328.3(a)(1) through (a)(8)]. For example, the document states "Waters located within the 100-year floodplain of a traditional navigable water, interstate water, or the territorial seas and waters located more than 1,500 feet and less than 4,000 feet from the lateral limit of an (a)(1) or (a)(3) water may still be determined to have a significant nexus on a case-specific basis under paragraph (a)(8) of the rule and, thus, be a "water of the United States" (EPA 2015).

On June 29, 2015 the new Clean Water Rule was entered into the Federal Register (40 CFR Parts 110, 112, 116, et al. Clean Water Rule: Definition of "waters of the United States"; Final Rule). This report will refer to this rule as "June 29, 2015 WOTUS Rule". This rule includes exact distances mentioned in the May 27, 2015 Technical Support Document as it relates to adjacent waters, including the following:

- Waters within 100 ft. of jurisdictional waters;
- Waters within the 100-year floodplain to a maximum of 1,500 feet from the ordinary high water mark (OHWM);
- Waters within the 100-year floodplain with a SNE to the Traditional Navigable Water (TNW); and
- Waters with a SNE within 4,000 ft. of jurisdictional waters.

On October 9, 2015 the U.S. Court of Appeals for the Sixth Circuit (Court) issued a nationwide stay against the enforcement of the June 29, 2015 WOTUS Rule. The Court stated, "...we conclude that...Justice Kennedy's opinion in *Rapanos* represents the best instruction on the permissible parameters of "waters of the United States" as used in the Clean Water Act, it is far from clear that the new Rule's distance limitations are harmonious with the instruction.

Moreover, the Court stated that the rulemaking process by which the distance limitations were adopted is facially suspect. Petitioners contend the proposed rule that was published, on which interested persons were invited to comment, did not include any proposed distance limitations in its use of terms like "adjacent waters" and "significant nexus." Consequently, petitioners contend, the Final Rule cannot be considered a "logical outgrowth" of the rule proposed, as required to satisfy the notice-and-comment requirements of the APA, 5 U.S.C. Section 553. As a further consequence of this defect, petitioners contend, the record compiled by respondents is devoid of specific scientific support for the distance limitations that were included in the Final Rule. They contend the Rule is therefore not the product of reasoned decision-making and is vulnerable to attack as impermissibly "arbitrary or capricious" under the APA, 5 U.S.C. Section 706(2)."

Until further notice, the June 29, 2015 WOTUS Rule is not in effect. Furthermore, this report does not attempt to include a professional opinion as it relates to the June 29, 2015 WOTUS Rule.

#### 2.2 Waters of the State

"Waters of the State" are within the jurisdiction of the Ohio Environmental Protection Agency (OEPA). They are generally defined as surface and underground water bodies, which extend through or exist wholly in the State of Ohio, which includes, but is not limited to, streams and both isolated and non-isolated wetlands. Private ponds, or any pond, reservoir, or facility built for reduction of pollutants prior to discharge are not included in this definition. In addition to "waters of the U.S.", OEPA also regulates and issues permits for isolated wetland impacts.

OEPA relies on the USACE decision regarding wetland determinations and delineations including whether or not a wetland is isolated or non-isolated.

#### 2.3 Wetlands

Wetlands are a category of "waters of the U.S." for which a specific identification methodology has been developed. As described in detail in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), wetland boundaries are delineated using three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. In addition to the criteria defined in the 1987 Manual, the procedures described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Environmental Laboratory, 2012) were used to evaluate the Study Area for the presence of wetlands.

#### 2.3.1 Hydrophytic Vegetation

On June 1, 2012, the National Wetland Plant List (NWPL), formerly called the National List of Plant Species that Occur in Wetlands (Reed 1988), went into effect after being released by the U.S. Army Corps of Engineers (USACE) as part of an interagency effort with the U.S. Fish and Wildlife Service (USFWS), the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (Lichvar and Kartesz, 2009). The NWPL, along with the information implied by its wetland plant species status ratings, provides general botanical information about wetland plants and is used extensively in wetland delineation, restoration, and mitigation efforts. The NWPL consists of a comprehensive list of wetland plant species that occur within the United States along with their respective wetland indicator statuses by region. An indicator status reflects the likelihood that a particular plant species occurs in a wetland or upland (Lichvar et al. 2012). Definitions of the five indicator categories are presented below.

<u>OBL</u> (Obligate Wetland Plants): almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface. These plants are of four types: submerged, floating, floating-leaved, and emergent.

**FACW** (Facultative Wetland Plants): usually occur in wetlands, but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.

<u>FAC (Facultative Plants):</u> occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.

**FACU** (Facultative Upland Plants): usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.

<u>UPL (Upland Plants):</u> almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

According to the USACE's Midwest Regional Supplement, plants that are rated as FAC, FACW, or OBL are classified as wetland plant species. The percentage of dominant wetland species in each of the four vegetation strata (tree, shrub/sapling, herbaceous, and woody vine) in the sample area determines the hydrophytic (wetland) status of the plant community. Dominant species are chosen independently from each stratum of the community. In general, dominants are the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total.

For the purposes of determining dominant plant species, the four vegetation strata are defined. Trees consist of woody species 3 inches or greater in diameter at breast height (DBH). Shrubs and saplings are woody species that are over 1 meter in height and less than 3 inches DBH. Herbaceous species consist of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants less than 1 meter tall. Woody vines consist of vine species greater than 1 meter in height, such as wild grapes.

#### 2.3.2 Hydric Soils

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. In general, hydric soils are flooded, ponded, or saturated for a week or more during the growing season when soil temperatures are above 32 degrees Fahrenheit. The anaerobic conditions created by repeated or prolonged saturation or flooding result in permanent changes in soil color and chemistry, which are used to differentiate hydric from non-hydric soils.

In this report, soil colors are described using the Munsell notation system. This method of describing soil color consists of separate notations for hue, value, and chroma that are combined in that order to form the color designation. The hue notation of a color indicates its relation to red, yellow, green, blue, and purple; the value notation indicates its lightness, and the chroma notation indicates its strength or departure from a neutral of the same lightness.

The symbol for hue consists of a number from 1 to 10, followed by the letter abbreviation of the color. Within each letter range, the hue becomes more yellow and less red as the numbers increase. The notation for value consists of numbers from 0 for absolute black, to 10 for absolute white. The notation for chroma consists of numbers beginning with /0 for neutral grays and increasing at equal intervals. A soil described as 10YR 3/1 soil is more gray than a soil designated 10YR 3/6.

#### 2.3.3 Wetland Hydrology

Wetland hydrology is defined as the presence of water for a significant period of time at or near the surface (within the root zone) during the growing season. Wetland hydrology is present only seasonally in many cases, and is often inferred by indirect evidence. Hydrology is controlled by such factors as seasonal and long-term rainfall patterns, local geology and topography, soil type, local water table conditions, and drainage. Primary indicators of hydrology are inundation, soil saturation in the upper 12 inches of the soil, watermarks, sediment deposits, and drainage patterns. Secondary indicators such as oxidized root channels in the upper 12 inches of the soil, water-stained leaves, local soil survey data, and the FAC-neutral vegetation test are sometimes used to identify hydrology. A primary indicator or two or more secondary indicators are required to establish a positive indication of hydrology.

## 2.3.4 Wetland Definition Summary

In general, an area must meet all three criteria to be classified as a wetland. In certain problem areas such as seasonal wetlands, which are not wet at all times, or in recently disturbed (atypical) situations, areas may be considered a wetland if only two criteria are met. In special situations, an area that meets the wetland definition may not be within the USACE's jurisdiction due to a specific regulatory exemption.

#### 2.4 Streams, Rivers, Watercourses & Jurisdictional Ditches

With non-tidal waters, in the absence of adjacent wetlands, the extent of the USACE's jurisdiction is defined by the OHWM. USACE regulations define the term "ordinary high water mark" for purposes of the CWA lateral jurisdiction at 33 CFR 328.3(e), which states:

The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Streams, rivers, watercourse, and ditches within the Study Area were evaluated using the above definition and documented. Waterways that did exhibit an OHWM were recorded and evaluated using the Ohio Environmental Protection Agency's Primary Headwater Habitat Evaluation (HHEI) or Qualitative Habitat Evaluation Index (QHEI) methodology. If applicable, the results of the HHEI and/or QHEI are presented in Section 3.2.

## 2.5 Endangered Species Act

Endangered, Threatened, and rare (ETR) species are protected at both the state and federal level (ORC 1531.25 and 50 CFR 17.11 through 17.12, respectively). The Ohio Revised Code defines "Take" as to harass, hunt, capture, or kill; or attempt to harass, hunt, capture, or kill.

The USFWS, under authority of the Endangered Species Act of 1973 (16 U.S. Code 1531), as amended, has the responsibility for federally listed species. The Ohio Department of Natural Resources (ODNR) has the responsibility for state listed species.

## 3 Background Information

## 3.1 Existing Maps

Several sources of information were consulted to identify potential wetlands and wetland soil units on the site. These include the USFWS's *National Wetland Inventory* (NWI), the USGS's *National Hydrography Dataset* (NHD), and the Natural Resources Conservation Service's (NRCS) *Soil Survey* for this county. These maps identify potential wetlands and wetland soil units on the site. The NHD maps are used to portray surface water. The NWI maps were prepared from high altitude photography and in most cases were not field checked. Because of this, wetlands are sometimes erroneously identified, missed, or misidentified. Additionally, the criteria used in identifying these wetlands were different from those currently used by the USACE. The county soil maps, on the other hand, were developed from actual field investigations. However, they address only one of the three required wetland criteria and may reflect historical conditions rather than current site conditions. The resolution of the soil maps limits their accuracy as well. The

mapping units are often generalized based on topography and many mapping units contain inclusions of other soil types for up to 15 percent of the area of the unit. The USACE does not accept the use of either of these maps to make wetland determinations.

#### 3.1.1 National Wetland Inventory

The NWI map of the area (Figure 4) identified one Riverine, Intermittent Streambed, Seasonally Flooded (R4SBC) wetland feature within the Study Area.

#### 3.1.2 National hydrography Dataset

The NHD dataset (Figure 4) identified one surface water within the Study Area.

#### 3.1.3 Soil Survey

The NRCS Soil Survey identified twelve (12) soil types located within the Study Area (Figure 3). The following table identifies the soil unit symbol, soil unit name, and whether or not the soil type contains components that meet the hydric soil criteria.

Table 3 – 2 Soil Map Units within the F3886 Port Union to Muhlhauser Rebuild Project Area

boll map offits within the 1 0000 fort officin to mullimauser rebuild 1 roject Area							
Description							
Dana silt loam, 2 to 6 percent slopes							
Eden silty clay loam, 25 to 50 percent slopes, moderately eroded	No						
Fincastle silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	No						
Henshaw silt loam, 0 to 2 percent slopes	No						
Miamian-Russell silt loams, 12 to 18 percent slopes, moderately eroded	No						
Miamian-Russell silt loams, bedrock substratum, 6 to 12 percent slopes, eroded							
Patton silty clay loam, 0 to 2 percent slopes	Yes						
Ragsdale silty clay loam, 0 to 2 percent slopes	Yes						
Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded	No						
RwB2 Russell-Miamian silt loams, bedrock substratum, 2 to 6 percent slopes, moderately eroded							
Udorthents	No						
eB Xenia silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes							
	Dana silt loam, 2 to 6 percent slopes  Eden silty clay loam, 25 to 50 percent slopes, moderately eroded  Fincastle silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes  Henshaw silt loam, 0 to 2 percent slopes  Miamian-Russell silt loams, 12 to 18 percent slopes, moderately eroded  Miamian-Russell silt loams, bedrock substratum, 6 to 12 percent slopes, eroded  Patton silty clay loam, 0 to 2 percent slopes  Ragsdale silty clay loam, 0 to 2 percent slopes  Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded  Russell-Miamian silt loams, bedrock substratum, 2 to 6 percent slopes, moderately eroded  Udorthents						

## 4 Methodology and Description

## 4.1 Regulated Waters Investigation

The delineation of regulated waters within the Study Area was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Environmental Laboratory, 2010) as required by current USACE policy.

Prior to the fieldwork, the background information was reviewed to establish the probability and potential location of wetlands on the site. Next, a general reconnaissance of the Study Area was conducted to determine site conditions. The site was then walked with the specific intent of determining wetland boundaries. Data stations were established at locations within and near the wetland areas to document soil characteristics, evidence of hydrology and dominant vegetation. Note that no attempt was made to examine a full soil profile to confirm any soil series designations.

However, when possible, soils were examined to a depth of at least 16 inches to assess soil characteristics and site hydrology. Complete descriptions of typical soil series can be found in the soil survey for these counties.

#### 4.1.1 Site Photographs.

Photographs of the site are located in Appendix A. These photographs are the visual documentation of site conditions at the time of inspection. The photographs are intended to provide representative visual samples of any wetlands or other special features found on the site.

### 4.2 Technical Descriptions

The project included the review of a 100-ft wide survey corridor approximately 2.74-miles long (the "Study Area"), located in the City of Fairfield and West Chester Township, Butler County, Ohio (see Figure 1). The Study Area consists of approximately 33.4 acres, with an actual project earth disturbance potential of approximately 4.6 acres. The F3886 Port Union to Muhlhauser Rebuild Project initiates at the Duke Energy Muhlhauser Substation located south of Muhlhauser Road, north of W Crescentville Road, and east of Dixie Highway (SR4) (39.308443, -84.486188) and terminates at the Duke Energy Port Union Substation located north of the Rialto Road and Port Union Road intersection (39.326641, -84.450244). The Study Area consisted five habitat types: maintained ROW/oldfield, urban turf/impervious surfaces, agricultural land, emergent wetland, and emergent/scrub-shrub wetland complex.

#### 4.2.1 <u>Data Point and Wetland Descriptions</u>

#### Pond 1 (0.02-acre within the Study Area)

Pond 1 was a freshwater excavated pond in both hydric and non-hydric soils. It is our best professional judgement based on desktop review and topography that Pond 1 discharges into Stream 6, a tributary to Mill Creek that ultimately flows into the Ohio River, a Traditional Navigable Water (TNW). Due to this connection, Pond 1 should be considered a jurisdictional water of the United States.

#### Wetland 1 (0.01-acre within the Study Area)

Wetland 1 (W01) was small palustrine emergent wetland (PEM) located along a constructed ditch. W01 discharges into Stream 1, a tributary to Mill Creek which flows into the Ohio River, a "Traditionally Navigable Water." Due to this significant nexus via Stream 1, this wetland should be considered a jurisdictional "water of the U.S.". The ORAM score for W01 was 26.0, categorizing the wetland as a Category 1, or low quality wetland. A complete ORAM field data sheet is located in Appendix D.

## Wetland Data Point

#### Data Point 01 (DP01)

Dominant vegetation in the vicinity of DP01 included dark-green bulrush (*Scirpus atrovirens*, OBL), and common fox sedge (*Carex vulpinoidea*, FACW). In addition, non-dominant vegetation observed included Frank's sedge (*Carex frankii*, OBL), white panicled American-aster (*Symphyotrichum lanceolatum*, FAC), blunt spike-rush (*Eleocharis obtusa*, OBL), giant ironweed (*Vernonia gigantea*, FAC), chufa (*Cyperus esculentus*, FACW), spotted lady's-thumb (*Persicaria maculosa*, FACW), and Fuller's teasel (*Dipsacus fullonum*, FACU). The plants at this data point qualified as hydrophytic vegetation. The soil from 0 to 3 inches had a matrix soil color of 10YR 4/2 with a texture of silty clay loam. The soil from 3 to 16 inches had a matrix soil color of 10YR 5/4 with concentrations in the matrix at 5 percent, and a texture of silty clay loam. The soil at the data point was mapped as Henshaw silt loam, 0 to 2 percent slopes (HoA), and met the redox depressions (F8) hydric soil criteria. Primary indicators of hydrology included surface water (A1),

saturation (A3), and secondary indicators of hydrology observed included geomorphic position (D2), and the FAC-neutral test (D5). This data point qualified as a wetland.

## <u>Upland Data Point</u> Data Point 02 (DP02)

Dominant vegetation in the vicinity of DP02 included red fescue (*Festuca rubra*, FACU). In addition, non-dominant vegetation observed included hairy crab grass (*Digitaria sanguinalis*, FACU). The plants at this data point did not qualify as hydrophytic vegetation criteria. The soil from 0 to 8 inches had a matrix soil color of 10YR 4/2 with a texture of silty clay loam. The soil from 8 to 16 inches had a matrix soil color of 10YR 5/3 with concentrations in the matrix at 2 percent, and a texture of silty clay loam. The soil at the data point was mapped as Henshaw silt loam, 0 to 2 percent slopes (HoA), and did not meet any hydric soil criteria. No indicators of hydrology were observed. This data point did not meet wetland criteria.

#### Wetland 2 (0.14-acre within the Study Area)

Wetlands 2 (W02) was a palustrine emergent and scrub-shrub wetland complex (PEM/PSS). W02 developed along the riparian area of Stream 1, a tributary to Mill Creek which flows into the Ohio River, a "Traditionally Navigable Water." Due to this significant nexus via Stream 1, this wetland should be considered a jurisdictional "water of the U.S.". The ORAM score for W02 was 48.0, categorizing the wetland as a Category 2, or moderate quality wetland. A complete ORAM field data sheet is located in Appendix D.

# Wetland Data Point Data Point 03 (DP03)

Dominant vegetation in the vicinity of DP03 included black willow (*Salix nigra*, OBL), silky dogwood (*Cornus amomum*, FACW), ash-leaf maple (*Acer negundo*, FAC), hybrid cattail (*Typha X glauca*, OBL), Canadian horseweed (*Erigeron canadensis*, FACU), and reed canary grass (*Phalaris arundinacea*, FACW). In addition, non-dominant vegetation observed included New England American-aster (*Symphyotrichum novae-angliae*, FACW), spotted touch-me-not (*Impatiens capensis*, FACW), dark-green bulrush (*Scirpus atrovirens*, OBL), Fuller's teasel (*Dipsacus fullonum*, FACU), flat-top goldentop (*Euthamia graminifolia*, FACW), common fox sedge (*Carex vulpinoidea*, FACW), spotted lady's-thumb (*Persicaria maculosa*, FACW), and crested sedge (*Carex cristatella*, FACW). The plants at this data point qualified as hydrophytic vegetation. The soil from 0 to 16 inches had a matrix soil color of 10YR 3/1 with concentrations in the matrix at 5 percent, and a texture of silty clay loam. The soil at the data point was mapped as Udorthents (Ud), and met the redox dark surface (F6), and redox depressions (F8) hydric soil criteria. Primary indicators of hydrology included saturation (A3), and secondary indicators of hydrology observed included crayfish burrows (C8), geomorphic position (D2), and the FAC-neutral test (D5). This data point qualified as a wetland.

## Upland Data Point Data Point 04 (DP04)

Dominant vegetation in the vicinity of DP04 included red fescue (*Festuca rubra*, FACU), and Johnson grass (*Sorghum halepense*, FACU). In addition, non-dominant vegetation observed included red clover (*Trifolium pratense*, FACU), Fuller's teasel (*Dipsacus fullonum*, FACU), Canadian thistle (*Cirsium arvense*, FACU), and eastern daisy fleabane (*Erigeron annuus*, FACU). The plants at this data point did not qualify as hydrophytic vegetation criteria. The soil from 0 to 16 inches had a matrix soil color of 10YR 3/1 with a texture of silt loam. The soil at the data point was mapped as Udorthents (Ud), and did not meet any hydric soil criteria. No indicators of hydrology were observed. This data point did not meet wetland criteria.

#### Wetland 3 (0.26-acre within the Study Area)

Wetlands 3 (W03) was a palustrine emergent and scrub-shrub wetland complex (PEM/PSS). W03 developed along the riparian area of Stream 7, a tributary to Mill Creek that flows into the Ohio River, a "Traditionally Navigable Water." Due to this significant nexus via Stream 7, this wetland should be considered a jurisdictional "water of the U.S.". The ORAM score for W03 was 45.0, categorizing the wetland as a Category 2, or moderate quality wetland. A complete ORAM field data sheet is located in Appendix D.

# Wetland Data Point Data Point 05 (DP05)

Dominant vegetation in the vicinity of DP05 included black willow (Salix nigra, OBL), broad-leaf cattail (*Typha latifolia*, OBL), and reed canary grass (*Phalaris arundinacea*, FACW). In addition, non-dominant vegetation observed included green ash (*Fraxinus pennsylvanica*, FACW), spotted touch-me-not (*Impatiens capensis*, FACW), dark-green bulrush (*Scirpus atrovirens*, OBL), white snakeroot (*Ageratina altissima*, FACU), Torrey's rush (*Juncus torreyi*, FACW), and giant ironweed (*Vernonia gigantea*, FAC). The plants at this data point qualified as hydrophytic vegetation. The soil from 0 to 2 inches had a matrix soil color of 10YR 3/1 with a texture of muck. The soil from 2 to 16 inches had a matrix soil color of 10YR 3/1 with a texture of silty clay loam. The soil at the data point was mapped as Eden silty clay loam, 25 to 50 percent slopes, moderately eroded (EcF2), and met the histic epipedon (A2), and 2 cm muck (A10) hydric soil criteria. Primary indicators of hydrology included surface water (A1), saturation (A3), and secondary indicators of hydrology observed included geomorphic position (D2), and the FAC-neutral test (D5). This data point qualified as a wetland.

# Upland Data Point Data Point 06 (DP06)

Dominant vegetation in the vicinity of DP06 included Amur honeysuckle (*Lonicera maackii*, UPL) in multiple strata. In addition, non-dominant vegetation observed included Canadian goldenrod (*Solidago canadensis*, FACU), spotted touch-me-not (*Impatiens capensis*, FACW), eastern woodland sedge (*Carex blanda*, FAC), Japanese honeysuckle (*Lonicera japonica*, FACU), summer grape (*Vitis aestivalis*, FACU), and cress-leaf groundsel (*Packera glabella*, FACW). The plants at this data point did not qualify as hydrophytic vegetation criteria. The soil from 0 to 3 inches had a matrix soil color of 10YR 3/2 with a texture of silty clay loam. The soil at the data point was mapped as Eden silty clay loam, 25 to 50 percent slopes, moderately eroded (EcF2), and did not meet any hydric soil criteria. No indicators of hydrology were observed. This data point did not meet wetland criteria.

#### Wetland 4 (0.99-acre within the Study Area)

Wetlands 4 (W04) was a palustrine emergent wetland (PEM). W04 developed along the riparian area of Stream 8, a tributary to Mill Creek which flows into the Ohio River, a "Traditionally Navigable Water." Due to this significant nexus via Stream 8, this wetland should be considered a jurisdictional "water of the U.S.". The ORAM score for W04 is 47.0, categorizing the wetland as a Category 2, or moderate quality wetland. A complete ORAM field data sheet is located in Appendix D.

# Wetland Data Point Data Point 07 (DP07)

Dominant vegetation in the vicinity of DP07 included blunt spike-rush (*Eleocharis obtusa*, OBL), and creeping-Jenny (*Lysimachia nummularia*, FACW). In addition, non-dominant vegetation observed included Torrey's rush (*Juncus torreyi*, FACW), common three-seed-mercury (*Acalypha rhomboidea*, FACU), Rufous bulrush (*Scirpus pendulus*, OBL), curly dock (*Rumex crispus*, FAC), dark-green bulrush (*Scirpus atrovirens*, OBL), common fox sedge (*Carex vulpinoidea*, FACW), swamp milkweed (*Asclepias incarnata*, OBL), white panicled American-aster (*Symphyotrichum lanceolatum*, FAC), Frank's sedge (*Carex frankii*, OBL), and cut-leaf water-horehound (*Lycopus americanus*, OBL). The plants at this data point qualified as hydrophytic vegetation. The soil from 0 to 16 inches had a matrix soil color of 10YR 3/1 with concentrations in the matrix at 10 percent, and a texture of sandy clay loam. The soil at the data point was mapped as Patton silty clay loam, 0 to 2 percent slopes (Pa), and met the redox dark surface (F6), and redox depressions (F8) hydric soil criteria. Primary indicators of hydrology included saturation (A3), and secondary indicators of hydrology observed included geomorphic position (D2), and the FAC-neutral test (D5). This data point qualified as a wetland.

### Upland Data Point Data Point 08 (DP08)

Dominant vegetation in the vicinity of DP08 included Canadian goldenrod (*Solidago canadensis*, FACU), and giant ironweed (*Vernonia gigantea*, FAC). In addition, non-dominant vegetation observed included annual ragweed (*Ambrosia artemisiifolia*, FACU), late-flowering Thoroughwort (*Eupatorium serotinum*, FAC), Fuller's teasel (*Dipsacus fullonum*, FACU), Japanese bristle grass (*Setaria faberi*, FACU), yellow sweet-clover (*Melilotus officinalis*, FACU), Virginia-creeper (*Parthenocissus quinquefolia*, FACU), Allegheny blackberry (*Rubus allegheniensis*, FACU), indian-hemp (*Apocynum cannabinum*, FAC), devil's-pitchfork (*Bidens frondosa*, FACW), white avens (*Geum canadense*, FAC), spotted touch-me-not (*Impatiens capensis*, FACW), curly dock (*Rumex crispus*, FAC), and white vervain (*Verbena urticifolia*, FAC). The plants at this data point did not qualify as hydrophytic vegetation criteria. The soil from 0 to 16 inches had a matrix soil color of 10YR 3/1 with a texture of silty clay loam. The soil at the data point was mapped as Patton silty clay loam, 0 to 2 percent slopes (Pa), and did not meet any hydric soil criteria. No indicators of hydrology were observed. This data point did not meet wetland criteria.

#### 4.2.2 Stream Descriptions

#### Stream 1 (Unnamed Tributary to Mill Creek - 1,598 Linear Feet within the Study Area)

Stream 1 (S01) was a perennial stream that flowed east through the Study Area. The dominant substrates were sand and silt. Ordinary High Water Mark (OHWM) width of S01 was approximately six feet and depth was 2.5 feet. The maximum pool depth observed was approximately twelve inches. S01 flows into Mill Creek which is a tributary to the Ohio River, a TNW. Due to this connection, this stream should be considered a jurisdictional "water of the United States." The HHEI score was 53 for S01. Complete HHEI field data sheets are located in Appendix D.

#### Stream 2 (Unnamed Tributary to Mill Creek – 54 Linear Feet within the Study Area)

Stream 2 (S02) was an intermittent stream that flowed south through the Study Area. The dominant substrates were gravel and silt. OHWM width of S02 was approximately ten feet and depth was 1.5 feet. The maximum pool depth observed was approximately four inches. S02flows into Mill Creek which is a tributary to the Ohio River, a TNW. Due to this connection, this stream

should be considered a jurisdictional "water of the United States." The HHEI score was 66 for S02. Complete HHEI field data sheets are located in Appendix D.

#### Stream 3 (Unnamed Tributary to Mill Creek – 78 Linear Feet within the Study Area)

Stream 3 (S03) was an intermittent stream that flowed south through the Study Area. The dominant substrates were sand and silt. OHWM width of S03 was approximately five feet and depth was one-foot. The maximum pool depth observed was approximately four inches. S03 flows into Mill Creek which is a tributary to the Ohio River, a TNW. Due to this connection, this stream should be considered a jurisdictional "water of the United States." The HHEI score was 58 for S03. Complete HHEI field data sheets are located in Appendix D.

### Stream 4 (Unnamed Tributary to Mill Creek – 259 Linear Feet within the Study Area)

Stream 4 (S04) was an intermittent stream that flowed east through the Study Area. The dominant substrates were sand and clay/hardpan. OHWM width of S04 was approximately seven feet and depth was 1.5 feet. The maximum pool depth observed was approximately three inches. S04 flows into Mill Creek which is a tributary to the Ohio River, a TNW. Due to this connection, this stream should be considered a jurisdictional "water of the United States." The HHEI score was 51 for S04. Complete HHEI field data sheets are located in Appendix D.

#### Stream 5 (Unnamed Tributary to Mill Creek – 113 Linear Feet within the Study Area)

Stream 5 (S05) was an intermittent stream that flowed south through the Study Area. The dominant substrates were gravel and silt. OHWM width of S05 was approximately nine feet and depth was two feet. The maximum pool depth observed was approximately two to three inches. S05 flows into Mill Creek which is a tributary to the Ohio River, a TNW. Due to this connection, this stream should be considered a jurisdictional "water of the United States." The HHEI score was 61 for S05. Complete HHEI field data sheets are located in Appendix D.

#### Stream 6 (Unnamed Tributary to Mill Creek – 164 Linear Feet within the Study Area)

Stream 6 (S06) was an intermittent stream that flowed east through the Study Area. The dominant substrates were gravel and sand. OHWM width of S06 was approximately eleven feet and depth was two feet. The maximum pool depth observed was approximately four inches. S06 flows into Mill Creek which is a tributary to the Ohio River, a TNW. Due to this connection, this stream should be considered a jurisdictional "water of the United States." The HHEI score was 69 for S06. Complete HHEI field data sheets are located in Appendix D.

#### Stream 7 (Unnamed Tributary to Mill Creek – 246 Linear Feet within the Study Area)

Stream 7 (S07) was an intermittent stream that flowed east through the Study Area. The dominant substrates were sand and clay/hardpan. OHWM width of S07 was approximately five feet and depth was 1.5 feet. The maximum pool depth observed was approximately four inches. S07 flows into Mill Creek which is a tributary to the Ohio River, a TNW. Due to this connection, this stream should be considered a jurisdictional "water of the United States." The HHEI score was 54 for S07. Complete HHEI field data sheets are located in Appendix D.

#### Stream 8 (Unnamed Tributary to Mill Creek – 232 Linear Feet within the Study Area)

Stream 8 (S08) was an intermittent stream that flowed northeast through the Study Area. The dominant substrates were silt. OHWM width of S08 was approximately fifteen feet and depth was 2.5 feet. The maximum pool depth observed was approximately ten inches. S08 flows into Mill Creek which is a tributary to the Ohio River, a TNW. Due to this connection, this stream should

be considered a jurisdictional "water of the United States." The HHEI score was 63 for S08. Complete HHEI field data sheets are located in Appendix D.

## 4.2.3 Non-Jurisdictional Aquatic Feature Descriptions

#### Non-Jurisdictional Ditches

Numerous non-jurisdictional ditches which lacked bed, bank, and OHWM were identified within the Study Area. These channels were characterized as small to moderate depressions created to channel water. Many of the identified ditches serve as drainage, transporting water from low-lying areas, alongside roadways or fields.

## 4.3 Endangered, Threatened and Rare Species

The potential for listed species known to occur within Butler County were evaluated based on the habitat observed within the Study Area. In addition, high quality natural communities and significant natural habitat areas were documented if encountered. A walking survey of the Study Area was performed in which all observed Endangered, Threatened and Rare (ETR) species or specific known special habitats were noted. Coordination with the U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources (ODNR) Division of Wildlife (DOW) occurred as it related to the Natural Heritage Database search results for the Study Area (Appendix E).

Tables summarizing the results of ETR species as they relate to the habitat observed within the Study Area are included with this report. Correspondence with the ODNR-DOW and the USFWS regarding RTE located within a ½-mile of the Study Area were sent August 28, 2019. The copies of the USFWS and ODNR-DOW response letters are located in Appendix E.

#### **Bat Roost Habitat**

The Indiana bat (*Myotis sodalis*, federally endangered) and northern long-eared bat (*Myotis septentrionalis*, federally threatened) are protected under the Endangered Species Act, which is overseen by the USFWS. Typical guidance from USFWS regarding potential bat roost trees is avoidance of cutting trees from April through October. The Study Area was assessed for potential bat roosting habitat with respect to any indicated clearing activities. Potential bat roost trees include dead or dying trees (including live shagbark hickories) with at least 10-percent exfoliating bark, a diameter at breast height (DBH) of at least 3 inches, and solar exposure for maternity roost trees (the tree is on a wooded edge or in a canopy gap). If applicable, correspondence from USFWS regarding Indiana bat and northern long-eared bat is included within Appendix E.

The entire Study Area was surveyed to identify potential Indiana bat and northern long-eared bat roost trees. Based on our field inspection and our best professional judgment, there was low to moderate quality suitable bat roost habitat observed within the Study Area.

## 5 Jurisdictional Analysis

## 5.1 U.S. Army Corps of Engineers

The USACE has authority over the discharge of fill or dredged material into "waters of the U.S.". This includes authority over any filling, mechanical land clearing, or construction activities that

occur within the boundaries of any "waters of the U.S.". A permit must be obtained from the USACE before any of these activities occur. Permits can be divided into two general categories: Individual Permits and Nationwide Permits.

Individual Permits are required for projects that do not fall into one of the specific Nationwide Permits or are deemed to have significant environmental impacts. These permits are much more difficult to obtain and receive a much higher level of regulatory agency and public scrutiny and may require several months to more than a year for processing.

Nationwide Permits have been developed for projects that meet specific criteria and are deemed to have minimal impact on the aquatic environment. There are currently 52 Nationwide Permits for qualifying activities with 31 Nationwide Permit General Conditions that must be satisfied in order to receive NWP consideration from the USACE.

## 5.2 Ohio Environmental Protection Agency

The OEPA is responsible for issuing Clean Water Act (CWA) Section 401 permits known as Water Quality Certifications (WQC) for all impacts to "waters of the State of Ohio." This includes authority over any dredging, filling, mechanical land clearing, impoundments or construction activities that occur within the boundaries of any "waters of the State," including those isolated waters not otherwise regulated by the USACE.

The OEPA issues Section 401 WQC in conjunction with the USACE' Section 404 permits. A Section 401 Water Quality Certification must be received before the USACE can issue any Section 404 Department of the Army Permit. The OEPA must issue Individual Section 401 WQC for all Individual Section 404 Permits.

Water quality certification may be granted, without notification to the OEPA, if the project falls under the NWP limitations described above. In order to qualify for this granted certification, all prior-authorized and *de minimis* Ohio State Certification General Limitations and Conditions as published by the OEPA must be satisfied.

The OEPA also requires notification for all impacts to isolated wetlands, which includes a permit application and mitigation plan pursuant to Section 6111 of Ohio Revised Code (ORC).

## 6 Summary and Conclusion

## 6.1 Summary

Cardno inspected the F3886 Port Union to Muhlhauser Rebuild Project Study Area on August 13 and 14, 2019. Table 6-1 summarizes the potentially regulated waters delineated within the Study Area.

#### 6.1.1 Endangered, Threatened, and Rare Species

Several sources of information were consulted to further define the potential habitat of listed species that occur within the county of the Study Area. The table presented in Appendix E contains the list of ETR species known to occur within Butler County and their potential to occur within the Study Area based on their habitat requirements and field observations.

Correspondence with the ODNR-DOW and the USFWS regarding RTE species located within a ½-mile of the Study Area were sent August 28, 2019. Copies of the USFWS and ODNR-DOW correspondence letter receipts are located in Appendix E.

#### 6.1.2 Indiana Bat and Northern Long-eared Bat Roost Habitat

The entire Study Area was surveyed to identify potential Indiana bat and northern long-eared Bat roost trees. Based on our field inspection and our best professional judgment, there is potential roost or maternity roost trees suitable for harboring Indiana Bats and Northern Long-eared Bats within the Study Area.

In the event tree clearing activity becomes a work priority within the Study Area, it is recommended that a field inspection be performed within the clearing limits to ensure that potential bat habitat has not developed.

The USFWS is the regulatory authority that makes the final determination as to the status of the Indiana bat and northern long-eared bat in the Study Area. A letter based on the field observations was submitted to the USFWS and ODNR-DOW for concurrence on August 28, 2019. The copies of the USFWS and ODNR-DOW response letters are located in Appendix E.

Table 6-1 Features Identified within the F3886 Port Union to Muhlhauser Rebuild Study Area

Feature Name	USGS/ NWI Identified	Feature Class	Regulatory Status¹	Dimensions (ft)		Cubatasta	QHEI/HHEI/	Linear	Acreage
				Width	Depth	Substrate	ORAM Score	Footage (LF)	(AC)
Pond 1	No	Perennial	Jurisdictional	N/A	N/A	N/A	N/A	N/A	0.02
Wetland 1 (W01)	No	PEM	Jurisdictional	N/A	N/A	N/A	26	N/A	0.01
Wetland 2 (W02)	No	PEM/PSS	Jurisdictional	N/A	N/A	N/A	48	N/A	0.14
Wetland 3 (W03)	No	PEM/PSS	Jurisdictional	N/A	N/A	N/A	45	N/A	0.26
Wetland 4 (W04)	No	PEM	Jurisdictional	N/A	N/A	N/A	47	N/A	0.99
Stream 1 (S01)	Yes	Perennial	Jurisdictional	6	2.5	Sa-Si	53	1,598	0.22
Stream 2 (S02)	No	Intermittent	Jurisdictional	10	1,5	Gr-Si	66	54	0.01
Stream 3 (S03)	No	Intermittent	Jurisdictional	5	1	Sa-Si	58	78	0.01
Stream 4 (S04)	No	Intermittent	Jurisdictional	7	1.5	Sa-Cl	51	259	0.04
Stream 5 (S05)	No	Intermittent	Jurisdictional	9	2	Gr-Si	61	113	0.02
Stream 6 (S06)	No	Intermittent	Jurisdictional	11	2	Gr-Si	69	164	0.04
Stream 7 (S07)	No	Intermittent	Jurisdictional	5	1.5	Gr-Sa	54	246	0.03
Stream 8 (S08)	No	Intermittent	Jurisdictional	15	2.5	Si	63	232	0.05
Totals			Perennia		1,594 LF				0.22

Int	ermittent		1,146 LF	0.20
	Pond		-	
Wetland	PEM	JD		1.00
Wetland	PEM/ PSS	JD	=	0.40

<sup>&</sup>lt;sup>1</sup> Regulatory Status is based on our "professional judgment" and experience; however the USACE makes the final determination.

#### 6.2 Conclusion

There was one (1) pond, four (4) wetlands, and eight (8) streams identified within the Study Area.

While this report represents our best professional judgment based on our knowledge and experience, it is important to note that the Huntington District of the USACE has final discretionary authority over all jurisdictional determinations of 'waters of the U.S.' including wetlands under Section 404 of the CWA in this region.

## 7 References

Environmental Laboratory. 1987. U.S. Army Corps of Engineers' Wetland Delineation Manual, Technical Report Y-87-1, U.S. Waterways Experiment Station, Vicksburg, MS.

Environmental Laboratory. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, ERDC/EL TR-12-19, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

Gleason, H.A. and A. Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*. 2<sup>nd</sup> Edition. The New York Botanical Garden. Bronx, NY.

Lichvar, R.W. 2013. The National Wetland Plant List: 2013 Wetland Ratings. Phytoneuron 2013-49: 1-241. Published July 17, 2013. ISSN 2153 733X.

Lichvar, R.W., and John T. Kartesz. 2009. *North American Digital Flora: National Wetland Plant List, version 2.4.0* (https://wetland\_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC.

Lichvar, R., Melvin, N.C., Butterwick, M.L. and Kirchner, W.N. 2012. *National Wetland Plant List Indicator Rating Definitions*. ERDC/CRREL TN-12-1. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. <a href="http://www.fws.gov/wetlands/documents/National-Wetland-Plant-List-Indicator-Rating-Definitions.pdf">http://www.fws.gov/wetlands/documents/National-Wetland-Plant-List-Indicator-Rating-Definitions.pdf</a>

Ohio Environmental Protection Agency, Division of Surface Water. 2009. Biological and Water Quality Study of the Lower Little Miami River and Selected Tributaries 2007 Including the Todd Fork Subwatershed.

(https://www.epa.state.oh.us/portals/35/documents/lowerlittlemiamirivertsd2007.pdf)

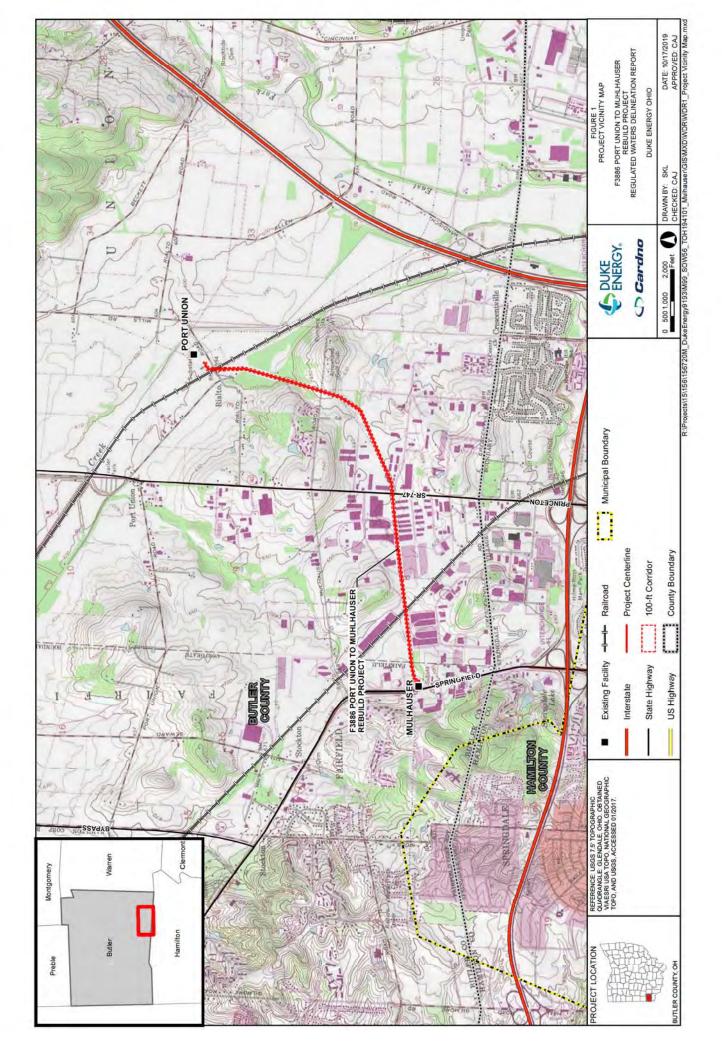
Reed, P. B., Jr. 1988. National List of Plant Species that Occur in Wetlands: 1988. Washington, DC: U.S. Fish and Wildlife Service.

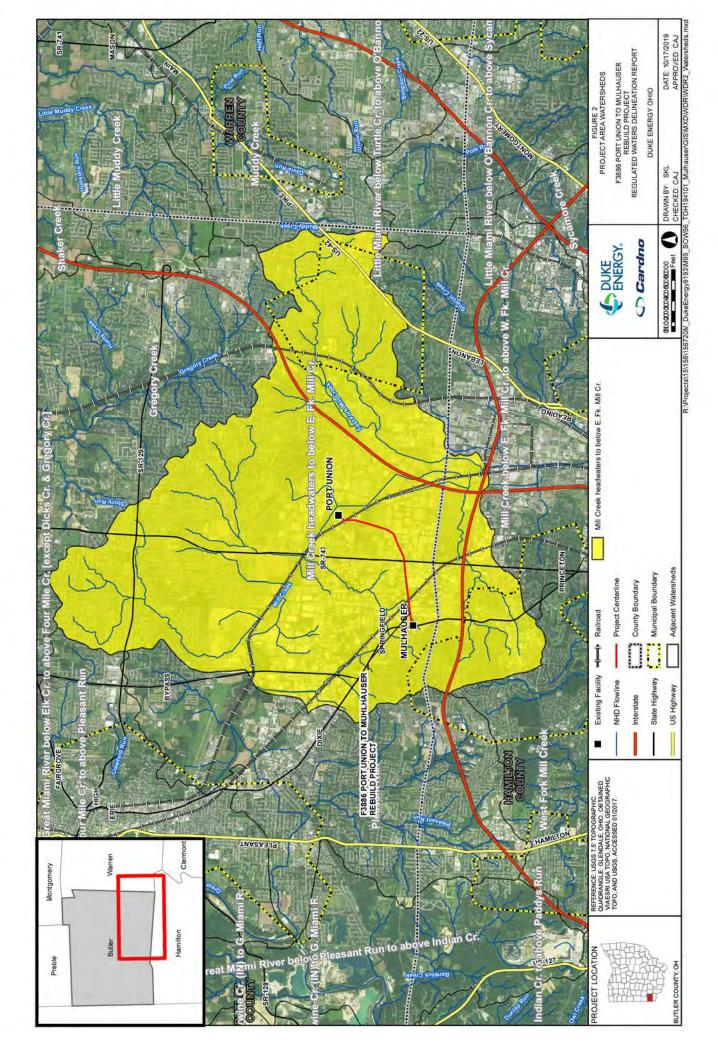
United States Department of Agriculture, Natural Resource Conservation Service (NRCS). Web Soil Survey. Soil Survey of Hamilton County, OH.

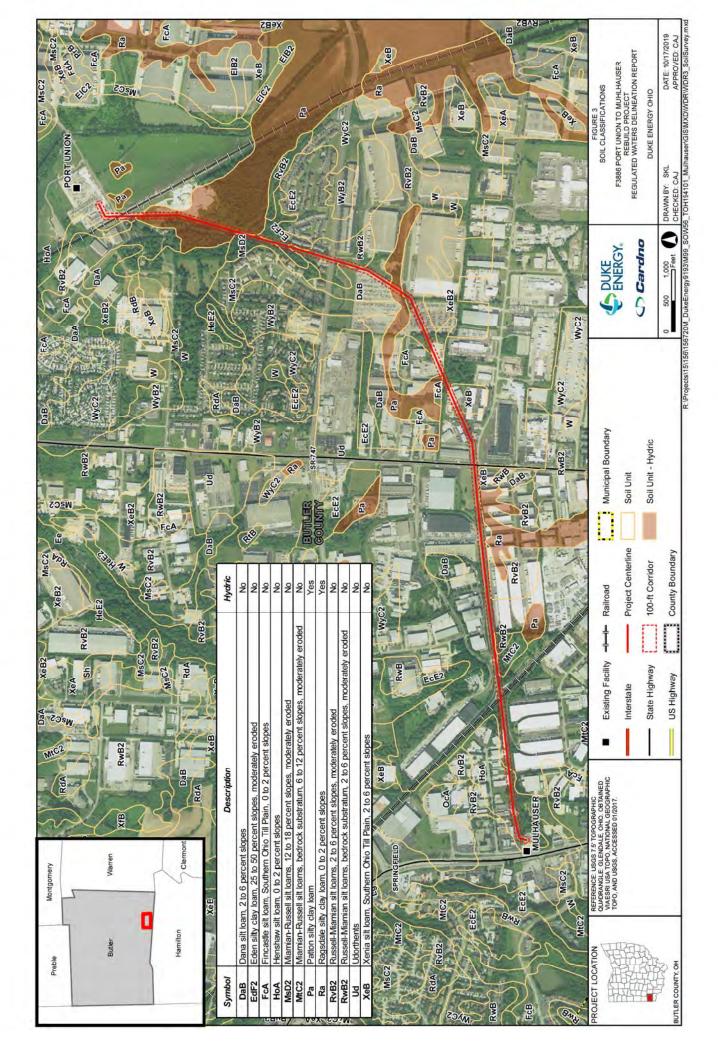
United States Environmental Protection Agency (EPA). 2015. Connectivity of Streams & Wetlands to Downstream Waters: A Review & Synthesis of the Scientific Evidence (http://www.epa.gov/cleanwaterrule)

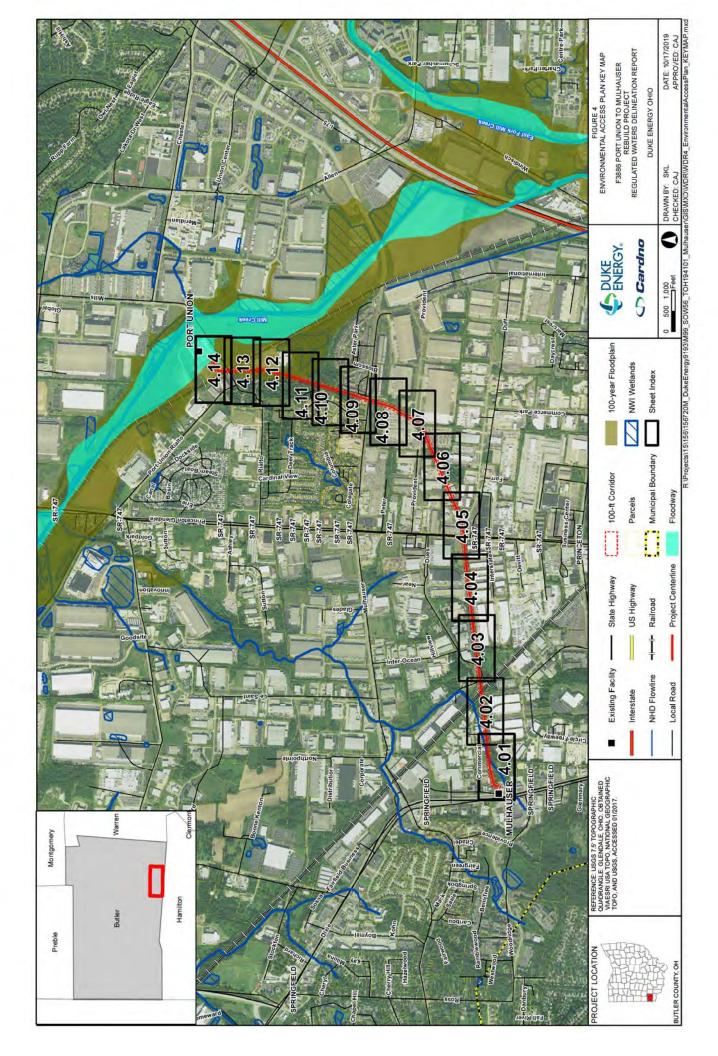
United States Environmental Protection Agency (EPA). 2015. Technical Support Document for the Clean Water Rule: Definition of Waters of the United States (http://www.epa.gov/cleanwaterrule)

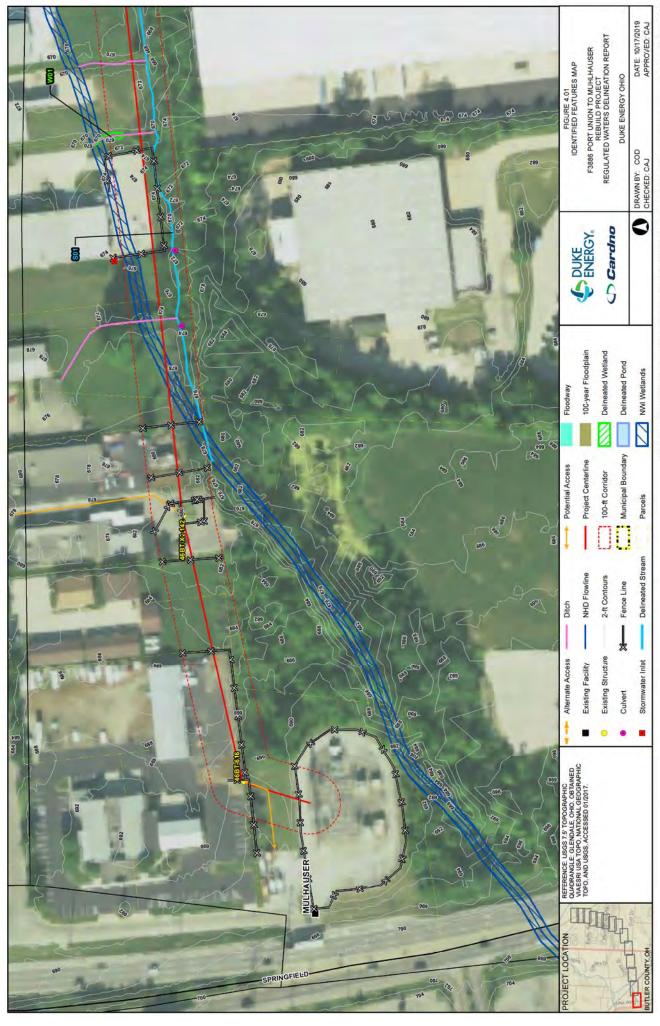
**DUKE ENERGY OHIO** F3886 PORT UNION TO MUHLHAUSER REBUILD PROJECT WETLAND DELINEATION REPORT **FIGURES** 



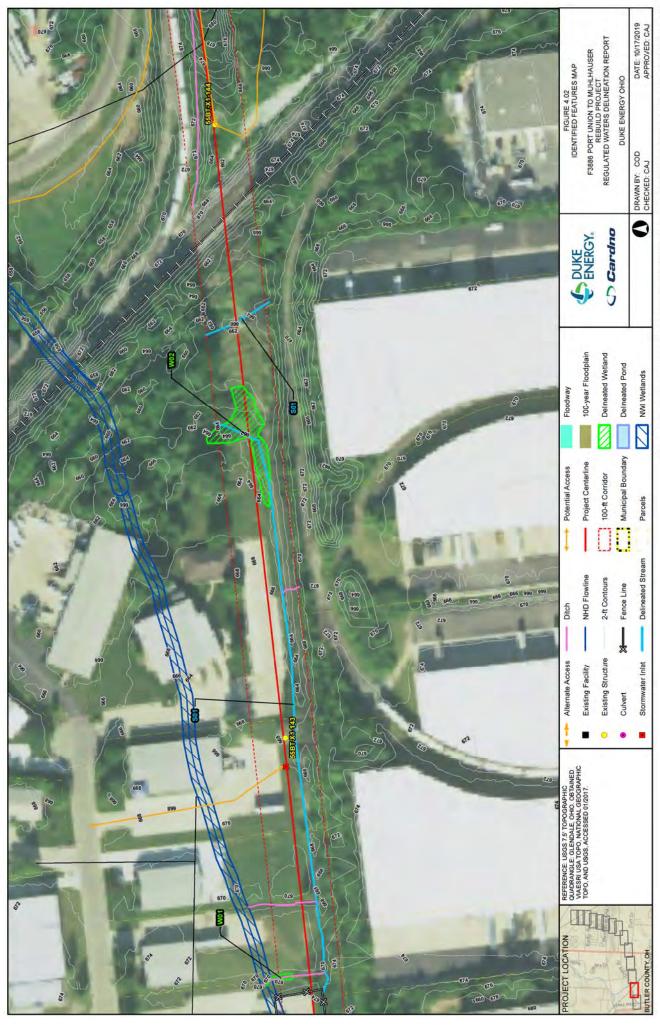




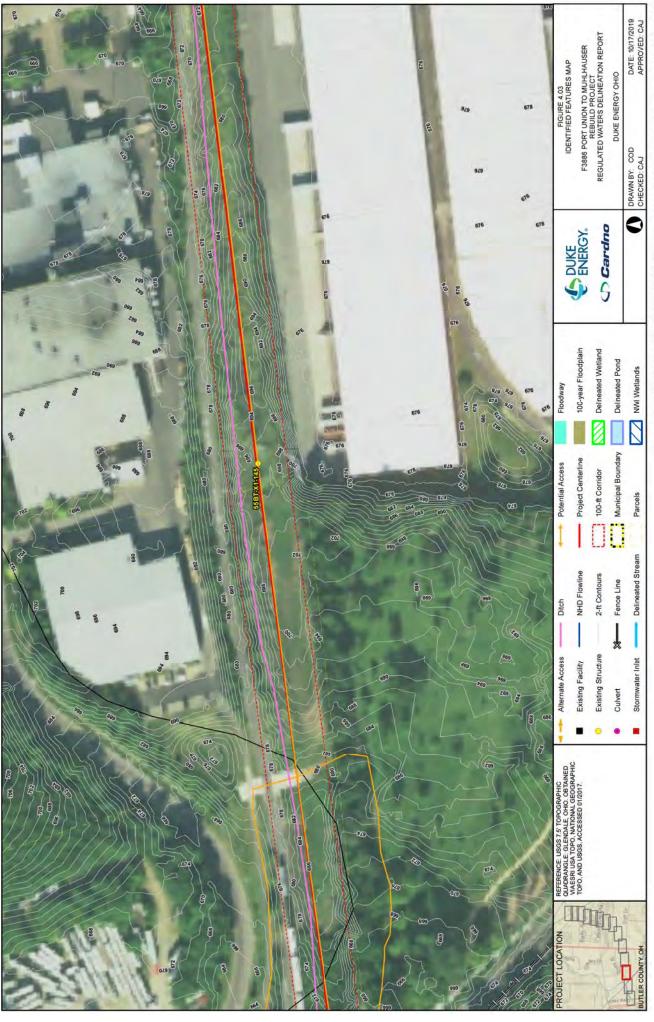




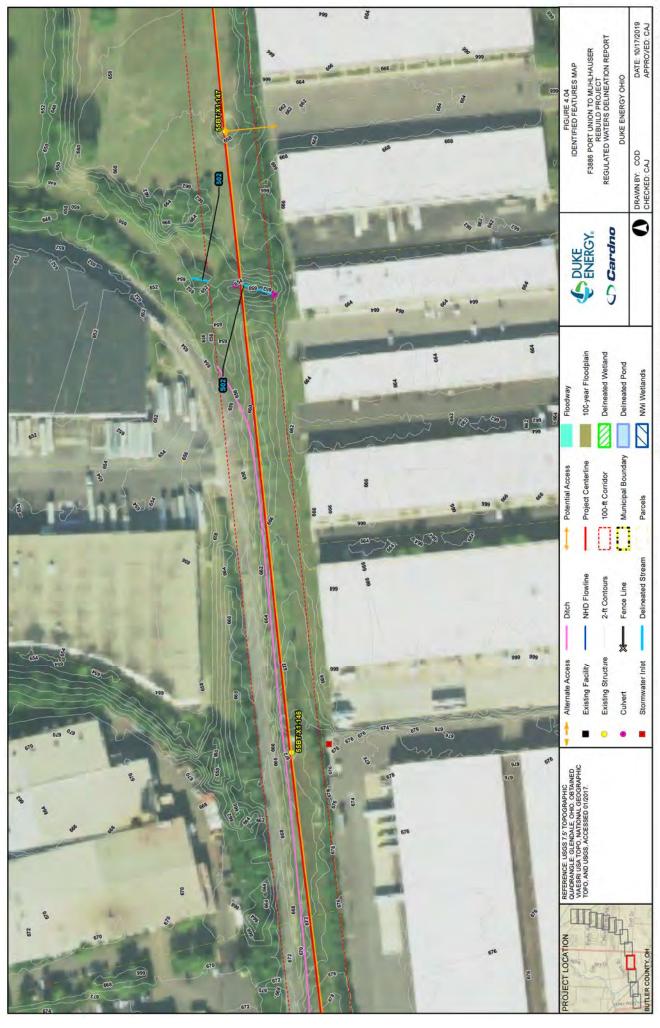
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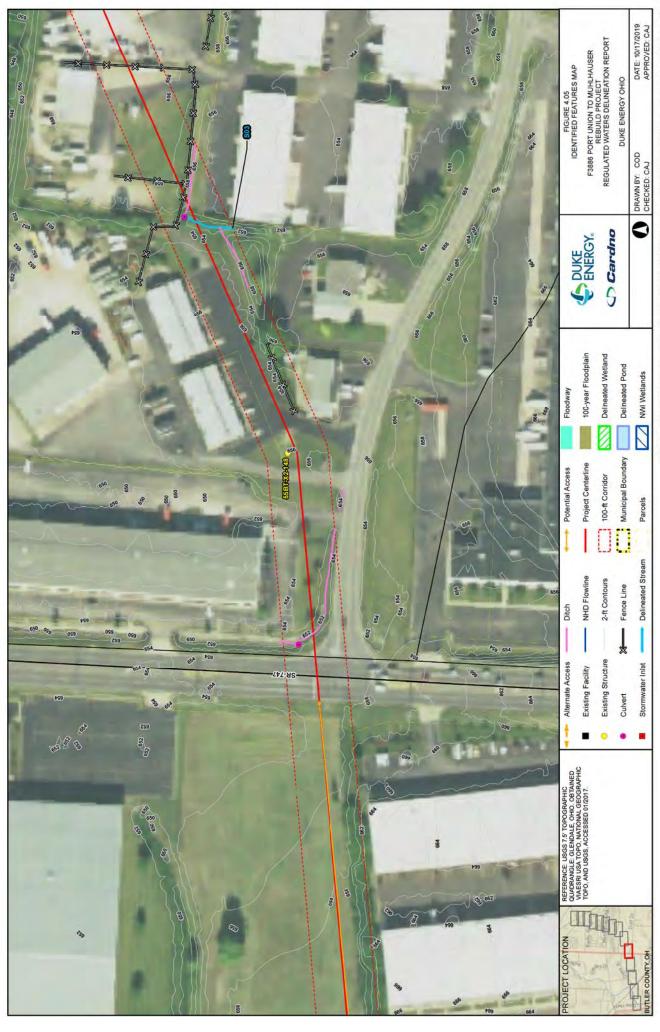
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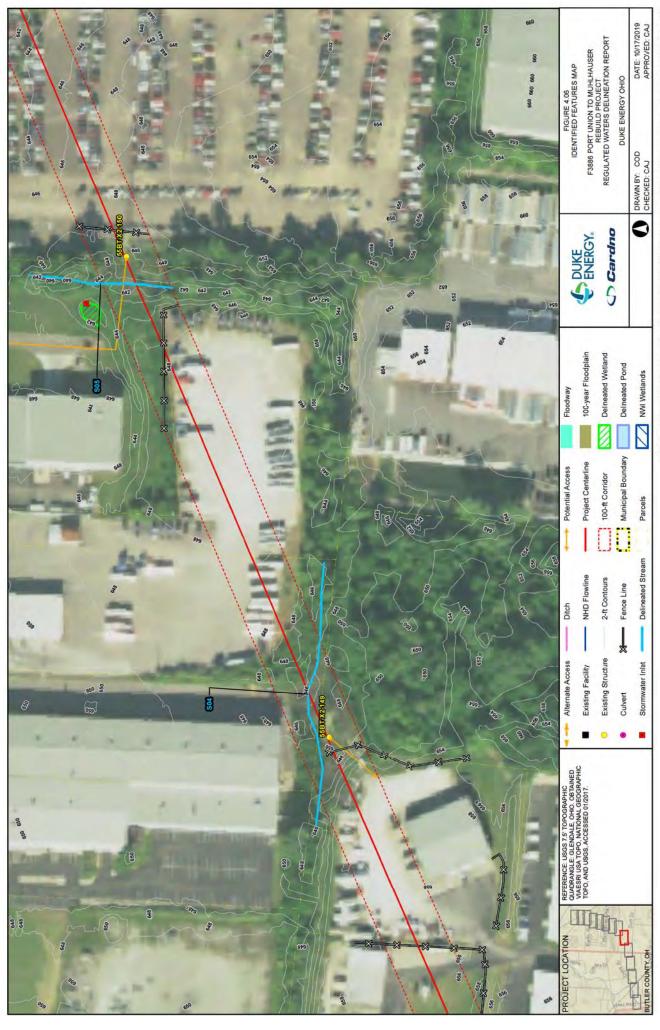
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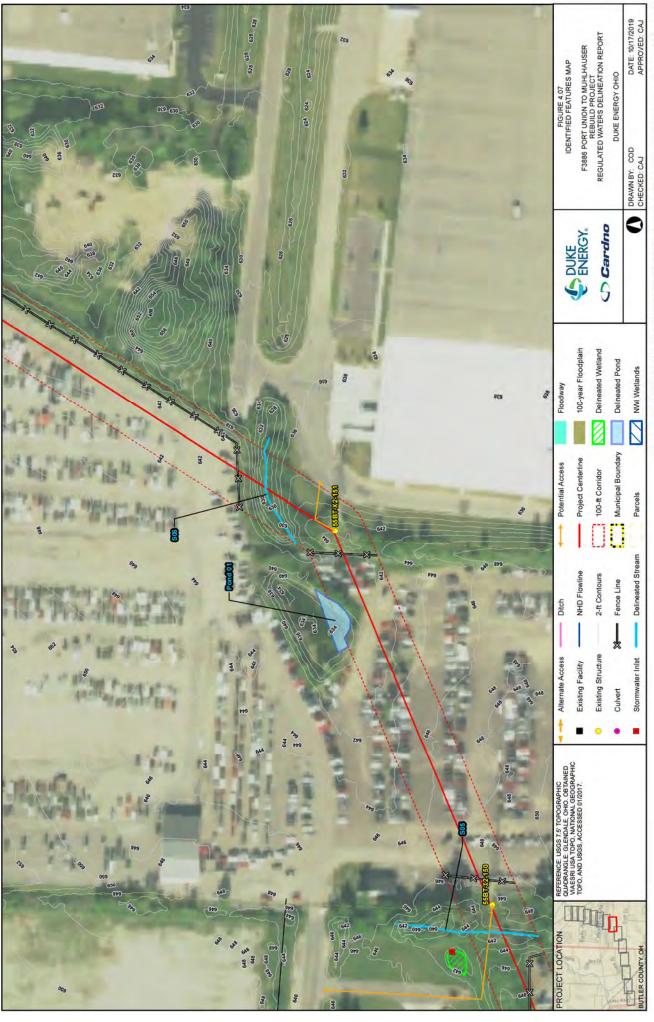
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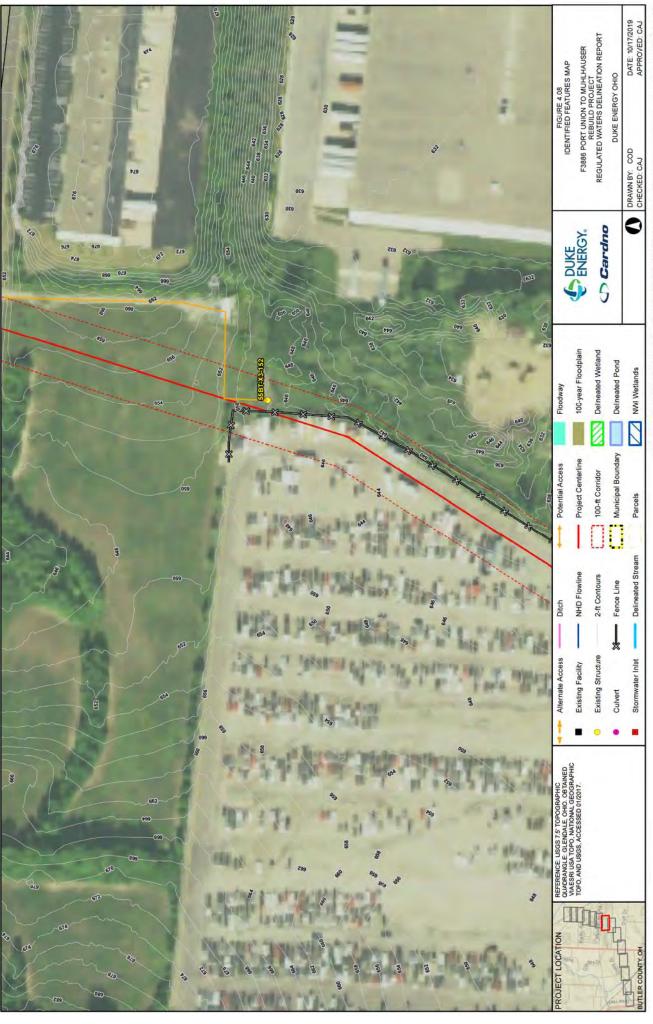
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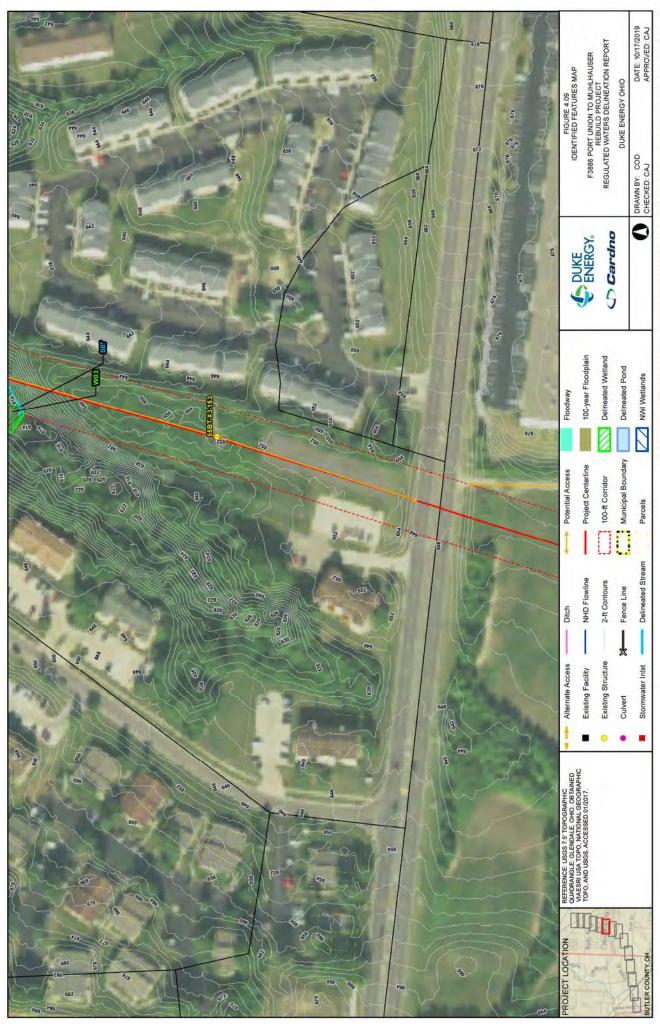
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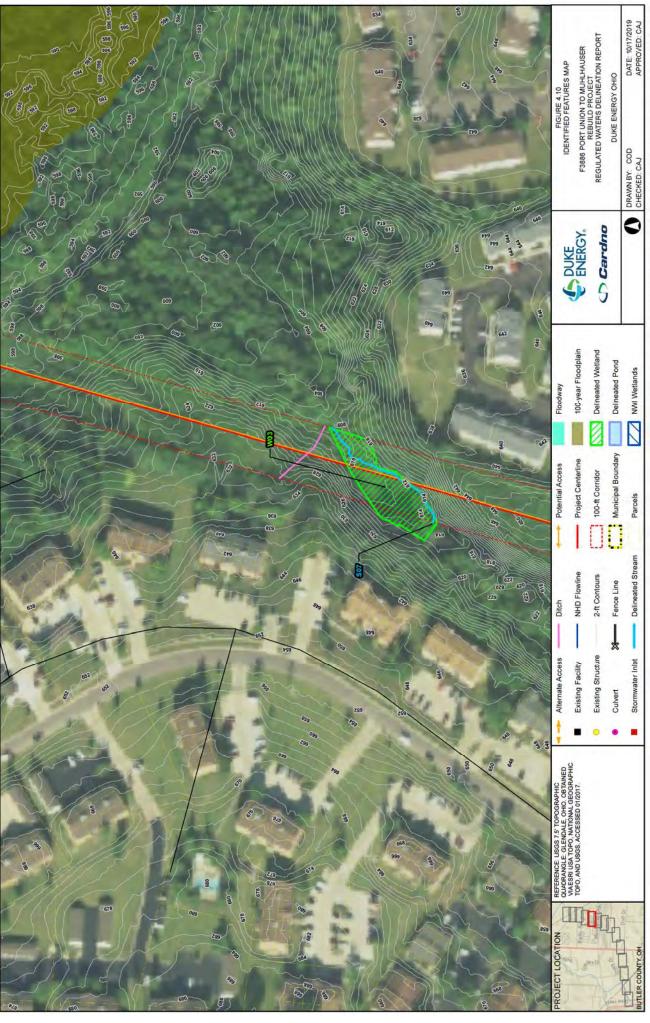
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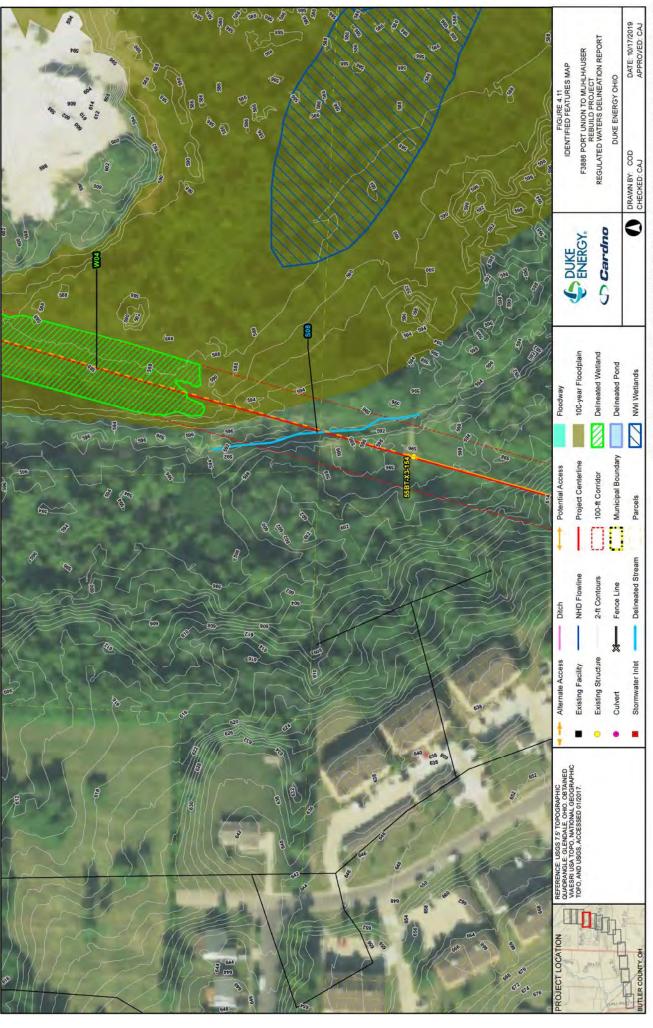
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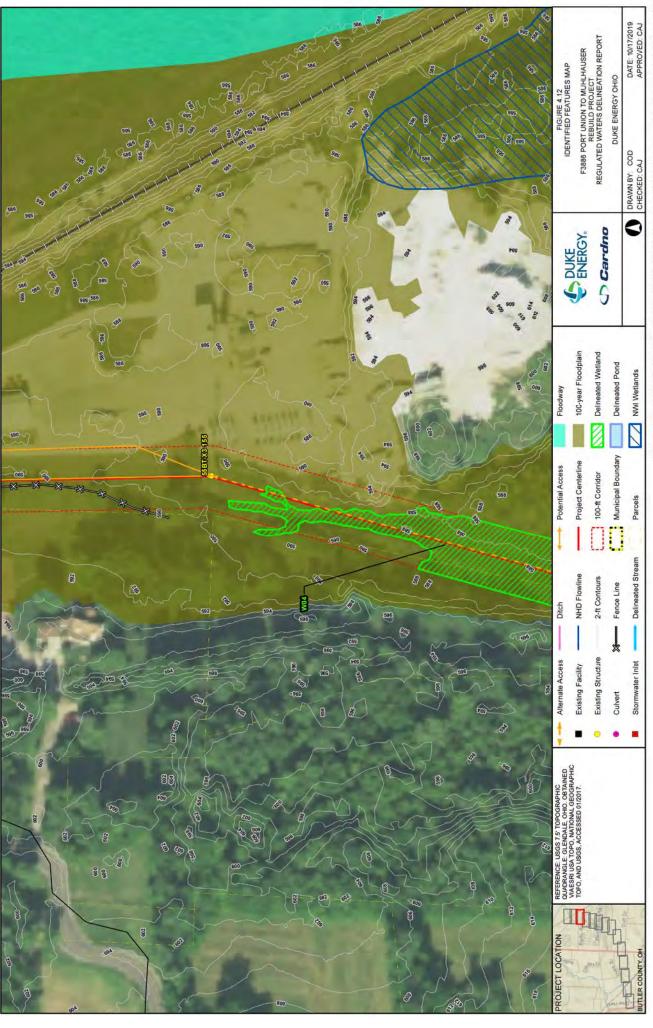
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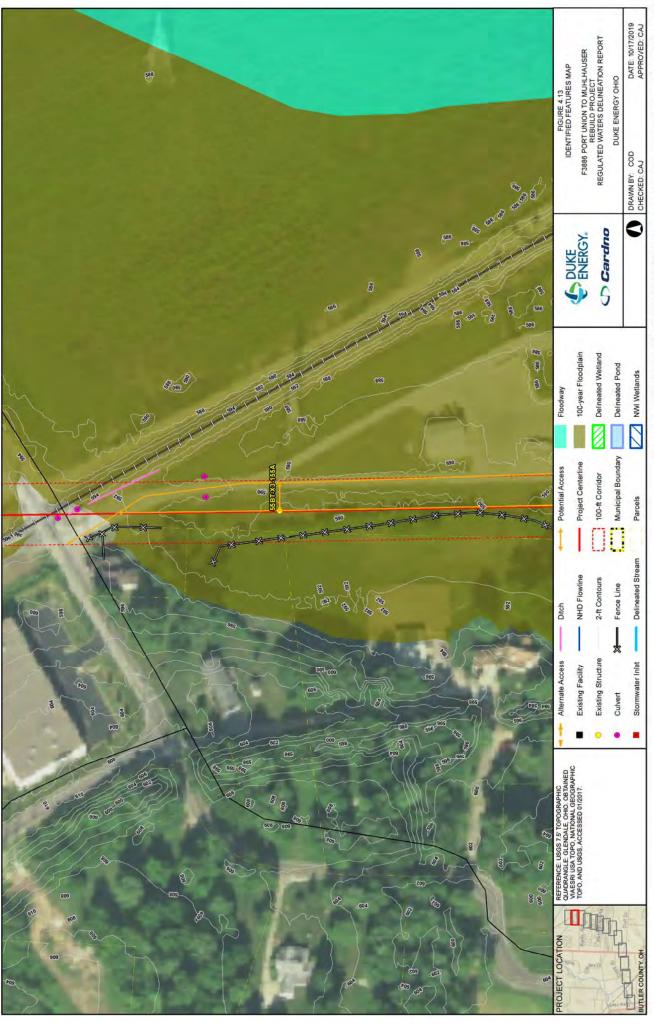
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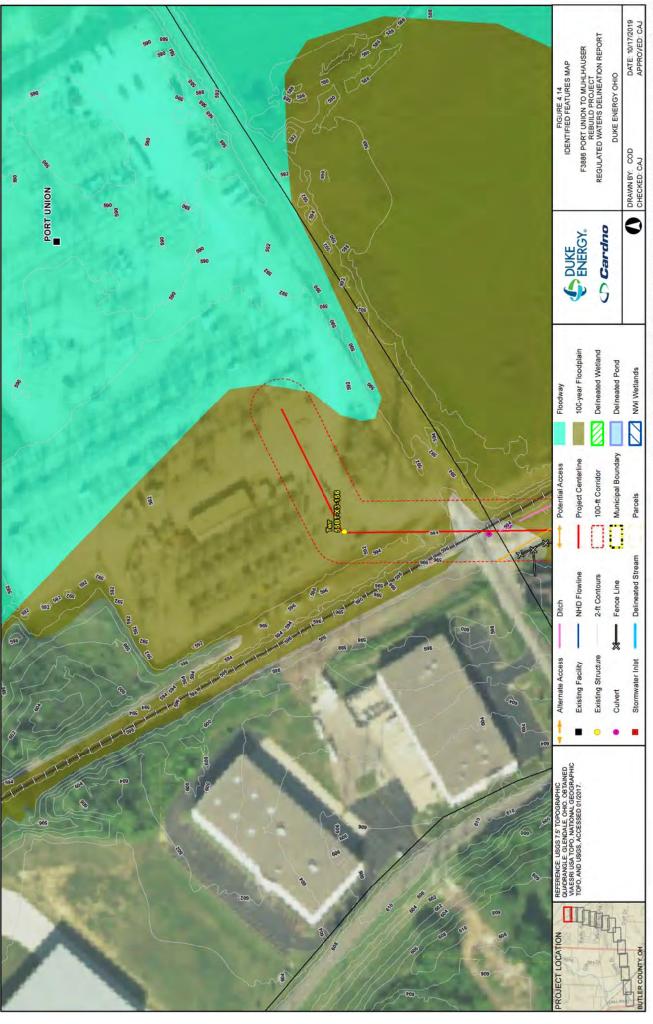
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DUKE ENERGY OHIO F3886 PORT UNION TO MUHLHAUSER REBUILD PROJECT WETLAND DELINEATION REPORT

**APPENDIX** 



SITE PHOTOGRAPHS

Photo 1: Stream 1, View Facing Upstream, 08/13/2019.



Photo 3: Stream 3, View Facing Upstream, 08/13/2019.



Photo 2: Stream 2, View Facing Upstream, 08/13/2019.



Photo 4: Stream 4, View Facing Upstream, 08/13/2019.



negulated waters beinteation heport F3886 Port Union to Muhlhauser Rebuild Project Duke Energy Ohio City of Fairfield and West Chester Township, Butler County, Ohio

Site Photographs

Photo 5: Stream 5, View Facing Upstream, 08/14/2019.



Photo 7: Stream 7, View Facing Upstream, 08/13/2019.



Photo 6: Stream 6, View Facing Upstream, 08/14/2019.



Photo 8: Stream 8, View Facing Upstream, 08/13/2019.



Regulated Waters Delineation Report
F3886 Port Union to Muhlhauser Rebuild Project
Duke Energy Ohio
City of Fairfield and West Chester Township, Butler County, Ohio

Site Photographs



Photo 9: Overview of Wetland 1, View Facing South, 08/13/2019.



Photo 11: Overview of Wetland 3, View Facing South, 08/14/2019.



Photo 10: Overview of Wetland 2, View Facing North, 08/13/2019



Photo 12: Overview of Wetland 4, View Facing South, 08/14/2019.



City of Fairfield and West Chester Township, Butler County, Ohio

Site Photographs

DUKE ENERGY OHIO F3886 PORT UNION TO MUHLHAUSER REBUILD PROJECT WETLAND DELINEATION REPORT

**APPENDIX** 

В

WETLAND DELINEATION DATA SHEETS – MIDWEST

Project/Site:	F3886 Port Union to	Mulhauser	Rebuild Project				City/Coun	ty: Fairfield/E	Butler	Sampling Date: 8/13/2019
Applicant/Owner:	Duke Energy Ohio						Sta	te: OH	Sampling Point:	DP01
Investigator(s):	Cori Jansing and Ka	aitlin Hillier						Section, To	wnship, Range: S8, T2E, R2N	
Landform (hillslope	e, terrace, etc.):	2	Stream Terrace						Local relief (concave, convex, none):	concave
Slope (%):	0%	Lat:		39.30925	8		Long:		-84.482372	Datum: NAD83 UTM16N
Soil Map Unit Nam	ne: Henshaw silt loam,	0 to 2 percer	nt slopes (HoA)						NWI class	ification: none
Are climatic / hydro	ologic conditions on th	e site typical	for this time of	year?			Ye	s_X_	No (If no, explain in Remarks.	
Are Vegetation	N	, Soil	N	, or Hydrology	N	significantly dist	urbed?	Are "	Normal Circumstances" present?	Yes X No
Are Vegetation	N	, Soil	N	, or Hydrology	N	naturally proble	matic?	(If ne	eded, explain any answers in Remark	5.)
SUMMARY OF	F FINDINGS Att	ach site n	nap showin	g sampling point	locations,	transects, im	portant feat	ures, etc.		
	egetation Present?			Yes x	-	No		e Sample		
Hydric Soil Pre				Yes x		No	with	in a Wetla	ind? Yes;	X No
Wetland Hydro	logy Present?			Yes X		No				
Remarks:										
VEGETATION	Use scientific	names of	plants.			Absolute	Dominant	Indicate	or I	
Tree Stratum (Plo	t size: 30' radius)					% Cover	Species?	Status	A TOTAL STATE OF THE STATE OF T	
1.								-		
2.									Number of Dominant Species	
3.									That Are OBL, FACW, or FAC	(A)
4.										
5.							-	0	Total Number of Dominant	
							= Total Cover		Species Across All Strata:	(B)
Capling/Charle Ctra	stum (Diet eine: 15) se	direct							—	
1.	atum (Plot size: 15' ra	ulus) -							Percent of Dominant Species That Are OBL, FACW, or FAC	100% (A/B)
2.							-	202	- Indiale Obl., PACVI, OF PAC	(46)
3.								-	_	
4.							_		Prevalence Index worksheet:	
5.							_	10-	_	
							= Total Cover		Total % Cover of:	Multiply by:
1.00	6 - 0v-3.7								That Are OBL, FACW, or FAC:	A/B
Herb Stratum (Plo	ot size: 5' radius)			-					OBL species 80%	x1 = 0.8
Scirpus atrovir						55%	Yes	OBL	FACW species 30%	x2 = 0.6
2. Carex vulpinoi	dea					20%	Yes	FACW		x3 = 0.6
3. Carex frankii						15%	No	OBL	FACU species 5%	x4 = 0.2
Symphyotricht     Eleocharis obt	um lanceolatum					15%	No No	FAC	UPL species  Column Totals: 1.35	x5 =(A) 2.2 (B)
Vernonia gigar						5%	No	FAC	Column Totals. 1.35	(A) 2.2 (B)
Cyperus escui						5%	No	FACV	/ Prevalence Index =	B/A = 1.63
8. Persicaria mad						5%	No	FACM		1.00
9. Dipsacus fullo						5%	No	FACU		
10.						_			Hydrophytic Vegetation Indi	cators:
11.										
12.									X 1-Rapid Test for Hydr	ophytic Vegetation
13.									X 2-Dominance Test is	
14.									x 3-Prevalence Index is	
15.										otations <sup>1</sup> (Provide supporting
16									data in Remarks or o	n a separate sheet) ytic Vegetation <sup>1</sup> (Explain)
17								-	Problematic Hydroph	yuc vegetation (Explain)
18. 19.									Indicators of hydric soil and w	etland hydrology must
20.									be present, unless disturbed o	
20.						135%	= Total Cover		De present, unless disturbed o	prodenduc.
						100 /11	10.00101		-	
	um (Plot size: 30' radi	us)		-					Hydrophytic	
t								20	Vegetation	V 11-
2,							= Total Cours		Present? Yes	X No
						-	= Total Cover		0.01	
Remarks: /loclude	e photo numbers here	or on a serva	rate sheet \							
. samanna. (moduc	p.o.o numbers nere	o. on a sepa	and direct.)							

_		

0-3" 10 3-16" 10  Type: C=Concentrati dydric Soil Indicators Histosol (A1) Histic Epipedon (ABlack Histic (A3) Hydrogen Sulfide Stratified Layers ( 2 cm Muck (A10)	A2) (A4)	Joyr 5/6  Juced Matrix, CS=Covered or Co Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	Te	Silty Clay Loam Silty Clay Loam  Cation: PL=Pore Lining, M=M  Cest Indicators of Hydric Soi  Iron-Manganese I	ls:
Type: C=Concentrati ydric Soil Indicators Histosol (A1) Histic Epipedon (A1) Black Histic (A3) Hydrogen Sulfide Stratified Layers (A10)	on, D=Depletion, RM=Redu 3: A2)	uced Matrix, CS=Covered or Co Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	pated Sand Grains. <sup>2</sup> Loc	Silty Clay Loam  cation: PL=Pore Lining, M=M  cest Indicators of Hydric Soi  Iron-Manganese I	ls:
Type: C=Concentrati ydric Soil Indicators Histosol (A1) Histic Epipedon (AB) Black Histic (A3) Hydrogen Sulfide Stratified Layers (AB)	on, D=Depletion, RM=Redu 3: A2)	uced Matrix, CS=Covered or Co Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	pated Sand Grains. <sup>2</sup> Loc	cation: PL=Pore Lining, M=M est Indicators of Hydric Soi Iron-Manganese I	ls:
ydric Soil Indicators Histosol (A1) Histic Epipedon (AB) Black Histic (A3) Hydrogen Sulfide Stratified Layers (AB) 2 cm Muck (A10)	A2) (A4)	Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	Te	est Indicators of Hydric Soi Iron-Manganese I	ls:
ydric Soil Indicators Histosol (A1) Histic Epipedon (AB) Black Histic (A3) Hydrogen Sulfide Stratified Layers (AB) 2 cm Muck (A10)	A2) (A4)	Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	Te	est Indicators of Hydric Soi Iron-Manganese I	ls:
ydric Soil Indicators Histosol (A1) Histic Epipedon (AB) Black Histic (A3) Hydrogen Sulfide Stratified Layers (AB) 2 cm Muck (A10)	A2) (A4)	Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	Te	est Indicators of Hydric Soi Iron-Manganese I	ls:
ydric Soil Indicators Histosol (A1) Histic Epipedon (AB) Black Histic (A3) Hydrogen Sulfide Stratified Layers (AB) 2 cm Muck (A10)	A2) (A4)	Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	Te	est Indicators of Hydric Soi Iron-Manganese I	ls:
lydric Soil Indicators Histosol (A1) Histic Epipedon (AB) Black Histic (A3) Hydrogen Sulfide Stratified Layers (AB) 2 cm Muck (A10)	A2) (A4)	Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	Te	est Indicators of Hydric Soi Iron-Manganese I	ls:
Hydric Soil Indicators Histosol (A1) Histic Epipedon (AB) Black Histic (A3) Hydrogen Sulfide Stratified Layers (AB) 2 cm Muck (A10)	A2) (A4)	Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	Te	est Indicators of Hydric Soi Iron-Manganese I	ls:
lydric Soil Indicators Histosol (A1) Histic Epipedon (AB) Black Histic (A3) Hydrogen Sulfide Stratified Layers (AB) 2 cm Muck (A10)	A2) (A4)	Sandy Gleyed Matri Sandy Redox (S5) Stripped Matrix (S6	Te	est Indicators of Hydric Soi Iron-Manganese I	ls:
Histic Epipedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers ( 2 cm Muck (A10)	(A4)	Sandy Redox (S5) Stripped Matrix (S6	ix (S4)		Masses (F12)
Black Histic (A3) Hydrogen Sulfide Stratified Layers ( 2 cm Muck (A10)	(A4)	Stripped Matrix (S6		V/am. 01-11-11-0	
Hydrogen Sulfide Stratified Layers ( 2 cm Muck (A10)		III II TO THE SAME OF THE PARTY		very Shallow Dar	k Surface (F22)
Stratified Layers ( 2 cm Muck (A10)			)	Other (Explain in	Remarks)
2 cm Muck (A10)	A5)	Dark Surface (S7)			
	(10)	Loamy Mucky Mine	ral (F1)		
Depleted Below D		Loamy Gleyed Matr	ix (F2)		
	Oark Surface (A11)	Depleted Matrix (F3	()		
Thick Dark Surface	ce (A12)	Redox Dark Surface	e (F6)	<sup>3</sup> The hydric soil indicate	ors have been updated to
Sandy Mucky Min	neral (S1)	Depleted Dark Surfa	ace (F7)	comply with the Field	d Indicators of Hydric Soils
5 cm Mucky Peat	or Peat (S3)	X Redox Depressions	; (F8)	in the United States	, Version 8.0, 2016.
Restrictive Layer (if o	bserved):				
Type:	1772.1770				
Depth (inches):			Hydr	ric Soil Present?	Yes X No
YDROLOGY Vetland Hydrology In		Dode Lero			Ten Control
	nimum of one is required: ch		7.00		minimum of two required)
X Surface Water (A	1)	Water-Stained Leav	res (B9)	Surface Soil Crac	:ks (B6)
High Water Table	(A2)	Aquatic Fauna (B13	3)	Drainage Patterns	
X Saturation (A3)		True Aquatic Plants		Dry-Season Water	
Water Marks (B1)		Hydrogen Sulfide O	dor (C1)	Crayfish Burrows	
Sediment Deposit			eres on Living Roots (C3)	Saturation Visible	on Aerial Imagery (C9)
Drift Deposits (B3	)	Presence of Reduce	ed Iron (C4)	Stunted or Stress	ed Plants (D1)
Algal Mat or Crus	t (B4)	Recent Iron Reduct	tion in Tilled Soils (C6)	X Geomorphic Posi	tion (D2)
Iron Deposits (B5	)	Thin Muck Surface	(C7)	X FAC-Neutral Test	(D5)
	on Aerial Imagery (B7)	Gauge or Well Data	(D9)		
Inundation Visible		Other (Explain in Re	emarks)		
	ed Concave Surface (B8)				
	ed Concave Surface (B8)				
Sparsely Vegetate		Depth (inches):2	2"		
Sparsely Vegetate Field Observations: Surface Water Present	? Yes X No	to the contract of the contrac	<u>2"</u> /A		
Sparsely Vegetate Field Observations: Surface Water Present Water Table Present?	? Yes X No	X Depth (inches): N	/A	ology Present?	Yes X No
Sparsely Vegetate Field Observations: Surface Water Present? Nater Table Present? Saturation Present?	? Yes X No Yes No Yes X No	X Depth (inches): N	/A	ology Present?	Yes X No
Sparsely Vegetate Field Observations: Surface Water Present Water Table Present? Saturation Present? (includes capillary fring	? Yes X No Yes No Yes X No	X Depth (inches): N	Metland Hydro	ology Present?	Yes X No
Sparsely Vegetate Field Observations: Surface Water Present Water Table Present? Saturation Present? (includes capillary fring	? Yes X No Yes No Yes X No	X Depth (inches): N Depth (inches): Sur	Metland Hydro	ology Present?	Yes X No

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0-8" 8-16"	Color (moist)	0/_					400	
	- 1. W. T. W. J. 705	_ %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
8-16"	10YR 4/2		Store on a				Silty Clay Loam	
	10YR 5/3	98	10YR 4/6			М	Silty Clay Loam	
					_			7
	The second secon	ion, RM=Redu	uced Matrix, CS=Covere	ed or Coated S	Sand Grains.		ion: PL=Pore Lining,	
dric Soil Ind			0101	-111-1-1-1010		lesi	Indicators of Hydri	
_ Histosol (	A PACIFIC AND A STATE OF THE PACIFIC AND A STATE			red Matrix (S4)				nese Masses (F12)
_	pedon (A2)		Sandy Redo					v Dark Surface (F22)
Black His			Stripped Ma				Other (Expla	in in Remarks)
	Sulfide (A4)		Dark Surface					
	Layers (A5)			ky Mineral (F1	-			
2 cm Muc			Loamy Gley	ed Matrix (F2)	)			
_ Depleted	Below Dark Surface	(A11)	Depleted M	atrix (F3)			21000	
Thick Dar	rk Surface (A12)		Redox Dark	Surface (F6)			<sup>3</sup> The hydric soil inc	dicators have been updated to
Sandy Mr	ucky Mineral (S1)		Depleted Da	ark Surface (F	7)		comply with the	Field Indicators of Hydric Soils
5 cm Muc	cky Peat or Peat (S3)		Redox Depi	ressions (F8)			in the United S	tates , Version 8.0, 2016.
strictive La	yer (if observed):							
Type:								
Depth (inc	hes):					Hydric	Soil Present?	Yes No
etland Hydro	ology Indicators:		Ta - 2 - 7				The contract of the contract o	
etland Hydro rimary Indica	ology Indicators: tors (minimum of one	is required: ch						ors (minimum of two required)
etland Hydro rimary Indica	ology Indicators:	is required: ch		ned Leaves (BS	9)		Surface Soil	Cracks (B6)
etland Hydro rimary Indica Surface V	ology Indicators: tors (minimum of one	is required: ch			9)			Cracks (B6)
etland Hydro rimary Indica Surface V	ology Indicators: tors (minimum of one Vater (A1) er Table (A2)	is required: ch	Water-Stain Aquatic Fau				Surface Soil Drainage Pa	Cracks (B6)
rimary Indica Surface V High Wat	ology Indicators: tors (minimum of one Water (A1) er Table (A2) n (A3)	is required: ch	Water-Stain Aquatic Fau True Aquati	una (B13)			Surface Soil Drainage Pa	Cracks (B6) tterns (B10) Water Table (C2)
rimary Indica rimary Indica Surface V High Wat Saturation Water Ma	ology Indicators: tors (minimum of one Water (A1) er Table (A2) n (A3)	is required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S	una (B13) ic Plants (B14)	1)	s (C3)	Surface Soil Drainage Pa Dry-Season Crayfish Bur	Cracks (B6) tterns (B10) Water Table (C2)
etland Hydro rimary Indica Surface V High Wat Saturation Water Ma	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2)	is required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh	una (B13) ic Plants (B14) Sulfide Odor (C nizospheres or	:1) n Living Roots	s (C3)	Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)
etland Hydro rimary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Depo	ology Indicators: tors (minimum of one Water (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)	is required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh Presence of	una (B13) ic Plants (B14) Sulfide Odor (C nizospheres or f Reduced Iron	1) n Living Roots n (C4)		Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  tressed Plants (D1)
rimary Indicat Surface V High Wat Saturation Water Ma Sediment Drift Depo	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) or Crust (B4)	is required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh Presence of	una (B13) ic Plants (B14) Sulfide Odor (C nizospheres or f Reduced Iron Reduction in	1) n Living Roots n (C4)		Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  tressed Plants (D1)  Position (D2)
etland Hydro rimary Indica' Surface V High Wat Saturation Water Ma Sediment Drift Depo	ology Indicators: tors (minimum of one Water (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) or Crust (B4)		Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S	una (B13) ic Plants (B14) Sulfide Odor (C nizospheres or f Reduced Iron Reduction in Surface (C7)	1) n Living Roots n (C4)		Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  tressed Plants (D1)  Position (D2)
etland Hydro imary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) or Crust (B4)	agery (B7)	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W	una (B13) ic Plants (B14) Sulfide Odor (C nizospheres or f Reduced Iron Reduction in	1) h Living Roots n (C4) Tilled Soils (C		Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  tressed Plants (D1)  Position (D2)
etland Hydro rimary Indica' Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Sparsely	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aerial Im Vegetated Concave S	agery (B7)	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W	una (B13) ic Plants (B14) Sulfide Odor (C nizospheres or f Reduced Iron Reduction in Surface (C7) Vell Data (D9)	1) h Living Roots n (C4) Tilled Soils (C		Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  tressed Plants (D1)  Position (D2)
etland Hydrorimary Indical Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Sparsely	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) er or Crust (B4) posits (B5) n Visible on Aerial Im Vegetated Concave S	agery (B7) Surface (B8)	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rt Presence of Recent Iron Thin Muck S Gauge or W Other (Expl.	una (B13) ic Plants (B14) Sulfide Odor (C nizospheres or f Reduced Iron Reduction in Surface (C7) Vell Data (D9) ain in Remarks	1) h Living Roots n (C4) Tilled Soils (C		Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  Ittressed Plants (D1)  Position (D2)
etland Hydro imary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Sparsely eld Observa	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) or Crust (B4) posits (B5) n Visible on Aerial Im Vegetated Concave S tions: Present?	agery (B7) Surface (B8)	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Expl.)	una (B13) ic Plants (B14) Sulfide Odor (C nizospheres or f Reduced Iron Reduction in Surface (C7) Vell Data (D9) ain in Remarks	1) h Living Roots n (C4) Tilled Soils (C		Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  tressed Plants (D1)  Position (D2)
etland Hydro imary Indica' Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Sparsely eld Observa	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) er or Crust (B4) posits (B5) n Visible on Aerial Im Vegetated Concave S  tions: Present?	agery (B7) Surface (B8)  Yes No Yes No	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rt Presence of Recent Iron Thin Muck S Gauge or W Other (Expl.  X Depth (inches	una (B13) ic Plants (B14) ic Plants (B15) ic P	n Living Roots n (C4) Tilled Soils (C	C6)	Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic FAC-Neutra	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  Itressed Plants (D1)  Position (D2)  Test (D5)
etland Hydro imary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Sparsely eld Observa aurface Water Paturation Pre-	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) er Crust (B4) posits (B5) n Visible on Aerial Im Vegetated Concave S  tions: Present? resent?	agery (B7) Surface (B8)  Yes No Yes No	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Expl.)	una (B13) ic Plants (B14) ic Plants (B15) ic P	n Living Roots n (C4) Tilled Soils (C	C6)	Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  tressed Plants (D1)  Position (D2)
etland Hydro rimary Indica' Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Sparsely eld Observa urface Water Vater Table Platuration Pre- ncludes capill	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) n Visible on Aerial Im Vegetated Concave S tions: Present? resent? sent? lary fringe)	yes No	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Ri Presence of Recent Iron Thin Muck S Gauge or W Other (Expl.  X Depth (inches X Depth (inches	una (B13) ic Plants (B14) ic P	(1)  a Living Roots (C4)  Tilled Soils (Cs)  Wetland	C6)	Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic FAC-Neutra	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  Itressed Plants (D1)  Position (D2)  Test (D5)
etland Hydrorimary Indicat Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Sparsely eld Observat urface Water Vater Table Procludes capill	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) n Visible on Aerial Im Vegetated Concave S tions: Present? resent? sent? lary fringe)	yes No	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rt Presence of Recent Iron Thin Muck S Gauge or W Other (Expl.  X Depth (inches	una (B13) ic Plants (B14) ic P	(1)  a Living Roots (C4)  Tilled Soils (Cs)  Wetland	C6)	Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic FAC-Neutra	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  Itressed Plants (D1)  Position (D2)  Test (D5)
etland Hydrorimary Indicated Surface Very High Water Market Sediment Drift Deporation Drift Deporation Sparsely  eld Observaturface Water Vater Table Personal Procludes capillescribe Recommendation Recommendation Presonal Resource Recommendation	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) n Visible on Aerial Im Vegetated Concave S tions: Present? resent? sent? lary fringe)	yes No	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Ri Presence of Recent Iron Thin Muck S Gauge or W Other (Expl.  X Depth (inches X Depth (inches	una (B13) ic Plants (B14) ic P	(1)  a Living Roots (C4)  Tilled Soils (Cs)  Wetland	C6)	Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic FAC-Neutra	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  Itressed Plants (D1)  Position (D2)  Test (D5)
rimary Indicat Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Sparsely eld Observat urface Water Vater Table Proceudes capill	ology Indicators: tors (minimum of one Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) n Visible on Aerial Im Vegetated Concave S tions: Present? resent? sent? lary fringe)	yes No	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Ri Presence of Recent Iron Thin Muck S Gauge or W Other (Expl.  X Depth (inches X Depth (inches	una (B13) ic Plants (B14) ic P	(1)  a Living Roots (C4)  Tilled Soils (Cs)  Wetland	C6)	Surface Soil Drainage Pa Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic FAC-Neutra	Cracks (B6)  Itterns (B10)  Water Table (C2)  rows (C8)  isible on Aerial Imagery (C9)  Itressed Plants (D1)  Position (D2)  Test (D5)

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nches)	Matrix		110	dox Features				
iciics)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-16"	10YR 3/1	95	10YR 3/6	5	С	M	Silty Clay Loam	
				- ——				
ype: C=Co	ncentration, D=Depletio	n, RM=Redu	uced Matrix, CS=Covere	d or Coated S	and Grains.	<sup>2</sup> Locatio	on: PL=Pore Lining, M	I=Matrix.
dric Soil In				- 1			Indicators of Hydric	
Histosol	(A1)		Sandy Gley	ed Matrix (S4)			Iron-Mangane	se Masses (F12)
Histic Ep	pipedon (A2)		Sandy Redo	x (S5)			Very Shallow	Dark Surface (F22)
Black His	stic (A3)		Stripped Ma	trix (S6)			Other (Explain	n in Remarks)
	n Sulfide (A4)		Dark Surfac					
	Layers (A5)			ky Mineral (F1)				
_ 2 cm Mu				ed Matrix (F2)				
_	Below Dark Surface (A	.11)	Depleted Ma				3	nac regress and a
	rk Surface (A12)		X Redox Dark					cators have been updated to
	lucky Mineral (S1)			ark Surface (F7	7)			Field Indicators of Hydric Soils
_ 5 cm Mu	cky Peat or Peat (S3)		X Redox Depr	essions (F8)			in the United Sta	tes, Version 8.0, 2016.
strictive La	yer (if observed):							
Type:								
Depth (in	ches):					Hydric S	Soil Present?	Yes X No
	GV.							
YDROLO								
YDROLO etland Hydr	OGY rology Indicators: ators (minimum of one is	required: ch	neck all that apply)				Secondary Indicator	rs (minimum of two required)
YDROLO etland Hydr imary Indica	ology Indicators:	required: ch		ed Leaves (B9	9)		Secondary Indicator Surface Soil O	rs (minimum of two required) Cracks (B6)
YDROLO etland Hydr imary Indica Surface	rology Indicators: ators (minimum of one is	required: ch			9)			Cracks (B6)
YDROLO etland Hydr imary Indica Surface V High Wa	ology Indicators: ators (minimum of one is Water (A1) ter Table (A2)	required: ch	Water-Stain Aquatic Fau				Surface Soil C Drainage Patt	Cracks (B6)
YDROLO etland Hydr imary Indica Surface V High Wa	ology Indicators: ators (minimum of one is Water (A1) ter Table (A2)	required: ch	Water-Stain Aquatic Fau True Aquati	na (B13)			Surface Soil C Drainage Patt	Cracks (B6) erns (B10) Vater Table (C2)
YDROLO etland Hydr imary Indica Surface V High Wa C Saturatio Water M:	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3)	required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S	na (B13) c Plants (B14)	1)	(C3)	Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro	Cracks (B6) erns (B10) Vater Table (C2)
YDROLO etland Hydr imary Indica Surface V High Wa C Saturatic Water M: Sedimen	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1)	required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh	na (B13) c Plants (B14) ulfide Odor (C	1) Living Roots	· (C3)	Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis	Cracks (B6) erns (B10) Vater Table (C2) ows (C8)
/DROLO etland Hydr imary Indica Surface High Wa Saturatio Water M: Sedimen Drift Dep	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2)	required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh Presence of	na (B13) c Plants (B14) ulfide Odor (C nizospheres on	1) Living Roots (C4)		Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis	Cracks (B6) erns (B10) Vater Table (C2) ows (C8) sible on Aerial Imagery (C9) essed Plants (D1)
YDROLO etland Hydr imary Indica Surface High Wa Saturatio Water Mi Sedimen Drift Dep Algal Ma	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3)	required: ch	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron	na (B13) c Plants (B14) ulfide Odor (C nizospheres on Reduced Iron	1) Living Roots (C4)		Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str	Cracks (B6) erns (B10) Vater Table (C2) buss (C8) bible on Aerial Imagery (C9) essed Plants (D1) Position (D2)
YDROLO etland Hydr imary Indica Surface V High Wa C Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) sosits (B3) at or Crust (B4)		Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S	na (B13) c Plants (B14) ulfide Odor (C nizospheres on Reduced Iron Reduction in T	1) Living Roots (C4)		Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F	Cracks (B6) erns (B10) Vater Table (C2) ows (C8) oible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
YDROLO etland Hydr imary Indica Surface V High Wa K Saturatio Water M: Sedimen Drift Dep Algal Ma Iron Dep Inundation	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	gery (B7)	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W	na (B13) c Plants (B14) ulfide Odor (C- nizospheres on Reduced Iron Reduction in T Surface (C7)	1) Living Roots (C4) Tilled Soils (C		Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F	Cracks (B6) erns (B10) Vater Table (C2) ows (C8) oible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
YDROLO etland Hydr rimary Indica Surface High Wa Saturatio Water Mark Sedimen Drift Dep Algal Mal Iron Dep Inundatio Sparsely	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Image	gery (B7)	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W	na (B13) c Plants (B14) ulfide Odor (C- nizospheres on Reduced Iron Reduction in T Surface (C7) fell Data (D9)	1) Living Roots (C4) Tilled Soils (C		Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F	Cracks (B6) erns (B10) Vater Table (C2) ows (C8) oible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
YDROLO etland Hydr imary Indica Surface High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Image vegetated Concave Su	gery (B7) urface (B8)	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W	na (B13) c Plants (B14) ulfide Odor (Cizospheres on Reduced Iron Reduction in T Surface (C7) fell Data (D9) ain in Remarks	1) Living Roots (C4) Tilled Soils (C		Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F	Cracks (B6) erns (B10) Vater Table (C2) ows (C8) oible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
COROLO etland Hydr imary Indica Surface High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Image vegetated Concave Su ations:	gery (B7) urface (B8) 'esNo	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain	na (B13) c Plants (B14) ulfide Odor (Cizospheres on Reduced Iron Reduction in Tourface (C7) fell Data (D9) ain in Remarks s): N/A	1) Living Roots (C4) Tilled Soils (C		Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F	Cracks (B6) erns (B10) Vater Table (C2) ows (C8) oible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
COROLO etland Hydrimary Indica Surface Migh Water Migh Water Might	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Image vegetated Concave Su ations: r Present? Y	gery (B7) urface (B8) 'esNo	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cizospheres on FReduced Iron Reduction in Tourface (C7) fell Data (D9) ain in Remarks s): N/A N/A	1) n Living Roots n (C4) Filled Soils (C	6)	Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F	Cracks (B6) erns (B10) Vater Table (C2) ows (C8) oible on Aerial Imagery (C9) ressed Plants (D1) Position (D2)
Months of the state of the stat	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Image vegetated Concave Su ations: r Present? Yesent? Yesent? Yesent?	gery (B7) urface (B8) 'es No 'es No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cizospheres on FReduced Iron Reduction in Tourface (C7) fell Data (D9) ain in Remarks s): N/A N/A	1) n Living Roots n (C4) Filled Soils (C	6)	Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F X FAC-Neutral	Cracks (B6) erns (B10) Vater Table (C2) bws (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)
YDROLO etland Hydr rimary Indica Surface V High Wa K Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely eld Observa urface Water (ater Table Paturation Pre- ancludes capi	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Image vegetated Concave Su ations: r Present? Yesent? Yesent? Yesent?	gery (B7) urface (B8)  Yes No Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cizospheres on Reduced Iron Reduction in Tourface (C7) fell Data (D9) ain in Remarks Si: N/A Si: N/A Si: 2"	1) a Living Roots a (C4) Tilled Soils (C	6) Hydrolog	Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F X FAC-Neutral	Cracks (B6) erns (B10) Vater Table (C2) bws (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)
YDROLO etland Hydr imary Indica Surface V High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely eld Observa aurface Water ater Table P aturation Pre	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Image vegetated Concave Su ations: r Present? r Present? y esent? y ellary fringe)	gery (B7) urface (B8)  Yes No Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cizospheres on Reduced Iron Reduction in Tourface (C7) fell Data (D9) ain in Remarks Si: N/A Si: N/A Si: 2"	1) a Living Roots a (C4) Tilled Soils (C	6) Hydrolog	Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F X FAC-Neutral	Cracks (B6) erns (B10) Vater Table (C2) bws (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)
YDROLO  detiand Hydr rimary Indica Surface V High Wa X Saturatio Water M: Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely eld Observa urface Water /ater Table F aturation Pre ncludes capil describe Reco	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Image vegetated Concave Su ations: r Present? r Present? y esent? y ellary fringe)	gery (B7) urface (B8)  Yes No Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cizospheres on Reduced Iron Reduction in Tourface (C7) fell Data (D9) ain in Remarks Si: N/A Si: N/A Si: 2"	1) a Living Roots a (C4) Tilled Soils (C	6) Hydrolog	Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F X FAC-Neutral	Cracks (B6) erns (B10) Vater Table (C2) bws (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)
rimary Indica Surface V High Wa X Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely seld Observa urface Water Vater Table P aturation Pre includes capi	rology Indicators: ators (minimum of one is Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Image vegetated Concave Su ations: r Present? r Present? y esent? y ellary fringe)	gery (B7) urface (B8)  Yes No Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cizospheres on Reduced Iron Reduction in Tourface (C7) fell Data (D9) ain in Remarks Si: N/A Si: N/A Si: 2"	1) a Living Roots a (C4) Tilled Soils (C	6) Hydrolog	Surface Soil C Drainage Patt Dry-Season V X Crayfish Burro Saturation Vis Stunted or Str X Geomorphic F X FAC-Neutral	Cracks (B6) erns (B10) Vater Table (C2) bws (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)

Project/Site:	F3886 Port Union to	Mulhauser	Rebuild Project				City/Count	y: West Cheste	er Township/Butler	Sampling Date: 8/13/2019
Applicant/Owner:	Duke Energy Ohio						Stat	e: OH	Sampling Point:	DP04
Investigator(s):	Cori Jansing and Ka	aitlin Hillier						Section, Towns	ship, Range: S8, T2E, R2N	
Landform (hillslope	e, terrace, etc.):		Shoulder					Lo	cal relief (concave, convex, none):	none
Slope (%):	0%	Lat:		39.3093	3		Long:		-84.479029	Datum: NAD83 UTM16N
Soil Map Unit Nam	e: Udorthents (Ud)								NWI classif	ication: none
Are climatic / hydro	ologic conditions on the	e site typica	I for this time of				Yes	X N		
Are Vegetation	N	, Soil	N	, or Hydrology	N	significantly dist			rmal Circumstances" present?	Yes X No
Are Vegetation	N	, Soil	N	, or Hydrology	N	naturally probler		4.	ed, explain any answers in Remarks	.)
SUMMARY OF	FINDINGS Att	ach site	map showing	sampling point	location	s, transects, im	portant feat	ures, etc.		
	getation Present?			Yes		Nox		e Sampled A		1600 190
Hydric Soil Pre				Yes		NoX	with	in a Wetland	1? Yes	Nox
Wetland Hydro	logy Present?			Yes		Nox				
Remarks:	Use scientific	namee of	folante							_
VEGETATION	- Ose scientific	ilailles U	piarits.			Absolute	Dominant	Indicator	1	
Tree Stratum (Plo	t size: 30' radius)					% Cover	Species?	Status	Dominance Test worksheet:	
1.	7 W V - 100					_				
2.									Number of Dominant Species	
3							-	,	That Are OBL. FACW, or FAC:	0 (A)
5.									-	
5							= Total Cover		Total Number of Dominant	2 (B)
							- Total Cover	_	Species Across All Strata:	2 (6)
Sapling/Shrub Stra	atum (Plot size: 15' rad	dius)							Percent of Dominant Species	
1.									That Are OBL, FACW, or FAC:	0% (A/B)
2.									- C X 39 P V	
3.									the same and	
4.									Prevalence Index worksheet:	
5.							-		_	
							= Total Cover		Total % Cover of: That Are OBL, FACW, or FAC:	Multiply by:  A/B
Herb Stratum (Plo	t size: 5' radius)								OBL species	x1 =
1. Festuca rubra				-		65%	Yes	FACU	FACW species	x2 =
2. Sorghum haler	pense					30%	Yes	FACU	FAC species	x3 =
3. Trifolium pratei	nse					20%	No	FACU	FACU species 130%	x4 = 5.2
4. Dipsacus fullor	num					5%	No	FACU	UPL species	x5 =
5. Cirsium arvens	se					5%	No	FACU	Column Totals: 1.30	(A) 5.2 (B)
6. Erigeron annui	us					5%	No	FACU	- U.S. T. ST. C.	
7									Prevalence Index = E	B/A = 4.00
9.								-	-	
10.							-		Hydrophytic Vegetation Indic	ators.
11.									_   .,,,,,,,	3,7,0,1
12.									1-Rapid Test for Hydro	phytic Vegetation
13.									2-Dominance Test is >	50%
14.									3-Prevalence Index is	
15.										ations <sup>1</sup> (Provide supporting
16							-		data in Remarks or on	
17								. —	Problematic Hydropny	tic Vegetation <sup>1</sup> (Explain)
18. 19.									Indicators of hydric soil and we	tland hydrology must
20.									be present, unless disturbed or	
						130%	= Total Cover		- De prosent, unless disturbed of	p. seleniado.
							77.3			
Woody Vine Stratu	m (Plot size: 30' radi	us)							Hydrophytic	
t				- 7 6				10	Vegetation	
2							-0.33		Present? Yes_	No X
						T) (	= Total Cover			
Remarke: /lockedo	photo numbers here	or on a con-	arate cheet \						1	
remarks. (medde	photo numbers here	or on a sep	urate sireet.)							

A I'	Action to the Company of the Company	umauser Rebuild Project					CIII	Sampling Date: 6/14/2019
Applicant/Owner:	Duke Energy Ohio	7007				State:		Sampling Point: DP05
Investigator(s):	Cori Jansing and Kaitlii	n Hillier					section, Townsh	ip, Range: S3, T2E, R2N
Landform (hillslope	, terrace, etc.):	Stream Terrace					Loca	l relief (concave, convex, none): concave
Slope (%):	0%	Lat:	39.31874			Long:	- 4	84.452418 Datum: NAD83 UTM16N
Soil Map Unit Name	e:Eden silty clay loam, 28	5 to 50 percent slopes, mo	derately eroded (EcF2)					NWI classification: none
		ite typical for this time of ye				Yes	X No	(If no, explain in Remarks.)
Are Vegetation		Soil N		N s	ignificantly distu	_		al Circumstances" present? Yes X No
				_				
Are Vegetation			71. C. A. C. C. C. C.		naturally problem			, explain any answers in Remarks.)
SUMMARY OF	FINDINGS Attac	h site map showing	sampling point loca	tions, tr	ansects, imp	ortant featur	res, etc.	
	getation Present?		Yes X	No			Sampled Ar	
Hydric Soil Pres	sent?		Yes X	No		within	a Wetland?	Yes X No
Wetland Hydrol	ogy Present?		Yes x	No				
Remarks:								
VEGETATION	Use scientific na	mes of plants.						
	Jeientine IId	e. pianis			Absolute	Dominant	Indicator	
Tree Stratum (Plot	size: 30' radius)				% Cover	Species?	Status	Dominance Test worksheet:
1.	CON EL CEMANY				10 00101		Citation	2000-02 (20) ((30)000-0
2.						<del></del>		Number of Dominant Species
_				_				
3								That Are OBL. FACW. or FAC: 3 (A)
4.								2. 10.00 - 2.00 - 5.
5.								Total Number of Dominant
						Total Cover		Species Across All Strata: 3 (B)
Sapling/Shrub Strai	tum (Plot size: 15' radius	3)	And the second					Percent of Dominant Species
1. Salix nigra					30%	Yes	OBL	That Are OBL, FACW, or FAC: 100% (A/B)
2. Fraxinus penns	sylvanica				5%	No	FACW	10 0000 0000 0000 0000 0000 0000 0000
3								
4								Prevalence Index worksheet:
5.				_			_	
0.					35%	Total Cover		Total % Cover of: Multiply by:
					3076	- Total Cover		That Are OBL, FACW, or FAC: A/B
Herb Stratum (Plot	eize: 5' radiue)							OBL species 125% x1 = 1.25
	- Size. 5 radius)				750		001	
Typha latifolia					75%	Yes	OBL	FACW species 60% x2 = 1.2
2. Phalaris arundii					30%	Yes	FACW	FAC species 5% x3 = 0.15
3. Impatiens cape					20%	No	FACW	FACU species 5% x4 = 0.2
Scirpus atrovire	ens				20%	No	OBL	UPL species x5 =
<ol><li>Ageratina altiss</li></ol>	ima				5%	No	FACU	Column Totals: 1.95 (A) 2.8 (B)
6. Juncus torreyi					5%	No	FACW	
7. Vernonia gigan	tea				5%	No	FAC	Prevalence Index = B/A = 1.44
8.								
9.						-		
10.								Hydrophytic Vegetation Indicators:
11.				_				
12				_				X 1-Rapid Test for Hydrophytic Vegetation
12				_				
13.								X 2-Dominance Test is >50% X 3-Prevalence Index is ≤3.0¹
14.								
15.								4-Morphological Adaptations (Provide supporting
16								data in Remarks or on a separate sheet)
17.								Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
18.								
19.								<sup>1</sup> Indicators of hydric soil and wetland hydrology must
20.								be present, unless disturbed or problematic.
					160%	Total Cover		
Woody Vine Stratus	m (Plot size: 30' radius)							Hydrophytic
1.		-	_					
-								Vegetation
2				_		T-1-1-C		Present? Yes X No
						Total Cover		
								1
Remarks: (Include	photo numbers here or o	on a separate sheet.)						

Project/Site:	F3886 Port Union to	Mulhauser	Rebuild Project				City/Cou	nty: F	airfield/Butler		Sampling Date: 8/14/2019
Applicant/Owner:	Duke Energy Ohio						St	ate: C	DH	Sampling Point:	DP06
Investigator(s):	Cori Jansing and Ka	aitlin Hillier						Sec	ction, Townshi	p, Range: S3, T2E, R2N	
Landform (hillslope	e, terrace, etc.):		Backslope						Loca	relief (concave, convex, none):	onvex
Slope (%):	5%	Lat:		39.31875	5		Long:		-8	4.452458	Datum: NAD83 UTM16N
				oderately eroded (EcF	2)					NWI classif	
Are climatic / hydro	ologic conditions on the	e site typica	I for this time of				Ye	es_>		(If no, explain in Remarks.)	
Are Vegetation	N	, Soil	N	, or Hydrology	N	significantly dist				al Circumstances" present?	Yes X No
Are Vegetation	N	, Soil	N	, or Hydrology	N	naturally problem	matic?		(If needed,	explain any answers in Remarks.	)
SUMMARY OF	FINDINGS Att	ach site	map showing	g sampling point	location	s, transects, im	portant fea	ture	s, etc.		
	getation Present?			Yes		Nox			ampled Are		1 Co. 10
Hydric Soil Pre				Yes		Nox	with	hin a	Wetland?	Yes	Nox
Wetland Hydro	logy Present?			Yes		Nox					
Remarks:	Use scientific	names of	f plants								
VECETATION	OSC SCIENTING	idilics of	piunto.			Absolute	Dominant	-	Indicator		
Tree Stratum (Plo	t size: 30' radius)					% Cover	Species?		Status	Dominance Test worksheet:	
1.	7 W.A (C.							33			
2.						3 0				Number of Dominant Species	
3.										That Are OBL, FACW, or FAC:	(A)
5.									_	T. 111	
5.							= Total Cover			Total Number of Dominant Species Across All Strata:	2 (B)
							- rotal Cover	_	_	Species Across Air Strata.	(6)
Sapling/Shrub Stra	atum (Plot size: 15' rad	dius)								Percent of Dominant Species	
Lonicera maac						5%	Yes		UPL	That Are OBL, FACW, or FAC:	0% (A/B)
2.										Y 77 Y Y Y	
3.										to the same of	
4.										Prevalence Index worksheet:	
5											
						5%	= Total Cover	r		Total % Cover of:	Multiply by:
Herb Stratum (Plo	st size: 5' radius)									That Are OBL, FACW, or FAC: OBL species	x1 = A/B
Lonicera maac				-		20%	Yes		UPL	FACW species 4%	x2 = 0.08
Solidago canad						3%	No		FACU	FAC species 3%	x3 = 0.09
3. Impatiens cape						3%	No		FACW	FACU species 9%	x4 = 0.36
4. Carex blanda						3%	No		FAC	UPL species 25%	x5 = 1.25
5. Lonicera japon	nica					3%	No	39	FACU	Column Totals: 0.41	(A) 1.78 (B)
6. Vitis aestivalis						3%	No		FACU		
7. Packera glabe	lia					1%	No		FACW	Prevalence Index = E	3/A = 4.34
8.								-			
9									_		Canada de Canada
11.							-			Hydrophytic Vegetation Indic	ators:
12.										1-Rapid Test for Hydro	phytic Vegetation
13.									_	2-Dominance Test is >	
14.										3-Prevalence Index is :	≤3.0¹
15.										4-Morphological Adapta	ations <sup>1</sup> (Provide supporting
16.										data in Remarks or on	
17										Problematic Hydrophy	tic Vegetation <sup>1</sup> (Explain)
18										North above of brodels and and control	Hand bridge bearings at
19.										<sup>1</sup> Indicators of hydric soil and we	
20						36%	= Total Cover			be present, unless disturbed or	problematic.
1						30%	- rotal cover	_			-
Woody Vine Stratu	ım (Plot size: 30' radi	us)		-						Hydrophytic Vegetation	
2.											No X
							= Total Cover				
	photo numbers here	or on a sepa	arate sheet.)								
Recently maintaine	ed ROW										

-	-	٠	

Depth	Matrix		Re	dox Features				
nches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-16"	10YR 3/1	90	10YR 4/6	10	С	М	Sandy Clay Loam	
Type: C=C	concentration, D=Depletion	on RM=Redu	uced Matrix, CS=Covere	ed or Coated S	and Grains	<sup>2</sup> Locatio	on: PL=Pore Lining, M	=Matrix
	ndicators <sup>3</sup> :	7.11 E.111 E.140	isou manon de corone		arra Granie.		Indicators of Hydric S	
Histoso			Sandy Gley	ed Matrix (S4)			얼마는 얼마는 얼마를 하고 있다면 하다네. 없다는	se Masses (F12)
Histic E	pipedon (A2)		Sandy Redo	ox (S5)			Very Shallow [	Dark Surface (F22)
Black H	listic (A3)		Stripped Ma	trix (S6)			Other (Explain	in Remarks)
Hydrog	en Sulfide (A4)		Dark Surfac	e (S7)				
Stratifie	ed Layers (A5)		Loamy Much	ky Mineral (F1)	)			
2 cm M	luck (A10)		Loamy Gley	ed Matrix (F2)				
Deplete	ed Below Dark Surface (A	A11)	Depleted Ma	atrix (F3)				
Thick D	ark Surface (A12)		X Redox Dark	Surface (F6)			<sup>3</sup> The hydric soil indic	ators have been updated to
	Mucky Mineral (S1)		Depleted Da	ark Surface (F7	7)		comply with the F	ield Indicators of Hydric Soils
_ 5 cm M	ucky Peat or Peat (S3)		X Redox Depr	ressions (F8)			in the United Stat	es , Version 8.0, 2016.
estrictive L	_ayer (if observed):							
Type:	The same of the sa							
Depth (i	The state of the s					Hydric 5	Soil Present?	Yes X No
marks:						.,,		
marks:								
YDROLO	OGY	s required: ch	eck all that apply)					s (minimum of two required)
YDROLO  Setland Hydrimary Indic	OGY drology Indicators:	s required: ch		ed Leaves (B9	))			
YDROLO  Vetland Hydrimary Indic  Surface	OGY drology Indicators: cators (minimum of one i	s required: ch			9)		Secondary Indicators	racks (B6)
YDROL( Vetland Hydrimary Indic Surface High W X Saturati	OGY drology Indicators: cators (minimum of one is Water (A1) later Table (A2) ion (A3)	s required: ch	Water-Stain Aquatic Fau				Secondary Indicators Surface Soil C Drainage Patte	racks (B6)
YDROL( Vetland Hydrimary Indic Surface High W X Saturati	OGY drology Indicators: cators (minimum of one i	s required: ch	Water-Stain Aquatic Fau True Aquati	ina (B13)			Secondary Indicators Surface Soil C Drainage Patte	racks (B6) erns (B10) ater Table (C2)
YDROLO  Vetland Hydrimary Indic  Surface  High W  X Saturati  Water M  Sedime	OGY  drology Indicators: cators (minimum of one in the Water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2)	s required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh	ina (B13) c Plants (B14) ulfide Odor (C nizospheres on	1) Living Roots		Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burro	racks (B6) erns (B10) ater Table (C2)
YDROLO  [etland Hydrimary Indic  Surface  High W  X Saturati  Water M  Sedime	OGY drology Indicators: cators (minimum of one is Water (A1) dater Table (A2) ion (A3) Marks (B1)	s required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh	ina (B13) c Plants (B14) ulfide Odor (C	1) Living Roots		Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burro Saturation Visi	racks (B6) erns (B10) later Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1)
YDROLO Vetland Hydrimary India Surface High W X Saturati Water M Sedime Drift De Algal M	OGY  drology Indicators: cators (minimum of one is water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4)	s required: ch	Water-Stain Aquatic Fau True Aquati Hydrogen S Oxidized Rh Presence of	ina (B13) c Plants (B14) ulfide Odor (C nizospheres on	1) Living Roots (C4)	s (C3)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burror Saturation Visi Stunted or Stre X Geomorphic Po	racks (B6) erns (B10) fater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
YDROLO  Setland Hydrimary Indice  High W.  X Saturati  Water M.  Sedime  Drift De  Algal M.	OGY drology Indicators: cators (minimum of one is water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	s required: ch	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron	na (B13) c Plants (B14) ulfide Odor (C nizospheres on f Reduced Iron	1) Living Roots (C4)	s (C3)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burro Saturation Visi	racks (B6) erns (B10) fater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
YDROLO  YDROLO  Yetland Hydrimary Indic  Surface  High W  X Saturati  Water N  Sedime  Drift De  Algal M  Iron De	OGY  drology Indicators: cators (minimum of one is water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4)		Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W	na (B13) c Plants (B14) ulfide Odor (Conizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9)	1) Living Roots (C4) Filled Soils (C	s (C3)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burror Saturation Visi Stunted or Stre X Geomorphic Po	racks (B6) erns (B10) fater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
YDROLO Vetland Hydrimary Indic Surface High W X Saturati Water N Sedime Drift De Algal M Iron De Inundat	OGY drology Indicators: cators (minimum of one is water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5)	igery (B7)	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W	na (B13) c Plants (B14) ulfide Odor (Conizospheres on f Reduced Iron Reduction in T Surface (C7)	1) Living Roots (C4) Filled Soils (C	s (C3)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burror Saturation Visi Stunted or Stre X Geomorphic Po	racks (B6) erns (B10) fater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
YDROLO Vetland Hydrimary India Surface High W X Saturati Water M Sedime Drift De Algal M Iron De Inundat Sparsel	OGY drology Indicators: cators (minimum of one is a Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) tion Visible on Aerial Imally Vegetated Concave S	igery (B7)	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W	na (B13) c Plants (B14) ulfide Odor (Conizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9)	1) Living Roots (C4) Filled Soils (C	s (C3)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burror Saturation Visi Stunted or Stre X Geomorphic Po	racks (B6) erns (B10) fater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
YDROLO  Setland Hydrimary Indice  High W.  X Saturati Water M. Sedime Drift De Algal M. Iron De Inundat Sparseleld Observe	OGY drology Indicators: cators (minimum of one is water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial Imally Vegetated Concave Si	igery (B7) urface (B8)	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W	ina (B13) c Plants (B14) ulfide Odor (C' nizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9) ain in Remarks	1) Living Roots (C4) Filled Soils (C	s (C3)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burror Saturation Visi Stunted or Stre X Geomorphic Po	racks (B6) erns (B10) fater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
YDROLO  Vetland Hydrimary Indic Surface High W X Saturati Water M Sedime Drift De Algal M Iron De Inundat Sparsel  eld Observ	OGY drology Indicators: cators (minimum of one is water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) tion Visible on Aerial Imally Vegetated Concave Signature.	ngery (B7) urface (B8) YesNo	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain	na (B13) c Plants (B14) ulfide Odor (C' nizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9) ain in Remarks	1) Living Roots (C4) Filled Soils (C	s (C3)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burror Saturation Visi Stunted or Stre X Geomorphic Po	racks (B6) erns (B10) fater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
YDROLO  Yetland Hydrimary Indic Surface High W X Saturati Water N Sedime Drift De Algal M Iron De Inundat Sparsel eld Observ urface Water	OGY drology Indicators: cators (minimum of one is water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial Imally Vegetated Concave Signature.	igery (B7) urface (B8) YesNo	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches	ina (B13) c Plants (B14) ulfide Odor (C' nizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9) ain in Remarks s): N/A N/A	1) Living Roots (C4) Filled Soils (C	s (C3)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burror Saturation Visi Stunted or Stre X Geomorphic Po	racks (B6) erns (B10) fater Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2)
YDROLO Vetland Hydrimary Indic Surface High W X Saturati Water N Sedime Drift De Inundat Sparsel Veld Observ Urface Water Vater Table aturation Po	OGY drology Indicators: cators (minimum of one is water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial Imally Vegetated Concave Signature.	igery (B7) urface (B8) Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches	ina (B13) c Plants (B14) ulfide Odor (C' nizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9) ain in Remarks s): N/A N/A	1) Living Roots (C4) Filled Soils (C	s (C3)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burro Saturation Visi Stunted or Stre X Geomorphic P X FAC-Neutral T	racks (B6) erns (B10) later Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
YDROLO Vetland Hyd Vetland Hyd Surface High W X Saturati Water N Sedime Drift De Inundat Sparsel Surface Water Vater Table Saturation Princludes cap	ogy drology Indicators: cators (minimum of one is water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial Imally Vegetated Concave Silvations: er Present?	rgery (B7) urface (B8) Yes No Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cinizospheres on f Reduced Iron Reduction in Tourface (C7) Vell Data (D9) ain in Remarks Si: N/A Si: N/A Surface	1) Living Roots (C4) Filled Soils (C	s (C3) C6)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burro Saturation Visi Stunted or Stre X Geomorphic P X FAC-Neutral T	racks (B6) erns (B10) later Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
YDROLO Vetland Hydrimary Indio Surface High W X Saturati Water N Sedime Drift De Inundat Sparsel Veld Observer Urface Water Vater Table aturation Princludes cap	ogy drology Indicators: cators (minimum of one is water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) ition Visible on Aerial Imally Vegetated Concave Servations: er Present? Present? ionillary fringe)	rgery (B7) urface (B8) Yes No Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cinizospheres on f Reduced Iron Reduction in Tourface (C7) Vell Data (D9) ain in Remarks Si: N/A Si: N/A Surface	1) Living Roots (C4) Filled Soils (C	s (C3) C6)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burro Saturation Visi Stunted or Stre X Geomorphic P X FAC-Neutral T	racks (B6) erns (B10) later Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
YDROLO Vetland Hydrimary Indio Surface High W X Saturati Water M Sedime Drift De Algal M Iron De Inundat Sparsel Vetland Observ urface Water Vater Table aturation Periodudes cap Describe Re	ogy drology Indicators: cators (minimum of one is water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) ition Visible on Aerial Imally Vegetated Concave Servations: er Present? Present? ionillary fringe)	rgery (B7) urface (B8) Yes No Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cinizospheres on f Reduced Iron Reduction in Tourface (C7) Vell Data (D9) ain in Remarks Si: N/A Si: N/A Surface	1) Living Roots (C4) Filled Soils (C	s (C3) C6)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burro Saturation Visi Stunted or Stre X Geomorphic P X FAC-Neutral T	racks (B6) erns (B10) later Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
YDROLO Vetland Hydro Surface High W X Saturati Water M Sedime Drift De Algal M Iron De Inundat Sparsel ield Observ Surface Water Vater Table Saturation Procludes cap Describe Re	ogy drology Indicators: cators (minimum of one is water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) ition Visible on Aerial Imally Vegetated Concave Servations: er Present? Present? ionillary fringe)	rgery (B7) urface (B8) Yes No Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cinizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9) ain in Remarks s): N/A s): N/A Surface	1) Living Roots (C4) Filled Soils (C	s (C3) C6)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burro Saturation Visi Stunted or Stre X Geomorphic P X FAC-Neutral T	racks (B6) erns (B10) later Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)
YDROLO Vetland Hyd Vetland Hyd Surface High W X Saturati Water N Sedime Drift De Algal M Iron De Inundat Sparsel Surface Water Vater Table Saturation Princludes cap	ogy drology Indicators: cators (minimum of one is water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) ition Visible on Aerial Imally Vegetated Concave Servations: er Present? Present? ionillary fringe)	rgery (B7) urface (B8) Yes No Yes No Yes No	Water-Stain Aquatic Fau True Aquatic Hydrogen S Oxidized Rh Presence of Recent Iron Thin Muck S Gauge or W Other (Explain X Depth (inches Depth (inches	na (B13) c Plants (B14) ulfide Odor (Cinizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9) ain in Remarks s): N/A s): N/A Surface	1) Living Roots (C4) Filled Soils (C	s (C3) C6)	Secondary Indicators Surface Soil C Drainage Patte Dry-Season W Crayfish Burro Saturation Visi Stunted or Stre X Geomorphic P X FAC-Neutral T	racks (B6) erns (B10) later Table (C2) ws (C8) ble on Aerial Imagery (C9) essed Plants (D1) osition (D2) est (D5)

Soil Map Unit Name: Patton silty clay loam, 0 to 2 percent slopes (Pa)  Are climatic / hydrologic conditions on the site typical for this time of year?  Are Vegetation N , Soil N , or Hydrology N significantly disturbed?  Are "Normal Circumstances" present?  Yes X No Yes X		F3886 Port Union to	Mulhauser	Rebuild Project				City/Cour	ty: Fairfield/Bu	tler	Sampling Date: 8/14/2019
	Applicant/Owner:	Duke Energy Ohio						Sta	te: OH	Sampling Point:	DP08
Single   1	Investigator(s):	Cori Jansing and K	aitlin Hillier						Section, Tow	nship, Range: S3, T2E, R2N	
Sold Stap Link New Patters ethy daily years and the Start of Lyman   Patter   Patt	Landform (hillslop	e, terrace, etc.):		Summit						ocal relief (concave, convex, none):	concave
New Content   Physics   Condense   Service	Slope (%):	1%	Lat:		39.32326	9		Long:		-84.450521	Datum: NAD83 UTM16N
New Vegetation   N	Soil Map Unit Nam	ne:Patton silty clay loa	m, 0 to 2 per	cent slopes (Pa	1)					NWI classit	fication: none
Manual   M	Are climatic / hydr	ologic conditions on the	e site typical	for this time of	year?			Ye	s_X_ !	No (If no, explain in Remarks.)	
SUMMARY OF FINDINGS — Attach alte map showing sampling point locations, transects, important features, etc.   Privatorylov (vegical present?   Vegical No X   Within a Wetland?   Vegical No X   Within a Wetland?   Vegical No X   Within a Wetland?   Vegical No X   Vegical No	Are Vegetation	N.	, Soil	N	, or Hydrology	N	significantly dis	turbed?	Are "N	ormal Circumstances" present?	Yes X No
No	Are Vegetation	N	, Soil	N	, or Hydrology	N	naturally proble	ematic?	(If nee	ded, explain any answers in Remarks	)
No	SUMMARY O	F FINDINGS At	ach site r	nap showing	g sampling point	locations	, transects, in	portant fea	tures, etc.		
No   X     No   X					Yes		Nox	ls th	e Sampled	Area	
Number of Dominant Species   Septiment (Pot sizes 30 radius)   Septiment								with	in a Wetlan	d? Yes	Nox
Name	Wetland Hydro	ology Present?			Yes		NoX				
Absolute   Continued   Indicator   Score   Status   For size   S		Was a same of	Cours states								
Time State   Pot size : 30' radius   Security   Pot size : 30' radius   Pot	VEGETATION	- Use scientific	names or	plants.			Absolute	Dominant	Indicator		
1	Tree Stratum (Pk	ot size: 30' radius)								A Table 1 To St. Co. Co. Co. Co. Co. Co. Co. Co. Co. Co	
3.	Commence of the commence of th						_				
Sagina_Stratum (Plot size: 15' radius)	2.						3.0			Number of Dominant Species	
Septimal Stratum (Plot size: 16 radius)	3.									That Are OBL, FACW, or FAC:	1 (A)
Septimal Stratum (Plot size: 16 radius)	4.										
Percent of Dominant Species   That Are GBL, FACW, or FAC: 50% (A8)	5.								0		
1								= Total Cover		Species Across All Strata:	(B)
1	0151011-01-	-to- (Diet view del es	altrino S							-	
2 3 3 4 5 5 7 Total Cover		atum (Plot size: 15 fa	alus)								E00/ (A/D)
3							_	· -	-	- Inat Are OBL, FACW, or FAC.	(A/B)
A   S   S   S   S   S   S   S   S   S									-		
Sear   Stratum   Pot size: 5' radius   Stratum   Pot size: 5' radius   Stratum   Pot size: 5' radius   Pot size: 3' radius   Pot s	4.							-		Prevalence Index worksheet:	
Total Scover   Multiply by:   Total Stratum (Plot size: 5' radius)   Total Stratum (Plot size: 3' radius)   Total Stratum (Plot size:	5.								15	_	
Herb Stratum (Plot size: 6' radius)								= Total Cover		Total % Cover of:	Multiply by:
1. Salidago canadensis		8.00								That Are OBL, FACW, or FAC:	A/B
Vernonia gigantea   20%   Yes   FAC   3. Ambrosia artemisifolia   10%   No   FACU   FACU   Species   120%   x4 =   4.8	Herb Stratum (Ple	ot size: 5' radius)								OBL species	x1 =
3. Ambrosis artemisifolia 10% No FACU 10%	1. Solidago cana	adensis						-			_
4. Eupatorium serolinum       10%       No       FAC       UPL species       x5 =       5. Disacus fullorum       10%       No       FACU       Column Totals:       1.80 (A)       6.5 (B)       6.5 (B)         5. Disacus fullorum       10%       No       FACU       FACU       FACU       Prevalence index = B/A = 3.61       3.61       1.80 (A)       6.5 (B)       6.5 (B)       6.5 (B)       1.80 (A)       6.5 (B)	_										
5. Dipsacus fullonum											
10% No FACU   Prevalence Index = B/A = 3.61											
7. Melliotus officinalis         5%         No         FACU         Prevalence Index = B/A = 3.61           8. Parthonosieus quinquefolia         5%         No         FACU           9. Rubus allegheniensis         5%         No         FACU           10. Apocynum cannabinum         5%         No         FAC           11. Bidens frondosa         5%         No         FAC           12. Geum canadense         5%         No         FAC           13. Impatiens capensis         5%         No         FAC           14. Rumex crispus         5%         No         FAC           15. Verbena urticifolia         5%         No         FAC           16.         3-Prevalence Index is \$3.0°         2-Dominance Test is \$50%           15. Verbena urticifolia         5%         No         FAC           16.         5%         No         FAC           17.         4-Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation (Explain)           19.         1         1         Indicators of hydric soil and welland hydrology must be present, unless disturbed or problematic.           Woody Vine Stratum (Plot size: 30' radius)         1         Hydrophytic Vegetation           1. Re	_									Column Totals: 1.80	(A) 6.5 (B)
8. Parthenoelieuse quinquefolia 9. Rubus allegheniensis 5% No FACU 10. Apocynum cannabinum 5% No FACW 11. Bidens frondosa 5% No FACW 11. Bidens frondosa 5% No FACW 11. Rapid Test for Hydrophytic Vegetation 13. Impatiens capensis 5% No FACW 14. Rumex crispus 5% No FAC 15. Verbena urticifolia 5% No FAC 17. 18. 19. 20. 180% = Total Cover  Woody Vine Stratum (Plot size: 30' radius) 1. = Total Cover  1 - Total Cover  1 - Total Cover  Hydrophytic Vegetation indicators:  Hydrophytic Vegetation indicators:  Hydrophytic Vegetation indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0' 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Hydrophytic Vegetation 2 - Total Cover    Hydrophytic Vegetation   Present?   Yes No X   No X	0.0									— Drawalanaa taday - I	2/4 - 2.64
9. Rubus allegheniensis 10. Apocynum cannabinum 10. Apocynum cannabinum 11. Bidens frondosa 15. No FACW 12. Geum canadense 13. Impatiens capensis 15. No FACW 14. Rumex crispus 15. Verbena urticifolia 15. Verbena urticifolia 16. 17. 18. 19. 20.  180% = Total Cover  Woody Vine Stratum (Plot size: 30' radius) 1. Each of the verbena urticifolia 15. Versena urticifolia 16. Total Cover  Woody Vine Stratum (Plot size: 30' radius) 1. = Total Cover  No FACW 1. Rapid Test for Hydrophytic Vegetation 1. Rapid Test for Hydrophytic Vegetation 2. Dominance Test is >50% 3. Prevalence Index is ≤3.0 ¹ 4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain)  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  **Woody Vine Stratum** (Plot size: 30' radius) 1. = Total Cover  **Woody Vine Stratum** (Plot size: 30' radius) 1. = Total Cover	-									Prevalence index = i	JA - 3.01
10. Apocynum cannabinum   5% No FAC   FAC   Hydrophytic Vegetation Indicators:   11. Bidens frondosa   5% No FAC   1. Rapid Test for Hydrophytic Vegetation   1. Rapid Test for Hydrophytic Vegeta									-		
11.   Bidens frondosa   5% No FACW   1-Rapid Test for Hydrophytic Vegetation   13.   Impatiens capensis   5% No FAC   1-Rapid Test for Hydrophytic Vegetation   2-Dominance Test is >50%   3-Prevalence Index is \$3.0°   15.   Verbena urticifolia   5% No FAC   4-Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)   Problematic Hydrophytic Vegetation (Explain)   18.   19.   180% = Total Cover   180% = Total Cover   180%   1-Rapid Test for Hydrophytic Vegetation   2-Dominance Test is >50%   3-Prevalence Index is \$3.0°   3-Prevalence Index i										Hydrophytic Vegetation India	ators:
12. Geum canadense   5% No FAC   1-Rapid Test for Hydrophytic Vegetation   2-Dominance Test is >50%   13. Impatiens capensis   5% No FAC   2-Dominance Test is >50%   3-Prevalence Index is ≤3.0 to   3-Prevalence Index is								-			
13. Impatiens capensis  14. Rumex crispus  15. Verbena urticifolia  15. Verbena urticifolia  16. Solution Separate Sheet)  17. Solution Stratum (Plot size: 30' radius)  1. Solution Stratum (Plot size: 30' radius)  2. Solution Stratum (Plot size: 30' radius)  3. Prevalence Index is ≤3.0'  4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)  Problematic Hydrophytic Vegetation (Plot size: 30' radius)  1. Solution Stratum (Plot size: 30' radius)  1. Solution Stratum (Plot size: 30' radius)  2. Solution Stratum (Plot size: 30' radius)  3. Prevalence Index is ≤3.0'  4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)  1. Solution Stratum (Plot size: 30' radius)  1. Solution Stratum (Plot size: 30' radius)  2. Solution Stratum (Plot size: 30' radius)  3. Prevalence Index is ≤3.0'  4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)  4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)  4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)  4. Morphological Adaptations (Provide supporting data in Rema	12. Geum canade	ense					5%			1-Rapid Test for Hydro	phytic Vegetation
15. Verbena urticifolia  15. Verbena urticifolia  16.											
data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain)  18.  19.  20.  180% = Total Cover  Woody Vine Stratum (Plot size: 30' radius)  1.  2 = Total Cover  data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain)  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Hydrophytic Vegetation Present? Yes No X	14. Rumex crispu	s					5%	No	FAC	3-Prevalence Index is	≤3.0 <sup>1</sup>
Problematic Hydrophytic Vegetation   (Explain)		folia					5%	No	FAC		
18.											
19.										Problematic Hydrophy	tic Vegetation¹ (Explain)
be present, unless disturbed or problematic.  Woody Vine Stratum (Plot size: 30' radius)  1.											West builded and the
180% = Total Cover											The state of the s
Woody Vine Stratum (Plot size: 30' radius)	20						1000/	- Tatal C		be present, unless disturbed or	problematic.
1.							180%	= Total Cover		-	
2			ius)		-					172 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
= Total Cover		um (Plot size: 30' rad						-			
	t	um (Plot size: 30' rad								Present? Vac	No. X
Remarks: (Include photo numbers here or on a separate sheet.)	t	um (Plot size: 30' rad						= Total Cover		Present? Yes	No X
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	t	um (Plot size: 30' rad						= Total Cover		Present? Yes	No X
	12			arate sheet.)				= Total Cover		Present? Yes_	No_X

DUKE ENERGY OHIO F3886 PORT UNION TO MUHLHAUSER REBUILD PROJECT WETLAND DELINEATION REPORT

**APPENDIX** 

C

OHIO RAPID ASSESSMENT METHOD 5.0 FORMS

grazing

clearcutting

selective cutting

toxic pollutants

woody debris removal

herbaceous/aquatic bed removal

sedimentation

nutrient enrichment

dredging

farming

24

Recovering (3)

X Recent or no recovery (1)

subtotal this page

ORAM V	5.0 Field	Form	Quant	itative	Rating
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0	2			
0	TAX TO MICE AND ADDRESS OF THE PARTY OF THE	Site:	F3886 Port Union to	Mulhauser ReBuild Project
O nax 10 pt	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 wetl Lake Plain Sand Prairies (Oak Of Relict Wet Prairies (10) Known occurrence state/federa	and-unrestricted hydr and-restricted hydrolo penings) (10)	pgy (5	
2	Significant migratory songbird/v Category 1 Wetland. See Quest X Not Applicable (0)  Metric 6. Plant communities,	tion 1 Qualitative Rati	ng (-10)	
nax 20 pt	t: subtotal 6a. Wetland Vegetation Communities.		ommunity Cover Scale	
	Score all present using 0 to 3 scale.	0		s <0.1ha (0.2471 acres) contiguous area
	O Aquatic bed Emergent O Shrub	1	vegetation and	comprises small part of wetland's lis of moderate quality, or comprises a but is of low quality
	O Forest O Mudflats O Open water	2	Present and either o	comprises significant part of wetland's lis of moderate quality or comprises a smal
	O Other  6b. Horizontal (plan view) Interspersion	3	Present and compri	ses significant part, or more, of wetland's l is of high quality
	Select only one.	Narrativa Day	variation of Vacatation Quality	
	High (5)  Moderately high (4)  Moderate (3)	low		nd/or predominance of nonnative or lerant native species
	Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	mod	although nonn can also be pre moderately hig	inant component of the vegetation, ative and/or disturbance tolerant native spr esent, and species diversity moderate to sh, but generally w/o presence of rare endangered spp
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)	high	A predominance of and/or disturbation absent, and high	native species, with nonnative spr ance tolerant native spp absent or virtually gh spp diversity and often, but no always f rare, threatened, or endangered spr
	Nearly absent <5% cover (0)  X Absent (1)	Mudflat and	Open Water Class Quality	
	6d. Microtopography.	0	Absent < 0.1ha (0.24	
	Score all present using 0 to 3 scale.  O Vegetated hummocks/tussocks		of marginal qua	
	O Coarse woody debris >15cm (6i O Standing dead >25cm (10in) db		quality or in sm	e amounts, but not of highest nall amounts of highest quality e or greater amounts
	Amphibian breading pools	3	and of highest	
26	Grand Total (max 100 pts)			
Refer to the r	most recent ORAM Score Calibration Report for the scoring breakpoints bet	ween wetland categories at t	he following address: http://www.epa.s	tate.oh.us/dsw/401/401.html

Site:	Duke Er	nergy Ohio	Rater(s):	C Jansing & K F	Hillier	Date:	August 13, 201
2 max 6 pts.	2 subtotal	Metric 1. Wetland Area (size).  Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pt)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  X 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pts)  <0.1 acres (0.04ha) (0 pts)		F3886 Port Un	ion to	Mulhauser R	eBuild Project
5 max 14 pts	7 subtotal	Metric 2. Upland buffers and su  2a. Calculate average buffer width. Select only of MIDE. Buffers average 50m (164ft) on MEDIUM. Buffers average 25m to <50   X NARROW. Buffers average 10m to <2   VERY NARROW. Buffers average <10r  2b. Intensity of surrounding land use. Select on VERY LOW. 2nd growth or older fores X LOW. Old field (>10 years), shrubland X MODERATELY HIGH. Residential, fend HIGH. Urban, industrial, open pasture	one and assign s r more around v Om (82 to <164f 5m (32ft to <82 m (<32ft) around de or double che st, prairie, savar l, young second ded pasture, par	core. Do not double ovetland perimeter (7) t) around wetland per ft) around wetland per d wetland perimeter (0 ck and average nah, wildlife area, etc growth forest. (5) k, conservation tillage	rimeter (4 erimeter ( 0 c. (7 e, new fall	(1)	
20	27	Metric 3. Hydrology	,	<b>3</b>	•=-		
max 30 pts	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5) Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface water ( Perennial surface water (lake or strea) 3c. Maximum water depth. Select only one and >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime.	m) (5) I assign score	Betwee X Part of X Part of X Part of Semi-t Regula Seasor X Seasor observed poin filling road dred	ear floodp een strean f wetland f riparian ation/sati to perma arly inund nally inun nally saturage at source g/grading i bed/RR	plain (1) m/lake and other l/upland (e.g. fore or upland corrido uration. Score on nently inundated (lated/saturated (2) rated in upper 30 (nonstormwater)	st), complex (1) or (1) e or dbl check /saturated (4)
13	40	Metric 4. Habitat Alteration and D	Developme	nt.			
max 20 pts	40	4a. Substrate disturbance. Score one or double  X None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and a Excellent (7) Very good (6) Good (5) X Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double chemake the comparent (9) X Recovered (6) X Recovering (3) Recent or no recovery (1)	check and aver	es observed shru herb sedii dred removal farm	paceous/a mentation lging		val

ORAM v 5	5.0 Field	Form O	uantitative	Rating
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Site:	Duke En	ergy Ohio	Rater(s):	C Jansing & K Hillier	Date: August 13	3, 201
	8		Site:	F3886 Port Union to	Mulhauser ReBuild Project	
<b>O</b>	O ot: 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 hydr	ology (10		
8	8 <u></u>	Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Openii Relict Wet Prairies (10) Known occurrence state/federal thr Significant migratory songbird/wate Category 1 Wetland. See Question X Not Applicable (0)  Metric 6. Plant communities, int 6a. Wetland Vegetation Communities.	eatened or endar frowl habitat or 1 Qualitative Ration erspersion, r	gered species (10 usage (10 ng (-10) nicrotopograhy.		
1X 20 p	t: subtotal	Score all present using 0 to 3 scale.	vegetation Co	ommunity Cover Scale  Absent or comprises	<0.1ha (0.2471 acres) contiguous are	ea
		O Aquatic bed Emergent Shrub	1	Present and either overgetation and	omprises small part of wetland's is of moderate quality, or comprises a but is of low quality	
		1 Forest 0 Mudflats 0 Open water	2	Present and either o	omprises significant part of wetland's is of moderate quality or comprises a	
		O Other  6b. Horizontal (plan view) Interspersion.	3	Present and compris	ses significant part, or more, of wetlar is of high quality	nd's
		Select only one. High (5)	Narrative Des	cription of Vegetation Quality		
		Moderately high (4) Moderate (3)	low	Low spp diversity an disturbance tol	d/or predominance of nonnative or erant native species	
		Moderately low (2)  X Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	mod	although nonna can also be pre	nant component of the vegetation, stive and/or disturbance tolerant nati- sent, and species diversity moderate t h, but generally w/o presence of rare andangered spp	tc
		or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  X Nearly absent <5% cover (0)	high	A predominance of and/or disturba absent, and hig	native species, with nonnative spr native species, with nonnative spr th spp diversity and often, but no alwa frare, threatened, or endangered spr	ays
		Absent (1)	Mudflat and	Open Water Class Quality		
		6d. Microtopography.	0	Absent <0.1ha (0.24		
		Score all present using 0 to 3 scale.  1 Vegetated hummocks/tussocks	1	Present very small a of marginal qua	mounts or if more common	
		O Coarse woody debris >15cm (6in) O Standing dead >25cm (10in) dbh	2	Present in moderate quality or in sm	amounts, but not of highest all amounts of highest quality	
		1 Amphibian breading pools	3	Present in moderate and of highest of	or greater amounts quality	
48	Grand Tota	(max 100 pts)				
	most recent ORAI	A Score Calibration Report for the scoring breakpoints between	wetland categories at t	ne following address: http://www.epa.st	ate.oh.us/dsw/401/401.html	

Site:	Duke En	ergy Ohio	Rater(s):	C Jansing & K Hillier	Date:	August 13, 201
2 max 6 pts.	2 subtotal	Metric 1. Wetland Area (size).  Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pt)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts).  X 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1		F3886 Port Union to	Mulhauser Re	Build Project
5 max 14 pts	7 . subtotal	VERY LOW. Old field (>10 years), shrubland MODERATELY HIGH. VINCENUMBERS AND SUPPLY SEED OF THE SUPPLY S	rrounding one and assign a more around with the condition of the condition	score. Do not double check wetland perimeter (7) (1) around wetland perimeter (8) around wetland perimeter (9) eck and average (1) around wetland perimeter (7) growth forest. (5) (8) conservation tillage, new fact.	(1	
20	27	HIGH. Urban, industrial, open pasture	, row cropping	mining, construction. (1		
max 30 pts		Metric 3. Hydrology  3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  X Precipitation (1)  X Seasonal/Intermittent surface water ( Perennial surface water (lake or streat)  3c. Maximum water depth. Select only one and  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  X <0.4m (<15.7in) (1)  3e. Modifications to natural hydrologic regime.  X None or none apparent (12)  Recovered (7)  Recovering (3)  Recent or no recovery (1)	m) (5) assign score.	X Part of wetlan X Part of riparia 3d. Duration inundation/sa Semi- to perm Regularly inun Seasonally inu X Seasonally sat ouble check and average observed point source filling/gradi road bed/Rl dredging	Iplain (1) am/lake and other hid/upland (e.g. fores in or upland corridor attraction. Score one in anently inundated/sidated/saturated (3) indated (2) invarted in upper 30cm in (in the constormwater) in grant of the constormwater) in grant of the constormwater in the constormwater	t), complex (1) (1) or dbl check saturated (4)
12 max 20 pts	39 subtotal 39 subtotal this page	X Recovered (6) X Recovering (3) Recent or no recovery (1)	check and aver	es observed  X shrub/saplir herbaceous sedimentati dredging removal farming	/aquatic bed remova on	al

Comments:

Check all disturbances observed

mowing

grazing

clearcutting

selective cutting

toxic pollutants

woody debris removal

shrub/sapling removal

nutrient enrichment

sedimentation

dredging

farming

herbaceous/aquatic bed removal

subtotal this page

None or none apparent (9)

Recent or no recovery (1)

Recovered (6)

X Recovering (3)

subtotal this page

Comments:

DUKE ENERGY OHIO F3886 PORT UNION TO MUHLHAUSER REBUILD PROJECT WETLAND DELINEATION REPORT

**APPENDIX** 

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OHIO HHEI DATA SHEETS

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SITE NAME/LOCATION S01 Duke E SITE NUMBER			NNAGE AREA (mi²) <1
LENGTH OF STREAM REACH (ft) 200 DATE 8/13/2019 SCORER C. Ja		-84.481696 RIVER CODE	RIVER MILE
NOTE: Complete All Items On This Fo STREAM CHANNEL MODIFICATIONS:			eams" for Instructions RECENT OR NO RECOVE
SUBSTRATE (Est. % of every type of su Add total number of significant substra TYPE  BLDR SLABS [16 pts] BOULDER (>256mm) [16 pts] BEDROCK [16 PTS] COBBLE (65-256mm) [12 pts] GRAVEL (2-64mm) [9 pts] X SAND (<2mm) [6 pts]	PERCENT TYPE    X   SILT [3 PT	al metric score is A + B.  IS]  K/WOODY DEBRIS [3 PTS]  RITUS [3 PTS]  HARDPAN [0 PT]  PT]	PERCENT HHEI  30 Point  Substra  Max =
Total of Percentages of Bldr Slabs, Boulder, Cobble, & Bedrock CORE OF 2 MOST PREDOMINANT SUBS		TAL NUMBER OF SUBSTRATI	(B) 4 13
Maximum Pool Depth (Measure the nevaluation. Avoid plunge pools from revaluation. Avo	oad culverts or storm water pip  >5 cm - 1  <5 cm [5]  NO WATI	es) (Check ONLY one box): 0 cm [15 pts]	30 Aax=
BANK FULL WIDTH (Measured as the above the second s	>1.0 m - 1.0 m (s	(Check ONLY one box): 1.5 m (>3'3" - 4'8") [15 pts] (3'3") [5 pts]	Bankfu Widtl Max =
RIPARIAN ZONE AND FLOODPLAN  RIPARIAN WIDTH (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None  Comments	This information must als N QUALITY * NOTE: River Lef FLOODPLAIN QUALITY L R (Most Predominant pe Mature Forest, Wetlar Immature Forest, Shru Residential, Park, New Fenced Pasture	er Bank)  bid bib, or Old Field	Conservation Tillage
Stream Flowing Subsurface flow with isolated poor Comments Fish Observed	□ M	loist Channel, isolated pools, ry channel, no water (Ephem	
SINUOSITY (Number of bends per None 0.5	1.0   2.5   2.1.5   2.	0	3.0 >3
STREAM GRADIENT ESTIMATE   Flat (0.5ft/100ft)     Flat to Mod	derate Moderate (2ft,	/100ft) Moderate to	Severe Severe (10ft/100ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? Yes Vo QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township/City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipition: Quantity:
Photographer Information:
Elevated Turbidity? (Y/N): N Canopy (% open):
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number
Field Measures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream? (Y/N) Y If not, please explain:
Additional comments/description of pollution impacts
BIOTIC EVAULATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)
Fish observed? (Y/N) Y Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) Y Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location
ingressing seed out of some seed to see the seed of th
all the state of t
Golden roel and
Sur or
Folder Ford and
and the second s
FLOW - Some noneysuckey
honeysuckly honeysuckle
Honeysuckle honeysuckle

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SITE NAME/LOCATION SO2 Duke Energy Oh SITE NUMBER RIVER	io F3886 Port Union to Mulhauser Rebuild  BASIN East Fork Mill Creek-Mill Creek DRAINAGE AREA (mi²) <1
LENGTH OF STREAM REACH (ft) 54 LAT DATE 8/13/2019 SCORER C. Jansing & K	39.31022 LONG -84.467936 RIVER CODE RIVER MILE
NOTE: Complete All Items On This Form - Refe STREAM CHANNEL NONE / NATURAL CHA MODIFICATIONS:	r to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions  NNEL RECOVERED RECOVERING RECENT OR NO RECOVE
SUBSTRATE (Est. % of every type of substrate p Add total number of significant substrate types TYPE PERCE  BLDR SLABS [16 pts] BOULDER (>256mm) [16 pts] BEDROCK [16 PTS] COBBLE (65-256mm) [12 pts] X GRAVEL (2-64mm) [9 pts] SAND (<2mm) [6 pts] Total of Percentages of Bldr Slabs, Boulder, Cobble, & Bedrock  O	TYPE
	pool depth within the 61m (200') evaluation reach at the time of erts or storm water pipes) (Check ONLY one box):    Social Content of the first of the first of the first or storm water pipes) (Check ONLY one box):    Social Content of the first of the
BANK FULL WIDTH (Measured as the average of >4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS	Solution
RIPARIAN ZONE AND FLOODPLAIN QUALI  RIPARIAN WIDTH (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None  Comments	FLOODPLAIN QUALITY (Most Predominant per Bank)  Mature Forest, Wetland Immature Forest, Shrub, or Old Field Residential, Park, New Field Fenced Pasture  L R  Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
Stream Flowing Subsurface flow with isolated pools (Inters Comments  SINUOSITY (Number of bends per 61m (20	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)  Oft) of channel) (Check ONLY one box):
None 0.5  STREAM GRADIENT ESTIMATE Flat (0.5ft/100ft)    1.0   1.5	2.0 2.5  Moderate (2ft/100ft)  Moderate to Severe Severe (10ft/100ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? Yes Ves QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township/City:
MISCELLANEOUS  Peace Flow Condition 2 (V/A) V. Peace of last association
Base Flow Conditions? (Y/N): Y Date of last precipition: Quantity:
Photographer Information:
Elevated Turbidity? (Y/N): N Canopy (% open):
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream? (Y/N) Y If not, please explain:
is the sampling reach representative of the streams (7/4)
Additional comments/description of pollution impacts
BIOTIC EVAULATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)
io number. Include appophate nell data sheets from the rinnary nedwater nabitat Assessment Manualy
Fish observed? (Y/N) N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) N Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location
Southers.
Josephans Josephans
3 3 3 1 3 1 1 1 1 1
FLOW-> 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
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SITE NAME/LOCATION SO3 Duke Energy Ohio					-
	9.31095 LONG	Mill Creek-Mill -84.462257 COMMENTS		AGE AREA (mi²)RIVER MILE	<1
DATE 8/13/2019 SCORER C Jansing & K H NOTE: Complete All Items On This Form - Refer		-	hio's PHWH Stream	ms" for Instructions	_
STREAM CHANNEL NONE / NATURAL CHAN MODIFICATIONS:			RECOVERING	RECENT OR N	O RECOVE
SUBSTRATE (Est. % of every type of substrate pr	esent. Check ONLY	2 predominar	nt substrate TYPE b	oxes (Max of 40).	
Add total number of significant substrate types f		nal metric scor	e is A + B.	DEDCEME	HHE
TYPE PERCEN   BLDR SLABS [16 pts]	NT TYPE	DTC1		PERCENT 35	Metri
BOULDER (>256mm) [16 pts]	power power	VCK/MOODA D	EBRIS [3 PTS]		
BEDROCK [16 PTS]	☐☐ FINE DE	TRITUS [3 PTS	1		Substra
COBBLE (65-256mm) [12 pts] 5 GRAVEL (2-64mm) [9 pts] 25		HARDPAN [0	PT]	-	Max =
GRAVEL (2-64mm) [9 pts] 25  X SAND (<2mm) [6 pts] 35	MUCK [	IAL [3 PTS]		-	1
		, , , , , , , , , , , , , , , , , , ,		(B)	13
Total of Percentages of Bldr Slabs, Boulder, Cobble, & Bedrock 5	. (4)			(B) 4	
ORE OF 2 MOST PREDOMINANT SUBSTRATE TY	PES: T	OTAL NUMBE	R OF SUBSTRATE T	YPES:	A + E
		VILES VIA EA V			
Maximum Pool Depth (Measure the maximum p evaluation. Avoid plunge pools from road culver				the time of	Pool De
>30 centimeters [20 pts]		10 cm [15 pts]			IVIAX -
>22.5 - 30 cm [30 pts]	<5 cm [				
>10 - 22.5 cm [25 pts]	No WA	TER OR MOIST	CHANNEL [0 pts]	40	25
COMMENTS		AXIMUM PO	OL DEPTH (centime	eters):   10	1
					-
BANK FULL WIDTH (Measured as the average of					Bankf
>4.0 meters (>13') [30 pts]		and the second second second	4'8") [15 pts]		Widt Max =
>3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]	≦1.0 m	(≤3'3") <b>[5 pts]</b>			IVIUX -
	_	Sales Sales Sales		1.5	20
COMMENTS		AVERAGE BA	NKFULL WIDTH (m	eters)	
This	information must a	lso be comple	ted		
RIPARIAN ZONE AND FLOODPLAIN QUALIT			nt (R) as looking do	wnstream	
	LOODPLAIN QUALIT		L R		
	Mature Forest, Wetla			Conservation Til	llage
	mmature Forest, Shi		ld XX	Urban or Indust	
	Residential, Park, Ne enced Pasture	wrieid		Open Pasture, R Mining or Const	A STATE OF THE PARTY OF THE PAR
Comments					
FLOW REGIME (At Time of Evaluation ) (Che	Parameter	Maist Channal	Canbard made un	flam (latamaittant)	
X Stream Flowing Subsurface flow with isolated pools (Intersti Comments			o water (Ephemera	flow (Intermittent)	
SINUOSITY (Number of bends per 61m (200	of channel) (Che	ck ONLY one h	oox):		
None 1.0		2.0	3.	.0	
0.5		2.5	□ >:	5	
Flat (0.5ft/100ft) Flat to Moderate	Moderate (2	ft/100ft\	Moderate to Se	were Covers !	10ft/100ft)
Flat (0.5ft/100ft)	Insucrate (2)	, 10010	LI Moderate to se	Severe (	2314 10011

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township/City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipition: Quantity:
Photographer Information:
Elevated Turbidity? (Y/N): N Canopy (% open):
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream? (Y/N) Y If not, please explain:
Additional comments/description of pollution impacts
BIOTIC EVAULATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  Fish observed? (Y/N) N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N Vou
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location
FLOW—  ST  Thishur conentration of  higher conentration of  A oney Suckle  are hears by Street
nony sulca

	y Ohio F3886 Port Union to Mulhauser Rebuild  VER BASIN East Fork Mill Creek-Mill Creek DRAINAGE AREA (mi²) <1
	AT 39.311768 LONG -84.459896 RIVER CODE RIVER MILE
NOTE: Complete All Items On This Form - R STREAM CHANNEL MODIFICATIONS:	Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions  CHANNEL RECOVERED RECOVERING RECENT OR NO RECO
Add total number of significant substrate type  PEI BLDR SLABS [16 pts] BOULDER (>256mm) [16 pts] BEDROCK [16 PTS] COBBLE (65-256mm) [12 pts] X GRAVEL (2-64mm) [9 pts] SAND (<2mm) [6 pts]	te present. Check ONLY 2 predominant substrate TYPE boxes (Max of 40).  Pess found (Max of 8). Final metric score is A + B.  PERCENT TYPE PERCENT    X   SILT [3 PTS]   50    LEAF PACK/WOODY DEBRIS [3 PTS]   Sub   CLAY or HARDPAN [0 PT]   Max  30   MUCK [0 PT]   10    ARTIFICIAL [3 PTS]   10
CORE OF 2 MOST PREDOMINANT SUBSTRAT	TE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4
	num pool depth within the 61m (200') evaluation reach at the time of sulverts or storm water pipes) (Check ONLY one box):
BANK FULL WIDTH (Measured as the average >4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS	ge of 3-4 measurements) (Check ONLY one box):    >1.0 m - 1.5 m (>3'3" - 4'8") [15 pts]   W Max   ≤1.0 m (≤3'3") [5 pts]   2.1    AVERAGE BANKFULL WIDTH (meters)   2.1
RIPARIAN ZONE AND FLOODPLAIN QUARIPARIAN WIDTH  (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None  Comments	This information must also be completed  JALITY * NOTE: River Left (L) and Right (R) as looking downstream  FLOODPLAIN QUALITY (Most Predominant per Bank)  Mature Forest, Wetland Immature Forest, Shrub, or Old Field Residential, Park, New Field Fenced Pasture  This information must also be completed  L R  Conservation Tillage  IXIX Urban or Industrial  Open Pasture, Row Cro  Mining or Construction
FLOW REGIME (At Time of Evaluation ) Stream Flowing Subsurface flow with isolated pools (Int	Moist Channel, isolated pools, no flow (Intermittent)
None	(200ft) of channel) (Check <i>ONLY</i> one box): 1.0
STREAM GRADIENT ESTIMATE    Flat (0.5ft/100ft)   Flat to Moderate	e Moderate (2ft/100ft) Moderate to Severe Severe (10ft/10

QHEI PERFO	RMED? Yes V No	QHEI Score	(If Yes, Attach	Completed QHEI Forn	n)
DOWNSTRE	AM DESIGNATED USE(S)	seare (sum	DIMH.		
WWH Name:		Distance from Eva	luated Stream		
CWH Name:	firetable solvenia	Distance from Eva	aluated Stream		TOTAL TIE
EWH Name:	Line American	Distance from Eva	aluated Stream	LAT IN COLUMN	or Rosson Marie description
MAPPING:	ATTACH COPIES OF MAPS, IN	CLUDING THE ENTI	RE WATERSHED A	REA. CLEARLY MARK	THE SITE LOCATION
JSGS Quadrangle Nam			l Map Page:	NRCS Soil Map Str	
County:	the state of the s	Township/C	ity:		THE LOUDING
MISCELLAN	EOUS				
lase Flow Conditions?	(Y/N): Y Date of last pred	cipition:		Quantity:	
hotographer Information	tion:		JC Y	79/10/6/81	707
levated Turbidity? (Y/	N): N Canopy	(% open):			
Vere samples collecte	d for water chemistry? (Y/N):	N (No	te lab sample no.	or id. And attach resul	ts) Lab Number
ield Measures: Tem	p (°C) Dissolved	Oxygen (mg/l)	pH (S.U.)	Conductivi	ty (µmhos/cm)
s the sampling reach r	epresentative of the stream? (	(Y/N) Y	If not, please expla	ain:	AND THE PARTY OF
		7 4			The state of the s
dditional comments/	description of pollution impact	te			HEREITA AND THE STATE OF THE ST
lar l	1D number. Include appopr	riate field data shee	ts from the Prima	ry Hedwater Habitat A	
ish observed? (Y/N; rogs or Tadpoles Obse	(If Yes, Record all observation ID number. Include appopred N Voucher(Y/N) N Perved? (Y/N) N Voucher	riate field data shee Salamander ( (Y/N) N Aqu	ets from the Prima  Observed? (Y/N)  uatic Macroinverte	ry Hedwater Habitat A  N Voucher? (Y/N)  brates Observed? (Y/I	N Voucher? (Y/N)
ish observed? (Y/N;_ frogs or Tadpoles Obsi Comments Regarding I	(If Yes, Record all observation in the Include appoprous in the Include appointment in the Include appoin	Salamander (	ots from the Prima  Observed? (Y/N)  Juatic Macroinverte	N Voucher? (Y/N) brates Observed? (Y/I) H (This must be comp	N Voucher? (Y/N) N Voucher?
ish observed? (Y/N;_ frogs or Tadpoles Obsi Comments Regarding I	(If Yes, Record all observation ID number. Include appopring Note that I was a series of the series	Salamander ( (Y/N) N Aqu	observed? (Y/N)	N Voucher? (Y/N) brates Observed? (Y/I) H (This must be comp	N Voucher? (Y/N) N Voucher? (Y/N) leted):
Fish observed? (Y/N; Frogs or Tadpoles Obse Comments Regarding (	If Yes, Record all observation ID number. Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include Appopring Note that I was a series of the Incl	Salamander (	observed? (Y/N) _ Justic Macroinverte	N Voucher? (Y/N) brates Observed? (Y/I) H (This must be comp	N Voucher? (Y/N) N Voucher? (Y/N) leted):
Fish observed? (Y/N; Frogs or Tadpoles Obse Comments Regarding (	If Yes, Record all observation ID number. Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include Appopring Note that I was a series of the Incl	Salamander (	observed? (Y/N) _ Justic Macroinverte	N Voucher? (Y/N) brates Observed? (Y/I  H (This must be comp	N N Voucher? (Y/N) N of the stream's location
Fish observed? (Y/N; Frogs or Tadpoles Obse Comments Regarding (	If Yes, Record all observation ID number. Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include Appopring Note that I was a series of the Incl	Salamander ( (Y/N) N Aqu	observed? (Y/N) _ Justic Macroinverte	N Voucher? (Y/N) brates Observed? (Y/I  H (This must be comp	N N Voucher? (Y/N) N of the stream's location
Fish observed? (Y/N). Frogs or Tadpoles Observed Comments Regarding I	If Yes, Record all observation ID number. Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include Appopring Note that I was a series of the Incl	Salamander (	observed? (Y/N) _ Justic Macroinverte	N Voucher? (Y/N) brates Observed? (Y/I  H (This must be comp	N N Voucher? (Y/N) N of the stream's location
Fish observed? (Y/N', Frogs or Tadpoles Obse Comments Regarding I	If Yes, Record all observation ID number. Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include Appopring Note that I was a series of the Incl	Salamander (	observed? (Y/N) _ Justic Macroinverte	N Voucher? (Y/N) brates Observed? (Y/I  H (This must be comp	N N Voucher? (Y/N) N of the stream's location
rish observed? (Y/N; Frogs or Tadpoles Observed Comments Regarding I	If Yes, Record all observation ID number. Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include Appopring Note that I was a series of the Incl	Salamander (	observed? (Y/N) _ Justic Macroinverte	N Voucher? (Y/N) brates Observed? (Y/I  H (This must be comp	N N Voucher? (Y/N) N of the stream's location
Fish observed? (Y/N). Frogs or Tadpoles Observed Comments Regarding I	If Yes, Record all observation ID number. Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include appopring Note that I was a series of the Include Appopring Note that I was a series of the Incl	Salamander (	observed? (Y/N) _ Justic Macroinverte	N Voucher? (Y/N) brates Observed? (Y/I  H (This must be comp	N N Voucher? (Y/N) N of the stream's location
rish observed? (Y/N; Frogs or Tadpoles Observed Comments Regarding I	If Yes, Record all observation ID number. Include appopring Not	Salamander (	Observed? (Y/N)uatic Macroinverte	N Voucher? (Y/N) brates Observed? (Y/I  H (This must be comp	N N Voucher? (Y/N) N of the stream's location

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SITE NAME/LOCATION S05 Duke Energy Ohio F3           SITE NUMBER         RIVER BASI           LENGTH OF STREAM REACH (ft) 200         LAT 39.3:           DATE         8/13/2019         SCORER         C. Jansing & K. Hill	IN East Fork Mill Creek-Mill Creek DRAINAGE AREA (mi²) <1 12659 LONG -84.457544 RIVER CODE RIVER MILE
NOTE: Complete All Items On This Form - Refer to " STREAM CHANNEL NONE / NATURAL CHANNEL MODIFICATIONS:	'Field Evaluation Manual for Ohio's PHWH Streams" for Instructions  L RECOVERED RECOVERING RECENT OR NO RECOV
Add total number of significant substrate types foun TYPE PERCENT  BIDR SLABS [16 pts] BOULDER (>256mm) [16 pts] BEDROCK [16 PTS] COBBLE (65-256mm) [12 pts]  K GRAVEL (2-64mm) [9 pts] SAND (<2mm) [6 pts] 20	TYPE    X   SILT [3 PTS]   30   Poir     LEAF PACK/WOODY DEBRIS [3 PTS]   5     CLAY or HARDPAN [0 PT]   5   Max:   Muck [0 PT]   ARTIFICIAL [3 PTS]   6     AT   12   (B)   4   12     Mother of the properties o
Maximum Pool Depth (Measure the maximum pool evaluation. Avoid plunge pools from road culverts of some some some some some some some some	A depth within the 61m (200') evaluation reach at the time of prostorm water pipes) (Check ONLY one box):
SANK FULL WIDTH (Measured as the average of 3-4  >4.0 meters (>13') [30 pts]  >3.0 m - 4.0 m (>9'7" - 13') [25 pts]  >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]	measurements   (Check ONLY one box):   Bank
COMMENTS	AVERAGE BANKFULL WIDTH (meters) 2.7 2.7
RIPARIAN ZONE AND FLOODPLAIN QUALITY   RIPARIAN WIDTH   L R (Mos   Wide > 10m   Matt   Moderate 5-10m   Imm   Narrow < 5m   Resident   Reside	* NOTE: River Left (L) and Right (R) as looking downstream  DDPLAIN QUALITY  st Predominant per Bank)  L R  Urban or Industrial  dential, Park, New Field  Ded Pasture  Wining or Construction
FLOW REGIME (At Time of Evaluation ) (Check ( Stream Flowing Subsurface flow with isolated pools (Interstitial Comments	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)
SINUOSITY (Number of bends per 61m (200ft) of None 1.0 1.5  STREAM GRADIENT ESTIMATE  Flat (0.5ft/100ft)   Flat to Moderate	Moderate (2ft/100ft)  Otherwise (200)  Check ONLY one box):  3.0  3.0  >3  Moderate (2ft/100ft)  Moderate to Severe Severe (10ft/100ft)

### Stream 5

	QHEI PERFORMED? Yes No QHEI Score (If Yes, Attach Completed QHEI Form)
	DOWNSTREAM DESIGNATED USE(S)
□wwн	Name: Distance from Evaluated Stream
☐ CWH	Name: Distance from Evaluated Stream
] EWH	Name: Distance from Evaluated Stream
	MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
JSGS Quad	Irangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County:	Township/City:
	MISCELLANEOUS
sase Flow	Conditions? (Y/N): Y Date of last precipition: Quantity:
	ner Information:
	arbidity? (Y/N): N Canopy (% open):
	oles collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number
	ures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (μmhos/cm)
the samp	oling reach representative of the stream? (Y/N) Y If not, please explain:
000	
dditional	comments/description of pollution impacts
erformed	BIOTIC EVAULATION  ? (Y/N):  N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the s ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)
ish observ	(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the solution in the primary Hedwater Habitat Assessment Manual)  (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N Vouche
Fish observ	? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the s ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  red? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N
ish observ	(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the solution in the primary Hedwater Habitat Assessment Manual)  (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N Vouche
Fish observ	(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the solution in the primary Hedwater Habitat Assessment Manual)  (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N Vouche
ish observ	(If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the s  ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  Yed? (Y/N! N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N  Idpoles Observed? (Y/N) N Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)  Regarding Biology
ish observ rogs or Ta Comments	(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the samples. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  Yed? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Fish observ Frogs or Ta Comments	(If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the s  ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  Yed? (Y/N! N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N  Idpoles Observed? (Y/N) N Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)  Regarding Biology
Fish observing or Ta	P(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the samples in the primary Hedwater Habitat Assessment Manual)  Pred? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location
rish observings or Ta	P(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the samples in the primary Hedwater Habitat Assessment Manual)  Pred? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location
ish observ rogs or Ta omments	P(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the samples in the primary Hedwater Habitat Assessment Manual)  Pred? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location
ish observ rogs or Ta comments	P(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the samples. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  Ped? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location of the stream's loca
rish observings or Ta	P(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the samples in the primary Hedwater Habitat Assessment Manual)  Pred? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location
Fish observings or Ta	P(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the s ID number. Include appropriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  Ped? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  ON THE STATE OF THE STATE OF THE STREAM REACH (This must be completed):  Send Market
Fish observ Frogs or Ta Comments	P(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the s ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  red? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  ONE PROPERTY OF STREAM REACH (This must be completed):  Sind light via the stream's location of the stream's locati
Fish observ Frogs or Ta Comments	P(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the s ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  red? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  ONE PROPERTY OF STREAM REACH (This must be completed):  Sind light via the stream's location of the stream's locati
Fish observing or Ta	P(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the s ID number. Include appropriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  Ped? (Y/N): N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  ON THE STATE OF THE STATE OF THE STREAM REACH (This must be completed):  Send Market

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	Ohio F3886 Port Union to Mulhauser Rebuild  ER BASIN East Fork Mill Creek-Mill Creek DRAINAGE AREA (mi²) <1	_
	T 39.31352 LONG -84.455033 RIVER CODE RIVER MILE	
	fer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	OVE
Add total number of significant substrate type  TYPE  PERCENTIFIES  BLDR SLABS [16 pts]  BOULDER (>256mm) [16 pts]  BEDROCK [16 PTS]	CENT TYPE PERCENT  SILT [3 PTS] 25  LEAF PACK/WOODY DEBRIS [3 PTS]  FINE DETRITUS [3 PTS]  Su	HHEI Metric Points ubstra
	30   MUCK [0 PT] 35   ARTIFICIAL [3 PTS]  (A) 15   (B) 4	19
Maximum Pool Depth ( <i>Measure the maximu</i>	m pool depth within the 61m (200') evaluation reach at the time of Pool	ol De
>10 - 22.5 cm [25 pts]  COMMENTS  BANK FULL WIDTH (Measured as the average		25
>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]  COMMENTS	21.0 iii - 1.5 iii (855 - 46 ) [15 pts]	width
RIPARIAN ZONE AND FLOODPLAIN QUAI  RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None Comments	This information must also be completed  LITY * NOTE: River Left (L) and Right (R) as looking downstream  FLOODPLAIN QUALITY (Most Predominant per Bank)  Mature Forest, Wetland Immature Forest, Shrub, or Old Field Residential, Park, New Field Fenced Pasture  The completed with the completed with the complete and the complete an	
FLOW REGIME (At Time of Evaluation ) (C Stream Flowing Subsurface flow with isolated pools (Inte Comments	Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61m (2 None 1. 1. 1.		
STREAM GRADIENT ESTIMATE    Flat (0.5ft/100ft)   Flat to Moderate	Moderate (2ft/100ft) Moderate to Severe Severe (10ft/1	.00ft)

### Stream 6

QHEI PERFORMED?	
DOWNSTREAM DESIGNA	- Alexandra for extract alternative telephone
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
12 March 19 10 10 10 10 10 10 10 10 10 10 10 10 10	ES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
	NRCS Soil Map Page: NRCS Soil Map Stream Order
ounty:	Township/City:
MISCELLANEOUS	SUBSTRACTION SUBSTRACT TO SERVICE OF SUBSTRACT SUBSTRACT CO. CO. CO. A CO.
ase Flow Conditions? (Y/N): Y	
hotographer Information:	2011 100 mm Phys
levated Turbidity? (Y/N): N	Canopy (% open):
Vere samples collected for water ch	emistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number
ield Measures: Temp (°C)	Dissolved Oxygen (mg/l)pH (S.U.)Conductivity (µmhos/cm)
the sampling reach representative	of the stream? (Y/N) Y If not, please explain:
1 31 1	
RIOTIC EVALUATION	PANTE OF ANTICE PROGRAMMENT AND TO THE STATE OF THE STATE
ID number	ord all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  er(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N  N Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N
erformed? (Y/N):  N (If Yes, Rec ID number  ish observed? (Y/N); N Vouch  rogs or Tadpoles Observed? (Y/N)  comments Regarding Biology  DRAWIN	. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual) er(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N

SITE NAME/LOCATION S07 Duke Energy ( SITE NUMBER RIVI			DRAINAGE AREA (mi²)	<1
LENGTH OF STREAM REACH (ft) 200 LA DATE 8/14/2019 SCORER C. Jansing 8	T 39.318736 LONG	-84.452170 RIVER CO		=
NOTE: Complete All Items On This Form - Re STREAM CHANNEL MODIFICATIONS:				
BLDR SLABS [16 pts] BOULDER (>256mm) [16 pts] BEDROCK [16 PTS] COBBLE (65-256mm) [12 pts] GRAVEL (2-64mm) [9 pts]	es found (Max of 8). Find CENT TYPE  SILT [3 P] LEAF PAC FINE DET X CLAY or H MUCK [0	al metric score is A + B. TS] CK/WOODY DEBRIS [3 PTS TRITUS [3 PTS] HARDPAN [0 PT] I PT]	PERCENT	HHEI Metric Points Substra Max = 4
Total of Percentages of Bldr Slabs, Boulder, Cobble, & Bedrock CORE OF 2 MOST PREDOMINANT SUBSTRATE	_   0	AL [3 PTS] DTAL NUMBER OF SUBSTI	(B) 3	9 A+B
Maximum Pool Depth (Measure the maximum evaluation. Avoid plunge pools from road cultiple of the second sec	verts or storm water pip >5 cm - 1 <5 cm [5 NO WAT	pes) (Check ONLY one book 10 cm [15 pts]	0 pts]	Pool De Max = 3
BANK FULL WIDTH (Measured as the average >4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS	>1.0 m - ≤1.0 m (s	(Check ONLY one box): 1.5 m (>3'3" - 4'8") [15 pt ≤3'3") [5 pts]  AVERAGE BANKFULL WIE	1.5	Bankfu Width Max = 1
RIPARIAN ZONE AND FLOODPLAIN QUA  RIPARIAN WIDTH (Per Bank) L R  Wide >10m Moderate 5-10m Narrow <5m None Comments	FLOODPLAIN QUALITY (Most Predominant per Mature Forest, Wetland Immature Forest, Shru Residential, Park, New Fenced Pasture	ft (L) and Right (R) as look ( er Bank) nd ub, or Old Field	L R Conservation Urban or Indu: Open Pasture, Mining or Con	strial Row Crop
FLOW REGIME (At Time of Evaluation ) ( Stream Flowing Subsurface flow with isolated pools (Intercomments	X	Noist Channel, isolated po Dry channel, no water (Epi	ools, no flow (Intermittent hemeral)	)
	.0 2	k ONLY one box): :.0	3.0	
STREAM GRADIENT ESTIMATE   Flat (0.5ft/100ft)     Flat to Moderate	Moderate (2ft	t/100ft) Moderat	te to Severe Severe	(10ft/100ft)

### Stream 7

	QHEI PERFORMED? Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
	DOWNSTREAM DESIGNATED USE(S)
□ ww⊦	Name: Distance from Evaluated Stream
□ CWH	Name: Distance from Evaluated Stream
□ EWH	Name: Distance from Evaluated Stream
	MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
JSGS Qu	drangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County:	Township/City:
	MISCELLANEOUS
Base Flov	Conditions? (Y/N): Y Date of last precipition: Quantity:
hotogra	oher Information:
levated	Turbidity? (Y/N): N Canopy (% open):
Were san	ples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number
Field Mea	sures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
s the san	pling reach representative of the stream? (Y/N) Y If not, please explain:
	211
Additiona	comments/description of pollution impacts
	mack and of the standard to distribut whose it is a standard to the standard t
eriorine	d? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Hedwater Habitat Assessment Manual)
Fish obse	Note
Fish obse Frogs or Commen	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  actual important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location    Uts of Overhors   Overhors     Dackers Vesch tick   (Spersanium, Cetteri, Jewey   - Steepe slupe . Alle of overhors
Fish obse Frogs or Commen	ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)  ved? (Y/N), N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N  adpoles Observed? (Y/N) N Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N  s Regarding Biology  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  acclude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location

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SITE NAME/LOCATION SO8 Duke Energy C			DDAMAGE ADEA / -2	- 21
	T 39.321012 LONG	Aill Creek-Mill Creek -84.451337 RIVER COMMENTS	CODE RIVER N	
NOTE: Complete All Items On This Form - Re STREAM CHANNEL NONE / NATURAL CH MODIFICATIONS:	fer to "Field Evaluation	Manual for Ohio's PHV		tions OR NO RECOVER
SUBSTRATE (Est. % of every type of substrate Add total number of significant substrate type TYPE PER BLDR SLABS [16 pts] BOULDER (>256mm) [16 pts] BEDROCK [16 PTS] COBBLE (65-256mm) [12 pts] GRAVEL (2-64mm) [9 pts]	es found (Max of 8). Fin CENT TYPE  XX SILT [3 P  LEAF PAC	al metric score is A + B. TS] CK/WOODY DEBRIS [3 F FRITUS [3 PTS] HARDPAN [0 PT]	PERCENT 95	O).  HHEI  Metric  Points  Substra  Max = 4
Total of Percentages of Bldr Slabs, Boulder, Cobble, & Bedrock CORE OF 2 MOST PREDOMINANT SUBSTRATE	_   0	AL [3 PTS] OTAL NUMBER OF SUB	(B) STRATE TYPES: 2	8 A+B
Maximum Pool Depth (Measure the maximu evaluation. Avoid plunge pools from road cul  >30 centimeters [20 pts] >22.5 - 30 cm [30 pts] >10 - 22.5 cm [25 pts]  COMMENTS	verts or storm water pip >5 cm - 1 <5 cm [5 NO WAT	oes) (Check ONLY one l 10 cm <b>[15 pts]</b>	L [0 pts]	Pool De Max =
SANK FULL WIDTH (Measured as the average   >4.0 meters (>13') [30 pts]   >3.0 m - 4.0 m (>9'7" - 13') [25 pts]   >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]   COMMENTS	>1.0 m - ≤1.0 m (s	(Check ONLY one bo 1.5 m (>3'3" - 4'8") [15 ≤3'3") [5 pts] AVERAGE BANKFULL V	pts] 4.	Bankfu Widtl Max =
RIPARIAN ZONE AND FLOODPLAIN QUA  RIPARIAN WIDTH (Per Bank) L R  Wide >10m Moderate 5-10m Narrow <5m None Comments	this information must al LITY * NOTE: River Let FLOODPLAIN QUALITY (Most Predominant po Mature Forest, Wetla Immature Forest, Shron Residential, Park, New Fenced Pasture	ft (L) and Right (R) as lo <u>(</u> er Bank) nd ub, or Old Field	L R Conservati Urban or li Open Past	and the second s
FLOW REGIME (At Time of Evaluation ) (Comments	erstitial)	Ory channel, no water (	pools, no flow (Intermit Ephemeral)	tent)
	.0 2	k <i>ONLY</i> one box): !.0 !.5	3.0	
STREAM GRADIENT ESTIMATE  X Flat (0.5ft/100ft) Flat to Moderate	Moderate (2ft	t/100ft) Mode	rate to Severe Sev	vere (10ft/100ft)

### Stream 8

8	
1	QHEI PERFORMED? Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
	DOWNSTREAM DESIGNATED USE(S)
□ WWH	Name: Distance from Evaluated Stream
☐ CWH	Name: Distance from Evaluated Stream
_ EWH	Name: Distance from Evaluated Stream
	MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
JSGS Quad	drangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County:	Township/City:
	MISCELLANEOUS
Base Flow	Conditions? (Y/N): Y Date of last precipition: Quantity:
hotograp	her Information:
levated T	urbidity? (Y/N): N Canopy (% open):
Nere sam	ples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number
ield Meas	sures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (μmhos/cm)
s the sam	pling reach representative of the stream? (Y/N) Y If not, please explain:
	8 11
Additional	comments/description of pollution impacts
	CONTRACT TO THE STATE OF THE ST
rogs or Ta	ved? (Y/N), N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N
Comments	Regarding Biology
Comments	Regarding Biology
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Comment	Regarding Biology
1 00	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
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100	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location
100	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location
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In	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  Surface Calks  Surface Calks
In	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  Solidass  Notey Sockle
100	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  Solidass  Notey Sockle
In	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  Suifue ciaes  Suifue ciaes  Aney Suckle
In	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  Surface Calks  Surface Calks

DUKE ENERGY OHIO F3886 PORT UNION TO MUHLHAUSER REBUILD PROJECT WETLAND DELINEATION REPORT

### **APPENDIX**



ENDANGERED, THREATENED, AND RARE SPECIES CORRESPONDENCE

SPECIES	COMMON NAME	STATE STATUS	FEDERAL STATUS <sup>2</sup>	HABITAT <sup>3</sup>	BREEDING PERIOD <sup>3</sup>	PROBABILITY OF OCCURENCE <sup>4</sup>
				Butler County		
				MAMMAL		
Eptesicus fuscus	Big Brown Bat	SSC	1	Water, fields, forest openings, and urban and suburban areas.	August-October	Low
Lasionycteris noctivagans	Silver-Haired Bat	SCC	1	Prefer mature northern forests with ponds and streams nearby. It roosts in trees during the summer and winter.	August-October	Low
Lasiurus borealis	Red Bat	SSC	-:1:-	Solitary and prefer to roost in trees, shrubs, and clusters of weeds in the summer. They change roost sites every couple of days and often roost closer to the ground. They overwinter in trees and tree cavities.	August-October	Low
Lasiurus cinereus	Hoary Bat	SSC	i	Migratory tree bat species travel north in the summer and back south in the winter. They migrate varying distances using landmarks and magnetic cues to direct themselves, and instead of hibernating in caves, they often hibernate in trees or leaf litter.	August-October	Low
Microtus ochrogaster	Prairie Vole	SSC		Eastern deciduous forests. They live on the forest floor in the thick layers of leaves and loose soil.	April-October	Low
Microtus pinetorum	Woodland Vole	SSC	-	Eastern deciduous forests. They live on the forest floor in the thick layers of leaves and loose soil.	April-October	Low
Myotis lucifugus	Little Brown Bat	SSC	Ī	Water, fields, forest openings, and urban and suburban areas.	August-October	Low
Myotis septentrioralis	Northern Long- Eared Bat	SSC	Т	Wooded and Semi wooded areas, mainly along streams. Maternity colonies are around hollow trees.	August-October	Low
Myotis sodalis	Indiana Bat	SE	LE	Wooded and Semi wooded areas, mainly along streams. Maternity colonies are around hollow trees.	August-October	Low
Perimyotis subflavus	Tri-Colored Bat	SSC		Open forest areas that are near a source of water.	August-October	Low
Peromyscus maniculatus	Deer Mouse	SSC	-	Forests, grasslands, brushlands, agricultural fields and deserts.	n/a	Low
Synaptomys cooperi	Southern Bog Lemming	SSC	-	Low, damp bogs and meadows with heavy vegetation growth	April-September	None
Taxidea taxus	Badger	SSC		Grassland species, specifically favoring habitats with short grass, such as fields and pastures.	June-September	None
				BIRD		
Colinus virginianus	Northern Bobwhite	SSC		Forest edge	February- October	Low
Dolichonyx oryzivorus	Bobolink	SSC		Grassy hayfields and pastures, clover/alfalfa hayfields, wet prairies, and the grassy margins of marshes. Fallow fields composed of grasses and weeds also provide suitable nesting habitats.	May-June	None

Seiurus noveboracensis	Northern Waterthursh	SSC	I	Swampy woodlands.	n/a	None
				FISH		
Esox masquinongy	Muskellunge	scc	1	Heavily vegetated lakes with lots of tree stumps and bays. Prime stream muskellunge habitat is generally considered to be long pools (at least 0.2 miles in length) with a minimum depth of at least three to four feet and an abundance of submerged woody structure.	April-Early May	None
Moxostoma carinatum	River Redhorse	SSC	i	Found in only the largest rivers of the Ohio and Lake Erie drainage systems. They are typically found in deep pools with moderate current over bedrock or gravel substrate.	April-May	None
				INVERTEBRATE		
Alasmidonta marginata	Elktoe	SSC	Ĩ	Medium to large size streams but is most common in smaller streams with moderately fast current and riffles. Fine gravel mixed with sand is preferred substrate.	June-July	Low
Gomphus externus	Plains Clubtail	Э	-	Found near large, slow, muddy streams and rivers.	May-Late July	None
Orconectes (Rhoadesius) sloanii	Sloan's Crayfish	T	Ť	Headwater and small inland streams	August-October	Low
Truncilla donaciformis	Fawnsfoot	T		Prefers large rivers or the lower reaches of medium- sized streams. It is most commonly found in sand or gravel.	April-May	None
Truncilla truncata	Deertoe	SSC	1	Habitats of firm sand or gravel substrates in rivers and lakes with a moderately swift current, but has been observed occasionally in smaller streams	August-July	None
Villosa fabalis	Rayed Bean	ш	ш	Smaller, headwater creeks, but are sometimes found in large rivers and wave-washed areas of glacial lakes	n/a	Low
				REPTILE		,
Clemmys guttata	Spotted Turtle	Т	1	Shallow, sluggish waters of ditches, small streams, marshes, bogs, and pond edges, especially where vegetation is abundant.	April-May	Low
Regina septemvittata	Queensnake	SSC	ľ	Prairie fens, wet meadows, wet prairies and associated open and wooded wetlands	February-March, May, August- September	None
Sistrurus catenatus	Eastern Massasauga	П	T	Wet prairies, sedge meadows, and early successional fields. Preferred wetland habitats are marshes and fens.	April-May	Low
				AMPHIBIAN		
Eurycea lucifuga	Cave Salamander	Ш	1	In and around caves, seeps, springs, and small forested limestone creeks associated with groundwater. Rock crevices or under rocks, logs, or other debris.	December- February	None
Acris crepitans crepitans	Eastern Cricket Frog	SSC	Ť	The shores of sparesly vegetated permanent ponds and streams.	April-June	Low

Arabis pycnocarpa var. Southern Hadpressipilis Arabis pycnocarpa va. Western Ha							
ocarpa va.	Southern Hairy Rock Cress	Ь	1	Variable habitat from part-shade, open woods to sunny, open prairie.	n/a	Low	
	Western Hairy Rock Cress	X	-	Meadows, meadow slopes, juniper hills, pastures, rocky outcrops, roadsides.	n/a	Low	
Bromus kalmia Prairie	Prairie Brome	Ь	-	Open upland woodlands, mesic to dry-mesic prairie, and grassy fens.	n/a	None	
Carex mesochorea Midlan	Midland Sedge	Т	1	Well-drained openings and clearings, oak woods and borders, fields.	n/a	Low	
Carex timida Timid Sedge	Sedge	T	-	Wet/marshy areas, sedge meadows, forests, and prairies.	n/a	Low	
Cyperus acuminatus sedge	Pale Umbrella- sedge	Ь	1	Open, wet, sandy habitats. Sores, seepages and fields.	n/a	None	
Echinodorus berteroi Burhead	ad	Ь	1	Muddy shores and shallow water of lakes, ponds, slow-moving streams, and ditches. Also in swamp woods and river bottoms.	n/a	Low	
Ribes missouriense Gooseberry	uri berry	ST	Ē	Mesic to dry open woodlands, savannas, woodland borders, thickets, power line clearances and small meadows and wooded areas, abandoned fields, and partially shaded fence rows.	n/a	Low	
Salix caroliniana Carolin	Carolina Willow	Ь		Wetland areas such as streams, swamps, marshes and retention ponds.	n/a	Low	
Silene nivea Snowy	Snowy Campion	Е		Forested river valley.	n/a	None	
Viburnum molle soft-le:	Soft-leaved Arrow- wood	Т	1	Dry, rocky woods, grassland, shores of rivers or lakes.	n/a	None	

1. STATE STATUS - X = extirpated, E = endangered, T = threatened, R = rare, SSC = special concern, WL = watch list, SG = significant, \*\* = no status but rarity warrants concern

Ohio Department of Natural Resources, Division of Wildlife Website - http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/publications/information/pub356.pdf (March 2016).

2. FEDERAL STATUS - E = endangered, T = threatened, R = rare, LELT = different listing for specific ranges or species, PE = proposed endangered, PT = proposed threatened, e/sa - appearance similar to a listed endanger species, \*\*= not listed

United States Fish and Wildlife Service, County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species - http://www.fws.gov/midwest/endangered/lists/ohiocty.html (January 2017).

- 3. Habitats and Breeding Periods described by:
- NatureServe: An online encyclopedia of Ilife [web application].2000. Version 1.1 Arlington, Virginia, USA: Association for Biodiversity information. Available: http://www.natureserve.org/ (Accessed January 6, 2017). ä
- United States Fish and Wildlife Service Rayed Bean Fact Sheet http://www.fws.gov/midwest/endangered/clams/rayedbean/RayedBeanFactSheet.html (January 6, 2017). b.
  - United States Fish and Wildlife Service Indiana Bat Fact Sheet http://www.fws.gov/midwest/endangered/mammals/inba/index.html (January 6, 2017).
  - United States Fish and Wildlife Service Northern Long-eared Bat Fact Sheet http://www.fws.gov/midwest/endangered/mammals/nleb/index.html (January 6, 2017). United States Fish and Wildlife Service Eastern Massasauga Fact Sheet - http://www.fws.gov/midwest/endangered/mammals/inba/index.html (January 6, 2017). ÷ € € €
    - United States Fish and Wildlife Service Running buffalo clover Fact Sheet http://www.fws.gov/midwest/endangered/mammals/nleb/index.html (January 6, 2017).
- 4. Likelihood of occurrence: None, Low, Moderate, or High based on best available data and selective field observations.

From: <u>susan zimmermann@fws.gov</u> on behalf of <u>Ohio, FW3</u>

To: Cori Jansing

Subject: Duke Energy OH F3886 Port Union to Muhlhauser Rebuild, Fairfield, Butler Co.

Date: Wednesday, September 11, 2019 9:35:31 AM



# UNITED STATES DEPARTMENT OF THE INTERIOR U.S. Fish and Wildlife Service Ecological Services Office 4625 Morse Road, Suite 104 Columbus, Ohio 43230

(614) 416-8993 / Fax (614) 416-8994



### TAILS# 03E15000-2019-TA-1890

Dear Ms. Jansing,

We have received your recent correspondence regarding potential impacts to federally listed species in the vicinity of the above referenced project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. We recommend that proposed activities minimize water quality impacts, including fill in streams and wetlands. Best management practices should be utilized to minimize erosion and sedimentation.

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees =3 inches diameter at breast height between October 1 and March 31) to avoid impacts to the federally listed endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*), we do not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the U.S. Fish and Wildlife Service (Service) should be initiated to assess any potential impacts.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the Endangered Species Act (ESA), between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or <a href="mailto:ohio@fws.gov">ohio@fws.gov</a>.

Sincerely,

Patrice M. Ashfield Field Office Supervisor



## Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate John Kessler, Chief 2045 Morse Road – Bldg. E-2 Columbus, OH 43229 Phone: (614) 265-6649 Fax: (614) 267-4764

January 21, 2020

Cori Jansing Cardno 11121 Canal Road Cincinnati, Ohio 45241

Re: 19-741; F3886 Port Union to Muhlhauser Rebuild

**Project:** The proposed project invovles the removal and replacement of 17 existing structures with updated engineered steel monopoles.

**Location:** The proposed project is located in the City of Fairfield and West Chester Township, Butler County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

**Natural Heritage Database**: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The project is within the range of the Indiana bat (Myotis sodalis), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (Carya ovata), shellbark hickory (Carya laciniosa), bitternut hickory (Carya cordiformis), black ash (Fraximus nigra), green ash (Fraxinus pennsylvanica), white ash (Fraxinus americana), shingle oak (Ouercus imbricaria), northern red oak (Quercus rubra), slippery elm (Ulmus rubra), American elm (Ulmus americana), eastern cottonwood (Populus deltoides), silver maple (Acer saccharinum), sassafras (Sassafras albidum), post oak (Quercus stellata), and white oak (Quercus alba). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, and the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet fields and meadows. Due to the location and the type of habitat present at the project site, and within the vicinity of the project area, this project is not likely to impact this species.

The project is within the range of the cave salamander (*Eurycea lucifuga*), a state endangered species. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). Due to the location and the type of habitat present at the project site, and within the vicinity of the project area, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community %20Contact%20List\_8\_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or <u>Sarah.Tebbe@dnr.state.oh.us</u> if you have questions about these comments or need additional information.

Mike Pettegrew Environmental Services Administrator (Acting)