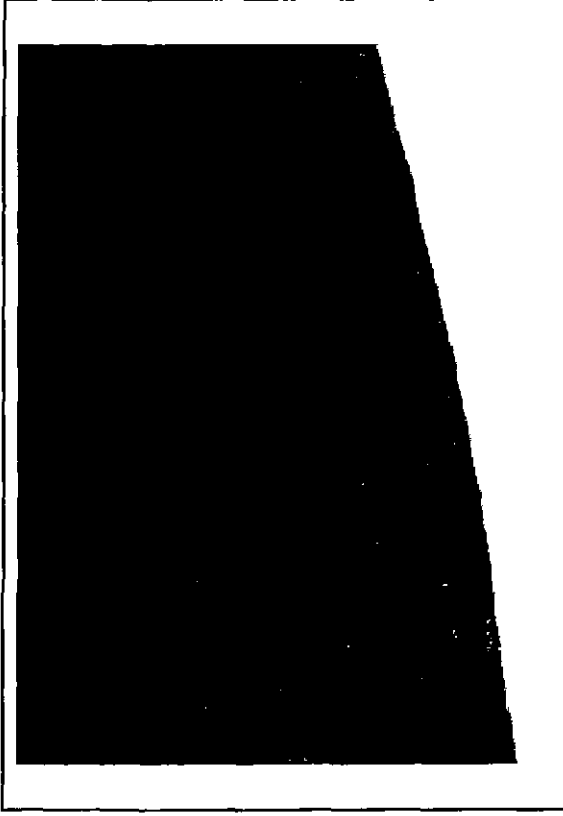
PHOTO#: 30 **DIRECTION:** ENE **DATE:** 04-27-08
COMMENTS: View of continuation of Wetland 7b, located north of the proposed alignment and west of the Ohio Tow Path. Wetland conditions and remnant Tow Path structures (to left of photo) restrict this area as a potential alignment.



PHOTO#: 32 **DIRECTION:** W **DATE:** 04-27-08
COMMENTS: View of open water area associated with Wetland 7b, located north of the proposed alignment and east of the Ohio Tow Path.



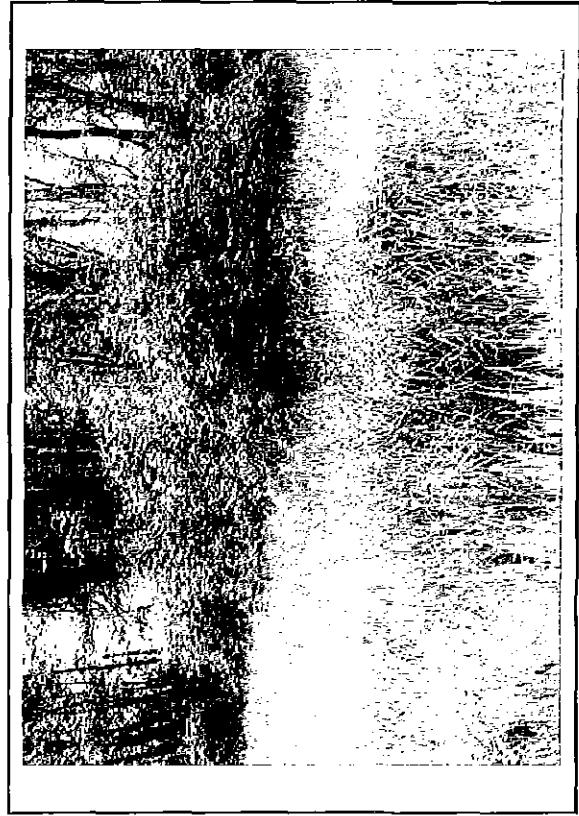
PHOTO#: 33 **DIRECTION:** N **DATE:** 04-27-08
COMMENTS: View of the Tuscarawas River (Stream 4).



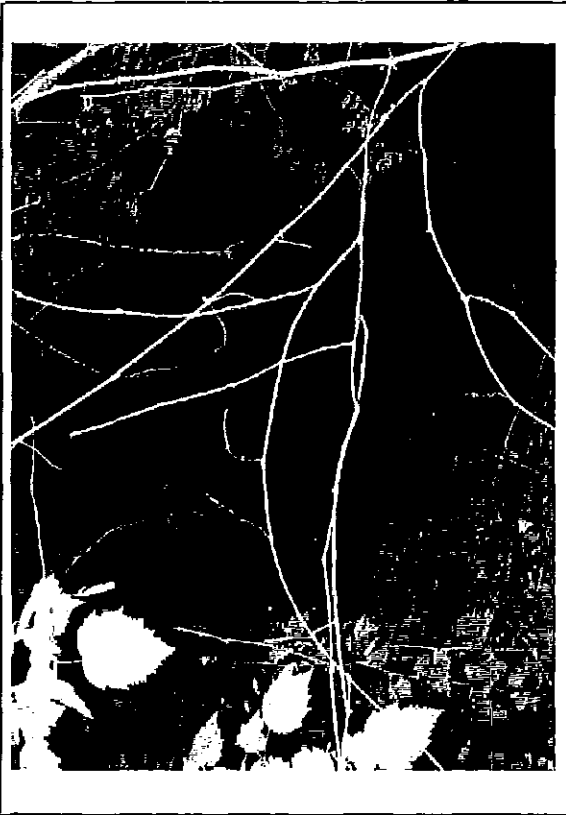
PHOTO#: 34 **DIRECTION:** E **DATE:** 05-14-08
COMMENTS: View of ephemeral channel located east of Hamilton Road; the channel dissipates at the ROW.



PHOTO#: 35 **DIRECTION:** NNW **DATE:** 05-14-08
COMMENTS: View of the first crossing of Stream 3, an unnamed intermittent tributary to Tuscarawas River. Fringe wetland growth (predominantly skunk cabbage), identified as Wetland 5 occurs along the right bank of the stream.



PHOTO#: 36 **DIRECTION:** N **DATE:** 05-14-08
COMMENTS: View of the location of Stream 5, an unnamed perennial tributary to the Tuscarawas River.



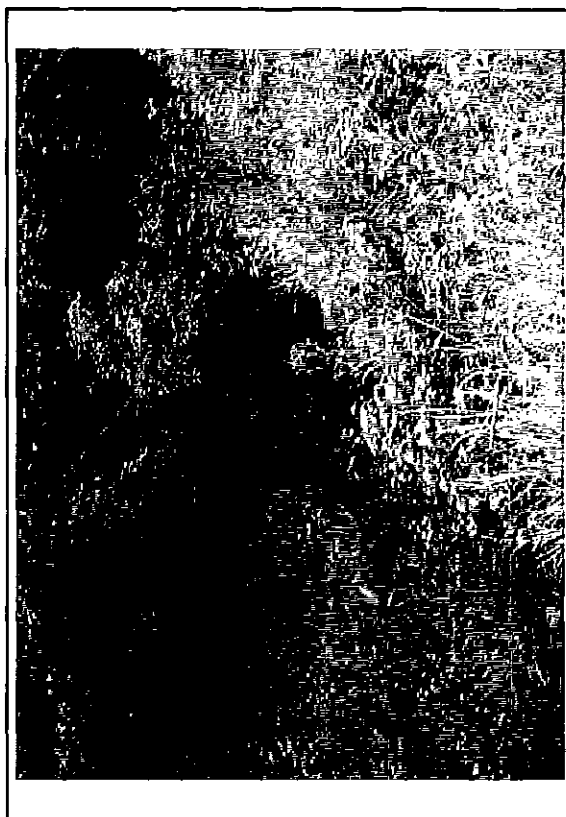
PHOTO#: 37 **DIRECTION:** N **DATE:** 05-14-08
COMMENTS: View of Stream 7a, an ephemeral tributary to an unnamed perennial tributary of Nimisila Creek.



PHOTO#: 38 **DIRECTION:** E **DATE:** 05-14-08
COMMENTS: View of Wetland 10, a large wetland complex that continues across Stream 7, an unnamed perennial tributary to Nimisila Creek.



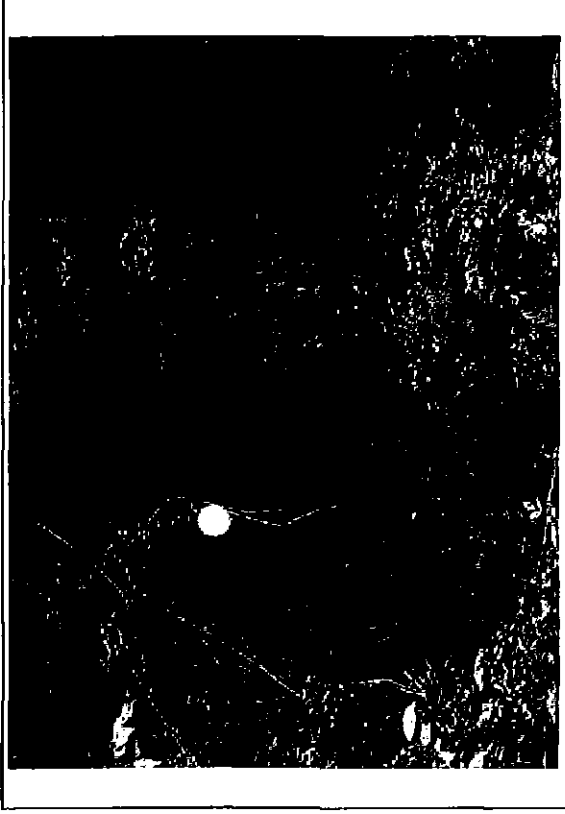
PHOTO#: 39 **DIRECTION:** SW **DATE:** 05-14-08
COMMENTS: View of Stream 7, looking upstream.



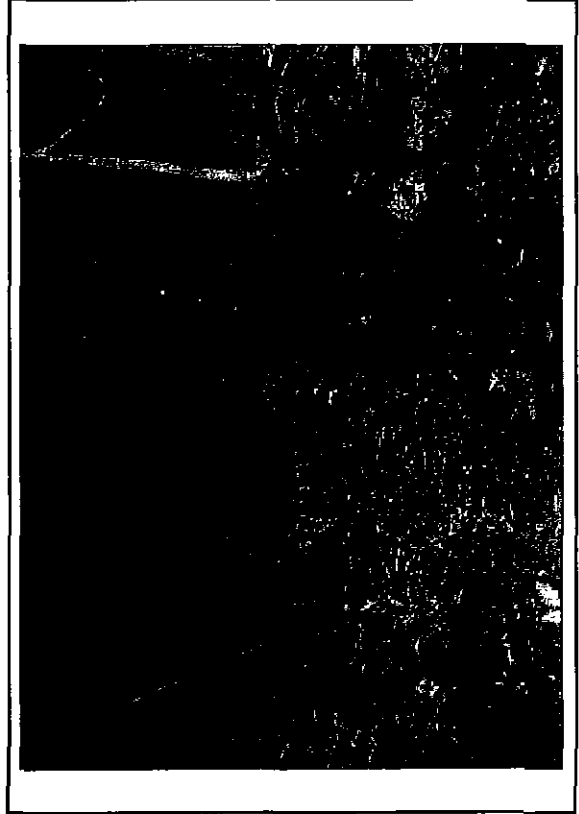
PHOTO#: 40 **DIRECTION:** S **DATE:** 05-14-08
COMMENTS: View of Stream 8, an ephemeral tributary to an unnamed perennial tributary to Nimisila Creek.



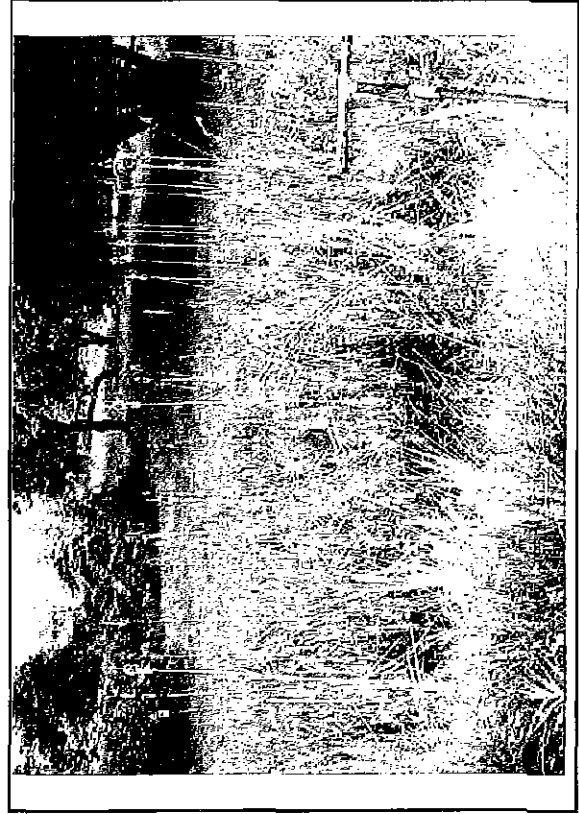
PHOTO#: 41 **DIRECTION:** ESE **DATE:** 04-27-08
COMMENTS: View of the existing ROW where the adjacent forest growth contains Stream 10a, an ephemeral stream to a perennial tributary to Nimisila Creek.



PHOTO#: 42 **DIRECTION:** E **DATE:** 05-14-08
COMMENTS: View of Stream 10a at its eastern-most portion near its confluence with Stream 10, an unnamed perennial tributary to Nimisila Creek.



PHOTO#: 43 **DIRECTION:** NNW **DATE:** 05-14-08
COMMENTS: View of Stream 10, looking downstream.



PHOTO#: 44 **DIRECTION:** S **DATE:** 05-14-08
COMMENTS: View of Wetland 11, located in a residential area and associated with a depressional drainage swale area.

APPENDIX F
Routine Wetland Data Sheets

(Note: These forms only provide information on wetland characteristics within the construction corridor.

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

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovihs, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes X No	Plot ID: Wetland 1

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. <i>Onoclea sensibilis</i>	H	FACW	9.		
2. <i>Carex</i> spp.	H	FACW	10.		
3. <i>Lysimachia nummularia</i>	H	OBL	11.		
4. <i>Symplocarpus foetida</i>	H	OBL	12.		
5. <i>Phalaris arundinacea</i>	H	FACW+	13.		
6.			14.		
7.			15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Fringe wetland aligning the banks of S1, an unnamed intermittent tributary to Chippewa Creek					

HYDROLOGY

<p>--- Recorded Date (Describe in Remarks):</p> <p style="padding-left: 20px;">Stream, Lake, or Tide Group</p> <p>X Aerial Photographs</p> <p>X Other: NWI + OWI</p> <p>No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 20px;">Depth to Free Water in Pit: NA (in.)</p> <p style="padding-left: 20px;">Depth to Saturated Soil: 0 (in.)</p> <p style="padding-left: 20px;">Depth of Surface Water: NA (in.)</p>	<p>Wetland Hydrology Indicators</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;">Inundated</p> <p style="padding-left: 20px;">X Saturated in Upper 12 inches</p> <p style="padding-left: 20px;">Water Marks</p> <p style="padding-left: 20px;">Drift Lines</p> <p style="padding-left: 20px;">Sediment Deposits</p> <p style="padding-left: 20px;">Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p style="padding-left: 20px;">Oxidized Root Channels in Upper 12 inches</p> <p style="padding-left: 20px;">Water-Stained Leaves</p> <p style="padding-left: 20px;">X Local Soil Survey Data</p> <p style="padding-left: 20px;">FAC- Neutral Test</p> <p style="padding-left: 20px;">Other (Explain in Remarks)</p>
Remarks: -----	

SOILS

Map Unit Name (Series and Phase):		Euclid silt loam, occasionally flooded		Drainage Class: Somewhat poorly drained	
Taxonomy (Subgroup):		Aeric Haplaquepts		Field Observations Confirm Mapped Type? No	
Profile Description:					
<u>Depth (Inches)</u>	<u>Horizon</u>	<u>Matrix Color (Munsell Moist)</u>	<u>Mottle Colors (Munsell Moist)</u>	<u>Mottle Abundance/ Size/Contrast</u>	<u>Texture, Concretions, Structure, Etc.</u>
0-9	A	7.5YR 4/1	5YR 4/6	f-f-d	silty clay
Hydric Soil Indicators:					
	Histosol				Concretions
	Histic Epipedon				High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor				Organic Streaking in Sandy Soils
	Aquic Moisture Regime				Listed on Local Hydric Soils List
	Reducing Conditions		X		Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors				Other (Explain in Remarks)
Remarks: -----					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	No	Is this Sampling Point a Wetland?	X	Yes	No
Wetland Hydrology Present?	X	Yes	No				
Hydric Soils Present?	X	Yes	No				
Remarks: ALL CRITERIA MET = Wetland 1							

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

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes X No	Plot ID: Wetland 2

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. <i>Carex spp.</i>	H	FACW	9.		
2. <i>Phalaris arundinacea</i>	H	FACW+	10.		
3. <i>Juncus effusus</i>	H	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks:: Palustrine emergent wetland within wet field growth, located east of Stream 1					

HYDROLOGY

<p>Recorded Date (Describe in Remarks):</p> <p style="padding-left: 20px;">Stream, Lake, or Tide Group</p> <p>X Aerial Photographs</p> <p style="padding-left: 20px;">Other</p> <p>No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 20px;">Depth to Free Water in Pit: NA (in.)</p> <p style="padding-left: 20px;">Depth to Saturated Soil: 0 (in.)</p> <p style="padding-left: 20px;">Depth of Surface Water: NA (in.)</p>	<p>Wetland Hydrology Indicators</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;">Inundated</p> <p style="padding-left: 20px;">X Saturated in Upper 12 inches</p> <p style="padding-left: 20px;">Water Marks</p> <p style="padding-left: 20px;">Drift Lines</p> <p style="padding-left: 20px;">Sediment Deposits</p> <p style="padding-left: 20px;">Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p style="padding-left: 20px;">Oxidized Root Channels in Upper 12 inches</p> <p style="padding-left: 20px;">Water-Stained Leaves</p> <p style="padding-left: 20px;">Local Soil Survey Data</p> <p style="padding-left: 20px;">FAC- Neutral Test</p> <p style="padding-left: 20px;">Other (Explain in Remarks)</p>
Remarks: -----	

SOILS

Map Unit Name (Series and Phase): Holly silt loam, alkaline, (Hy)	Drainage Class: Poorly drained
Taxonomy (Subgroup): Typic Fluvaquents	Field Observations Confirm Mapped Type? No
Profile Description:	
Depth (Inches) Horizon Matrix Color (Munsell Moist) Mottle Colors (Munsell Moist) Mottle Abundance/ Size/Contrast Texture, Concretions, Structure, Etc.	
0-9 A Gray 10Y/2.5 --- --- silty clay	
Hydric Soil Indicators:	
<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in 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 checked="" type="checkbox"/> X Listed on National Hydric Soils List
<input checked="" type="checkbox"/> X Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)
Remarks: -----	

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> X	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Is this Sampling Point a Wetland? <input checked="" type="checkbox"/> X Yes No
Wetland Hydrology Present?	<input checked="" type="checkbox"/> X	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Hydric Soils Present?	<input checked="" type="checkbox"/> X	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Remarks: ALL CRITERIA MET = Wetland 2				

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

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Plot ID: Wetland 3

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. Phalaris arundinacea	H	FACW+	9.		
2. Juncus effusus	H	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Wet field located immediately east of Stream 2 (Silver Creek/Rogue Hollow)					

HYDROLOGY

___ Recorded Date (Describe in Remarks): Stream, Lake, or Tide Group X Aerial Photographs Other No Recorded Data Available	Wetland Hydrology Indicators Primary Indicators: Inundated X Saturated in Upper 12 inches Water Marks Drift Lines X Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 inches Water-Stained Leaves Local Soil Survey Data FAC- Neutral Test Other (Explain in Remarks)
Field Observations: Depth to Free Water in Pit: 18 (in.) Depth to Saturated Soil: 0 (in.) Depth of Surface Water: NA (in.)	
Remarks: -low-lying area east of Stream 2 and west of Hameton Road	

SOILS

Map Unit Name (Series and Phase): Holly silt loam, alkaline, (Hy) Taxonomy (Subgroup): Typic Fluvaquents	Drainage Class: Poorly drained Field Observations Confirm Mapped Type? No				
Profile Description:					
<u>Depth (Inches)</u>	<u>Horizon</u>	<u>Matrix Color (Munsell Moist)</u>	<u>Mottle Colors (Munsell Moist)</u>	<u>Mottle Abundance/ Size/Contrast</u>	<u>Texture, Concretions, Structure, Etc.</u>
0-9	A	10YR 4/2	7.5YR 3/4	f-f-d	silty clay loam
Hydric Soil Indicators:					
		<i>Histosol</i>	<i>Concretions</i>		
		Histic Epipedon	High Organic Content in Surface Layer in Sandy Soils		
		Sulfidic Odor	Organic Streaking in Sandy Soils		
		Aquic Moisture Regime	Listed on Local Hydric Soils List		
		Reducing Conditions	X	Listed on National Hydric Soils List	
X	Gleyed or Low-Chroma Colors		Other (Explain in Remarks)		
Remarks: -----					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	No	Is this Sampling Point a Wetland? X Yes No
Wetland Hydrology Present?	X	Yes	No	
Hydric Soils Present?	X	Yes	No	
Remarks: ALL CRITERIA MET = Wetland 3				

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

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: Vernal Pool
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes X No	Plot ID: Wetland 4

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1.			9.		
2. No vegetation			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Vernal pool; appears to artificially created depressional area located within tree line to the north side of the Proposed centerline					

HYDROLOGY

Recorded Date (Describe in Remarks): Stream, Lake, or Tide Group Aerial Photographs Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators Primary Indicators: Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 inches <input checked="" type="checkbox"/> Water-Stained Leaves Local Soil Survey Data FAC- Neutral Test Other (Explain in Remarks)
Field Observations: Depth to Free Water in Pit: >18 (in.) Depth to Saturated Soil: 0 (in.) Depth of Surface Water: 0-2 (in.)	
Remarks: -----	

SOILS

Map Unit Name (Series and Phase):		Berks silt loam 18-25%, (BrE)		Drainage Class: (Non-Hydric)	
Taxonomy (Subgroup):				Field Observations Confirm Mapped Type? No	
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.
0-9	A	10YR 4/2	---	---	silty clay
Hydric Soil Indicators:					
Histosol		Concretions			
Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils			
Sulfidic Odor		Organic Streaking in Sandy Soils			
Aquic Moisture Regime		Listed on Local Hydric Soils List			
Reducing Conditions		Listed on National Hydric Soils List			
X	Gleyed or Low-Chroma Colors	Other (Explain in Remarks)			
Remarks: -----					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	X	No	Is this Sampling Point a Wetland?	X	Yes	No
Wetland Hydrology Present?	X	Yes	No				
Hydric Soils Present?	X	Yes	No				
Remarks: Wetland 4 is a vernal pool							

Approved by HQUSACE 3/92

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: Wetland 5

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. <i>Onoclea sensibilis</i>	H	FACW	9.		
2. <i>Carex</i> spp.	H	FACW	10.		
3. <i>Lysimachia nummularia</i>	H	OBL	11.		
4. <i>Symplocarpus foetida</i>	H	OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Narrow fringe wetland aligning the right banks of the first centerline crossing of S3, an int. trib. to Tuscarawas River					

HYDROLOGY

___ Recorded Date (Describe in Remarks): Stream, Lake, or Tide Group Aerial Photographs Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators Primary Indicators: Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 inches Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data FAC- Neutral Test Other (Explain in Remarks)
Field Observations: Depth to Free Water in Pit: 3 (in.) Depth to Saturated Soil: 0 (in.) Depth of Surface Water: NA (in.)	
Remarks: -----	

SOILS

Map Unit Name (Series and Phase):		Wooster silt loam, 12-18% slopes moderately eroded (WuD2)		Drainage Class: (Non-Hydric)	
Taxonomy (Subgroup):		---		Field Observations Confirm Mapped Type? No	
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.
0-9	A	105YR 3/1	---	---	silty clay/muck
Hydric Soil Indicators:					
		Histosol		Concretions	
		Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils	
		Sulfidic Odor		Organic Streaking in Sandy Soils	
		Aquic Moisture Regime		Listed on Local Hydric Soils List	
		Reducing Conditions		Listed on National Hydric Soils List	
X	Gleyed or Low-Chroma Colors		Other (Explain in Remarks)		
Remarks: -----					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	No				
Wetland Hydrology Present?	X	Yes	No				
Hydric Soils Present?	X	Yes	No	Is this Sampling Point a Wetland?	X	Yes	No
Remarks: ALL CRITERIA MET = Wetland 5							

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

Project/Site: Franklin 20-inch	Date: April 26, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes X No	Plot ID: Wetland 6

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. <i>Carex spp.</i>	H	FACW	9.		
2. <i>Phalaris arundinacea</i>	H	FACW+	10.		
3. <i>Juncus effusus</i>	H	FACW	11.		
4. <i>Symplocarpus foetida</i>	H	OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Palustrine emergent wetland within swale area that drains south across the ROW into Stream 3					

HYDROLOGY

<p>Recorded Date (Describe in Remarks): Stream, Lake, or Tide Group Aerial Photographs Other <input checked="" type="checkbox"/> 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>Water Marks</p> <p>Drift Lines</p> <p>Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>Oxidized Root Channels in Upper 12 inches</p> <p>Water-Stained Leaves</p> <p>Local Soil Survey Data</p> <p>FAC- Neutral Test</p> <p>Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth to Free Water in Pit: 12 (in.)</p> <p>Depth to Saturated Soil: 0 (in.)</p> <p>Depth of Surface Water: 0-1 (in.)</p>	
Remarks: -----	

SOILS

Map Unit Name (Series and Phase): Wooster silt loam, 12-18% slopes moderately eroded (WuD2)	Drainage Class: (Non-Hydric)												
Taxonomy (Subgroup): ---	Field Observations Confirm Mapped Type? No												
Profile Description:													
<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Depth (Inches)</th> <th style="text-align: left; border-bottom: 1px solid black;">Horizon</th> <th style="text-align: left; border-bottom: 1px solid black;">Matrix Color (Munsell Moist)</th> <th style="text-align: left; border-bottom: 1px solid black;">Mottle Colors (Munsell Moist)</th> <th style="text-align: left; border-bottom: 1px solid black;">Mottle Abundance/ Size/Contrast</th> <th style="text-align: left; border-bottom: 1px solid black;">Texture, Concretions, Structure, Etc.</th> </tr> </thead> <tbody> <tr> <td>0-9</td> <td>A</td> <td>10YR 3/1</td> <td>---</td> <td>---</td> <td>silty clay</td> </tr> </tbody> </table>	Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.	0-9	A	10YR 3/1	---	---	silty clay	
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.								
0-9	A	10YR 3/1	---	---	silty clay								
Hydric Soil Indicators:													
<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; vertical-align: top;"> <input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors </td> <td style="width:50%; vertical-align: top;"> <input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks) </td> </tr> </table>	<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)											
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)												
Remarks: -----													

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	No	Is this Sampling Point a Wetland?
Wetland Hydrology Present?	X	Yes	No	
Hydric Soils Present?	X	Yes	No	
Is this Sampling Point a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Remarks: ALL CRITERIA MET = Wetland 6				

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

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: PEM/SS
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes X No	Plot ID: Wetland 7a

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Phalaris arundinacea	H	FACW+	9.		
2. Juncus effusus	H	FACW	10.		
3. Carex spp.	H	FACW	11.		
4. Typha latifolia	H	OBL	12.		
5. Symplocarpus foetida	H	OBL	13.		
6. Impatiens capensis	H	FACW	14.		
7. Cornus amomum	S	FACW	15.		
8. Salix spp.	S	FACW+	16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Large wetland complex located east of CR17 and west of railroad tracks. This wetland complex includes areas of open water.					

HYDROLOGY

<p>Recorded Date (Describe in Remarks):</p> <p style="padding-left: 20px;">Stream, Lake, or Tide Group</p> <p>X Aerial Photographs</p> <p>X Other: NWI + OWI</p> <p>No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth to Free Water in Pit: 0 (in.)</p> <p>Depth to Saturated Soil: 0 (in.)</p> <p>Depth of Surface Water: >5 (in.)</p>	<p>Wetland Hydrology Indicators</p> <p>Primary Indicators:</p> <p>X Inundated</p> <p>X Saturated in Upper 12 inches</p> <p>Water Marks</p> <p>Drift Lines</p> <p>X Sediment Deposits</p> <p>Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>X Oxidized Root Channels in Upper 12 inches</p> <p>Water-Stained Leaves</p> <p>Local Soil Survey Data</p> <p>FAC- Neutral Test</p> <p>Other (Explain in Remarks)</p>
Remarks: -Stream 3 flows into this wetland area. Railroad berm also likely source of impounding water/surface flow	

SOILS

Map Unit Name (Series and Phase): Holly silt loam, alkaline, (Hy)	Drainage Class: Poorly drained				
Taxonomy (Subgroup): Typic Fluvaquents	Field Observations Confirm Mapped Type? No				
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.
0-9	A	Gley 10Y 2.5	---	---	silty clay
Hydric Soil Indicators:					
X	Reducing Conditions		X	Listed on National Hydric Soils List	
	Gleyed or Low-Chroma Colors			Other (Explain in Remarks)	
Remarks: -----					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	No	Is this Sampling Point a Wetland? <table style="margin-left: 20px;"> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">No</td> </tr> </table>	X	Yes	No
X	Yes	No					
Wetland Hydrology Present?	X	Yes	No				
Hydric Soils Present?	X	Yes	No				
Remarks: ALL CRITERIA MET = Wetland 7a							

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

Project/Site: Franklin 20-inch	Date: April 27, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: PEM/SS/FO
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes X No	Plot ID: Wetland 7b

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. Phalaris arundinacea	H	FACW	9. Salix spp.	T	FACW
2. Carex spp.	H	FACW	10. Acer negundo	T	FAC+
3. Impatiens spp.	H	FACW	11. Ullmus rubra	T	FAC
4. Rosa palustris	S	OBL	12. Acer saccharinum	T	FACW
5. Cornus amomum	S	FACW	13.		
6. Typha latifolia	H	OBL	14.		
7. Onoclea sensibilis	H	OBL	15.		
8. Fraxinus pennsylvanicus	T	FACW	16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Large wetland complex that extends from the east side of railroad tracks, bisected by the Ohio Tow Path, and then extends east toward the Tuscarawas River.					

HYDROLOGY

<u>Recorded Date (Describe in Remarks):</u> Stream, Lake, or Tide Group X Aerial Photographs X Other: NWI + OWI No Recorded Data Available	<u>Wetland Hydrology Indicators</u> <u>Primary Indicators:</u> X Inundated X Saturated in Upper 12 inches <u>Water Marks</u> Drift Lines Sediment Deposits Drainage Patterns in Wetlands <u>Secondary Indicators (2 or more required):</u> Oxidized Root Channels in Upper 12 inches X Water-Stained Leaves Local Soil Survey Data FAC- Neutral Test Other (Explain in Remarks)
<u>Field Observations:</u> Depth to Free Water in Pit: 0 (in.) Depth to Saturated Soil: 0 (in.) Depth of Surface Water: 0-8 (in.)	
Remarks: -----	

SOILS

Map Unit Name (Series and Phase):		Holly silt loam (Hy)		Drainage Class:		Poorly drained	
Taxonomy (Subgroup):		Typic Fluvaquents		Field Observations Confirm Mapped Type?		No	
Profile Description:							
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.		
0-9	A	7.5YR 4/1	---	---	silty clay		
Hydric Soil Indicators:							
Histosol				Concretions			
Histic Epipedon				High Organic Content in Surface Layer in Sandy Soils			
Sulfidic Odor				Organic Streaking in Sandy Soils			
Aquic Moisture Regime				X	Listed on Local Hydric Soils List		
Reducing Conditions				X	Listed on National Hydric Soils List		
X	Gleyed or Low-Chroma Colors				Other (Explain in Remarks)		
Remarks: -----							

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	X	No				
Wetland Hydrology Present?	X	Yes	No				
Hydric Soils Present?	X	Yes	No	Is this Sampling Point a Wetland?	X	Yes	No
Remarks: ALL CRITERIA MET - Wetland 7b							

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

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes X No	Plot ID: Wetland 8

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Impatiens spp.</i>	H	FACW	9.		
2. <i>Carex spp.</i>	H	FACW	10.		
3. <i>Lysimachia nummularia</i>	H	OBL	11.		
4. <i>Phalaris arundinacea</i>	H	FACW+	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Drainage swale bisecting two pasture from old field growth, located west of West Nimisila Road					

HYDROLOGY

Recorded Date (Describe in Remarks): Stream, Lake, or Tide Group Aerial Photographs Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators Primary Indicators: Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 inches Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data FAC- Neutral Test Other (Explain in Remarks)
Field Observations: Depth to Free Water in Pit: >18 (in.) Depth to Saturated Soil: 0 (in.) Depth of Surface Water: NA (in.)	
Remarks: -----	

SOILS

Map Unit Name (Series and Phase):		Canfield silt loam, 2-6% slopes (CdB)		Drainage Class: Somewhat poorly drained	
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type? No			
Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.
0-9	A	10YR 3/2	7.5YR 3/4	f-f-d	silty clay loam
Hydric Soil Indicators:					
Histosol		Concretions			
Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils			
Sulfidic Odor		Organic Streaking in Sandy Soils			
Aquic Moisture Regime		Listed on Local Hydric Soils List			
Reducing Conditions		X	Listed on National Hydric Soils List		
X	Gleyed or Low-Chroma Colors		Other (Explain in Remarks)		
Remarks: -----					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	No	Is this Sampling Point a Wetland?	X	Yes	No
Wetland Hydrology Present?	X	Yes	No				
Hydric Soils Present?	X	Yes	No				
Remarks: ALL CRITERIA MET = Wetland 8							

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

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: PEM/SS
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes X No	Plot ID: Welland 9a

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex spp.	H	FACW	9.		
2. Phalaris arundinacea	H	FACW+	10.		
3. Juncus effusus	H	FACW	11.		
4. Typha latifolia	H	OBL	12.		
5. Lysimachia nummularia	H	OBL	13.		
6. Salix spp.	S	FACW	14.		
7. Cornus sp.	S	FAC	15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Palustrine emergent/scrub-shrub complex located on the west side of West Nimisila Road					

HYDROLOGY

<p>Recorded Date (Describe in Remarks):</p> <p style="padding-left: 20px;">Stream, Lake, or Tide Group</p> <p>X Aerial Photographs</p> <p>X Other NWI + OWI</p> <p>No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 20px;">Depth to Free Water in Pit: NA (in.)</p> <p style="padding-left: 20px;">Depth to Saturated Soil: 0 (in.)</p> <p style="padding-left: 20px;">Depth of Surface Water: NA (in.)</p>	<p>Wetland Hydrology Indicators</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;">Inundated</p> <p style="padding-left: 20px;">X Saturated in Upper 12 inches</p> <p style="padding-left: 20px;">Water Marks</p> <p style="padding-left: 20px;">Drift Lines</p> <p style="padding-left: 20px;">Sediment Deposits</p> <p style="padding-left: 20px;">Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p style="padding-left: 20px;">Oxidized Root Channels in Upper 12 inches</p> <p style="padding-left: 20px;">Water-Stained Leaves</p> <p style="padding-left: 20px;">X Local Soil Survey Data</p> <p style="padding-left: 20px;">FAC- Neutral Test</p> <p style="padding-left: 20px;">Other (Explain in Remarks)</p>
Remarks: -----	

SOILS

Map Unit Name (Series and Phase):		Frenchtown silt loam (Fy)		Drainage Class:		Poorly drained	
Taxonomy (Subgroup):		Typic Fluvaquents		Field Observations Confirm Mapped Type?		No	
Profile Description:							
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.		
0-9	A	10YR 4/2	10YR 5/8	f-f-d	silly clay		
Hydric Soil Indicators:							
Histosol				Concretions			
Histic Epipedon				High Organic Content in Surface Layer in Sandy Soils			
Sulfidic Odor				Organic Streaking in Sandy Soils			
Aquic Moisture Regime				Listed on Local Hydric Soils List			
Reducing Conditions				X	Listed on National Hydric Soils List		
X	Gleyed or Low-Chroma Colors				Other (Explain in Remarks)		
Remarks: -----							

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	No				
Wetland Hydrology Present?	X	Yes	No				
Hydric Soils Present?	X	Yes	No	Is this Sampling Point a Wetland?	X	Yes	No
Remarks: ALL CRITERIA MET = Wetland 9a							

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

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Wayne
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) Yes X No	Plot ID: Wetland 9b

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Phalaris arundinacea</i>	H	FACW+	9.		
2. <i>Juncus effusus</i>	H	FACW	10.		
3. <i>Eleocharis</i> spp.	H	OBL	11.		
4. <i>Ranunculus repens</i>	H	FAC	12.		
5. <i>Lysimachia nummularia</i>	H	OBL	13.		
6.			14.		
7.			15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks:: Wet pasture located on east/south side of West Nimisila Road					

HYDROLOGY

<p>Recorded Date (Describe in Remarks):</p> <p style="padding-left: 20px;">Stream, Lake, or Tide Group</p> <p>X Aerial Photographs</p> <p>X Other NWI + OWI</p> <p>No Recorded Data Available</p>	<p>Wetland Hydrology Indicators</p> <p>Primary Indicators:</p> <p>X Inundated</p> <p>X Saturated in Upper 12 inches</p> <p>Water Marks</p> <p>Drift Lines</p> <p>Sediment Deposits</p> <p>Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>X Oxidized Root Channels in Upper 12 inches</p> <p>Water-Stained Leaves</p> <p>X Local Soil Survey Data</p> <p>FAC- Neutral Test</p> <p>Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth to Free Water in Pit: 0 (in.)</p> <p>Depth to Saturated Soil: 0 (in.)</p> <p>Depth of Surface Water: 0-8 (in.)</p>	
Remarks: ----	

SOILS

Map Unit Name (Series and Phase): Frenchtown silt loam		Drainage Class: Poorly drained			
Taxonomy (Subgroup): Typic Fluvaquents		Field Observations Confirm Mapped Type? No			
Profile Description:					
<u>Depth (Inches)</u>	<u>Horizon</u>	<u>Matrix Color (Munsell Moist)</u>	<u>Mottle Colors (Munsell Moist)</u>	<u>Mottle Abundance/ Size/Contrast</u>	<u>Texture, Concretions, Structure, Etc.</u>
0-9	A	10YR 4/2	10YR 5/8	f-f-d	silty clay
Hydric Soil Indicators:					
Histosol		Concretions			
Histlic Epipedon		High Organic Content in Surface Layer in Sandy Soils			
Sulfidic Odor		Organic Streaking in Sandy Soils			
Aquic Moisture Regime		X	Listed on Local Hydric Soils List		
Reducing Conditions		X	Listed on National Hydric Soils List		
X	Gleyed or Low-Chroma Colors		Other (Explain in Remarks)		
Remarks: -----					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	No	Is this Sampling Point a Wetland? X Yes No
Wetland Hydrology Present?	X	Yes	No	
Hydric Soils Present?	X	Yes	No	
Remarks: ALL CRITERIA MET = Wetland 9b				

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

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? X Yes No	Community ID: PEM/SS
Is the site significantly disturbed (Atypical Situation)? Yes X No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? Yes X No (If needed, explain on reverse)	Plot ID: Wetland 10

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Phalaris arundinacea	H	FACW	9. Viburnum dentatum	S	FAC
2. Typha latifolia	H	OBL	10. Cornus sp.	S	FACW
3. Vernonia sp.	H	FAC	11. Impatiens spp.	H	FACW
4. Carex.	H	FACW	12. Onoclea sensibilis	H	OBL
5. Acer negundo	S	FAC	13.		
6. Ulmus rubra	S	FAC	14.		
7. Salix spp.	S	FACW	15.		
8. Symplecarpus foetida	H	OBL	16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Large wetland complex that is bisected by Stream 7, an unnamed perennial tributary to Nimisila Creek.					

HYDROLOGY

<u>Recorded Date (Describe in Remarks):</u> Stream, Lake, or Tide Group X Aerial Photographs X Other (NWI + OWI) No Recorded Data Available	Wetland Hydrology Indicators Primary Indicators: X Inundated X Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 inches X Water-Stained Leaves X Local Soil Survey Data FAC- Neutral Test Other (Explain in Remarks)
Field Observations: Depth to Free Water in Pit: 10 (in.) Depth to Saturated Soil: 0 (in.) Depth of Surface Water: 0-3 (in.)	
Remarks: -----	

SOILS

Map Unit Name (Series and Phase):		Sebring silt loam (Sb)		Drainage Class:		Poorly drained	
Taxonomy (Subgroup):		Typic Ochraqualfs		Field Observations Confirm Mapped Type?		No	
Profile Description:							
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.		
0-9	A	10YR 4/2	10YR 5/6	f-f-d	silty clay		
Hydric Soil Indicators:							
Histosol				Concretions			
Histic Epipedon				High Organic Content in Surface Layer in Sandy Soils			
Sulfidic Odor				Organic Streaking in Sandy Soils			
Aquic Moisture Regime				X	Listed on Local Hydric Soils List		
Reducing Conditions				X	Listed on National Hydric Soils List		
X	Gleyed or Low-Chroma Colors				Other (Explain in Remarks)		
Remarks:							

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	X	No				
Wetland Hydrology Present?	X	Yes	No				
Hydric Soils Present?	X	Yes	No	Is this Sampling Point a Wetland?	X	Yes	No
Remarks: ALL CRITERIA MET - Wetland 10							

Approved by HQUSACE 3/92

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Franklin 20-inch	Date: May 14, 2008
Applicant/Owner: Dominion East Ohio	County: Summit
Investigators: C. Lovins, L. Minda	State: Ohio
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: Pipeline Centerline
Is the area a potential Problem Area? (If needed, explain on reverse) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: Wetland 11

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Typha latifolia</i>	H	OBL	9.		
2. <i>Juncus effusus</i>	H	FACW	10.		
3. <i>Lysimachia nummularia</i>	H	OBL	11.		
4. <i>Verbesina alternifolia</i>	H	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW, FAC (excluding FAC-):			100%		
Remarks: Low swale located in residential area; drainage is directed to buried culvert					

HYDROLOGY

<u> </u> Recorded Date (Describe in Remarks): Stream, Lake, or Tide Group Aerial Photographs Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches Water Marks Drift Lines Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 inches Water-Stained Leaves Local Soil Survey Data FAC- Neutral Test Other (Explain in Remarks)
Field Observations: Depth to Free Water in Pit: 14 (in.) Depth to Saturated Soil: 0 (in.) Depth of Surface Water: 0-1 (in.)	
Remarks: -----	

SOILS

Map Unit Name (Series and Phase):		Wooster silt loam, 6-12% slopes moderately eroded (WuC2)		Drainage Class:		Well-Drained	
Taxonomy (Subgroup):		---		Field Observations Confirm Mapped Type?		No	
Profile Description:							
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, Etc.		
0-9	A	105YR 3/2	10YR 5/8	f-f-d	silty clay		
Hydric Soil Indicators:							
		Histosol		Concretions			
		Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils			
		Sulfidic Odor		Organic Streaking in Sandy Soils			
		Aquic Moisture Regime		Listed on Local Hydric Soils List			
		Reducing Conditions		Listed on National Hydric Soils List			
X		Gleyed or Low-Chroma Colors		Other (Explain in Remarks)			
Remarks: -----							

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	X	Yes	No				
Wetland Hydrology Present?	X	Yes	No				
Hydric Soils Present?	X	Yes	No	Is this Sampling Point a Wetland?	X	Yes	No
Remarks: ALL CRITERIA MET = Wetland 11							

APPENDIX G
Ohio Rapid Assessment Method
Field Data Forms

(Note: These forms only provide information on wetland characteristics within the construction corridor.)

Site: Franklin 20-inch; Wetland 1 Rater(s): C. Lovins, L. Minda Date: April 26, 2008

2 2

Metric 1. Wetland Area (size).

max 5 pts subject

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)

12 14

Metric 2. Upland buffers and surrounding land use.

max 14 pts subject

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 21

Metric 3. Hydrology.

max 7 pts subject

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 (<16.7in) (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 type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input checked="" type="checkbox"/> other pipeline

3 24

Metric 4. Habitat Alteration and Development.

max 25 pts subject

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 (8)
- Recovered (6)
- Recovering (3)
- Recent or no recovery (1)

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

24

submit this page

Site: Franklin 20-inch; Wetland 1 Rater(s): C. Lovins, L. Minda Date: April 26, 2008

24

-10 14

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated

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

4 18

Metric 6. Plant communities, interspersions, microtopography.

max 27 pts. subtotal 6a. Wetland Vegetation Communities

Scores all present using 0 to 3 scale.

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

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

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

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

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

6d. Microtopography.

Scores all present using 0 to 3 scale.

- 1 Vegetated hummocks/mounds
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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 in very small amounts or little common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

22 GRAND TOTAL(max 100 pts)

Site: Franklin 20-inch; Wetland 2 **Rater(s):** C. Lovins, L. Minda **Date:** April 26, 2008

3 **3**

Metric 1. Wetland Area (size).

pts: 5 pts editorial

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)

9 **12**

Metric 2. Upland buffers and surrounding land use.

pts: 14 pts editorial

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

- WIDE. Buffers average 80m (164ft) or more around wetland perimeter (7)
- MEDIUM. Buffers average 25m to <80m (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. (6)
- MODERATELY HIGH. Residential, leached pasture, park, conservation tillage, new fallow field. (3)
- HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

11 **23**

Metric 3. Hydrology.

pts: 20 pts editorial

3a Sources of Water. Score all that apply.

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

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

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

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

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

3b Connectivity. Score all that apply.

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

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

- Semi-to-permanently inundated/saturated (6)
- Regularly inundated/saturated (3)
- Seasonally inundated (2)
- Seasonally saturated in upper 30cm (1.2m) (1)

Check all disturbances observed.

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

6 **29**

Metric 4. Habitat Alteration and Development.

pts: 23 pts editorial

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 (5)
- Recovering (3)
- Recent or no recovery (1)

Check all disturbances observed.

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

29
score this page

Site: Franklin 20-inch; Wetland 2 Rater(s): C. Lovins, L. Minda Date: April 26, 2008

29

29

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 Prairie (Oak Openings) (10)
- Relict Wet Prairies (10)
- Known occurrence state/federal threatened or endangered species (10)
- Significant migratory songbird/waterfowl habitat or usage (10)
- Category I Wetland See Question 1 Qualitative Rating (-10)

5 34

Metric 6. Plant communities, interspersions, microtopography.

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

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

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

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

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

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

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

- 1 Vegetated hummocks/tussocks
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dch
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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 9.58 acres)
3	High 4ha (9.58 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts of; 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

34 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Record for the scoring break points between wetland categories at the following URL: <http://www.epa.state.or.us/oram/01/051.htm>

Site: Franklin 20-inch; Wetland 3 Rater(s): C. Lovins, L. Minda Date: April 26, 2008

3 3

Metric 1. Wetland Area (size).

max 3 pts subtotal

Select one size class and assign score.

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

7 10

Metric 2. Upland buffers and surrounding land use.

max 14 pts subtotal

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

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

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

- VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife areas, 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, mowing, construction. (1)

12 22

Metric 3. Hydrology.

max 20 pts subtotal

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

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

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

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

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

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

3b. Connectivity. Score all that apply

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

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

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

Check all disturbances observed

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

6 28

Metric 4. Habitat Alteration and Development.

max 25 pts subtotal

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

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

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

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

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

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

Check all disturbances observed.

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

28

submit this page

Site: Franklin 20-inch; Wetland 3 Rater(s): C. Lovins, L. Minda Date: April 26, 2008

28

subtotal

--- 28

Metric 5. Special Wetlands.

max (25 pts) subtotal Check all that apply and score as indicated

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

5 33

Metric 6. Plant communities, interspersions, microtopography.

max (25 pts) subtotal 6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale:

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

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

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

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

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

6d. Microtopography

Score all present using 0 to 3 scale.

- 1 Vegetated hummocks/mounds
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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
mid	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 9.58 acres)
3	High 4ha (9.58 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

33 GRAND TOTAL (max 100 pts)

Site: Franklin 20-inch; Wetland 4 **Rater(s):** C. Lovins, L. Minda **Date:** April 26, 2008

0 0

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)

0 7

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. (6)
 - MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
 - HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4 11.5

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)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest, complex) (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Modifications to natural hydrologic regime. Score one or double-check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed:

<input type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstorm water)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/ditch track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input checked="" type="checkbox"/> other: pipeline

11.5 14.5

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 (5)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed:

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

14.5

submits 7/3 page

Site: Franklin 20-inch; Wetland 4 Rater(s): C. Lovins, L. Minda Date: April 26, 2008

14.5

subtotal's page

-10 4.5

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated.

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

4.5 8.5

Metric 6. Plant communities, interspersions, microtopography.

max 25 pts. subtotal 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

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

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/mounds
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) diam
- 1 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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

Native Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

8.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring key and page between version categories at the following address: <http://www.epa.state.nv.us/ram/401/01.htm>

Site: Franklin 20-inch; Wetland 5 Rater(s): C. Lovins, L. Minda Date: May 14, 2008

1 1

Metric 1. Wetland Area (size).

- max 6 pts subtotal
- Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

9 10

Metric 2. Upland buffers and surrounding land use.

- max 14 pts subtotal
- 2a Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - MEDIUM. Buffers average 25m to <50m (82ft 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)

10 20

Metric 3. Hydrology.

- max 22 pts subtotal
- 3a Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or double check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed:

<input type="checkbox"/> dirt	<input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road built/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input checked="" type="checkbox"/> other: pipeline

3 23

Metric 4. Habitat Alteration and Development.

- max 25 pts subtotal
- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (5)
 - 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 checked="" type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

23

Site: Franklin 20-inch; Wetland 5 Rater(s): C. Lovins, L. Minda Date: May 14, 2008

23

--- 23

Metric 5. Special Wetlands.

max 10 pts; subtotal Check all that apply and score as indicated

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

2 25

Metric 6. Plant communities, interspersions, microtopography.

max 25 pts; subtotal 6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.

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

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

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

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

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

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

- 0 Vegetated hummocks/bumps
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dch
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

25 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM State Calibration Report for the scoring breakdown between wetland categories at the following address: <http://www.epa.state.pa.us/wet/4010501.htm>

Site: Franklin 20-inch; Wetland 6 Rater(s): C. Lovins, L. Minda Date: May 14, 2008

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

9 11

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 80m (164ft) or more around wetland perimeter (7)
 - MEDIUM. Buffers average 25m to <50m (82ft 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)

10 21

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)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/land (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or double-check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double-check and average.
- | | | |
|--|---|--|
| <input type="checkbox"/> None or none apparent (1/2) | <input type="checkbox"/> ditch | <input type="checkbox"/> point-source (nonstorm-water) filling/grading |
| <input type="checkbox"/> Recovered (7) | <input type="checkbox"/> tile | <input type="checkbox"/> road bed/RR track |
| <input checked="" type="checkbox"/> Recovering (3) | <input type="checkbox"/> dike | <input type="checkbox"/> dredging |
| <input type="checkbox"/> Recent or no recovery (1) | <input type="checkbox"/> weir | <input checked="" type="checkbox"/> other: pipeline |
| | <input type="checkbox"/> stormwater input | |

3 24

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.
- | | | |
|---|--|---|
| <input type="checkbox"/> None or none apparent (9) | <input checked="" type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> Recovered (5) | <input checked="" type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> Recovering (3) | <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input checked="" type="checkbox"/> Recent or no recovery (1) | <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| | <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| | <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

24

continues this page

Site: Franklin 20-inch; Wetland 6 Rater(s): C. Lovins, L. Minda Date: May 14, 2008

24

--- 24

Metric 5. Special Wetlands.

max pts: subtotal: Check all that apply and score as indicated

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

2 26

Metric 6. Plant communities, interspersions, microtopography.

max pts: subtotal: 6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.

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

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

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

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

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

6d. Microtopography

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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 no 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 9.58 acres)
3	High 4ha (9.58 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or infrequently 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

26 GRAND TOTAL (max 100 pts)

Refer to the most recent QRAM Score Calibration Report for the scoring breaks for each wetland category at the following address: <http://www.ebataje.com/etawv4011501.htm>

Site: Franklin 20-inch; Wetland 7a Rater(s): C. Lovins, L. Minda Date: May 14, 2008

4 4

Metric 1. Wetland Area (size).

max 4 pts subtotal

Select one size class and assign score.

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

14 18

Metric 2. Upland buffers and surrounding land use.

max 14 pts subtotal

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

- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- MEDIUM. Buffers average 25m to <50m (82ft 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, leached pasture, park, conservation blade, new fallow field. (3)
- HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

19 37

Metric 3. Hydrology.

max 37 pts subtotal

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

- Semi- to permanently inundated/saturated (4)
- Regularly inundated/saturated (3)
- Seasonally inundated (2)
- Seasonally saturated in upper 30cm (1.2m) (1)

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

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

Check all disturbances observed:	
<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	<input checked="" type="checkbox"/> other pipeline

9 46

Metric 4. Habitat Alteration and Development.

max 25 pts subtotal

4a. Substrates 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 (5)
- 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 checked="" type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

46

submits this page

Site: Franklin 20-inch; Wetland7a Rater(s): C. Lovins, L. Minda Date: May 14, 2008

46

--- 46

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated

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

13 59

Metric 6. Plant communities, interspersions, microtopography.

max 22 pts. subtotal 6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale:

- 1 Aquatic bed
- 2 Emergent
- 1 Shrub
- 0 Forest
- 0 Mudflats
- 1 Open water
- 0 Other

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

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

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

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

6d. Microtopography

Score all present using 0 to 3 scale.

- 2 Vegetated hummocks/mounds
- 1 Coarse woody debris >15cm (6in)
- 1 Standing dead >25cm (10in) dbh
- 1 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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 9.89 acres)
3	High 4ha (9.89 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts of (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

59 GRAND TOTAL(max 100 pts)

Refer to the most recent QRAM Site Calibration Report for the scoring breakdown by wetland category at the following address: <http://www.epa.state.co.us/oram/5011201.htm>

Site: Franklin 20-inch; Wetland 7b **Rater(s):** C. Lovins, L. Minda **Date:** May 14, 2008

4 **4**

Metric 1. Wetland Area (size).

- max 4 pts subtotal
- Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

14 **18**

Metric 2. Upland buffers and surrounding land use.

- max 14 pts subtotal
- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE.** Buffers average 50m (164ft) or more around wetland perimeter (7)
 - MEDIUM.** Buffers average 25m to <50m (82ft 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)

19 **37**

Metric 3. Hydrology.

- max 37 pts subtotal
- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or double check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- | | | | |
|---|--|--|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> None or none apparent (12) <input type="checkbox"/> Recovered (7) <input checked="" type="checkbox"/> Recovering (3) <input type="checkbox"/> Recent or no recovery (1) | <p>Check all disturbances observed:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> point source (Nonstormwater) <input type="checkbox"/> filling/grading <input checked="" type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input checked="" type="checkbox"/> other pipeline </td> </tr> </table> | <ul style="list-style-type: none"> <input type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <ul style="list-style-type: none"> <input type="checkbox"/> point source (Nonstormwater) <input type="checkbox"/> filling/grading <input checked="" type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input checked="" type="checkbox"/> other pipeline |
| <ul style="list-style-type: none"> <input type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <ul style="list-style-type: none"> <input type="checkbox"/> point source (Nonstormwater) <input type="checkbox"/> filling/grading <input checked="" type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input checked="" type="checkbox"/> other pipeline | | |

10 **47**

Metric 4. Habitat Alteration and Development.

- max 25 pts subtotal
- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- | | | | |
|---|--|---|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> None or none apparent (9) <input type="checkbox"/> Recovered (6) <input checked="" type="checkbox"/> Recovering (3) <input type="checkbox"/> Recent or no recovery (1) | <p>Check all disturbances observed:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment </td> </tr> </table> | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <ul style="list-style-type: none"> <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |
| <ul style="list-style-type: none"> <input checked="" type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <ul style="list-style-type: none"> <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment | | |

47

subtotal this page

Site: Franklin 20-inch; Wetland7b Rater(s): C. Lovins, L. Minda Date: May 14, 2008

47

subtotal: 47 pts

5 52

Metric 5. Special Wetlands.

max: 12 pts

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)

16 68

Metric 6. Plant communities, interspersions, microtopography.

max: 25 pts

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

- 1 Aquatic bed
- 2 Emergent
- 1 Shrub
- 2 Forest
- 0 Mudflats
- 1 Open water
- 0 Other

6b. horizontal (plan view) Interspersion

Select only one.

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

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

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

6d. Microtopography

Score all present using 0 to 3 scale.

- 2 Vegetated hummocks/mounds
- 1 Coarse woody debris >15cm (6in)
- 1 Standing dead >25cm (10in) dbh
- 1 Amphibian breeding pools

Vegetation Community Cover Scale

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

Qualitative 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 9.58 acres)
3	High 4ha (9.58 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

68 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakdown between wetland categories at the following address: <http://www.epa.state.or.us/dsw4011e01.htm>

Site: Franklin 20-inch; Wetland 8 **Rater(s):** C. Lovins, L. Minda **Date:** April 26, 2008

1 **1**

Metric 1. Wetland Area (size).

- max 5 pts subject
- 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)

9 **10**

Metric 2. Upland buffers and surrounding land use.

- max 14 pts subject
- 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)

8 **18**

Metric 3. Hydrology.

- max 22 pts subject
- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest, complex) (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or double check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed.

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

3 **21**

Metric 4. Habitat Alteration and Development.

- max 22 pts subject
- 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 silting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

21

subject this page

Site: Franklin 20-inch; Wetland 8 Rater(s): C. Lovins, L. Minda Date: April 26, 2008

21

subtotal: 216 pts

21

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated

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

4 25

Metric 6. Plant communities, interspersions, microtopography.

max 25 pts. subtotal 6a. Wetland Vegetation Communities
Score all present using 0 to 3 scale.

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

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

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

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

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

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

- 1 Vegetated hummocks/mounds
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) debris
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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
med	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 of, if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

25 GRAND TOTAL(max 100 pts)

Site: Franklin 20-inch; Wetland 9a Rater(s): C. Lovins, L. Minda Date: May 14, 2008

4 4

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)

7 11

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)

12 23

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)
- 3b. Maximum water depth. Select only one and assign score.
- <0.2 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3c. 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)
- 3d. 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)
- 3e. 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 (nonstorm water) |
| <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 | <input checked="" type="checkbox"/> other: pipeline |

8 31

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 (5)
 - 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 checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

31

Site: Franklin 20-inch; Wetland9a Rater(s): C. Lovins, L. Minda Date: May 14, 2008

31

subtotal

--- 31

max 12 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)

5 36

max 22 pts

subtotal

Metric 6. Plant communities, interspersions, microtopography.

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

- 0 Aquatic bed
- 2 Emergent
- 1 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other

6b. Horizontal (plan view) interspersions
Select only one.

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

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

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

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

- 1 Vegetated hummocks/mounds
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) d.b.h.
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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 no presence of rare threatened or endangered spp.
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

36 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakdown by wetland category. All the following address: <http://www.dnr.state.co.us/wetland/01/031.htm>

Site: Franklin 20-inch; Wetland 9b	Rater(s): C. Lovins, L. Minda	Date: May 14, 2008
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4	4
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Metric 1. Wetland Area (size).

max 4 pts subtotal

Select one size class and assign score.

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

5	9
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Metric 2. Upland buffers and surrounding land use.

max 14 pts subtotal

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

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

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

- VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- LOW. Old field (>10 years), 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)

10	19
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Metric 3. Hydrology.

max 20 pts subtotal

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed	
<input type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> fill	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road/battle track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input checked="" type="checkbox"/> other: pipeline

5	24
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Metric 4. Habitat Alteration and Development.

max 22 pts subtotal

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

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

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

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

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

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

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

24

subtotal this page

Site: Franklin 20-inch; Wetland9b Rater(s): C. Lovins, L. Minda Date: May 14, 2008

24

--- 24

Metric 5. Special Wetlands.

max 10 pts subtotal Check all that apply and score as indicated.

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

5 29

Metric 6. Plant communities, interspersions, microtopography.

max 25 pts subtotal 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other

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

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

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

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

6d. Microtopography

Score all present using 0 to 3 scale.

- 2 Vegetated hummocks/mounds
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 1 Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.68 acres)
3	High 4ha (9.68 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

29 GRAND TOTAL (max 100 pts)

Site: Franklin 20-inch; Wetland 10 Rater(s): C. Lovins, L. Minda Date: May 14, 2008

4 4

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)

9 13

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)

16.5 29.5

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)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or double check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed.

<input type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstorm-water)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input checked="" type="checkbox"/> other: pipeline

8 37.5

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 checked="" type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

37.5

submits 9/3 page

Site: Franklin 20-inch; Wetland 10 Rater(s): C. Lovins, L. Minda Date: May 14, 2008

37.5

--- 37.5

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated

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

12 49.5

Metric 6. Plant communities, interspersions, microtopography.

max 25 pts. subtotal 6a. Wetland Vegetation Communities:

Score all present using 0 to 3 scale.

- 1 Aquatic bed
- 2 Emergent
- 1 Shrub
- 0 Forest
- 0 Mudflats
- 1 Open water
- 0 Other

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

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

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

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

6d. Microtopography

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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 6thn, 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 infrequent, of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

49.5 GRAND TOTAL (max 100 pts)

Site: Franklin 20-inch; Wetland 11 Rater(s): C. Lovins, L. Minda Date: April 26, 2008

1 1

Metric 1. Wetland Area (size).

max 5 pts subtotal

Select one size class and assign score.

- >50 acres (>20.2ha) (6 pts)
- 25 to <50 acres (10 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)

7 8

Metric 2. Upland buffers and surrounding land use.

max 14 pts subtotal

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

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

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

- VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- LOW. Old field (>10 years), 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 13

Metric 3. Hydrology.

max 20 pts subtotal

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

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

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

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

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

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

Check all disturbances observed

- ditch
- tile
- dike
- weir
- stormwater input
- point source (nonstormwater)
- filling/grading
- road used/RR track
- dredging
- other: pipeline

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)

3 16

Metric 4. Habitat Alteration and Development.

max 20 pts subtotal

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

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

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

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

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

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

Check all disturbances observed

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

16

subtotal this page

Site: Franklin 20-inch; Wetland 11 Rater(s): C. Lovins, L. Minda Date: April 26, 2008

16

-10 21

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 Prairie (Oak Opening) (10)
- Relict Wet Prairies (10)
- Known occurrence state/federal threatened or endangered species (10)
- Significant migratory songbird/water fowl habitat or usage (10)
- Category 1 Wetland - See Question 1- Qualitative Rating (-10)

2 23

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale

- 0 Aquatic bed
- 1 Emergent
- 0 Shrub
- 0 Forest
- 0 Mirellats
- 0 Open water
- 0 Other

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

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

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

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

6d. Microtopography

Score all present using 0 to 3 scale

- 1 Vegetated hummocks/mounds
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dth
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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 with presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

23 GRAND TOTAL (max 100 pts)

APPENDIX 07-1B

**SUPPLEMENTAL U.S. ARMY CORPS OF ENGINEERS
WETLAND DELINATION FORMS FROM GAI FIELD SURVEYS**

WETLAND 9d

DATA FORM

ROUTINE WETLAND DETERMINATION
1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE
 Applicant/Owner: DEOG
 Investigator: jav/jen
 Do Normal Circumstances exist on this site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No

Date: 4-17-08
 County: SUMMIT
 State: OH
 Community ID: PEM
 Transect ID: _____
 Plot ID: W08-JEN-013

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Phalaris arundinacea</u>	<u>H</u>	<u>FACW+</u>	9. _____	_____	_____
2. <u>Juncus effusus</u>	<u>H</u>	<u>FACW+</u>	10. _____	_____	_____
3. <u>Carex sp</u>	<u>H</u>	_____	11. _____	_____	_____
4. <u>Cytisochia nummularia</u>	<u>H</u>	<u>OBL</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): > 75%

Remarks: _____

HYDROLOGY

RECORDED DATA (Describe in Remarks):
 Stream, Lake, or Tide Gauge
 Aerial Photographs
 Other
 No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: 1-4 (in.)
 Depth to Free Water in Pit: _____ (in.)
 Depth to Saturated Soil: _____ (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

Inundation of 1-4"

Remarks: _____

WETLAND QC

WOH-JEN-013

SOILS

Sebring Silt Loam (sb)

Sb: PD

Map Unit Name

(Series and Phase):

Frenchtown Silt Loam (Fr)

Fr: PD

Drainage Class:

Taxonomy (Subgroup):

Sb: Typic Endoaqualfs

Field Observations

Fr: Typic Fragiaqualfs

Confirm Mapped Type?

Yes

No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6"	A	2.5Y 3/2	10YR 2/1	Few, Fine	Silty clay

HYDRIC SOIL INDICATORS

- Histosol
- Reducing Conditions
- Organic Streaking in Sandy Soils
- Histic Epipedon
- Gleyed or Low-Chroma Colors
- Listed on Local Hydric Soils List
- Sulfidic Odor
- Concretions
- Listed on National Hydric Soils List
- Aquic Moisture Regime
- High Organic Streaking in Surface Layer in Sandy Soils
- Other (Explain in Remarks)

Hydric Soil Present?

Yes

No

Remarks:

Sebring Silt Loam (sb) is a hydric soil
Fr is a hydric soil

WETLAND DETERMINATION

- Hydrophytic Vegetation Present? Yes No
- Wetland Hydrology Present? Yes No
- Hydric Soils Present? Yes No
- Is this sampling point a Wetland? Yes No

Remarks: This wetland is divided from other large wetland complex by an upland grassy thoroughfare.

- Emergent fringe wetland along SOH-LFS-002
- Culvert associated with stream

UPLAND ASSOCIATED WITH WETLAND 9C

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: FRANKLIN 20" PIPELINE

Applicant/Owner: DEOG

Investigator(s): jav/jen

Date: 4-17-08 Community ID: UPLAND

County: SUMMIT Transect ID: _____

State: OH Plot ID: UPL-JEN-013

- Do Normal Circumstances exist on the site? YES NO
- Is the site significantly & recently disturbed?(Atypical Situation) YES NO
- Is the area a potential Problem Area? (Explain in final remarks) YES NO

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. <u>Poa pratensis</u>	<u>H</u>	<u>Facu</u>
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 0 %

Hydrophytic Vegetation Present? Yes No

REMARKS:

Upland area is a grassy thoroughfare surrounding wetland WOH-JEN-013 and stream SOH-LFS-002

UPLAND ASSOCIATED WITH WETLAND. 9c
HYDROLOGY

UPL-JEN-013

RECORDED DATA (Describe in Remarks):

- Stream, Lake or Tide Gauge
- Aerial Photographs
- Other
- None Available

PRIMARY Indicators:

- Inundated
- Saturated in Upper 12"
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: 0 (in.)
 Depth to Free Water in Pit: — (in.)
 Depth to Saturated Soil: — (in.)

SECONDARY Indicators

- Oxidized Root Channels in UPPER 12"
- Water Stained leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Wetland Hydrology Present?

Yes No

REMARKS:

SOILS Sebring silt loam (sb) Sb: PD
 Map Unit Name Frenchtown Silt loam (Fr) Drainage Class: Fr: PD
 (Series and Phase) Sb: Typic Endoaqualfs
 Taxonomy (Subgroup): Fr: Typic Fraglaqualfs Field Observations Confirm Mapped Type: Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2"	A	2.5Y 4/6	—	—	SILTY CLAY
PROBE REFUSAL					

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List

Hydric Soil Present? Yes No

REMARKS:

Upland area is part of grass thoroughfare surrounding Wetland WOH-JEN-013 and Stream^{SOIL} L FS-002

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No Is this sampling point a Wetland? Yes No
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

REMARKS:

associated wetland is divided from other large wetland complex by an upland grassy thoroughfare

WETLAND 9d

DATA FORM

ROUTINE WETLAND DETERMINATION
1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE Date: 4-17-08
 Applicant/Owner: DEO County: SUMMIT
 Investigator: JAV/JEN State: OH
 Do Normal Circumstances exist on this site? Yes No
 Is the site significantly disturbed (Atypical Situation)? Yes No
 Is the area a potential Problem Area? Yes No
 Community ID: POW
 Transect ID: _____
 Plot ID: W04-JEN-014

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>CAREX sp</u>	<u>H</u>		9. _____		
2. <u>ROSA MULTIFLORA</u>	<u>S</u>	<u>FACU</u>	10. _____		
3. <u>Cephalanthus occidentalis</u>	<u>S</u>	<u>OBL</u>	11. _____		
4. <u>Acer Rubrum</u>	<u>T</u>	<u>FAC</u>	12. _____		
5. <u>Tar oak</u>			13. _____		
6. _____			14. _____		
7. _____			15. _____		
8. _____			16. _____		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): > 51%

Remarks: POW = polustrine open water

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

FIELD OBSERVATIONS:

Depth of Surface Water: > 8 (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

WETLAND HYDROLOGY INDICATORS:

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: NOTE: LOTS OF TRASH IN WATER AND @ EDGES
UNE. CONTAMINANTS. FENCED

Water/area noted in 2007 Aerial photographs, Summit
County, Auditors.

WETLAND 9d

WOH-JEN-014

SOILS

Map Unit Name
(Series and Phase):

Canfield Silt Loam (CdB)

Drainage Class:

MWD

Taxonomy (Subgroup):

AQUIC FRAGILLOLES

Field Observations

Confirm Mapped Type?

Yes

No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"	A	10 YR 4/2	7.5 YR 3/4	Common Distinct	Silty clay

HYDRIC SOIL INDICATORS

- Histosol
- Reducing Conditions
- Histic Epipedon
- Gleyed or Low-Chroma Colors
- Sulfidic Odor
- Concretions
- Aquic Moisture Regime
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present?

Yes

No

Remarks:

Field confirmed hydric soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Yes

No

Wetland Hydrology Present?

Yes

No

Hydric Soils Present?

Yes

No

Is this sampling point a Wetland?

Yes

No

Remarks:

Lots of trash and unknown chemicals in water and around edges. Partial fence on border

Project/Site: FRANKLIN 20" PIPELINE
Applicant/Owner: DEO
Investigator(s): jav/jen
Date: 4-17-08 Community ID: UPL
County: SUMMIT Transect ID: _____
State: OH Plot ID: UPL-JEN-014

Do Normal Circumstances exist on the site? YES NO
Is the site significantly & recently disturbed?(Atypical Situation) YES NO
Is the area a potential Problem Area? (Explain in final remarks) YES NO

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. <u>ROSA Multiflora</u>	<u>S</u>	<u>FACU</u>
2. <u>ACER Rubrum</u>	<u>T</u>	<u>FAC</u>
3. <u>POA pratensis</u>	<u>H</u>	<u>FACU</u>
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 0 %

Hydrophytic Vegetation Present? Yes No

REMARKS:

HYDROLOGY

UPL-JEN-014

RECORDED DATA (Describe in Remarks):

- Stream, Lake or Tide Gauge
- Aerial Photographs
- Other
- None Available

PRIMARY Indicators:

- Inundated
- Saturated in Upper 12"
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: 0 (in.)
 Depth to Free Water in Pit: (in.)
 Depth to Saturated Soil: (in.)

SECONDARY Indicators

- Oxidized Root Channels in UPPER 12"
- Water Stained leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Wetland Hydrology Present?

Yes No

REMARKS:

SOILS

Map Unit Name Canfield Silt Loam (CbB) Drainage Class: MWD
 (Series and Phase)

Taxonomy (Subgroup): Aquic Fragiudalfs Field Observations Confirm Mapped Type: Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-12"</u>	<u>A</u>	<u>10YR 4/6</u>	<u>—</u>	<u>—</u>	<u>Silty clay</u>

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List

Hydric Soil Present? Yes No

REMARKS:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

Is this sampling point a Wetland? Yes No

associated of Wetland

REMARKS:

Lots of trash and unknown chemicals in water and around edges. Partial fence on border of associated wetland.

9 flags | WETLAND 10a

DATA FORM

ROUTINE WETLAND DETERMINATION
1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE Date: 5-22-08
Applicant/Owner: DED County: SUMMIT
Investigator: JAV/JEN State: OH
Do Normal Circumstances exist on this site? Yes No
Is the site significantly disturbed (Atypical Situation?) Yes No
Is the area a potential Problem Area? Yes No
Community ID: PEM
Transect ID: 1
Plot ID: Wet-JEN-015

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Alliaria petiolata</u>	<u>H</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Carex sp</u>	<u>H</u>	<u>FACW</u>	11. _____	_____	_____
4. <u>Acer Saccharum</u>	<u>T</u>	<u>FACU</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 51%+

Remarks: Impatiens capensis dominant

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches To surface
- Water Marks
- Drill Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: 0 - 1/2 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

Saturated to surface

Remarks: possibly has seep origin

PHOTOS
58-63

SOILS

Map Unit Name (Series and Phase): Wooster Silt Loam (WuB)

Drainage Class: WD

Taxonomy (Subgroup): Oxyaquic Fragiudalfs

Field Observations Confirm Mapped Type? Yes No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5	A	10YR 3/2	No mottling		Silty clay
5-12	B	10YR 4/2	7.5YR 4/6	Common DISTINCT	Silty clay

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present? Yes No

Remarks: Field confirmed hydric soil

WETLAND DETERMINATION

- Hydrophytic Vegetation Present? Yes No
- Wetland Hydrology Present? Yes No
- Hydric Soils Present? Yes No
- Is this sampling point a Wetland? Yes No

Remarks: On portion/ adjacent to landowners property

see photos # 58-63 in folder 052208 under DEO project

9 flags

Photo # 57 provides overview of wetland in relation to landowners property

UPLAND ASSOCIATED WITH WETLAND 10a

DATA FORM

ROUTINE WETLAND DETERMINATION
1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE Date: 5-22-08
 Applicant/Owner: DEO County: SUMMIT
 Investigator: JAV/JEN State: OH
 Do Normal Circumstances exist on this site? Yes No
 Is the site significantly disturbed (Atypical Situation?) Yes No
 Is the area a potential Problem Area? Yes No
 Community ID: Upland
 Transect ID: _____
 Plot ID: UPL-JEN-015

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Parthenocissus quinquefolia</u>	<u>H</u>	<u>FACU</u>	9.		
2. <u>Glechoma hederacea</u>	<u>H</u>	<u>FACU</u>	10.		
3. <u>Toxicodendron radicans</u>	<u>H</u>	<u>FAC</u>	11.		
4. <u>Pedophilum peltatum</u>	<u>H</u>	<u>FACU</u>	12.		
5. <u>Quercus rubra</u>	<u>T</u>	<u>FACU</u>	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): ~20%

Remarks:

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: _____ (in.)
 Depth to Free Water in Pit: _____ (in.)
 Depth to Saturated Soil: _____ (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

No wetland hydrology indicators

Remarks:

No wetland hydrology indicators

Photo # 64

SOILS

Map Unit Name

(Series and Phase): WOOSTER SILT LOAM (WUB)

Drainage Class:

WD

Taxonomy (Subgroup): Oxyaquic Fragiudalfs

Field Observations

Confirm Mapped Type?

Yes No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	<u>0</u>	<u>RICH ORGANIC SOIL #</u>	<u>Color</u>	<u>Organic</u>	<u>Organic</u>
2-12	<u>A</u>	<u>10YR 3/4</u>	<u>No mottling</u>		<u>Silty clay</u>

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present?

Yes No

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Yes No

Wetland Hydrology Present?

Yes No

Hydric Soils Present?

Yes No

Is this sampling point a Wetland?

Yes No

Remarks:

See photo # 64

Field confirmed upland location.

WETLAND 106

DATA FORM

ROUTINE WETLAND DETERMINATION

1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE

Date: 5-22-08

Applicant/Owner: DEO

County: SUMMIT

Investigator: JAV/JEN

State: OH

Do Normal Circumstances exist on this site? Yes No

Community ID: PEM/ISS

Is the site significantly disturbed (Atypical Situation?) Yes No

Transect ID:

Is the area a potential Problem Area? Yes No

Plot ID: W11-JEN-016

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>	9.		
2. <u>Carex sp</u>	<u>H</u>		10.		
3. <u>Viburnum dentatum</u>	<u>S</u>	<u>FAC</u>	11.		
4. <u>Rosa Multiflora</u>	<u>S</u>	<u>FACU</u>	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 75%

Remarks: Impatiens capensis dominant species

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: 0 (in.)
 Depth to Free Water in Pit: 0 (in.)
 Depth to Saturated Soil: 0 (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

Remarks: Saturated to Surface

Wetland 106

W0H-JEN-016

SOILS

Map Unit Name (Series and Phase): Confield Silt Loam (CdB) Drainage Class: MWD

Taxonomy (Subgroup): Aquic Fragiudalfs Field Observations Confirm Mapped Type? Yes No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"	A	10YR 3/2	10YR 6/6	Few / distinct	Silty clay

HYDRIC SOIL INDICATORS

- Histosol
- Reducing Conditions
- Histic Epipedon
- Gleyed or Low-Chroma Colors
- Sulfidic Odor
- Concretions
- Aquic Moisture Regime
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No

Wetland Hydrology Present? Yes No

Hydric Soils Present? Yes No

Is this sampling point a Wetland? Yes No

Remarks:

(see photo #64)

Associated with culvert system, stream, and access road.

• Drainage system that wetland is a part of, could have come from past land disturbance

UPLAND ASSOCIATED WITH WETLAND 106

DATA FORM

ROUTINE WETLAND DETERMINATION

1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE Date: 5-22-08
 Applicant/Owner: DEO County: SUMMIT
 Investigator: JAV/JEN State: OH
 Do Normal Circumstances exist on this site? Yes No
 Is the site significantly disturbed (Atypical Situation?) Yes No
 Is the area a potential Problem Area? Yes No
 Community ID: UPL
 Transect ID:
 Plot ID: UPL-JEN-016

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Ranunculus acris</u>	<u>H</u>	<u>Fac+</u>	9.		
2. <u>Taraxacum officinale</u>	<u>H</u>	<u>Fac II</u>	10.		
3. <u>Toxicodendron radicans</u>	<u>H</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-): 33%

Remarks:

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: _____ (in.)
 Depth to Free Water in Pit: _____ (in.)
 Depth to Saturated Soil: _____ (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

NONE

Remarks: No field hydrological indicators

SOILS

Map Unit Name (Series and Phase): Canfield Silt Loam (cdB) Drainage Class: MWD

Taxonomy (Subgroup): Aquic Fragiudalfs Field Observations Confirm Mapped Type? Yes No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5	A	7.5YR 4/4	—	—	Silty clay
5-12	PROBE REFUSAL				

HYDRIC SOIL INDICATORS

- Hislosol
- Hislic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present? Yes No

Remarks: Field confirmed nonhydric soil

WETLAND DETERMINATION

- Hydrophytic Vegetation Present? Yes No
- Wetland Hydrology Present? Yes No
- Hydric Soils Present? Yes No
- Is this sampling point a Wetland? Yes No

Remarks: Field confirmed upland

WETLAND 100

DATA FORM

ROUTINE WETLAND DETERMINATION 1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 50" PIPELINE Date: 5-22-08
 Applicant/Owner: DEO County: SUMMIT
 Investigator: jav / jen State: OH
 Do Normal Circumstances exist on this site? Yes No
 Is the site significantly disturbed (Atypical Situation?) Yes No
 Is the area a potential Problem Area? Yes No
 Community ID: PEN/PFO
 Transect ID: _____
 Plot ID: W04-JEN-017

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Carex sp.</u>	<u>H</u>		9. _____		
2. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>	10. _____		
3. <u>Toxicodendron Radicans</u>	<u>H</u>	<u>FAC</u>	11. _____		
4. <u>Polygonum persicaria</u>	<u>H</u>	<u>FACW</u>	12. <u>Silphium</u>		
5. <u>Juncus effusus</u>	<u>H</u>	<u>FACW</u>	13. _____		
6. <u>Acer Saccharinum</u>	<u>T</u>	<u>FACW</u>	14. _____		
7. <u>Fraxinus pennsylvanicum</u>	<u>T</u>	<u>FACW</u>	15. _____		
8. <u>Urtica americana</u>	<u>T</u>	<u>FACW</u>	16. _____		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): > 75%

Remarks:

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

FIELD OBSERVATIONS:

Depth of Surface Water: 0 (in.)
 Depth to Free Water in Pit: 0 (in.)
 Depth to Saturated Soil: 0 (in.)

WETLAND HYDROLOGY INDICATORS:

Saturated to surface

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks:

SOILS

Canfield Silt Loam (CdB)

CdB: mWD

Map Unit Name

(Series and Phase): Wooster Silt Loam (WuC2)

Drainage Class:

WuC2: WD

Taxonomy (Subgroup)

CdB: Aquic Fragiudalfs
WuC2: Oxyaquic Fragiudalfs

Field Observations

Confirm Mapped Type? Yes No

PROFILE DESCRIPTION (2 soil probe investigations)

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	O	10YR 3/2	No mottling		Silty clay
4-12	A	10YR 3/2	10YR 4/4	Common/Fine	Silty clay
0-2	O	10YR 3/2	No mottling		Silty clay
2-7	A	10YR 3/2	7.5YR 4/6	Common/Distinct	Silty clay
7-12	B	10YR 4/3	7.5YR 4/6	Common/Distinct	Silty clay

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present?

Yes No

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Yes No

Wetland Hydrology Present?

Yes No

Hydric Soils Present?

Yes No

Is this sampling point a Wetland?

Yes No

Remarks:

- Portion of Wetland follows a ^{stream-like} channel that is predominantly vegetated.
- Part of drainage system connecting streams
- Likely past filling from Row disturbance that has reverted back to wetland

WETLAND IUC
DATA FORM

ROUTINE WETLAND DETERMINATION
1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE Date: 5-23-08
 Applicant/Owner: DEO County: SUMMIT
 Investigator: JAV/jer State: OH
 Do Normal Circumstances exist on this site? Yes No
 Is the site significantly disturbed (Atypical Situation?) Yes No
 Is the area a potential Problem Area? Yes No
 Community ID: PEM
 Transect ID: _____
 Plot ID: W04-JEN-017B

VEGETATION

(Within ROW D)

Dominant Plant Species	Indicator	Stratum	Dominant Plant Species	Indicator	Stratum
1. <u>Urtica dioica</u>			9. _____		
2. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>	10. _____		
3. <u>Carex sp</u>	<u>H</u>		11. _____		
4. _____			12. _____		
5. _____			13. _____		
6. _____			14. _____		
7. _____			15. _____		
8. _____			16. _____		

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

Remarks: Dominant species is POA sp.

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: To surface (in.)
 Depth to Free Water in Pit: _____ (in.)
 Depth to Saturated Soil: _____ (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

Saturated to surface

Remarks:

WETLAND LOC

WOH-JEN-017B

SOILS

Canfield Silt Loam (CdB)

CdB: mWD

Map Unit Name

(Series and Phase):

Wooster Silt Loam (WuC2)

Drainage Class:

WuC2: WP

CdB: Aquic Fragiudalfs

Field Observations

Taxonomy (Subgroup):

WuC2: Oxyaquic Fragiudalfs

Confirm Mapped Type?

Yes

No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5	A ₁	10YR 3/2	10YR 3/1	Some streaks	Silty clay
5-12	A ₂	10YR 3/2	7.5YR 5/6	Common, prominent	Silty clay

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present?

Yes

No

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Yes

No

Welland Hydrology Present?

Yes

No

Hydric Soils Present?

Yes

No

Is this sampling point a Welland?

Yes

No

Remarks:

• Part of draining system connecting streams

• likely past filling from ROW disturbance that has reverted back to wetland.

• Located in ROW

WETLAND ASSOCIATED WITH WETLAND 10C

DATA FORM

ROUTINE WETLAND DETERMINATION

1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE

Date: 5-22-08

Applicant/Owner: DEO

County: SUMMIT

Investigator: jav/jen

State: OH

Do Normal Circumstances exist on this site? Yes No

Community ID: UPL

Is the site significantly disturbed (Atypical Situation?) Yes No

Transect ID: _____

Is the area a potential Problem Area? Yes No

Plot ID: UPL-JEN-017

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>			
2. <u>Toxicodendron radicans</u>	<u>H</u>	<u>FAC</u>			
3. <u>POA TRATENSIS</u>	<u>H</u>	<u>FACU</u>			
4. <u>Alliaria petiolata</u>	<u>H</u>	<u>FACU</u>			
5. <u>Rosa multiflora</u>	<u>S</u>	<u>FACU</u>			
6. _____					
7. _____					
8. _____					

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 40%

Remarks: _____

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other _____
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: 0 (in.)
 Depth to Free Water in Pit: _____ (in.)
 Depth to Saturated Soil: _____ (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

No wetland hydrology indicators

Remarks: _____

SOILS

Canfield Silt Loam (CdB)

CdB: mWd

Map Unit Name

(Series and Phase):

Wooster Silt Loam (Wu2)

Drainage Class:

Wu2: WD

Taxonomy (Subgroup):

CdB: Aquic Fragiudalfs

Field Observations

Wu2: Oxyaquic Fragiudalfs

Confirm Mapped Type?

Yes

No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O	10YR 4/2	—	—	Silty clay
2-7	A	10YR 5/4	—	—	Silty clay
7-12	B	2.5YR 5/6	—	—	Silty clay

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present?

Yes No

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Yes No

Wetland Hydrology Present?

Yes No

Hydric Soils Present?

Yes No

Is this sampling point a Wetland?

Yes No

Remarks:

Field confirmed upland

WETLAND 10d

DATA FORM

ROUTINE WETLAND DETERMINATION 1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE Date: 5-23-08
 Applicant/Owner: DEO County: SUMMIT
 Investigator: JAV/JEN State: OH
 Do Normal Circumstances exist on this site? Yes No Community ID: PEM/PFO
 Is the site significantly disturbed (Atypical Situation?) Yes No Transect ID: _____
 Is the area a potential Problem Area? Yes No Plot ID: WOH-JEN-018

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Carex sp.</u>	<u>H</u>	_____	10. _____	_____	_____
3. <u>Acer saccharum</u>	<u>T</u>	<u>FACW</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 60% +

Remarks:

Lots of dead Snags present in wetland

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

FIELD OBSERVATIONS:

Depth of Surface Water: (in.)
 Depth to Free Water in Pit: 0 (in.)
 Depth to Saturated Soil: 0 (in.)

WETLAND HYDROLOGY INDICATORS:

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks:

Soil Saturated to Surface

WETLAND 10d

W04-JEN-018

SOILS

Map Unit Name: Wooster Silt Loam (Wu C2) Drainage Class: WD

Taxonomy (Subgroup): Oxyaquic Fragiualfs Field Observations Confirm Mapped Type? Yes No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 2/1	—	—	Silty clay
6-11		10YR 2/1	—	—	bits of gravel with silty clay
PROBE REFUSAL after 6"					

HYDRIC SOIL INDICATORS

- Histosol
- Reducing Conditions
- Organic Streaking in Sandy Soils
- Histic Epipedon
- Gleyed or Low-Chroma Colors
- Listed on Local Hydric Soils List
- Sulfidic Odor
- Concretions
- Listed on National Hydric Soils List
- Aquic Moisture Regime
- High Organic Streaking in Surface Layer in Sandy Soils
- Other (Explain in Remarks)

Hydric Soil Present? Yes No

Remarks: Sulfidic odor noted in portion of wetland

WETLAND DETERMINATION

- Hydrophytic Vegetation Present? Yes No
- Wetland Hydrology Present? Yes No
- Hydric Soils Present? Yes No
- Is this sampling point a Wetland? Yes No

Remarks:

UPLAND ASSOCIATED WITH WETLAND 10d

DATA FORM

ROUTINE WETLAND DETERMINATION

1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE

Date: 5-23-08

Applicant/Owner: DEO

County: SUMMIT

Investigator: JAV / JEN

State: OH

Do Normal Circumstances exist on this site? Yes No

Community ID: UPL

Is the site significantly disturbed (Atypical Situation?) Yes No

Transect ID:

Is the area a potential Problem Area? Yes No

Plot ID: UPL-JEN-018

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Allyria petiolata</u>	<u>H</u>	<u>FACU</u>	9. <u>Sparganium angustifolium</u>	<u>H</u>	<u>FACU</u>
2. <u>Parthenocissus quinquefolia</u>	<u>H</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Podophyllum peltatum</u>	<u>H</u>	<u>FACU</u>	11. _____	_____	_____
4. <u>Toxicodendron radicans</u>	<u>H</u>	<u>FAC</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 25%

Remarks:

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: _____ (in.)
 Depth to Free Water in Pit: _____ (in.)
 Depth to Saturated Soil: _____ (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

No Wetland hydrology indicators

Remarks: No soil saturation

UPLAND ASSOCIATED WITH WETLAND 10d

UPL-JEN-018

SOILS

Map Unit Name
(Series and Phase)

Wooster Silt Loam (WUCZ)

Drainage Class:

WD

Taxonomy (Subgroup):

Oxyaquic Fragiualfs

Field Observations

Confirm Mapped Type?

Yes

No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5"	O	Rich organic color			Organic Matter
5-10"	A	2.5YR 3/3	NONE		Silt loam

HYDRIC SOIL INDICATORS

- Histosol
- Histc Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present?

Yes

No

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Yes

No

Wetland Hydrology Present?

Yes

No

Hydric Soils Present?

Yes

No

Is this sampling point a Wetland?

Yes

No

Remarks:

Field confirmed upland area

WETLAND 11a

DATA FORM

ROUTINE WETLAND DETERMINATION

1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE

Date: 5-23-08

Applicant/Owner: DEO

County: SUMMIT

Investigator: JAV / JEN

State: OH

Do Normal Circumstances exist on this site? Yes No

Community ID: _____

Is the site significantly disturbed (Atypical Situation?) Yes No

Transect ID: _____

Is the area a potential Problem Area? Yes No

Plot ID: W01-JEN-019

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Phalaris arundinacea</u>	<u>H</u>	<u>FACW*</u>	9. _____	_____	_____
2. <u>CORNUS AMOMIUM</u>	<u>S</u>	<u>FACW</u>	10. _____	_____	_____
3. <u>SALIX NIGRA</u>	<u>T</u>	<u>FACW*</u>	11. _____	_____	_____
4. <u>ACER SACHARINUM</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):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Pondated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: 0 (in.)
 Depth to Free Water in Pit: 0 (in.)
 Depth to Saturated Soil: 0 (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

Saturated to soil surface

Remarks:

WETLAND 11a

WOH-JEN-019

SOILS

Wooster Silt Loam (WuC2)

WuC2: WD

Map Unit Name

(Series and Phase):

Fitchville Silt Loam (FCB)

Drainage Class:

FCB: SPD

Taxonomy (Subgroup):

WuC2: Oxyaquic Fragiualfs

Field Observations

FCB: Aeric Endoaqualfs

Confirm Mapped Type?

Yes

No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-7	A	10YR 3/2	7.5YR 5/6	Common, Distinct	Silty clay
7-12	B	10YR 4/3	10YR 3/1	Common, Distinct	Silty clay
			7.5YR 5/6	Common, Distinct	Silty clay

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present?

Yes No

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Yes No

Wetland Hydrology Present?

Yes No

Hydric Soils Present?

Yes No

Is this sampling point a Wetland?

Yes No

Remarks:

Wetland adjacent to access road

UPLAND ASSOCIATED WITH WETLAND: 11a

DATA FORM

ROUTINE WETLAND DETERMINATION

1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE

Date: 5-23-08

Applicant/Owner: DEO

County: SUMMIT

Investigator: JV/JEN

State: OH

Do Normal Circumstances exist on this site? Yes No

Community ID: UPL

Is the site significantly disturbed (Atypical Situation?) Yes No

Transect ID: 1

Is the area a potential Problem Area? Yes No

Plot ID: UPL-JEN-019

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>LONICECA JAPONICA</u>	<u>S</u>	<u>FAC</u>	9.		
2. <u>POA PRATENSIS</u>	<u>H</u>	<u>FAC</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-): 0%

Remarks:

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: _____ (in.)
 Depth to Free Water in Pit: _____ (in.)
 Depth to Saturated Soil: _____ (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

No Wetland hydrology indicators

Remarks:

SOILS

Map Unit Name

Wobster Silt Loam (WUCZ)

WUCZ: WD

(Series and Phase):

Fitchville Silt Loam (FCB)

Drainage Class:

FCB: SPD

Taxonomy (Subgroup):

WUCZ: Oxyaquic Frugiqualfs

Field Observations

FCB: Aeric Endoaqualfs

Confirm Mapped Type?

Yes No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6"	A	10YR 4/4	—	—	SILTY CLAY
6+	PROBE REFUSAL				

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present?

Yes No

Remarks: probe refusal 6+ inches in depth.

WETLAND DETERMINATION

- Hydrophytic Vegetation Present? Yes No
- Welland Hydrology Present? Yes No
- Hydric Soils Present? Yes No
- Is this sampling point a Welland? Yes No

Remarks:

Field confirmed upland area

WETLAND 7d

DATA FORM

ROUTINE WETLAND DETERMINATION
1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE
Applicant/Owner: DEO
Investigator: JAV/JEN

Date: 5-29-08
County: SUMMIT
State: OH

Do Normal Circumstances exist on this site? Yes No
Is the site significantly disturbed (Atypical Situation?) Yes No
Is the area a potential Problem Area? Yes No

Community ID: PEM
Transect ID:
Plot ID: W04-JEN-020

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Phalaris arundinacea</u>	<u>H</u>	<u>FACW*</u>	9. _____	_____	_____
2. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</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):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: 0-2 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

SECONDARY INDICATORS (2 or more required):

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

WETLAND HYDROLOGY INDICATORS:

Remarks: Seasonal wetland
• Culvert connection

- Seasonal wetland
- Culvert connection
- Annual

WETLAND 7d

WOH-JEN-020

SOILS

Map Unit Name (Series and Phase): Ravenna Silt Loom (Re.B)

Drainage Class: SPD

Taxonomy (Subgroup): Aeric Fragiaqualfs

Field Observations Confirm Mapped Type? Yes No

PROFILE DESCRIPTION

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/2	10YR 5/6 10YR 4/6	Common, Distinct	Silty clay Silty clay

HYDRIC SOIL INDICATORS

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Streaking in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION

- Hydrophytic Vegetation Present? Yes No
- Wetland Hydrology Present? Yes No
- Hydric Soils Present? Yes No
- Is this sampling point a Wetland? Yes No

Remarks:

- Associated with stream area & culvert
 - Seasonal wetland

UPLAND ASSOCIATED WITH WETLANDS Td

DATA FORM

ROUTINE WETLAND DETERMINATION

1987 COE Wetlands Determination Manual

Project/Site: FRANKLIN 20" PIPELINE

Date: 5-29-08

Applicant/Owner: DEO

County: SUMMIT

Investigator: jav / jen

State: OH

Do Normal Circumstances exist on this site? Yes No

Community ID: UPL

Is the site significantly disturbed (Atypical Situation?) Yes No

Transect ID:

Is the area a potential Problem Area? Yes No

Plot ID: UPL-JEN-020

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Plantago Major	H	FACU	9.		
2. Trifolium pratense	H	FACU	10.		
3. Taraxacum officinale	H	FACU	11.		
4. Poa pratensis	H	FACU	12.		
5. ERIGERON PHILADELPHICUS	H	FACU	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks:

HYDROLOGY

RECORDED DATA (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- Aerial Photographs
- Other
- No Recorded Data Available

PRIMARY INDICATORS:

- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

SECONDARY INDICATORS (2 or more required)

- Oxidized Root Channels in Upper 12 Inches
- Water Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks) '

WETLAND HYDROLOGY INDICATORS:

NONE

Remarks:

UPLAND ASSOCIATED WITH WETLAND /
HYDROLOGY

UPL-JEN-020

RECORDED DATA (Describe in Remarks):

- Stream, Lake or Tide Gauge
- Aerial Photographs
- Other
- None Available

PRIMARY Indicators:

- Inundated
- Saturated in Upper 12"
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wellands

FIELD OBSERVATIONS:

Depth of Surface Water: 0 (in.)
 Depth to Free Water in Pit: (in.)
 Depth to Saturated Soil: (in.)

SECONDARY Indicators

- Oxidized Root Channels in UPPER 12"
- Water Stained leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Wetland Hydrology Present?

Yes No

REMARKS:

No wetland hydrology indicators

SOILS

Map Unit Name Ravenna Silt Loam (ReB) Drainage Class: SPD
 (Series and Phase)

Taxonomy (Subgroup): Aeric Fragi aqualfs Field Observations Confirm Mapped Type: Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8	A	2.5Y3/3		NO MOTTLES	Silt Loam
8+	PROBE REFUSAL				

HYDRIC SOIL INDICATORS

- Histosol
- Reducing Conditions
- Organic Streaking in Sandy Soils
- Hislic Epipedon
- Gleyed or Low-Chroma Colors
- Listed on Local Hydric Soils List
- Sulfidic Odor
- Concretions
- Listed on National Hydric Soils List
- Aquic Moisture Regime
- High Organic Streaking in Surface Layer in Sandy Soils

Hydric Soil Present? Yes No

REMARKS:

Probe Refusal 8+ inches in depth.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No Is this sampling point a Wetland? Yes No
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

REMARKS:

Field confirmed Upland area

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

Project/Site: Dominion East Ohio-Well Pad 2462/Hammond #2	Date: 11/15/07
Applicant/Owner: Dominion East Ohio	County: Summit
Investigator: Chet Elewski	State: OH
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Transect/Plot ID:
Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Wetland ID: WOH-CRE-001

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Juncus effusus</i>	H	FACW+	9.		
2. <i>Carex lurida</i>	H	OBL	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-):

Remarks: Study Area is an active farm pasture where most of the vegetation has been chewed down by livestock.

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u> </u> (in.)</p> <p>Depth to Free Water in Pit: <u> </u> (in.)</p> <p>Depth to Saturated Soil: <u> 11 </u> (in.)</p>	
<p>Remarks: Region has been under considerable drought conditions.</p>	

Project Site:	Dominion East Ohio-Well Pad 2462/Hammond #2	Wetland No.:	WOH-CRE-001 PEM	Date:	11/15/07
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SOILS

Map Unit Name (Series and Phase):	Drainage Class:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type? Yes _____ No _____

Profile Description:					
Depth (Inches)	Horizon	Matrix Color (Munsell Molst)	Mottle Colors (Munsell Molst)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-1	O	---	---	---	---
1-12	B	2.5YR 4/2	7.5YR 4/6	25% Mottles	Silty Clay Loam

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in 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 checked="" 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)

Remarks:
Region has been under considerable drought conditions.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Hydric Soils Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks:

APPENDIX 07-1C

**SUPPLEMENTAL OHIO EPA OHIO RAPID ASSESSMENT METHOD (ORAM)
FOR WETLANDS V5.0 FORMS FROM GAI FIELD SURVEYS**

Site: WOH-JEN-013 Rater(s): Jen/Jav Date: 4-17-08

1 1

Metric 1. Wetland Area (size).

- max 6 pts. subtotal Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

5 6

Metric 2. Upland buffers and surrounding land use.

- max 14 pts. subtotal 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Intensity of surrounding land use. Select one or double check and average.
- VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
 - LOW. Old field (>10 years), shrubland, young second growth forest. (5)
 - MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) mowed,
 - HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10.5 16.5

Metric 3. Hydrology.

- max 30 pts. subtotal 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3) (SOH-LFS-002)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest, complex) (1) - Perhaps at one time
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- Semi- to permanently inundated/saturated (4) is divided from other large
 - Regularly inundated/saturated (3) 2, 5
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1) (Wetland 9b)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed

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

12 28.5

Metric 4. Habitat Alteration and Development.

- max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed

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

28.5
subtotal this page

Site: W014-JEN-013 Rater(s): jen/jav Date: 4-17-08

28.5

subtotal this page

0 28.5

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated.

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

4 32.5

Metric 6. Plant communities, interspersions, microtopography.

max 20 pts. subtotal 6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- Other _____

8b. horizontal (plan view) Interspersion. Select only one.

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

8c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

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

8d. Microtopography. Score all present using 0 to 3 scale.

- Vegetated hummocks/tussucks
- 1 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

32.5 GRAND TOTAL(max 100 pts)

Site: WOH-TEN-014 Rater(s): jen/jav Date: 4-17-08

1 1

Metric 1. Wetland Area (size).

max 6 pts. subtotal Select one size class and assign score.

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

8 9

Metric 2. Upland buffers and surrounding land use.

max 14 pts. subtotal 2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) *(To South)*
 - 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) *(To North)*
 - VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 7+1 = 8/2 = 4*

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)

13 22

Metric 3. Hydrology.

max 30 pts. subtotal 3a. Sources of Water. Score all that apply.

- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)

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)

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

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

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

10 32

Metric 4. Habitat Alteration and Development.

max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average.

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

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

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

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

- None or none apparent (8)
- Recovered (6)
- Recovering (3)
- Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input checked="" type="checkbox"/> toxic pollutants (possible)	<input checked="" type="checkbox"/> nutrient enrichment
<input checked="" type="checkbox"/> TRASH - Miscellaneous glass, rusty cans, wrappers, etc.	

32

subtotal this page

Oily sheen, chemical smell in water

Site: WOH-JEN-014 Rater(s): jen/jav Date: 4-17-08

32

subtotal this page
0 32

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated.

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

9 41

Metric 6. Plant communities, interspersions, microtopography.

max 20 pts. subtotal 6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 1 Emergent
- 2 Shrub
- 6 1 Forest
- 0 Mudflats
- 2 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 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

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

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

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

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

- Extensive >75% cover (-5)
- 2 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.

- 0 Vegetated hummocks/mounds
- 2 Coarse woody debris >15cm (6in)
- 3 1 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools
potential, but not as likely due to unknown chemicals in water.

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

41 GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: <http://www.epa.state.oh.us/dsw/401/401.html>

Site: WOH-JEN-015 Rater(s): jen/jav Date: 5-22-08

1 1

Metric 1. Wetland Area (size).

- max 6 pts. subtotal Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

8 9

Metric 2. Upland buffers and surrounding land use.

- max 14 pts. subtotal
- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) *(To North)*
 - 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) *(To South)*
 - 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)

13.5 22.5

Metric 3. Hydrology.

- max 30 pts. subtotal
- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3) *seeps in area*
 - Precipitation (1)
 - Seasonal/intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)

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

7

<input type="checkbox"/> None or none apparent (12)	<input type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input checked="" type="checkbox"/> Recovered (7)	<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> Recovering (3)	<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> Recent or no recovery (1)	<input type="checkbox"/> weir	<input type="checkbox"/> dredging
	<input type="checkbox"/> stormwater input	<input type="checkbox"/> other _____

13 35.5

Metric 4. Habitat Alteration and Development.

- max 20 pts. subtotal
- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- 6

Check all disturbances observed	
<input type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment
<input checked="" type="checkbox"/> Landscape plantings adjacent to Wetland	
<input checked="" type="checkbox"/> Home/driveway adjacent to wetland	

35.5
subtotal this page

Site: WAH-JEN-015 Rater(s): jen/jav Date: 5-22-08

35.5

subtotal this page

0 35.5

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated.

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

3 38.5

Metric 6. Plant communities, interspersions, microtopography.

max 20 pts. subtotal 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 2 Forest
- 0 Mudflats
- 0 Open water
- 0 Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

38.5 GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: <http://www.epa.state.oh.us/dsw/401401.html>

Site: WOH-JEN-016 Rater(s): jen/jav Date: 5-22-08

1 1

Metric 1. Wetland Area (size).

- max 6 pts. subtotal
- Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

8.5 9.5

Metric 2. Upland buffers and surrounding land use.

- max 14 pts. subtotal
- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) *Access road adjacent*
- 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)

14.5 24.0

Metric 3. Hydrology.

- max 30 pts. subtotal
- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3) *Adj. to Stream S-10e and drainage system*
 - Perennial surface water (lake or stream) (5) *drainage system*
- 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 drainage system/forested area*
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed

 - ditch
 - tile
 - dike
 - weir
 - stormwater input
 - point source (nonstormwater)
 - filling/grading
 - road bed/RR track
 - dredging
 - other *culvert on associated stream S-10e*

13 37.0

Metric 4. Habitat Alteration and Development.

- max 20 pts. subtotal
- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed

 - mowing
 - grazing
 - clearcutting
 - selective cutting
 - woody debris removal
 - toxic pollutants
 - Adjacent access road. *Doesn't appear to be used very frequently.*
 - shrub/sapling removal
 - herbaceous/aquatic bed removal
 - sedimentation
 - dredging
 - farming
 - nutrient enrichment

37.0
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Site: WOH-JEN-016 Rater(s): jen/jav Date: Feb-08

37.0

subtotal this page

0 37.0

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated.

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

8 45

Metric 6. Plant communities, interspersions, microtopography.

max 20 pts. subtotal 6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 4 1 Shrub
- 1 Forest
- 0 Mudflats
- 0 Open water
- Other _____

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

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

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

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

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

- 2 1 Vegetated hummocks/mounds
- 1 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

45 GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: <http://www.epa.state.oh.us/dsw/401/401.html>

Site: WOH-JEN-017 Rater(s): jen/jav Date: 5-22-08

1 1

Metric 1. Wetland Area (size).

- max 6 pts. subtotal Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

8.5 9.5

Metric 2. Upland buffers and surrounding land use.

- max 14 pts. subtotal
- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE.** Buffers average 50m (164ft) or more around wetland perimeter (7)
 - MEDIUM.** Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - NARROW.** Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - VERY NARROW.** Buffers average <10m (<32ft) around wetland perimeter (0) *Utility ROW adjacent and through portions of Wetland*
- 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)

15.5 25.0

Metric 3. Hydrology.

- max 30 pts. subtotal
- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3) *Associated with stream 5-10 a*
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/levee and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)

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

<input type="checkbox"/> None or none apparent (12)	<input type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input checked="" type="checkbox"/> Recovered (7)	<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> Recovering (3)	<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> Recent or no recovery (1)	<input type="checkbox"/> weir	<input type="checkbox"/> dredging
	<input type="checkbox"/> stormwater input	<input checked="" type="checkbox"/> other <i>Adj + Within Utility Right of Way</i>

9.5 34.5

Metric 4. Habitat Alteration and Development.

- max 20 pts. subtotal
- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment
<input checked="" type="checkbox"/> <i>Utility E-O-W through and adjacent to portions of Wetland</i>	

34.5

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Site: Wolt-JEN-017 Rater(s): jen/jav Date: 5-22-08

34.5

subtotal this page

0 34.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

8 42.5

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 2 Forest
- 0 Mudflats
- 0 Open water
- 0 Other

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/mounds
- 1 Coarse woody debris >15cm (6in)
- 1 Standing dead >25cm (10in) dbh
- 2 Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

42.5 **GRAND TOTAL(max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: <http://www.epa.state.oh.us/dsw/401/401.html>

Site: WOH-JEN-018 Rater(s): Jen/JAV Date: 5-23-08

0 0

Metric 1. Wetland Area (size).

- max 6 pts. subtotal Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

9 9

Metric 2. Upland buffers and surrounding land use.

- max 14 pts. subtotal
- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) *Forested area*
 - 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) *Residential + utility ROW*
 - 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 of 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 lillage, new fallow field. (3)
 - HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

13.5 22.5

Metric 3. Hydrology.

- max 30 pts. subtotal
- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3) *Associated by streams-10*
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed

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

14 36.5

Metric 4. Habitat Alteration and Development.

- max 20 pts. subtotal
- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)
- Check all disturbances observed

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

Housing close to wetland area

Utility ROW close to wetland area

36.5

subtotal this page

Site: W0H-JEM-018 Rater(s): JPN/JAV Date: 5-23-08

36.5

subtotal this page

0 36.5

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated.

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

8 44.5

Metric 6. Plant communities, interspersions, microtopography.

max 20 pts. subtotal

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

- 0 Aquatic bed
- 2 Emergent
- 3 Shrub
- 1 Forest
- 0 Mudflats
- 0 Open water
- Other _____

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

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

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

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

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

- 0 Vegetated hummocks/mounds
- 1 Coarse woody debris >15cm (6in)
- 3 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

44.5

GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: <http://www.epa.state.ch.us/dsw401401.html>

Site: W04-JFN-019 Rater(s): jen/jav Date: 5-23-08

1 1

Metric 1. Wetland Area (size).

- max 6 pts. subtotal Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

7.5 8.5

Metric 2. Upland buffers and surrounding land use.

- max 14 pts. subtotal 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) *(To North)*
 - 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) *(To South)*
- 3.5
- 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)
- 4

11 19.5

Metric 3. Hydrology.

- max 30 pts. subtotal 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 1
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 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)
- 2
- 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)
- 7
- Check all disturbances observed

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

12 31.5

Metric 4. Habitat Alteration and Development.

- max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 3
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 3
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)
- 6
- Check all disturbances observed

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

31.5
subtotal this page

Site: W0H-JEN-019 Rater(s): Jen/jav Date: 5-23-08

31.5

subtotal this page

0 31.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- Bog (10)
- Fen (10)
- Old growth forest (10)
- Mature forested wetland (5)
- Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- Lake Erie coastal/tributary wetland-restricted hydrology (5)
- Lake Plain Sand Prairies (Oak Openings) (10)
- Relict Wet 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 1 Qualitative Rating (-10)

6 37.5

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) interspersions.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 1 Vegetated hummocks/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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

37.5 GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the coding breakpoints between wetland categories at the following address: <http://www.epa.state.oh.us/dsw/401/401.html>

Site: W0H-JEN-020 Rater(s): jen/jav Date: 5-24-08

1 1 Metric 1. Wetland Area (size).

- max 6 pts. subtotal Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

6.5 7.5 Metric 2. Upland buffers and surrounding land use.

- max 14 pts. subtotal 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - 2.5 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.
- 4 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)

12 19.5 Metric 3. Hydrology.

- max 30 pts. subtotal 3a. Sources of Water. Score all that apply.
- 2 High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- 1 >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.
- 7 None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed

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

9.5 29 Metric 4. Habitat Alteration and Development.

- max 20 pts. subtotal 4a. Substrate disturbance. Score one or double check and average.
- 3 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)
 - 3.5 Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- 3 None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed

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

29
subtotal this page

Site: WOH-JEN-020 Rater(s): Jen/JAV Date: 5-29-08

29

subtotal this page

0 29

Metric 5. Special Wetlands.

max 10 pts. subtotal Check all that apply and score as indicated.

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

-2 27

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 (plain 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/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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

27 GRAND TOTAL(max 100 pts)

Site: WON-CRE-001 Rater(s): CRE Date: 11/15/07

1 | **1**

Metric 1. Wetland Area (size).

max 6 pts, subtotal

Select one size class and assign score.

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

0.104487 acres

3 | **4**

Metric 2. Upland buffers and surrounding land use.

max 14 pts, subtotal

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

- WIDE. Buffers average 60m (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)

10 | **14**

Metric 3. Hydrology.

max 50 pts, subtotal

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

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

6 | **20**

Metric 4. Habitat Alteration and Development.

max 20 pts, subtotal

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

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

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

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

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

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

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

20

subtotal this page

Site: _____ Rater(s): _____ Date: _____

20

subtotal this page

0 20

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

3 23

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 (-6)
- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

23 GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: <http://www.epa.state.oh.us/dsw/401/401.html>