

WETLAND DELINEATION

**340-ACRE TRACT
SOUTH OF INTERSECTION OF
INTERSTATE 69 & STATE ROAD 56
PETERSBURG, INDIANA
PROJECT NO.: 16IN0310**

PREPARED FOR:

PIKE COUNTY ECONOMIC DEVELOPMENT CORPORATION

PREPARED BY:

**Alt & Witzig Consulting Services
Carmel, Indiana**

**June 22, 2016
Revised August 1, 2016**



Alt & Witzig Consulting Services

4105 West 99th Street • Carmel, Indiana 46032
(317) 875-7000 • Fax (317) 876-3705

June 22, 2016
Revised August 1, 2016

Pike County Economic Development Corporation
1592 Indiana 61
Petersburg, Indiana 47567
Attn: Ms. Ashley Willis

RE: Wetland Delineation
340-Acre Tract
South of Intersection of
I-69 & SR 56
Petersburg, Indiana
Alt & Witzig Project No.:16IN0310

Dear Ms. Willis:

In compliance with your request, we have completed a Wetland Delineation at the above referenced Site. The purpose of our investigation was to identify jurisdictional areas associated with the Site by evaluation of potential wetland areas or other "Waters of the United States".

If you have questions or comments regarding our findings, please do not hesitate to contact us. Thank you for the opportunity to offer our services.

Sincerely,
ALT & WITZIG CONSULTING SERVICES

Clayton Heavin
Project Manager
Environmental Division

John C. Flannelly
Senior Project Manager
Environmental Division

TABLE OF CONTENTS

INTRODUCTION	1
LIMITATION OF LIABILITY	2
REGULATION DEFINITION	3
DESCRIPTION OF SITE	5
WETLAND DELINEATION	6
CONCLUSIONS AND RECOMMENDATIONS	13

APPENDICES

Appendix

- A FIGURES

- B WETLAND DETERMINATION DATA FORMS – MIDWEST REGION

- C SOIL REPORT

- D SITE PHOTOGRAPHS

INTRODUCTION

This report presents the results of a wetland reconnaissance performed on an approximately 340-acres of unimproved and wooded land located south of the intersection of Interstate 69 and State Road 56 in Petersburg, Indiana (Site). A total of ten (10) ponds/open water features, four (4) unnamed tributaries and five (5) drainage features were identified on the Site, as well as multiple wetland areas. It should be noted that the majority of the Site was formerly involved in surface mining operations and currently exists as reclaimed mine land. The portions of the Site composed of reclaimed mine land exhibited problematic factors including disturbed/non-native soils and non-native/manually planted vegetation intended for reclamation purposes.

The purpose of our investigation was to determine if portions of the Site are regulated under Sections 401 and/or 404 of the Clean Water Act. Sections 401 and 404 were established to control activities in "State Regulated Wetlands" and regulated "Waters of the United States." An Alt & Witzig Consulting Services (Alt & Witzig) Wetlands Scientist performed the Site reconnaissance on May 17 and May 23, 2016.

Soil and vegetation samples collected on the Site during the investigation were inspected to determine whether wetland soils or hydrophytic vegetation were present. Wetland hydrological indicators were also investigated.

This investigation was performed for the Pike County Economic Development Corporation. Authorization to perform this assessment was in the form of an agreement between Ms. Ashley Willis of the Pike County Economic Development Corporation and Alt & Witzig.

LIMITATION OF LIABILITY

This report has been prepared in accordance with an agreement between Ms. Ashley Willis and Alt & Witzig.

The services performed by Alt & Witzig have been conducted in a manner consistent with the level of quality and skill generally exercised by members of its profession and consulting practices.

This report is solely for the use of the Pike County Economic Development Corporation. Any reliance of this report by third parties shall be at such party's sole risk as this report may not contain sufficient information for purposes of other parties or for other uses. This report shall only be presented in full and may not be used to support any other objectives than those set out in the report, except where written approval and consent are provided by the Pike County Economic Development Corporation and Alt & Witzig.

REGULATION DEFINITION

Definition of “Waters of the U.S.”

“Waters of the U.S.” is a broad term that includes intrastate lakes, rivers, perennial and intermittent streams, mudflats, sandflats, wetlands, sloughs, wet meadows and natural ponds, which could affect interstate or foreign commerce. The U.S. Army Corps of Engineers (USACE) has jurisdiction over any “Waters of the U.S.” under the Clean Water Act.

Definition of “State Regulated Wetlands” and “Isolated Wetland”

According to Indiana state regulatory changes, the definition of a “State Regulated Wetland” is described as an isolated wetland located in Indiana that is not an exempt isolated wetland. Isolated wetlands consist of wetlands that are not subject to regulation under section 404(a) of the Clean Water Act, regulated by USACE. Exempt isolated wetlands are generally wetlands that are voluntarily created, exists as an incidental feature, is a fringe wetland associated with a private pond, is associated with a manmade body of surface water, is a Class I isolated wetland with a delineation of 0.5-acre or less, is a Class II isolated wetland with a delineation of 0.25-acre or less, or is constructed for reduction or control of pollution.

Definition of Wetlands

The following definition of a wetland is taken from the *U.S. Army Corps of Engineers Wetland Delineation Manual* (USACE, 1987).

Wetlands are "...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Listed below are the three criteria used to classify wetlands. All three wetland criteria must be present for an area to be classified as a regulated wetland under normal circumstances.

1. The site must have hydric soil. A hydric soil is defined as a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the near surface zone.
2. The area must have a predominance of hydrophytic or wetland vegetation (e.g., sedges, cattails, reed-canary grass, water tolerant trees) or be capable of supporting this vegetation.
3. The site must have evidence of wetland hydrology. Wetland hydrology is defined as periodic inundation or saturation of soils to the surface at some time during the growing season. Drainage patterns, drift lines, and watermarks are examples of hydrological indicators used if soils are not saturated or inundated at the time of inspection.

It should also be noted that the Corps distributed the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Document ERDC/EL TR-10-16* (USACE, 2010). This document is one of a series of Regional Supplements to the USACE Delineation Manual. The development of the Regional Supplements is part of a nationwide effort to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineating procedures. All wetland delineations submitted to the USACE after November 30, 2008 must follow the procedures listed within the supplement that includes the geographic region in which the subject property is located.

Regulation of Wetlands

Wetlands are regulated "Waters" under Section 404 of the Clean Water Act. Section 404, administered by the USACE, requires permits for discharges of dredged or fill material into regulated "Waters." Regulated "Waters" subject to jurisdiction by the USACE includes navigable "Waters of the United States" and wetland areas determined by the USACE as possessing a significant nexus to a regulated "Waters". A Supreme Court case in 2001 determined that the USACE does not have jurisdiction over isolated wetlands under the Section 404 Clean Water Act.

The Indiana Department of Environmental Management (IDEM) also regulates any activities in wetlands or other "waters" (e.g. streams, ponds, and lakes) under Section 401, Water Quality Certification (WQC). Regulatory laws have further identified IDEM as having regulatory jurisdiction over isolated wetlands.

DESCRIPTION OF SITE

Site Location

The Site is located approximately two (2) miles south of downtown Petersburg in Pike County, Indiana. The Site is further located on the USGS 7.5-Minute Series Topographic map of Petersburg, Indiana (see Figure 1, Appendix A) in Section 2, Township 1 South, Range 8 West. Coordinates for the approximate center of the Site are 38.27241 North Latitude and -87.16083 West Longitude.

General Site Description

The Site consists of approximately 340-acres of unimproved and wooded land. It should be noted that the majority of the Site appears to have been formerly utilized for surface mining operations. An access road transects the central and southern portion of the Site from the northeast to the southwest. A church, Gum Tree Road and residential land adjoin the Site to the north. County Road 75 East, unimproved, residential and wooded land adjoin the Site to the east. Unimproved land adjoins the Site to the south. Agricultural land and Interstate 69 adjoin the Site to the west.

Based on the review of historical aerial photographs, it appears the Site has consisted of unimproved and wooded land from at least 1939 through the present. It should be noted that the majority of the Site was formerly involved in surface mining operations beginning in the 1980s through the early 2010s.

WETLAND DELINEATION

Methodology

Prior to mobilizing to the Site, aerial photographs of the Site, were reviewed via the Indiana Historical Aerial Photograph Index (IHAPI) website and Google Earth©. The Petersburg, Indiana USGS 7.5-Minute Series Topographic map (USGS, 1961 [Revised 1980]) was also reviewed. A United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) map and a United States Department of Agriculture (USDA) Soil Conservation Service (SCS) soil survey for the Site were also reviewed. The NWI map depicted two (2) "Forested/Shrub" wetlands on the central portion of the Site, four (4) "Emergent" wetlands on the central and eastern portions of the Site, and seven (7) "Freshwater Ponds" on the eastern and central portions of the Site. The soil survey indicated the presence of hydric soils. An initial reconnaissance was performed at the Site in order to determine sampling points. Sample points were selected based on the potential for that area to be identified as a wetland. Areas that were not sampled were located on upland terraces, exhibited a dominance of upland plant species and/or a lack of hydrology indicators. A total of 22 sampling points were established at the Site in order to obtain a representative sample of the vegetation, soils and hydrology (Appendix A, Figure 2).

Wetland determination activities were performed in accordance with the *U.S. Army Corps of Engineers Wetland Delineation Manual* (USACE, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Version 2.0* (USACE, 2010). At each sampling point, vegetation was identified, a soil test pit was excavated to determine if hydric soils were present, and visual observations were made to determine if hydrology indicators were present. For vegetation, each sampling point consisted of a 30-foot radius for the tree and woody vine stratum; a 15-foot radius for the sapling and shrub stratum; and a five foot radius for the herbaceous plants stratum. The following is a summary of the data that was collected from the sampling points. Copies of the Wetland Determination Data Forms – Midwest Region are provided in Appendix B.

Vegetation

The dominant vegetation within a wetland must have greater than 50 percent hydrophytic species by evaluation with the 50/20 rule. In addition, if hydric soils and wetland hydrology are observed on the Site, but the vegetation does not pass the dominance test by use of the 50/20 rule, then a prevalence index value greater than three must be shown to indicate the lack of dominance of wetland vegetation. If the vegetation does not meet the prevalence index requirements indicating a dominance of hydric vegetation, then morphological adaptations (adventitious roots, multi-stemmed trunks, shallow root systems, tree buttressing, etc.) must be noted to indicate if the upland vegetation on the Site are functioning as hydrophytes. The dominance of plants classified as Obligate Wetland (OBL), Facultative Wetland (FACW) and/or Facultative (FAC) are necessary to meet the wetland vegetation criteria. The indicator status of a plant species is expressed in terms of the estimated probabilities of a species occurring in a wetland within this region. The indicator categories as defined by the USACE Midwest Regional Supplement are as follows:

Obligate Wetland (OBL): Occur almost always (> 99%) under natural conditions in wetlands.

Facultative Wetland (FACW): Usually occur in wetlands (67%-99%), but occasionally found in non-wetlands.

Facultative (FAC): Equally likely to occur in wetlands or non-wetlands (34%-66%).

Facultative Upland (FACU): Usually occur in non-wetlands, but occasionally found in wetlands (1%-33%).

Obligate Upland (UPL): Occur almost always (>99%) in uplands

Plants that are OBL, FACW and FAC are considered to be wetland species. The type of soil and the duration of standing water and/or saturated soil determine the plant species composition of an area.

The Site was investigated for the presence and dominance of hydrophytic vegetation. Vegetation was identified and recorded on the data forms. Vegetation identities were confirmed using references entitled *Wetland Plants of Indiana* (Chadde, 2011) and *Peterson Field Guides® Eastern Trees* (Petrides/Wehr, 1988). Identified vegetation was then compared to the *Midwest 2014 Regional Wetland Plant List* (USACE, 2014) and assigned the appropriate classification (i.e., FAC, FACW). Table 1 summarizes dominant vegetation identified at each sampling point.

TABLE 1 – VEGETATION		
Sample Area	Dominance of Hydrophytic Vegetation	Vegetation (Classification)
S-1	Y	<i>Robina pseudoacacia</i> (FACU), <i>Salix nigra</i> (OBL), <i>Lonicera morrowii</i> (FACU), <i>Phragmites australis</i> (FACW), <i>Carex grayi</i> (FACW), <i>Lonicera hirsuta</i> (FAC), <i>Parthenocissus quinquefolia</i> (FACU)
S-2	N	<i>Andropogon virginicus</i> (FACU)
S-3	Y	<i>Populus deltoides</i> (FAC), <i>Salix nigra</i> (OBL), <i>Robina pseudoacacia</i> (FACU), <i>Solidago gigantea</i> (FACW), <i>Phalaris arundinacea</i> (FACW), <i>Toxicodendron radicans</i> (FAC), <i>Parthenocissus quinquefolia</i> (FACU)
S-4	Y	<i>Ulmus americana</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Acer rubrum</i> (FAC), <i>Persicaria virginiana</i> (FAC), <i>Laportea canadensis</i> (FACW), <i>Solidago gigantea</i> (FACW), <i>Toxicodendron radicans</i> (FAC), <i>Parthenocissus quinquefolia</i> (FACU)
S-5	N	<i>Andropogon virginicus</i> (FACU), <i>Trifolium pratense</i> (FACU)
S-6	Y	<i>Salix nigra</i> (OBL), <i>Fraxinus pennsylvanica</i> (FACW), <i>Acer rubrum</i> (FAC), <i>Populus deltoides</i> (FAC), <i>Lysimachia nummularia</i> (FACW)
S-7	Y	<i>Acer rubrum</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Salix nigra</i> (OBL), <i>Phragmites australis</i> (FACW), <i>Solidago gigantea</i> (FACW), <i>Parthenocissus quinquefolia</i> (FACU)
S-8	N	<i>Andropogon virginicus</i> (FACU)
S-9	Y	<i>Robinia pseudoacacia</i> (FACU), <i>Acer rubrum</i> (FAC), <i>Salix nigra</i> (OBL), <i>Lonicera morrowii</i> (FACU), <i>Phalaris arundinacea</i> (FACW), <i>Solidago gigantea</i> (FACW), <i>Toxicodendron radicans</i> (FAC), <i>Parthenocissus quinquefolia</i> (FACU)
S-10	N	<i>Andropogon virginicus</i> (FACU)
S-11	Y	<i>Populus deltoides</i> (FAC), <i>Acer rubrum</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Phalaris arundinacea</i> (FACW), <i>Solidago gigantea</i> (FACW), <i>Toxicodendron radicans</i> (FAC), <i>Parthenocissus quinquefolia</i> (FACU)
S-12	N	<i>Andropogon virginicus</i> (FACU), <i>Trifolium repens</i> (FACU)
S-13	Y	<i>Fraxinus pennsylvanica</i> (FACW), <i>Acer rubrum</i> (FAC), <i>Phalaris arundinacea</i> (FACW), <i>Solidago gigantea</i> (FACW), <i>Persicaria virginiana</i> (FAC), <i>Parthenocissus quinquefolia</i> (FACU)
S-14	N	<i>Andropogon virginicus</i> (FACU)
S-15	Y	<i>Betula nigra</i> (FACW), <i>Acer rubrum</i> (FAC), <i>Solidago gigantea</i> (FACW), <i>Geum canadense</i> (FAC), <i>Toxicodendron radicans</i> (FAC)
S-16	N	<i>Andropogon virginicus</i> (FACU)

TABLE 1 – VEGETATION		
Sample Area	Dominance of Hydrophytic Vegetation	Vegetation (Classification)
S-17	Y	<i>Populus deltoides</i> (FAC), <i>Acer rubrum</i> (FAC), <i>Solidago gigantea</i> (FACW), <i>Elymus virginicus</i> (FACW), <i>Toxicodendron radicans</i> (FAC)
S-18	N	<i>Andropogon virginicus</i> (FACU), <i>Trifolium pratense</i> (FACU)
S-19	Y	<i>Populus deltoides</i> (FAC), <i>Acer rubrum</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Solidago gigantea</i> (FACW), <i>Carex grayi</i> (FACW), <i>Parthenocissus quinquefolia</i> (FACU)
S-20	N	<i>Andropogon virginicus</i> (FACU)
S-21	Y	<i>Populus deltoides</i> (FAC), <i>Acer rubrum</i> (FAC), <i>Phragmites australis</i> (FACW)
S-22	N	<i>Andropogon virginicus</i> (FACU)
Y = 50% or more wetland species N = Less than 50% wetland species		

A dominance of wetland/hydrophytic vegetation was observed at sample points S-1, S-3, S-4, S-6, S-7, S-9, S-11, S-13, S-15, S-17, S-19 and S-21. These twelve (12) sample points were all located within wooded areas throughout the Site. Hydrophytic vegetation appears to be the dominant form of vegetation within the wooded tracts, specifically within the vicinity of drainage features and/or open water features. However, it should be noted that the majority of the Site was formerly involved in surface mining operations. These areas that were formerly surface mined appear to have been replanted manually, as was evidenced by the distinct rows of trees and grasses in these areas. In addition, some of the observed hydrophytic species (i.e. *Phragmites australis* and *Phalaris arundinacea*) are considered to be invasive by the Indiana Department of Natural Resources. Therefore, the vegetation located within the formerly surface mined areas throughout the Site is potentially problematic. The vegetation located in areas not within wooded tracts or on hills/hillsides was observed to consist primarily of upland species.

Hydrology

Wetland hydrology consists of water that is on or near the surface of the soil for a significant period of time during the growing season. Evidence of hydrology indicators can be observed beyond the growing season, or during times in the growing season that actual hydrology is not present. Many factors determine wetland hydrology such as topography, soil type, depth of the water table, and drainage. A summary of the hydrological indicators observed at the sampling points is summarized in Table 2.

TABLE 2 – HYDROLOGY		
Sample Area	Wetland Hydrology	Hydrological Indicators Field Observations
S-1	Y	Water Marks, Drift Deposits, Aquatic Fauna, Drainage Patterns, Crayfish Burrows, Geomorphic Position
S-2	N	None Observed
S-3	Y	Drift Deposits, Aquatic Fauna, Drainage Patterns, Crayfish Burrows
S-4	Y	Saturation, Crayfish Burrows
S-5	N	None Observed
S-6	Y	Surface Water, High Water Table, Saturation, Aquatic Fauna, Thin Muck Surface, Crayfish Burrows
S-7	Y	High Water Table, Saturation, Aquatic Fauna, Crayfish Burrows
S-8	N	None Observed

TABLE 2 – HYDROLOGY		
Sample Area	Wetland Hydrology	Hydrological Indicators Field Observations
S-9	Y	Saturation, Water Marks, Sediment Deposits, Drift Deposits, Drainage Patterns, Crayfish Burrows
S-10	N	None Observed
S-11	Y	Saturation, Water Marks, Drift Deposits, Crayfish Burrows
S-12	N	None Observed
S-13	Y	Saturation, Aquatic Fauna, Crayfish Burrows, Geomorphic Position
S-14	N	None Observed
S-15	Y	Saturation, Drainage Patterns, Geomorphic Position
S-16	N	None Observed
S-17	Y	Drift Deposits, Aquatic Fauna, Drainage Patterns, Crayfish Burrows
S-18	N	None Observed
S-19	Y	Saturation, Sparsely Vegetated Concave Surface, Crayfish Burrows, Geomorphic Position
S-20	N	None Observed
S-21	Y	Surface Water, Saturation, Drainage Patterns, Crayfish Burrows
S-22	N	None Observed
Y = Hydrology indicators indicate wetland hydrology N = Hydrology indicators are not present or sufficient for wetland hydrology (A1) = Primary/Secondary hydrology indicators		

The Site was investigated for the presence of wetland hydrology and/or hydrological indicators noted in the USACE Midwest Regional Supplement. Wetland hydrology was observed at sample points S-1, S-3, S-4, S-6, S-7, S-9, S-11, S-13, S-15, S-17, S-19 and S-21. These twelve (12) sample points were all located within wooded areas throughout the Site. Wetland hydrology was not observed in the vicinity of the remaining sample points.

Soils

Hydric soils, as defined by USDA, are soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions. Indications of hydric soils can be documented in the field any time of the year. A hydric soil is different from a non-hydric soil due to the anaerobic conditions, which change the soil color, mottling, structure and chemistry. Soils must be hydric for an area to be considered a wetland.

A custom soil report for the Site was generated using the USDA web soil survey (Appendix C). Based on the report, it appears thirteen (13) soil associations are present on the Site (Appendix A, Figure 3). All thirteen of the soil associations at the Site are classified as hydric. It should be noted however, that soil surveys act as a guide to the general types of soil in an area and field observations take precedent.

In order to determine if hydric soils were present, a soil test pit was excavated to approximately 20-inches below ground surface (bgs) at each sampling point. Soil horizons were observed and soil colors were

determined using the *Munsell Soil Color Chart* (Munsell, 2000). Soil colors observed included the matrix and any mottling, if present. In addition, texture, redox features (if present) and any other characteristics were observed. These data were recorded on the data forms (Appendix B). The USACE Midwest Regional Supplement has included numerous additional soil indicators to aid in identifying hydric soils and this was referenced during data collection. In addition, the USDA Natural Resource Conservation Service (NRCS) *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, version 7.0, 2010* was referenced. A description of the soils is provided in Table 3.

TABLE 3 – SOILS				
Sampling Point	Hydric Soils	Depth (inches)	Soil Color	Soil Texture
S-1	Yes	0 - 4	10YR 4/2	Silty clay loam
		4 - 20	Matrix 7.5YR 5/3 95%; Mottling 7.5YR5/6 5%	Silty clay loam
	Hydric Indicators: Depleted Matrix			
S-2	No	0 - 20	10YR 6/6	Silty clay loam
	Hydric Indicators: None Observed			
S-3	Yes	0 - 3	10YR 4/2	Silty clay loam
		3 - 20	Matrix 7.5YR 5/3 95%; Mottling 7.5YR 5/6 5%	Silty clay loam
	Hydric Indicators: Depleted Matrix			
S-4	Yes	0 - 8	Matrix 10YR 3/2 90%; Mottling 10YR 5/6 10%	Silty clay loam
		8 - 20	Matrix 7.5YR 5/3 85%; Mottling 7.5YR 5/6 15%	Silty clay loam
	Hydric Indicators: Depleted Matrix			
S-5	No	0 - 20	10YR 5/6	Silty clay loam
	Hydric Indicators: None Observed			
S-6	Yes	0 - 3	10YR 2/1	Muck
		3 - 20	Matrix 10YR 3/2 60%; Mottling 10YR 5/8 40%	Silty clay loam
	Hydric Indicators: 2 cm Muck, Depleted Below Dark Surface, Depleted Matrix			
S-7	Yes	0 - 3	10YR 3/2	Silty clay loam
		3 - 20	Matrix 10YR 5/6 80%; Mottling 7.5YR 5/8 20%	Silty clay loam
	Hydric Indicators: Depleted Below Dark Surface, Depleted Matrix			
S-8	No	0 - 20	10YR 6/6	Silty clay loam
	Hydric Indicators: None Observed			
S-9	Yes	0 - 3	10YR 4/2	Silty clay loam
		3 - 12	Matrix 7.5YR 5/3 90%; Mottling 7.5YR 5/6 10%	Silty clay loam
		12 - 20	Matrix 2.5YR 6/3 90%; Mottling 5YR 5/8 10%	Silty clay loam
Hydric Indicators: Depleted Matrix				
S-10	No	0 - 20	10YR 6/6	Silty clay loam
	Hydric Indicators: None Observed			

TABLE 3 – SOILS

Sampling Point	Hydric Soils	Depth (inches)	Soil Color	Soil Texture
S-11	Yes	0 - 4	10YR 3/2	Silty clay loam
		4 - 20	Matrix 7.5YR 5/3 90%; Mottling 7.5YR 5/8 10%	Silty clay loam
	Hydric Indicators: Depleted Matrix			
S-12	No	0 - 20	10YR 6/8	Silty clay loam
	Hydric Indicators: None Observed			
S-13	Yes	0 - 3	10YR 3/2	Silty clay loam
		3 - 20	Matrix 7.5YR 5/3 95%; Mottling 7.5YR 5/8 5%	Silty clay loam
	Hydric Indicators: Depleted Matrix			
S-14	No	0 - 20	10YR 6/6	Silty clay loam
	Hydric Indicators: None Observed			
S-15	Yes	0 - 5	10YR 3/2	Silty clay loam
		5 - 20	Matrix 7.5YR 5/3 90%; Mottling 7.5YR 5/8 10%	Silty clay loam
	Hydric Indicators: Depleted Matrix			
S-16	No	0 - 20	10YR 6/6	Silty clay loam
	Hydric Indicators: None Observed			
S-17	Yes	0 - 4	10YR 3/2	Silty clay loam
		4 - 20	Matrix 7.5YR 5/3 95%; Mottling 7.5YR 5/8 5%	Silty clay loam
	Hydric Indicators: Depleted Matrix			
S-18	No	0 - 20	10YR 5/6	Silty clay loam
	Hydric Indicators: None Observed			
S-19	Yes	0 - 3	10YR 4/2	Silty clay loam
		3 - 20	Matrix 7.5YR 5/3 90%; Mottling 7.5YR 5/8 10%	Silty clay loam
	Hydric Indicators: Depleted Matrix			
S-20	No	0 - 20	10YR 5/6	Silty clay loam
	Hydric Indicators: None Observed			
S-21	Yes	0 - 3	10YR 5/6	Silty clay loam
		3 - 20	Matrix 7.5YR 5/3 90%; Mottling 7.5YR 5/8 10%	Silty clay loam
	Hydric Indicators: Depleted Matrix			
S-22	No	0 - 20	10YR 5/6	Silty clay loam
	Hydric Indicators: None Observed			
Yes = The soils are classified as hydric based upon field conditions No = The soils are not classified as hydric soils				

Hydric soil indicators were observed at sampling points S-1, S-3, S-4, S-6, S-7, S-9, S-11, S-13, S-15, S-17, S-19 and S-21. These twelve (12) sample points were all located within wooded areas throughout

the Site. However, it should be noted that the majority of the Site was formerly involved in surface mining operations. Large portions of the Site were excavated and filled in once mining operations ceased or were covered with large amounts of soil originating from either an on-Site or off-Site excavation. Large pieces of shale and other miscellaneous debris were observed in the soil samples to depths as far as 20 inches. Based on these observations and Alt & Witzig's understanding of previous on-Site surface mining operations, the majority of the soils on the Site have been disturbed and are potentially problematic. The remaining sample point locations did not demonstrate hydric soil indicators.

National Wetland Inventory Map

An NWI map was reviewed for the Site (Figure 4, Appendix A). The NWI map depicted two (2) "Forested/Shrub" wetlands on the central portion of the Site, four (4) "Emergent" wetlands on the central and eastern portions of the Site, and seven (7) "Freshwater Ponds" on the eastern and central portions of the Site. It should be noted the NWI map does not preclude the results of a wetland assessment.

Identified "Waters of the U.S."

Vegetation and soil data were collected at 22 sampling points. In addition, visual observations were made to determine the presence of hydrology indicators. A total of ten (10) ponds/open water features, four (4) unnamed tributaries and five (5) drainage features were identified on the Site (see Figure 5, Appendix A). Wetland areas were observed to be located within the vicinity of the ponds/open water features, unnamed tributaries and drainage features. These water features and wetland areas are described below in the Conclusions and Recommendations Section.

CONCLUSIONS AND RECOMMENDATIONS

This report presents the results of a Wetland Delineation performed on approximately 340-acres of unimproved and wooded land located in Pike County, Indiana. The majority of the Site consists of reclaimed mine land. The reconnaissance was performed to determine if potential "Waters of the U.S." and/or "State Regulated Wetlands" exist on the Site. Photographs taken during this assessment are provided in Appendix D.

Based on this reconnaissance, four (4) unnamed tributaries, ten (10) ponds/open water features and five (5) drainage features were identified on the Site. Wetland areas were observed to be located within the vicinity of the ponds/open water features, unnamed tributaries and drainage features. (see Figure 5, Appendix A).

Unnamed Tributary 1 transects the central portion of the Site from east to west, totaling approximately 3,600-linear feet. This unnamed tributary has been located on the Site since at least 1939. However, it appears sometime between 1978 and 1998 the path of Unnamed Tributary 1 was altered, likely due to the former on-Site surface mining operations. Fringe wetland areas were observed to be located along Unnamed Tributary 1. Water observed in this unnamed tributary was observed to be draining in a westerly direction. Unnamed Tributary 1 appears to originate approximately 0.25-miles east-northeast of the Site at the point where two additional unnamed tributaries converge. Unnamed Tributary 1 continues to flow off-Site in a westerly direction until it converges with Prides Creek. Prides Creek continues to flow in a northerly direction until it eventually converges with the White River. Unnamed Tributary 1 demonstrated an Ordinary High Water Mark (OHWM), a defined bed and bank and a significant nexus to a Traditional Navigable Water (TNW); therefore, Unnamed Tributary 1 and all fringe wetland areas are anticipated to be regulated by the USACE as a "Waters of the U.S."

Unnamed Tributary 2 traverses the eastern portion of the Site from north to south, totaling approximately 1,300-linear feet. This unnamed tributary has been located on the Site since at least 1998. However, it should be noted that a review of historical aerial photographs and the Petersburg, Indiana USGS 7.5-Minute Series Topographic map indicated that Unnamed Tributary 2 formerly transected the central portion of the Site from west to east from the late 1930s through the late 1970s. The path of Unnamed Tributary 2 appears to have been altered sometime between 1978 and 1998, likely due to the former on-Site surface mining operations. Fringe wetland areas were observed to be located along Unnamed Tributary 2. Unnamed Tributary 2 appears to originate approximately 0.6-miles east of the Site and emerges from a wooded area. The section of Unnamed Tributary 2 located on the Site flows in a northerly direction and converges with Unnamed Tributary 1. Unnamed Tributary 1 continues to flow in a westerly direction until it converges with Prides Creek. Prides Creek continues to flow in a northerly direction until it eventually converges with the White River. Unnamed Tributary 2 demonstrated an Ordinary High Water Mark (OHWM), a defined bed and bank and a significant nexus to a Traditional Navigable Water (TNW); therefore, Unnamed Tributary 2 and all fringe wetland areas are anticipated to be regulated by the USACE as a "Waters of the U.S."

Unnamed Tributary 3 traverses the southeastern portion of the Site from east to west then bends to the north, totaling approximately 2,000-linear feet. This unnamed tributary has been located on the Site since at least 1939. However, it should be noted that a review of historical aerial photographs and the Petersburg, Indiana USGS 7.5-Minute Series Topographic map indicated that Unnamed Tributary 3 formerly transected the southern portion of the Site from the southeast to the northwest from the late 1930s through the late 1970s. The path of Unnamed Tributary 3 appears to have been altered sometime between 1978 and 1998, likely due to the former on-Site surface mining operations. Fringe wetland areas were observed to be located along Unnamed Tributary 3. Unnamed Tributary 3 appears

to originate approximately 0.25-miles east of the Site and emerges from a wooded area. The section of Unnamed Tributary 3 located on the Site flows in a northerly direction and converges with Pond 7, which is located on the east central portion of the Site. The network of Ponds 5, 6 and 7 were observed to be connected via a series of channels. In addition, a channel was observed to connect Pond 7 and Unnamed Tributary 2. Therefore, Unnamed Tributary 3 eventually converges with Unnamed Tributary 2, which eventually converges with Unnamed Tributary 1. Unnamed Tributary 1 continues to flow in a westerly direction until it converges with Prides Creek. Prides Creek continues to flow in a northerly direction until it eventually converges with the White River. Unnamed Tributary 3 demonstrated an Ordinary High Water Mark (OHWM), a defined bed and bank and a significant nexus to a Traditional Navigable Water (TNW); therefore, Unnamed Tributary 3 and all fringe wetland areas are anticipated to be regulated by the USACE as a "Waters of the U.S."

Unnamed Tributary 4 traverses the southwestern portion of the Site from west to east, totaling approximately 1,900-linear feet. This unnamed tributary has been located on the Site since at least 1998. A review of historical aerial photographs indicated that this unnamed tributary was likely created as a result of former surface mining operations that occurred on and off-Site. Fringe wetland areas were observed to be located along Unnamed Tributary 4. Unnamed Tributary 4 appears to originate approximately 0.6-miles southeast from the Site and emerges from a wooded area. The section of Unnamed Tributary 4 located on the Site was observed to be flowing in a westerly direction. Unnamed Tributary 4 continues to flow off-Site in a westerly direction until it converges with Prides Creek. Prides Creek continues to flow in a northerly direction until it eventually converges with the White River. Unnamed Tributary 4 demonstrated an Ordinary High Water Mark (OHWM), a defined bed and bank and a significant nexus to a Traditional Navigable Water (TNW); therefore, Unnamed Tributary 4 and all fringe wetland areas are anticipated to be regulated by the USACE as a "Waters of the U.S."

Pond 1 is located on the northeastern portion of the Site, is approximately 0.10-acres in size and is situated within a wooded tract. This pond has been located on the Site since at least 1998 and appears to have formed as drainage, originating from adjoining upland areas to the west and a culvert from the northeast, consistently inundated this portion of the Site. Fringe wetland areas were observed to surround Pond 1 and extended toward the northeast and the culvert situated underneath State Road 61. Based on observations made during the Site reconnaissance and a review of the Petersburg, Indiana USGS 7.5-Minute Series Topographic map, it is Alt & Witzig's opinion that this pond and the fringe wetland areas appear to be isolated and do not contain a significant nexus to a "Waters of the U.S."

Ponds 2 and 3 are located on the west central portion of the Site and are approximately 0.40-acres and 0.75-acres in size. Both Ponds 2 and 3 are located within a wooded tract. These two ponds have been located on the Site since at least 1998 and appear to have formed as a result of former surface mining operations. Fringe wetland areas were observed to surround Ponds 2 and 3 to the north, south and west. Observations made during the Site reconnaissance indicated that it is likely excess water from these two ponds potentially drains to the south and converges with Unnamed Tributary 1. As stated previously, it is Alt & Witzig's opinion that Unnamed Tributary 1 contains a significant nexus to a "Waters of the U.S."; therefore, Ponds 2 and 3 and the fringe wetland areas are anticipated to be regulated by the USACE as "Waters of the U.S."

Pond 4 is located on the central portion of the Site and is approximately 0.25-acres in size. Pond 4 is located within a wooded tract. This pond has been located on the Site since at least 1998 and appears to have formed as a result of former surface mining operations. Fringe wetland areas were observed to surround Pond 4 to the east and west. Observations made during the Site reconnaissance indicated that it is likely excess water from this pond potentially drains to the north and converges with Unnamed Tributary 1. As stated previously, it is Alt & Witzig's opinion that Unnamed Tributary 1

contains a significant nexus to a "Waters of the U.S."; therefore, Pond 4 and the fringe wetland areas are anticipated to be regulated by the USACE as "Waters of the U.S."

Ponds 5, 6 and 7 are located on the eastern portion of the Site and are approximately 1.6-acres, 1.3-acres and 1.15-acres in size. These three ponds have been located on the Site since at least 1998 and appear to have formed as a result of former surface mining operations. Ponds 5, 6 and 7 were observed to be connected via a series of channels. Fringe wetland areas were observed to surround Ponds 5, 6 and 7 in all directions. Observations made during the Site reconnaissance indicated that Pond 7 connects to Unnamed Tributary 2 via a channel, and it is extremely likely that excess water from Ponds 5, 6 and 7 drains to Unnamed Tributary 2 which converges with Unnamed Tributary 1. As stated previously, it is Alt & Witzig's opinion that Unnamed Tributary 1 contains a significant nexus to a "Waters of the U.S."; therefore, Ponds 5, 6 and 7 and the fringe wetland areas are anticipated to be regulated by the USACE as "Waters of the U.S."

Ponds 8, 9 and 10 are located on the southeast portion of the Site and are approximately 0.08-acres, 0.1-acres and 0.03-acres in size. A review of historical aerial photographs indicated that Ponds 8 and 9 have been located on the Site since at least 1998 and appear to have formed as a result of former surface mining operations. A review of historical aerial photographs and the Petersburg, Indiana USGS 7.5-Minute Series Topographic map indicated that Pond 10 has been located on the Site since at least the early 1960s. Fringe wetland areas were observed to surround Ponds 8, 9 and 10 in all directions. Observations made during the Site reconnaissance indicated that it is likely excess water from Ponds 8, 9 and 10 drains to Unnamed Tributary 3, which converges with Pond 7. As stated previously, it is Alt & Witzig's opinion that Pond 7 contains a significant nexus to a "Waters of the U.S."; therefore, Ponds 8, 9 and 10 and the fringe wetland areas are anticipated to be regulated by the USACE as "Waters of the U.S."

Drainage Feature 1 traverses the northwestern Site boundary from north to south. Observations made during the Site reconnaissance indicated that water originating from precipitation events collects from the adjoining upland areas to the east, north and west and flows in a southerly direction toward Ponds 2 and 3. Fringe wetland areas were observed to be located along Drainage Feature 1. As stated previously, it is Alt & Witzig's opinion that Ponds 2 and 3 contain a significant nexus to a "Waters of the U.S.". In addition, Drainage Feature 1 demonstrated an OHWM and defined bed and bank. Therefore, Drainage Feature 1 and the fringe wetland areas are anticipated to be regulated by the USACE as "Waters of the U.S."

Drainage Feature 2 traverses the north central portion of the Site from north to south. Observations made during the Site reconnaissance indicated that water originating from precipitation events collects from the adjoining upland areas to the north and east and flows in a southerly direction toward Unnamed Tributary 1. Fringe wetland areas were observed to be located along Drainage Feature 2. It should be noted that Drainage Feature 2 did not demonstrate an OHWM or a defined bed and bank. However, as stated previously, it is Alt & Witzig's opinion that Unnamed Tributary 1 contains a significant nexus to a "Waters of the U.S.". The fringe wetland areas located along Drainage Feature 2 likely drain to Unnamed Tributary 1; therefore, the fringe wetland areas located along Drainage Feature 2 are anticipated to be regulated by the USACE as "Waters of the U.S."

Drainage Feature 3 traverses the western portion of the Site from west to east. Observations made during the Site reconnaissance indicated that water originating from precipitation events collects from the adjoining upland areas to the south and north and flows in a east-southeast direction toward the access road. Drainage Feature 3 was not observed to converge with additional water features located

on the Site. Drainage Feature 3 demonstrated an OHWM and defined bed and bank, and fringe wetland areas were observed to be located along Drainage Feature 3. It is Alt & Witzig's opinion that Drainage Feature 3 does not possess a significant nexus to a "Waters of the U.S.". Therefore, Drainage Feature 3 and the fringe wetland areas are not anticipated to be regulated by the USACE as "Waters of the U.S."

Drainage Feature 4 traverses the central portion of the Site from west to east. Observations made during the Site reconnaissance indicated that water originating from precipitation events collects from the adjoining upland areas to the south and access road to the west and flows in an easterly direction eventually converging with Pond 5. Fringe wetland areas were observed to be located along Drainage Feature 4. It should be noted that Drainage Feature 4 did not demonstrate an OHWM or a defined bed and bank. However, as stated previously, it is Alt & Witzig's opinion that Pond 5 contains a significant nexus to a "Waters of the U.S.". The fringe wetland areas located along Drainage Feature 4 likely drain to Pond 5; therefore, Drainage Feature 4 and the fringe wetland areas are anticipated to be regulated by the USACE as "Waters of the U.S."

Drainage Feature 5 traverses the eastern portion of the Site from north to south. Observations made during the Site reconnaissance indicated that water originating from precipitation events collects from adjoining upland areas to the north and access road and flows in a southerly direction eventually converging with Pond 6. Fringe wetland areas were observed to be located along Drainage Feature 5. It should be noted that Drainage Feature 5 was manually developed and did not demonstrate an OHWM or a defined bed and bank. However, as stated previously, it is Alt & Witzig's opinion that Pond 6 contains a significant nexus to a "Waters of the U.S.". The fringe wetland areas located along Drainage Feature 5 likely drain to Pond 6; therefore, Drainage Feature 5 and the fringe wetland areas are anticipated to be regulated by the USACE as "Waters of the U.S."

As previously stated, wetland areas were observed to be located surrounding the on-Site tributaries, ponds and drainage features. These wetland areas totaled approximately 55-acres, cumulatively. Wetland boundaries were marked with pink biodegradable marking tape using a handheld GPS device for the purpose of approximating the boundaries and sizes of the identified wetlands. However, wetland boundaries were not surveyed as a part of this assessment. All wetland areas, with the exception of wetland areas adjoining Pond 1, are anticipated to be regulated by the USACE as "Waters of the U.S."

Impacts to "Waters of the U.S." which total less than 0.1-acre do not require mitigation. If impacts are anticipated to be 1.0-acre or greater, or exceed 1,500-linear feet of stream, then an Individual Permit may be necessary. Mitigation for impacts is required at a 1:1 ratio for drainage features and open water; 4:1 for forested wetlands; 3:1 for scrub/shrub wetlands; and 2:1 for emergent wetlands if verified as a USACE jurisdictional "Waters of the U.S."

Prior to any permitting activities, a jurisdictional determination (JD) would be required to be performed by USACE to ensure they concur with our findings.

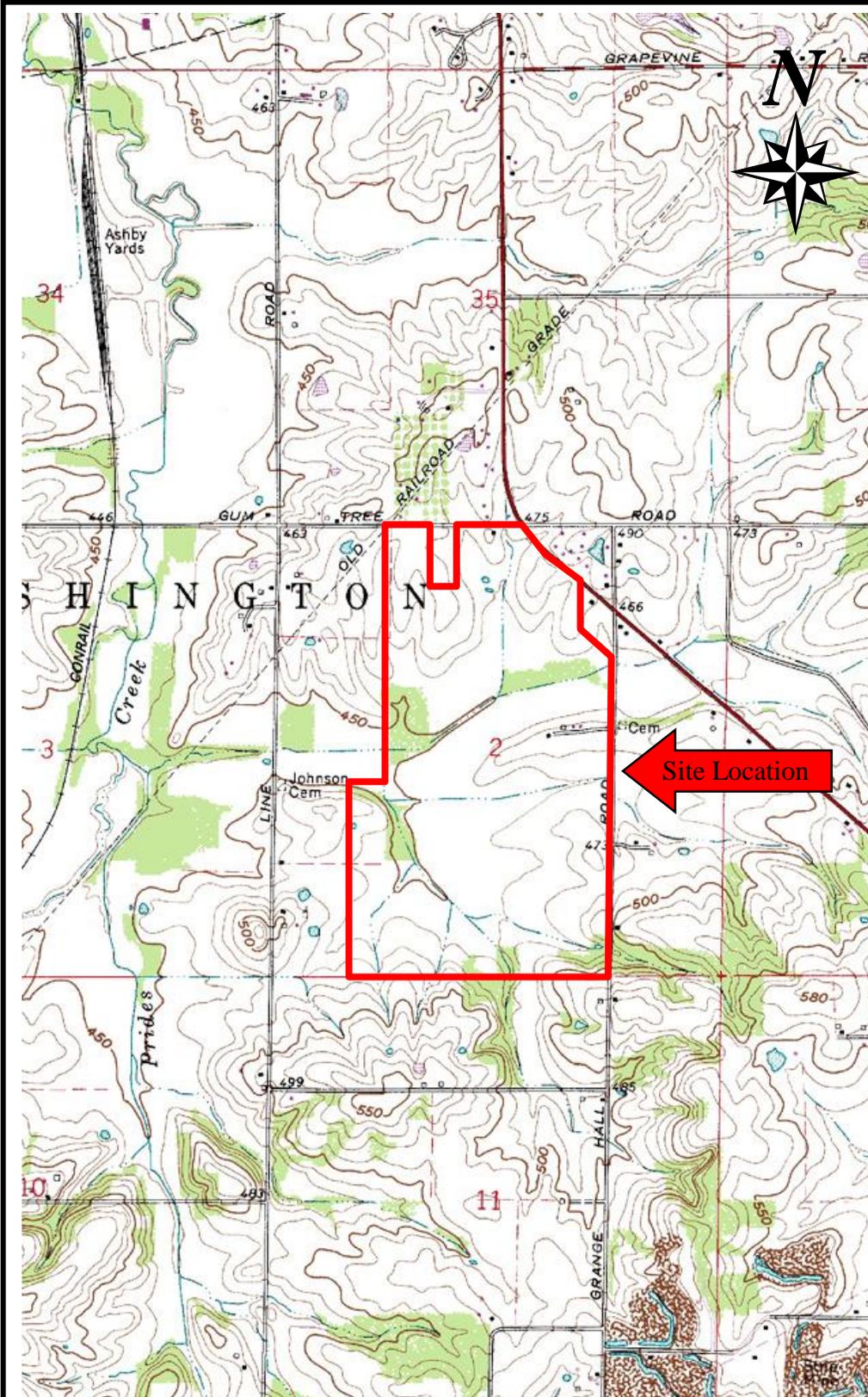
REFERENCES

- Chadde, Steve W. 2011. *Wetland Plants of Indiana*. Lexington, Kentucky: Steve W. Chadde.
- Indiana Historical Aerial Photograph Index (IHAPI) website and Google Earth©. Aerial photograph dated 1939, 1949, 1954, 1966, 1978, 1998, 2005, 2010 and 2016.
- Munsell Color Book. 2000. Munsell Soil Color Charts. Gretag Macbeth, New Windsor, New York.
- Petrides, A. George and Wehr, Janet. 1988. *George Peterson Field Guides® Eastern Trees*. New York, New York: Houghton Mifflin Company.
- United States Army Corps of Engineers (USACE).
1987. *U.S. Army Corps of Engineers Wetland Delineation Manual*. Technical Report Y-87-1, Vicksburg, MS.
2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Version 2.0*.
2014. *Midwest 2014 Regional Wetland Plant List*.
- United States Department of Agriculture (USDA), National Resource Conservation Service (NRCS). 2010. *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 7.0*.
- USDA, NRCS. 2016. *Custom Soil Resource Report for Pike County, Indiana*. Generated from the USDA on-line web soil survey.
- United States Fish and Wildlife Service. 2016. *National Wetlands Inventory Mapper*.
- United States Geological Survey (USGS). 1961 (Revised 1980). Petersburg, Indiana, 7.5-minute topographic series.

APPENDIX A

Figures

FIGURE 1: SITE LOCATION MAP



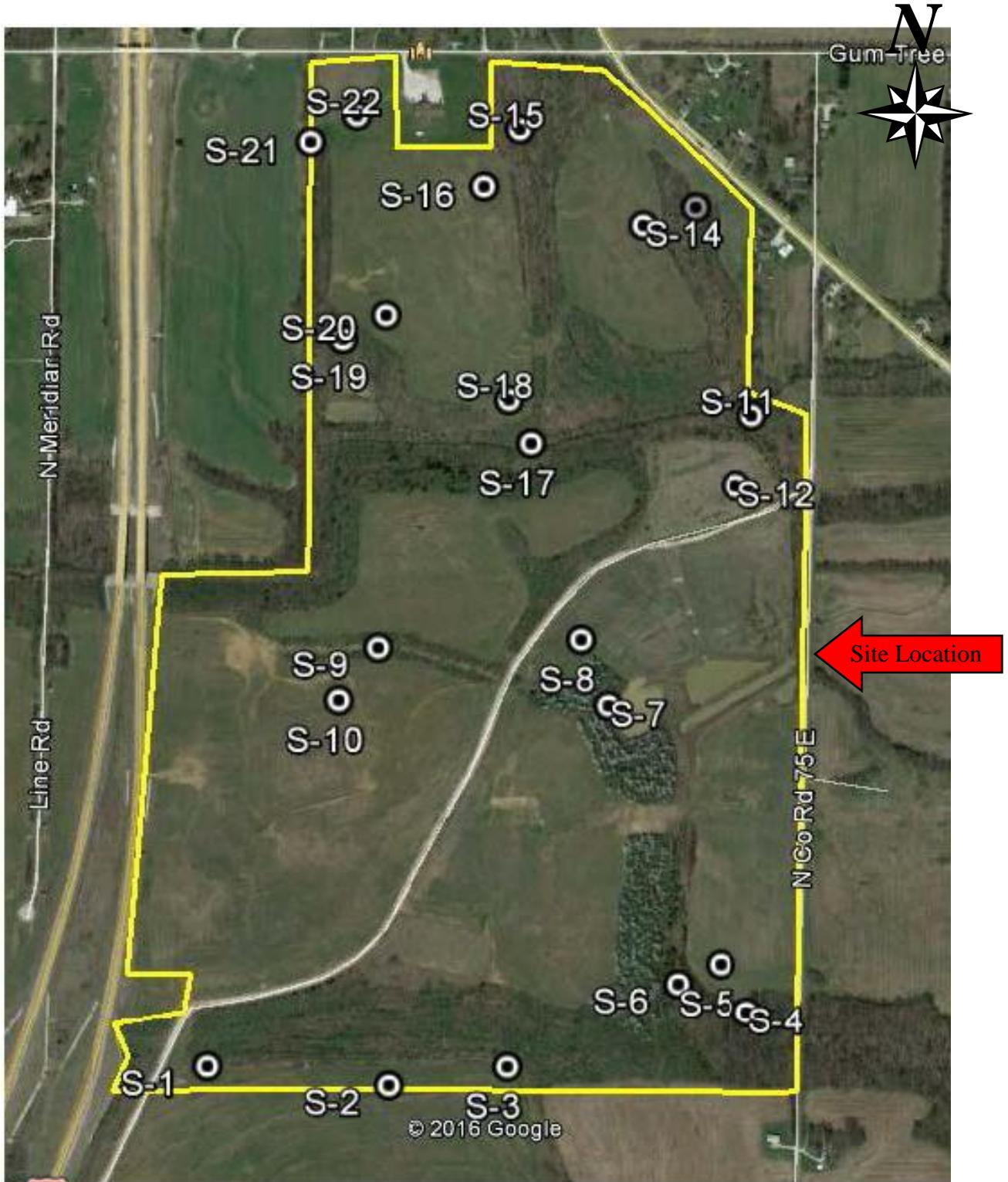
*USGS Topographic Map:
Petersburg Quadrangle*

*Township: T 1 S.
Range: R 8 W.
Section: 2*

PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

A
W *Alt & Witzig Consulting Services*
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

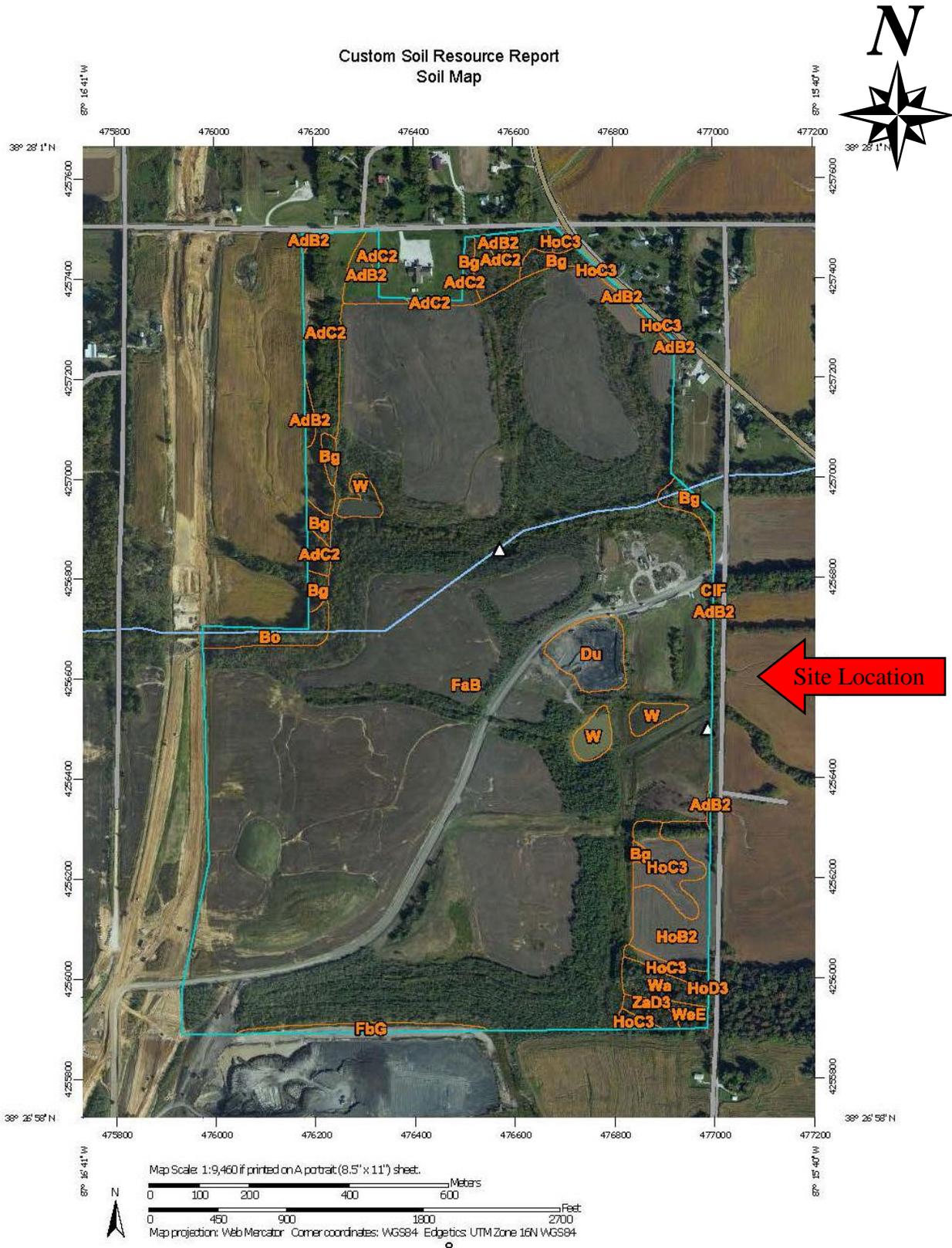
FIGURE 2: SAMPLE LOCATION MAP



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

A
W Alt & Witzig Consulting Services
4105 W. 99th Street · Carmel, IN 46032
TEL (317)875-7000 · FAX (317) 876-3705
www.altwitzig.com

FIGURE 3: SOIL MAP



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

A&W Alt & Witzig Consulting Services
 4105 W. 99th Street · Carmel, IN 46032
 TEL (317)875-7000 · FAX (317) 876-3705
www.altwitzig.com

FIGURE 4: NATIONAL WETLANDS INVENTORY MAP



U.S. Fish and Wildlife Service
National Wetlands Inventory

May 18, 2016



Wetlands

-  Freshwater Emergent
-  Freshwater Forested/Shrub
-  Estuarine and Marine Deepwater
-  Estuarine and Marine
-  Freshwater Pond
-  Lake
-  Riverine
-  Other

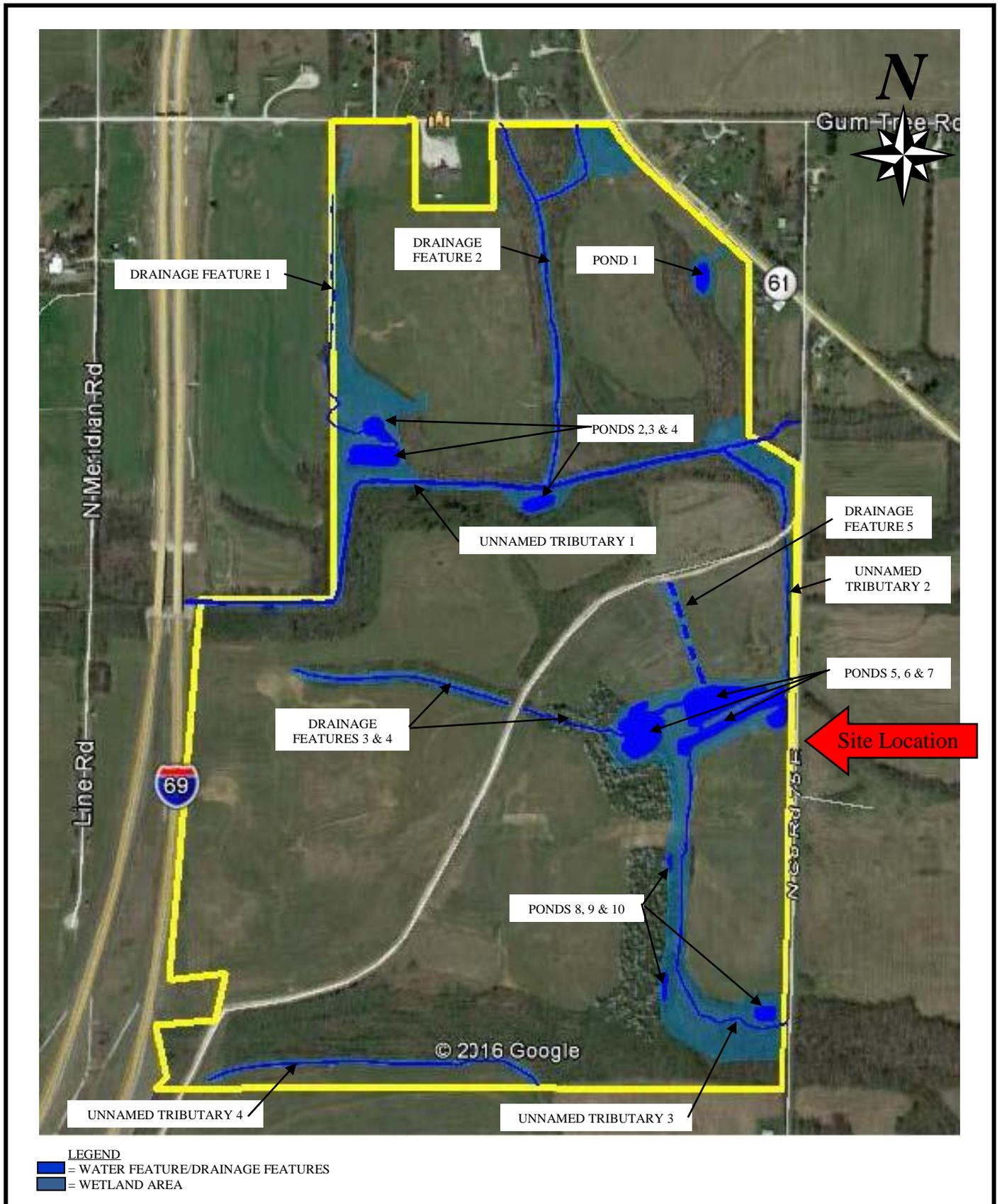
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

 **Alt & Witzig Consulting Services**
4105 W. 99th Street · Carmel, IN 46032
TEL (317)875-7000 · FAX (317) 876-3705
www.altwitzig.com

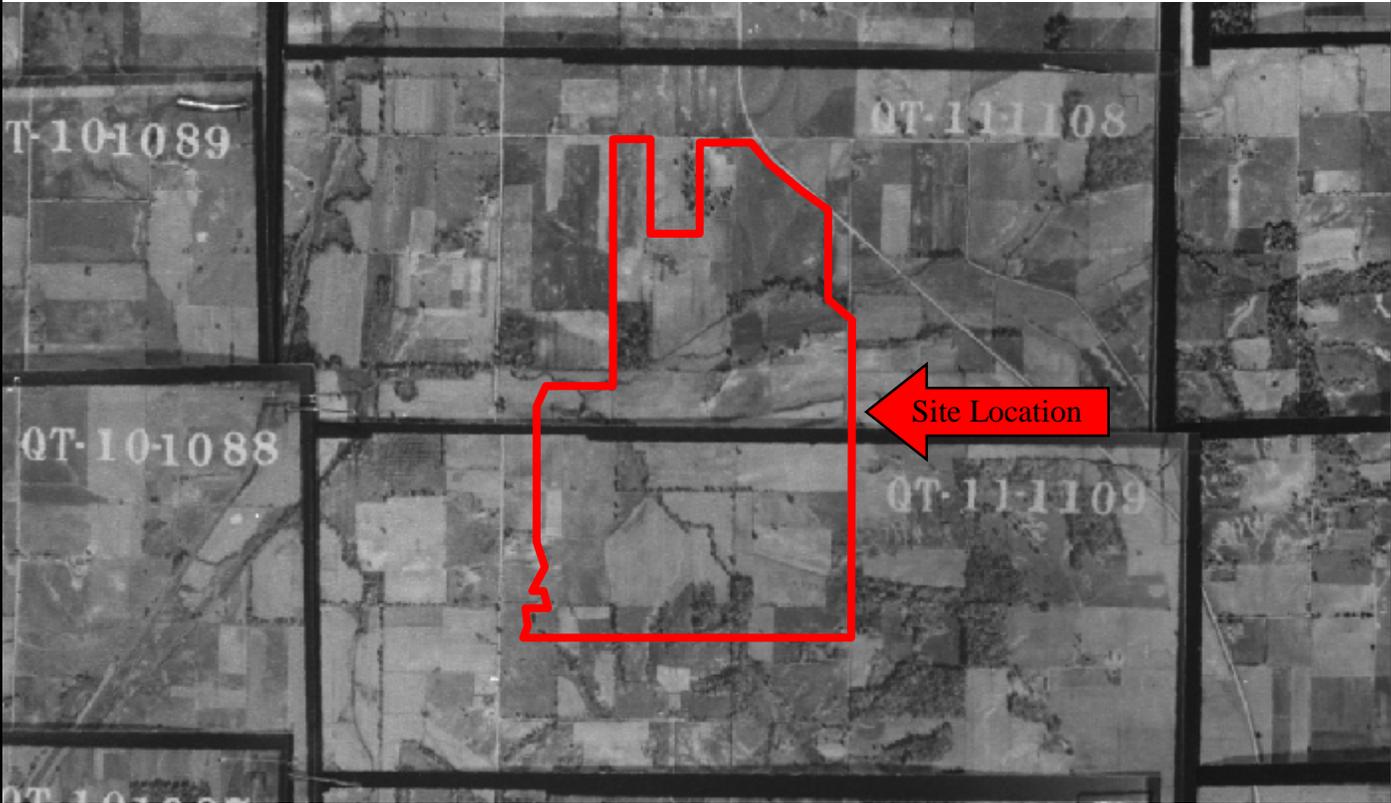
FIGURE 5: WETLAND MAP



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

A
W Alt & Witzig Consulting Services
4105 W. 99th Street · Carmel, IN 46032
TEL (317)875-7000 · FAX (317) 876-3705
www.altwitzig.com

FIGURE 6: 1939 AERIAL



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

 **Alt & Witzig Consulting Services**
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

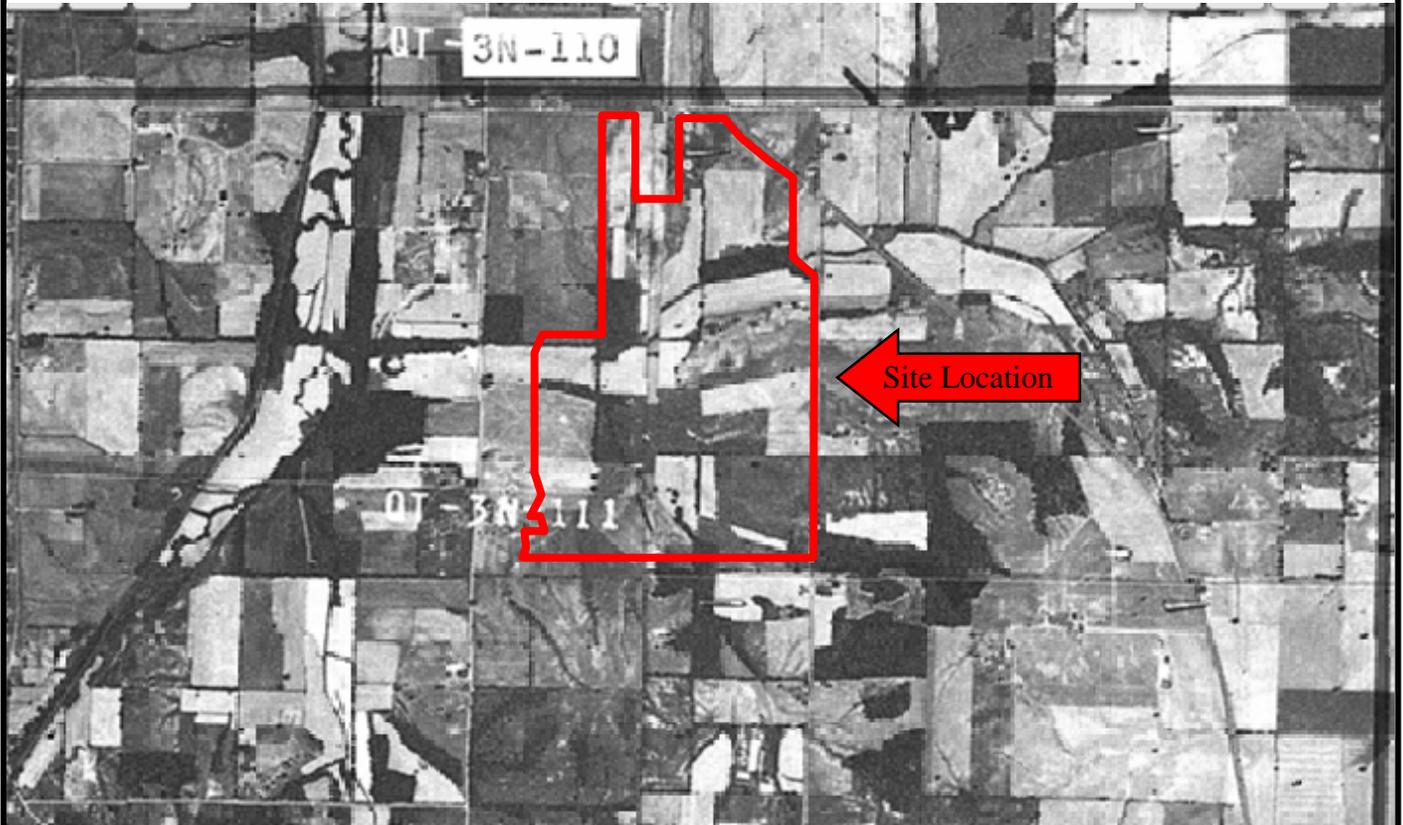
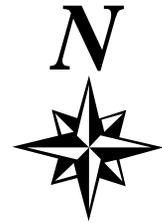
FIGURE 7: 1949 AERIAL



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

 **Alt & Witzig Consulting Services**
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

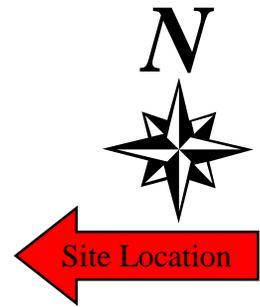
FIGURE 8: 1954 AERIAL



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

 **Alt & Witzig Consulting Services**
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

FIGURE 9: 1966 AERIAL



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

 **Alt & Witzig Consulting Services**
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

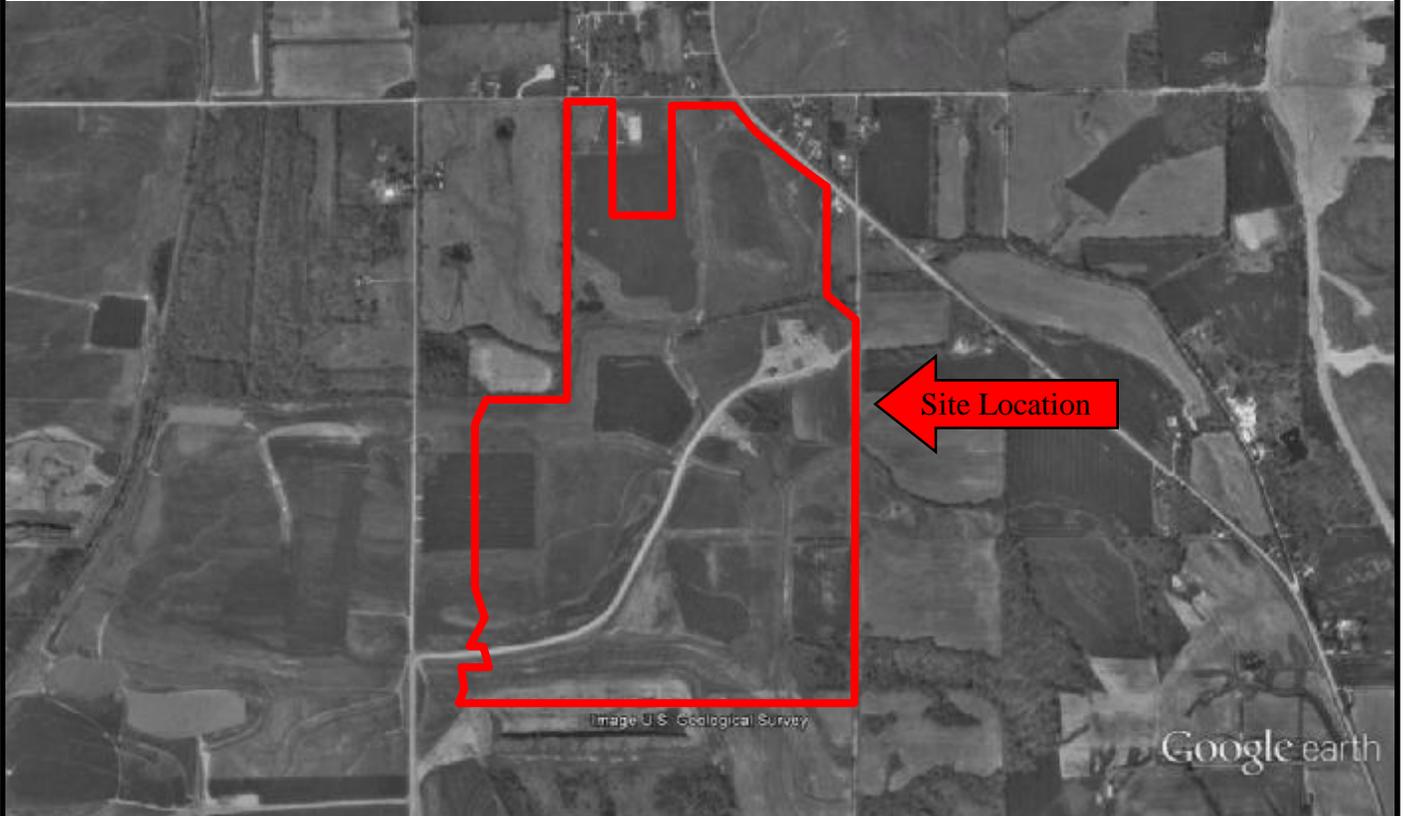
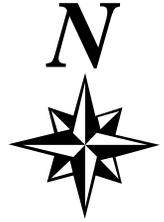
FIGURE 10: 1978 AERIAL



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

AW Alt & Witzig Consulting Services
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

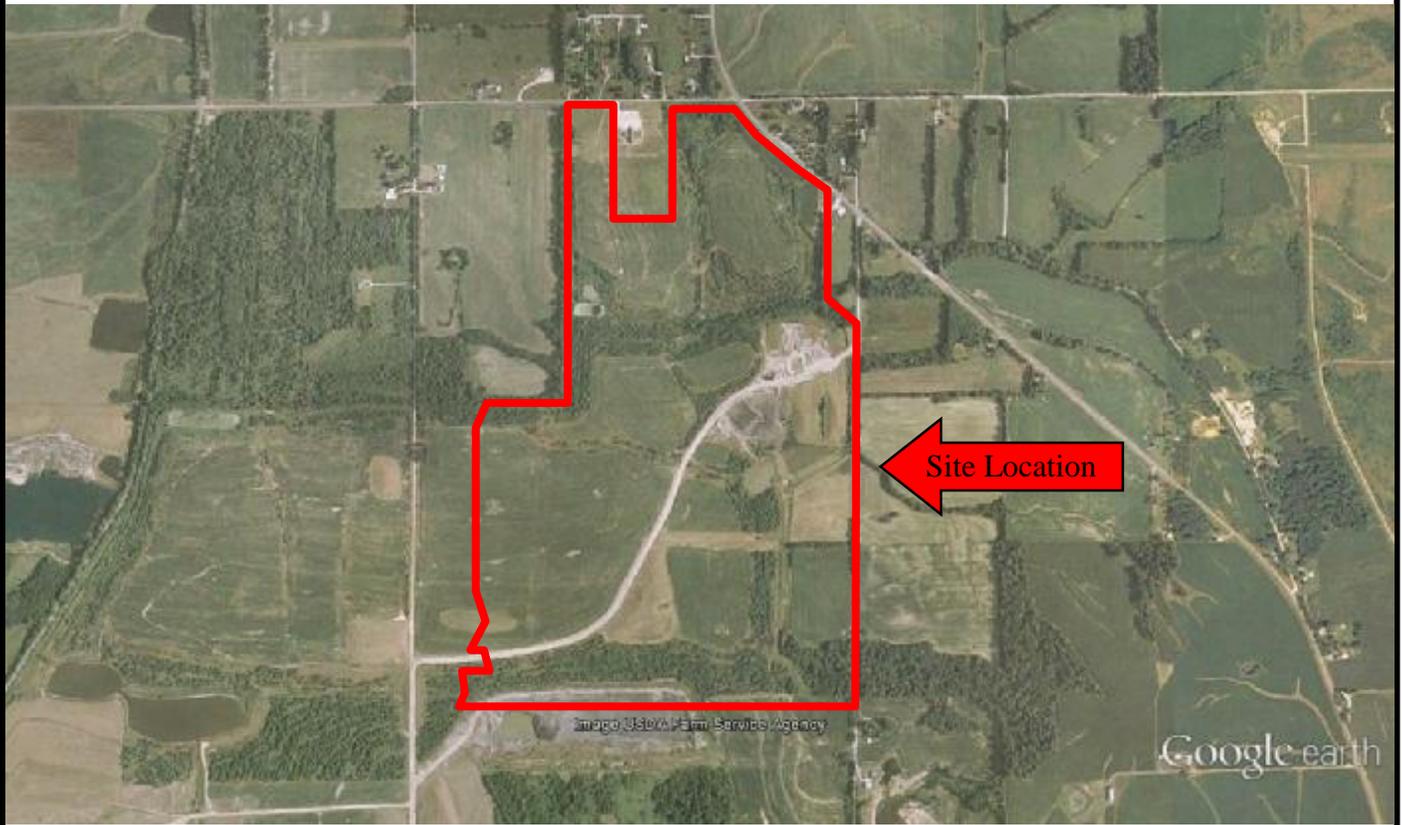
FIGURE 11: 1998 AERIAL



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

 **Alt & Witzig Consulting Services**
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

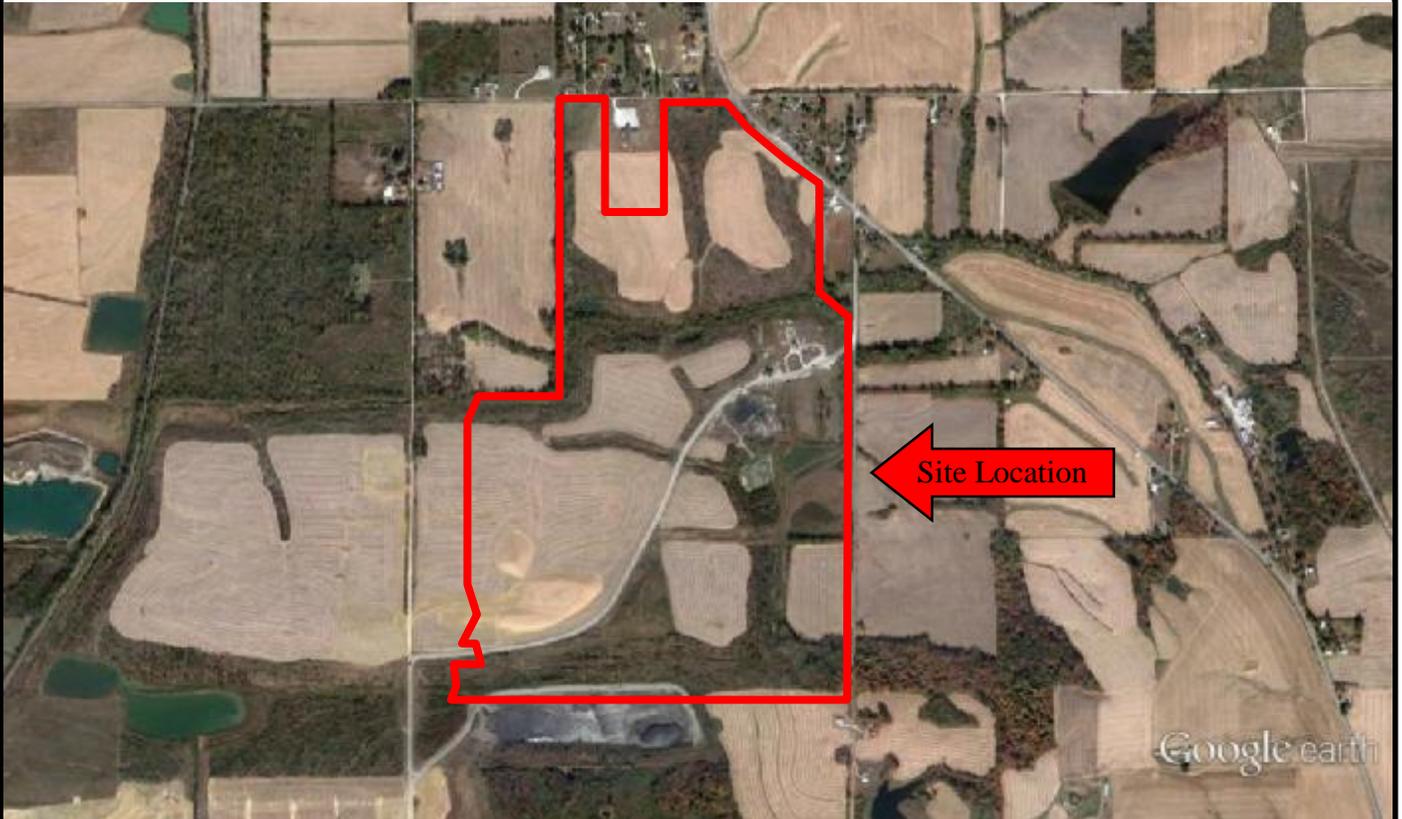
FIGURE 12: 2005 AERIAL



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

 **Alt & Witzig Consulting Services**
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

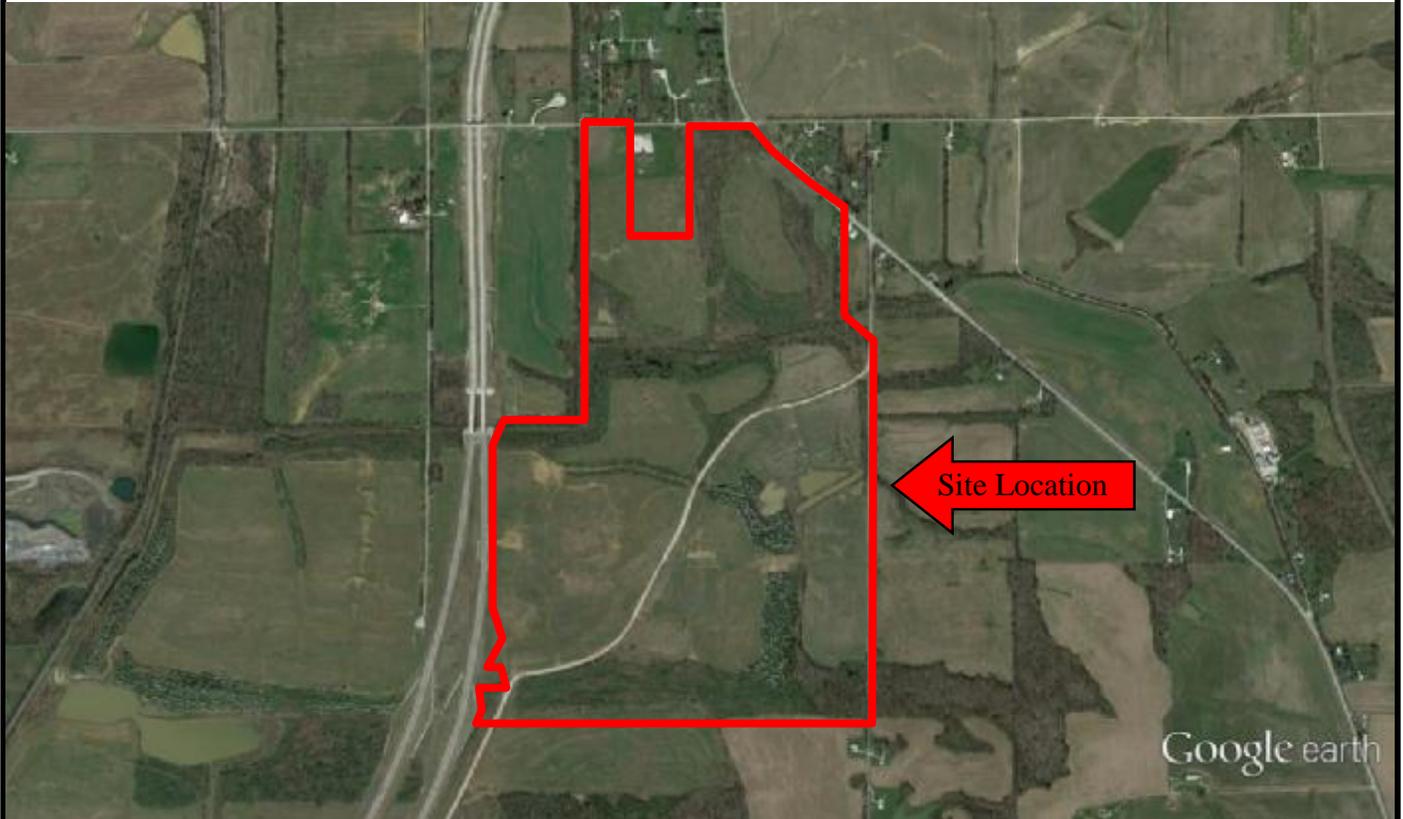
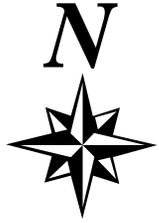
FIGURE 13: 2010 AERIAL



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

 **Alt & Witzig Consulting Services**
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

FIGURE 14: 2016 AERIAL



PROJECT: 340-Acre Tract
LOCATION: Petersburg, Indiana
CLIENT: Pike County Economic Development Corporation
A&W File No.: 16IN0310

 **Alt & Witzig Consulting Services**
2315 A. Glenview Dr. · Evansville, IN 47720
TEL (812)422-4446 · FAX (812) 422-8377
www.altwitzig.com

APPENDIX B

Wetland Determination Data Forms – Midwest Region

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-1
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Ravine Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27042 N Long: -87.16271 W Datum: _____
 Soil Map Unit Name: Fairpoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:															
1. <i>Robinia pseudoacacia</i>	50	Y	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57%</u> (A/B)															
2. <i>Salix nigra</i>	25	Y	OBL																
3. _____																			
4. _____																			
5. _____																			
<u>75</u> = Total Cover				Prevalence Index worksheet:															
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																			
1. <i>Lonicera morrowii</i>	10	Y	FACU		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>25</u></td> <td>x 1 = <u>25</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>370</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>25</u>	x 1 = <u>25</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>370</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>25</u>	x 1 = <u>25</u>																		
FACW species <u>20</u>	x 2 = <u>40</u>																		
FAC species <u>15</u>	x 3 = <u>45</u>																		
FACU species <u>65</u>	x 4 = <u>260</u>																		
UPL species _____	x 5 = <u>0</u>																		
Column Totals: <u>125</u> (A)	<u>370</u> (B)																		
2. _____																			
3. _____																			
4. _____																			
5. _____																			
<u>10</u> = Total Cover				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.															
Herb Stratum (Plot size: <u>5'</u>)																			
1. <i>Phragmites australis</i>	10	Y	FACW																
2. <i>Carex grayi</i>	10	Y	FACW																
3. _____																			
4. _____																			
5. _____																			
6. _____																			
7. _____																			
8. _____																			
9. _____																			
10. _____																			
<u>20</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____															
Woody Vine Stratum (Plot size: <u>30'</u>)																			
1. <i>Lonicera hirsuta</i>	15	Y	FAC																
2. <i>Parthenocissus quinquefolia</i>	5	Y	FACU																
<u>20</u> = Total Cover																			

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

SOIL

Sampling Point: S-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	10YR 4/2	100					Si Cl	
4 - 14	7.5YR 5/3	95	7.5YR 5/6	5	C	M	Si Cl	
14 - 20	2.5YR 6/3	90	5YR 5/8	10	C	M	Si Cl	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:					
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Iron-Manganese Masses (F12)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input checked="" type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)					
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)					
<input type="checkbox"/> 2 cm Muck (A10)			<input checked="" type="checkbox"/> Depleted Matrix (F3)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)						³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								
The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site investigation indicated that the majority of the soils located throughout the Site were dumped/redistributed from other areas as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the soils on the Site are considered problematic.								

HYDROLOGY

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

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-2
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27032 N Long: -87.16153 W Datum: _____
 Soil Map Unit Name: Fairpoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>None</u>				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____				
5. _____				
_____ = Total Cover				
Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)		Total % Cover of: _____ Multiply by: _____		
1. <u>None</u>		OBL species _____	x 1 = <u>0</u>	
2. _____		FACW species _____	x 2 = <u>0</u>	
3. _____		FAC species _____	x 3 = <u>0</u>	
4. _____		FACU species <u>75</u>	x 4 = <u>300</u>	
5. _____		UPL species _____	x 5 = <u>0</u>	
_____ = Total Cover		Column Totals: <u>75</u> (A)	<u>300</u> (B)	
				Prevalence Index = B/A = <u>4.00</u>
Hydrophytic Vegetation Indicators:				
<input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Andropogon Virginicus</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. <u>None</u>				
2. _____				
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-3
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Ravine Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27043 N Long: -87.16075 W Datum: _____
 Soil Map Unit Name: Faripoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. <i>Populus deltoides</i>	20	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)																
2. <i>Salix nigra</i>	20	Y	OBL																	
3. <i>Robinia pseudoacacia</i>	10	Y	FACU																	
4. _____				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>75</u></td> <td>x 2 = <u>150</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>165</u> (A)</td> <td><u>400</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.42</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>75</u>	x 2 = <u>150</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>165</u> (A)	<u>400</u> (B)	Prevalence Index = B/A = <u>2.42</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>20</u>	x 1 = <u>20</u>																			
FACW species <u>75</u>	x 2 = <u>150</u>																			
FAC species <u>50</u>	x 3 = <u>150</u>																			
FACU species <u>20</u>	x 4 = <u>80</u>																			
UPL species _____	x 5 = <u>0</u>																			
Column Totals: <u>165</u> (A)	<u>400</u> (B)																			
Prevalence Index = B/A = <u>2.42</u>																				
5. _____																				
<u>50</u> = Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																				
1. <i>Populus deltoides</i>	20	Y	FAC																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
<u>20</u> = Total Cover																				
Herb Stratum (Plot size: <u>5'</u>)																				
1. <i>Solidago gigantea</i>	50	Y	FACW																	
2. <i>Phalaris arundinacea</i>	25	Y	FACW																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
<u>75</u> = Total Cover																				
Woody Vine Stratum (Plot size: <u>30'</u>)																				
1. <i>Toxicodendron radicans</i>	10	Y	FAC																	
2. <i>Parthenocissus quinquefolia</i>	10	Y	FACU																	
<u>20</u> = Total Cover																				

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-4
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Wooded Area Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27073 N Long: -87.15518 W Datum: _____
 Soil Map Unit Name: Hosmer silt loam, severely eroded NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. <u><i>Ulmus americana</i></u>	20	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A)																
2. <u><i>Fraxinus pennsylvanica</i></u>	20	Y	FACW																	
3. <u><i>Acer rubrum</i></u>	20	Y	FAC																	
4. _____				Total Number of Dominant Species Across All Strata: <u>10</u> (B)																
5. _____																				
<u>60</u> = Total Cover				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>90%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>95</u></td> <td>x 2 = <u>190</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>185</u> (A)</td> <td><u>470</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.54</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = <u>0</u>	FACW species <u>95</u>	x 2 = <u>190</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>185</u> (A)	<u>470</u> (B)	Prevalence Index = B/A = <u>2.54</u>	
Total % Cover of:	Multiply by:																			
OBL species _____	x 1 = <u>0</u>																			
FACW species <u>95</u>	x 2 = <u>190</u>																			
FAC species <u>80</u>	x 3 = <u>240</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species _____	x 5 = <u>0</u>																			
Column Totals: <u>185</u> (A)	<u>470</u> (B)																			
Prevalence Index = B/A = <u>2.54</u>																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Acer rubrum</i></u>	10	Y	FAC																	
2. <u><i>Fraxinus pennsylvanica</i></u>	10	Y	FACW																	
3. _____																				
4. _____																				
5. _____																				
<u>20</u> = Total Cover																				
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Persicaria virginiana</i></u>	30	Y	FAC																	
2. <u><i>Laportea canadensis</i></u>	25	Y	FACW																	
3. <u><i>Solidago gigantea</i></u>	20	Y	FACW																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
<u>75</u> = Total Cover																				
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Toxicodendron radicans</i></u>	20	Y	FAC																	
2. <u><i>Parthenocissus quinquefolia</i></u>	10	Y	FACU																	
<u>30</u> = Total Cover																				

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-5
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27097 N Long: -87.15536 W Datum: _____
 Soil Map Unit Name: Hosmer silt loam NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				Prevalence Index worksheet:
1. <u>None</u>	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = <u>0</u>
3. _____	_____	_____	_____	FACW species _____ x 2 = <u>0</u>
4. _____	_____	_____	_____	FAC species _____ x 3 = <u>0</u>
5. _____	_____	_____	_____	FACU species <u>75</u> x 4 = <u>300</u>
_____ = Total Cover				UPL species _____ x 5 = <u>0</u>
				Column Totals: <u>75</u> (A) <u>300</u> (B)
				Prevalence Index = B/A = <u>4.00</u>
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators:
1. <u>Andropogon Virginicus</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Dominance Test is >50%
2. <u>Trifolium pratense</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>75</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present?
1. <u>None</u>	_____	_____	_____	Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-6
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Wooded Area Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27087 N Long: -87.15564 W Datum: _____
 Soil Map Unit Name: Hosmer silt loam, severely eroded NWI or WMI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation , Soil , or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <i>Salix nigra</i>	10	Y	OBL	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. <i>Fraxinus pennsylvanica</i>	10	Y	FACW	
3. _____				
4. _____				
5. _____				
<u>20</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>130</u> x 2 = <u>260</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>160</u> (A) <u>330</u> (B) Prevalence Index = B/A = <u>2.06</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <i>Acer rubrum</i>	10	Y	FAC	
2. <i>Populus deltoides</i>	10	Y	FAC	
3. _____				
<u>20</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				
1. <i>Lysimachia nummularia</i>	80	Y	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Phragmites australis</i>	20	N	FACW	
3. <i>Bidens frondosa</i>	10	N	FACW	
4. <i>Carex grayi</i>	10	N	FACW	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>120</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. <i>None</i>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____				
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

SOIL

Sampling Point: S-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR 2/1	100					Muck	
3 - 20	10YR 3/2	60	10YR 5/8	40	C	M	Si Cl	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

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

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

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

Remarks:

 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site investigation indicated that the majority of the soils located throughout the Site were dumped/redistributed from other areas as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the soils on the Site are considered problematic.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____ _____ _____		
Remarks: _____ _____ _____		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-7
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Wooded Area Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27228 N Long: -87.16011 W Datum: _____
 Soil Map Unit Name: Fairpoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. <i>Acer rubrum</i>	30	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85%</u> (A/B)																
2. <i>Fraxinus pennsylvanica</i>	10	Y	FACW																	
3. <i>Pinus strobus</i>	5	N	FACU																	
4. <i>Rhamnus cathartica</i>	5	N	FAC																	
5. _____				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>385</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.48</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>80</u>	x 2 = <u>160</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>385</u> (B)	Prevalence Index = B/A = <u>2.48</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>80</u>	x 2 = <u>160</u>																			
FAC species <u>45</u>	x 3 = <u>135</u>																			
FACU species <u>20</u>	x 4 = <u>80</u>																			
UPL species _____	x 5 = <u>0</u>																			
Column Totals: <u>155</u> (A)	<u>385</u> (B)																			
Prevalence Index = B/A = <u>2.48</u>																				
<u>50</u> = Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <i>Acer rubrum</i>	10	Y	FAC																	
2. <i>Salix nigra</i>	10	Y	OBL																	
3. _____																				
4. _____																				
5. _____																				
<u>20</u> = Total Cover																				
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <i>Phragmites australis</i>	30	Y	FACW																	
2. <i>Solidago gigantea</i>	20	Y	FACW																	
3. <i>Bidens frondosa</i>	10	N	FACW																	
4. <i>Carex grayi</i>	10	N	FACW																	
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
<u>70</u> = Total Cover																				
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <i>Parthenocissus quinquefolia</i>	15	Y	FACU																	
2. _____																				
<u>15</u> = Total Cover																				

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

SOIL

Sampling Point: S-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR 3/2	100					Si Cl	
3 - 20	10YR 5/6	80	7.5YR 5/8	40	C	M	Si Cl	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

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

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

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

Remarks:

 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site investigation indicated that the majority of the soils located throughout the Site were dumped/redistributed from other areas as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the soils on the Site are considered problematic.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 6" Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 3" (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-8
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27262 N Long: -87.16029 W Datum: _____
 Soil Map Unit Name: Faripoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u>None</u>	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species <u>85</u> x 4 = <u>340</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>85</u> (A) <u>340</u> (B) Prevalence Index = B/A = <u>4.00</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Andropogon Virginicus</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Trifolium pratense</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. <u>None</u>	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-9
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Wooded Drainage Feature Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27257 N Long: -87.16162 W Datum: _____
 Soil Map Unit Name: Fairpoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. <i>Robinia pseudoacacia</i>	25	Y	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)																
2. <i>Acer rubrum</i>	15	Y	FAC																	
3. <i>Salix nigra</i>	15	Y	OBL	Total Number of Dominant Species Across All Strata: <u>9</u> (B)																
4. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)																
5. _____																				
<u>55</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>25</u></td> <td>x 1 = <u>25</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>165</u> (A)</td> <td><u>415</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.52</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>25</u>	x 1 = <u>25</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>165</u> (A)	<u>415</u> (B)	Prevalence Index = B/A = <u>2.52</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>25</u>	x 1 = <u>25</u>																			
FACW species <u>70</u>	x 2 = <u>140</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>40</u>	x 4 = <u>160</u>																			
UPL species _____	x 5 = <u>0</u>																			
Column Totals: <u>165</u> (A)	<u>415</u> (B)																			
Prevalence Index = B/A = <u>2.52</u>																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <i>Salix nigra</i>	10	Y	OBL																	
2. <i>Lonicera morrowii</i>	10	Y	FACU																	
3. _____																				
4. _____																				
5. _____																				
<u>20</u> = Total Cover																				
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <i>Phalaris arundinacea</i>	50	Y	FACW																	
2. <i>Solidago gigantea</i>	20	Y	FACW																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
<u>70</u> = Total Cover																				
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <i>Toxicodendron radicans</i>	15	Y	FAC																	
2. <i>Parthenocissus quinquefolia</i>	5	Y	FACU																	
<u>20</u> = Total Cover																				

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

SOIL

Sampling Point: S-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR 4/2	100					Si Cl	
3 - 12	7.5YR 5/3	90	7.5YR 5/6	10	C	M	Si Cl	
12 - 20	2.5YR 6/3	90	5YR 5/8	10	C	M	Si Cl	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

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

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

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

Remarks:

The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site investigation indicated that the majority of the soils located throughout the Site were dumped/redistributed from other areas as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the soils on the Site are considered problematic.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 6"	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-10
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27230 N Long: -87.16187 W Datum: _____
 Soil Map Unit Name: Faripoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>None</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>300</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.00</u>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = <u>0</u>	FACW species _____	x 2 = <u>0</u>	FAC species _____	x 3 = <u>0</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>300</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = <u>0</u>																	
FACW species _____	x 2 = <u>0</u>																	
FAC species _____	x 3 = <u>0</u>																	
FACU species <u>75</u>	x 4 = <u>300</u>																	
UPL species _____	x 5 = <u>0</u>																	
Column Totals: <u>75</u> (A)	<u>300</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>None</u>																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Andropogon Virginicus</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
<u>75</u> = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>														
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>None</u>																		
2. _____																		
_____ = Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-11
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Wooded Area Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27377 N Long: -87.15518 W Datum: _____
 Soil Map Unit Name: Fairpoint silt loam, reclaimed NWI or WMI classification: Forested/Shrub

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status														
1. <i>Populus deltoides</i>	25	Y	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)													
2. <i>Acer rubrum</i>	25	Y	FAC														
3. <i>Fraxinus pennsylvanica</i>	15	Y	FACW														
4. _____																	
5. _____																	
<u>65</u> = Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																	
1. <i>Populus deltoides</i>	10	Y	FAC														
2. <i>Acer rubrum</i>	10	Y	FAC														
3. <i>Fraxinus pennsylvanica</i>	10	Y	FACW														
4. _____																	
5. _____																	
<u>30</u> = Total Cover																	
Herb Stratum (Plot size: <u>5'</u>)																	
1. <i>Phalaris arundinacea</i>	30	Y	FACW														
2. <i>Solidago gigantea</i>	20	Y	FACW														
3. <i>Laportea canadensis</i>	5	N	FACW														
4. _____																	
5. _____																	
6. _____																	
7. _____																	
8. _____																	
9. _____																	
10. _____																	
<u>55</u> = Total Cover																	
Woody Vine Stratum (Plot size: <u>30'</u>)																	
1. <i>Toxicodendron radicans</i>	10	Y	FAC														
2. <i>Parthenocissus quinquefolia</i>	10	Y	FACU														
<u>20</u> = Total Cover																	
Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>170</u> (A)</td> <td><u>440</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.59</u>				Total % Cover of:	Multiply by:	OBL species _____	x 1 = <u>0</u>	FACW species <u>80</u>	x 2 = <u>160</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>170</u> (A)	<u>440</u> (B)
Total % Cover of:	Multiply by:																
OBL species _____	x 1 = <u>0</u>																
FACW species <u>80</u>	x 2 = <u>160</u>																
FAC species <u>80</u>	x 3 = <u>240</u>																
FACU species <u>10</u>	x 4 = <u>40</u>																
UPL species _____	x 5 = <u>0</u>																
Column Totals: <u>170</u> (A)	<u>440</u> (B)																
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)																	
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																	
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____																	

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-12
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27341 N Long: -87.15528 W Datum: _____
 Soil Map Unit Name: Faripoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>None</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>65</u> (A)</td> <td><u>260</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.00</u>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = <u>0</u>	FACW species _____	x 2 = <u>0</u>	FAC species _____	x 3 = <u>0</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>65</u> (A)	<u>260</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = <u>0</u>																	
FACW species _____	x 2 = <u>0</u>																	
FAC species _____	x 3 = <u>0</u>																	
FACU species <u>65</u>	x 4 = <u>260</u>																	
UPL species _____	x 5 = <u>0</u>																	
Column Totals: <u>65</u> (A)	<u>260</u> (B)																	
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)														
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover																		
_____ = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>														

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/17/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-13
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Wooded Area Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27377 N Long: -87.15518 W Datum: _____
 Soil Map Unit Name: Fairpoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <i>Fraxinus pennsylvanica</i>	25	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>88%</u> (A/B)	
2. <i>Acer rubrum</i>	25	Y	FAC		
3. _____					
4. _____					
5. _____					
<u>50</u> = Total Cover				Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)					
1. <i>Fraxinus pennsylvanica</i>	10	Y	FACW		Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = <u>0</u> FACW species <u>85</u> x 2 = <u>170</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>145</u> (A) <u>360</u> (B)
2. <i>Acer rubrum</i>	10	Y	FAC		
3. _____					
4. _____					
5. _____					
<u>20</u> = Total Cover				Prevalence Index = B/A = <u>2.48</u>	
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)	
1. <i>Phalaris arundinacea</i>	30	Y	FACW		
2. <i>Solidago gigantea</i>	20	Y	FACW		
3. <i>Panicum virginiana</i>	15	Y	FAC		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
<u>65</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
Woody Vine Stratum (Plot size: <u>30'</u>)					
1. <i>Parthenocissus quinquefolia</i>	10	Y	FACU		
2. _____					
<u>10</u> = Total Cover					

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

SOIL

Sampling Point: S-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR 3/2	100					Si Cl	
3 - 20	7.5YR 5/3	95	7.5YR 5/8	5	C	M	Si Cl	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

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

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

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

Remarks:

 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site investigation indicated that the majority of the soils located throughout the Site were dumped/redistributed from other areas as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the soils on the Site are considered problematic.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 4"		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/23/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-14
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27474 N Long: -87.15591 W Datum: _____
 Soil Map Unit Name: Faripoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>None</u>				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____				
5. _____				
_____ = Total Cover				
Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)		Total % Cover of: _____ Multiply by: _____		
1. <u>None</u>		OBL species	_____ x 1 =	<u>0</u>
2. _____		FACW species	_____ x 2 =	<u>0</u>
3. _____		FAC species	_____ x 3 =	<u>0</u>
4. _____		FACU species	<u>75</u> x 4 =	<u>300</u>
5. _____		UPL species	_____ x 5 =	<u>0</u>
_____ = Total Cover				Column Totals: <u>75</u> (A) <u>300</u> (B)
_____ = Total Cover				Prevalence Index = B/A = <u>4.00</u>
Hydrophytic Vegetation Indicators:				
<input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Andropogon Virginicus</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. <u>None</u>				
2. _____				
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/23/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-15
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Wooded Area Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27523 N Long: -87.16071 W Datum: _____
 Soil Map Unit Name: Alford silt loam, eroded NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <i>Betula nigra</i>	25	Y	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. <i>Acer rubrum</i>	25	Y	FAC															
3. _____																		
4. _____																		
5. _____																		
<u>50</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>45</u></td> <td>x 2 = <u>90</u></td> </tr> <tr> <td>FAC species <u>75</u></td> <td>x 3 = <u>225</u></td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>315</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.63</u>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = <u>0</u>	FACW species <u>45</u>	x 2 = <u>90</u>	FAC species <u>75</u>	x 3 = <u>225</u>	FACU species _____	x 4 = <u>0</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>315</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = <u>0</u>																	
FACW species <u>45</u>	x 2 = <u>90</u>																	
FAC species <u>75</u>	x 3 = <u>225</u>																	
FACU species _____	x 4 = <u>0</u>																	
UPL species _____	x 5 = <u>0</u>																	
Column Totals: <u>120</u> (A)	<u>315</u> (B)																	
<u>10</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <i>Acer rubrum</i>	10	Y	FAC															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
<u>10</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <i>Solidago gigantea</i>	20	Y	FACW															
2. <i>Geum canadense</i>	20	Y	FAC															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
<u>40</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. <i>Toxicodendron radicans</i>	20	Y	FAC															
2. _____																		
<u>20</u> = Total Cover																		

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/23/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-16
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27493 N Long: -87.16094 W Datum: _____
 Soil Map Unit Name: Faripoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u>None</u>	_____	_____	_____	Prevalence Index worksheet:
2. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
3. _____	_____	_____	_____	OBL species _____ x 1 = <u>0</u>
4. _____	_____	_____	_____	FACW species _____ x 2 = <u>0</u>
5. _____	_____	_____	_____	FAC species _____ x 3 = <u>0</u>
_____ = Total Cover				FACU species <u>50</u> x 4 = <u>200</u>
UPL species _____ x 5 = <u>0</u>				
				Column Totals: <u>50</u> (A) <u>200</u> (B)
				Prevalence Index = B/A = <u>4.00</u>
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Andropogon Virginicus</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:
2. _____	_____	_____	_____	___ Dominance Test is >50%
3. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 ¹
4. _____	_____	_____	_____	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>50</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. <u>None</u>	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/23/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-17
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Wooded Area Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27362 N Long: -87.16062 W Datum: _____
 Soil Map Unit Name: Fairpoint silt loam, reclaimed NWI or WMI classification: Forested/Shrub

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <i>Populus deltoides</i>	25	Y	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. <i>Acer rubrum</i>	25	Y	FAC															
3. <i>Fraxinus pennsylvanica</i>	10	N	FACW															
4. _____				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>340</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.62</u>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = <u>0</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species _____	x 4 = <u>0</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>340</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = <u>0</u>																	
FACW species <u>50</u>	x 2 = <u>100</u>																	
FAC species <u>80</u>	x 3 = <u>240</u>																	
FACU species _____	x 4 = <u>0</u>																	
UPL species _____	x 5 = <u>0</u>																	
Column Totals: <u>130</u> (A)	<u>340</u> (B)																	
5. _____																		
<u>60</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <i>Acer rubrum</i>	10	Y	FAC	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <i>Populus deltoides</i>	10	Y	FAC															
3. _____																		
4. _____																		
5. _____																		
<u>20</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <i>Solidago gigantea</i>	20	Y	FACW															
2. <i>Elymus virginicus</i>	20	Y	FACW															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
<u>40</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <i>Toxicodendron radicans</i>	10	Y	FAC	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
2. _____																		
<u>10</u> = Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

SOIL

Sampling Point: S-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	10YR 3/2	100					Si Cl	
4 - 20	7.5YR 5/3	95	7.5YR 5/8	5	C	M	Si Cl	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input checked="" type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site investigation indicated that the majority of the soils located throughout the Site were dumped/redistributed from other areas as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the soils on the Site are considered problematic.								

HYDROLOGY

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

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/23/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-18
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27384 N Long: -87.16077 W Datum: _____
 Soil Map Unit Name: Faripoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species <u>80</u> x 4 = <u>320</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>80</u> (A) <u>320</u> (B) Prevalence Index = B/A = <u>4.00</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Andropogon Virginicus</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Trifolium pratense</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None</u>				
2. _____				
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/23/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-19
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Wooded Area Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27415 N Long: -87.16186 W Datum: _____
 Soil Map Unit Name: Fairpoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:															
1. <i>Populus deltoides</i>	15	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>88%</u> (A/B)															
2. <i>Acer rubrum</i>	15	Y	FAC																
3. <i>Fraxinus pennsylvanica</i>	10	Y	FACW																
4. _____																			
5. _____																			
<u>40</u> = Total Cover				Prevalence Index worksheet:															
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																			
1. <i>Acer rubrum</i>	10	Y	FAC		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>250</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = <u>0</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>90</u> (A)	<u>250</u> (B)
Total % Cover of:	Multiply by:																		
OBL species _____	x 1 = <u>0</u>																		
FACW species <u>30</u>	x 2 = <u>60</u>																		
FAC species <u>50</u>	x 3 = <u>150</u>																		
FACU species <u>10</u>	x 4 = <u>40</u>																		
UPL species _____	x 5 = <u>0</u>																		
Column Totals: <u>90</u> (A)	<u>250</u> (B)																		
2. <i>Populus deltoides</i>	10	Y	FAC																
3. _____																			
4. _____																			
5. _____																			
<u>20</u> = Total Cover				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.															
Herb Stratum (Plot size: <u>5'</u>)																			
1. <i>Solidago gigantea</i>	10	Y	FACW																
2. <i>Carex grayi</i>	10	Y	FACW																
3. _____																			
4. _____																			
5. _____																			
6. _____																			
7. _____																			
8. _____																			
9. _____																			
10. _____																			
<u>20</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____															
Woody Vine Stratum (Plot size: <u>30'</u>)																			
1. <i>Parthenocissus quinquefolia</i>	10	Y	FACU																
2. _____																			
<u>10</u> = Total Cover																			

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/23/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-20
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27427 N Long: -87.16158 W Datum: _____
 Soil Map Unit Name: Faripoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>None</u>				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____				
5. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				Prevalence Index worksheet:
1. <u>None</u>				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = <u>0</u>
3. _____				FACW species _____ x 2 = <u>0</u>
4. _____				FAC species _____ x 3 = <u>0</u>
5. _____				FACU species <u>75</u> x 4 = <u>300</u>
_____ = Total Cover				UPL species _____ x 5 = <u>0</u>
				Column Totals: <u>75</u> (A) <u>300</u> (B)
				Prevalence Index = B/A = <u>4.00</u>
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators:
1. <u>Andropogon Virginicus</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Dominance Test is >50%
2. _____				<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. _____				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>75</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present?
1. <u>None</u>				Yes _____ No <input checked="" type="checkbox"/>
2. _____				
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/23/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-21
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Tree Line / Drainage Feature Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27515 N Long: -87.16208 W Datum: _____
 Soil Map Unit Name: Fairpoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <i>Populus deltoides</i>	10	Y	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. <i>Acer rubrum</i>	10	Y	FAC															
3. _____																		
4. _____																		
5. _____																		
<u>20</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>255</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.43</u>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species _____	x 4 = <u>0</u>	UPL species _____	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>255</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = <u>0</u>																	
FACW species <u>60</u>	x 2 = <u>120</u>																	
FAC species <u>45</u>	x 3 = <u>135</u>																	
FACU species _____	x 4 = <u>0</u>																	
UPL species _____	x 5 = <u>0</u>																	
Column Totals: <u>105</u> (A)	<u>255</u> (B)																	
<u>20</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <i>Acer rubrum</i>	10	Y	FAC															
2. <i>Populus deltoides</i>	10	Y	FAC															
3. _____																		
4. _____																		
5. _____																		
<u>20</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <i>Phragmites australis</i>	50	Y	FACW															
2. <i>Packeria glabella</i>	10	N	FACW															
3. <i>Andropogon virginicus</i>	5	N	FACU															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
<u>65</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. <i>None</i>																		
2. _____																		
_____ = Total Cover																		

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 16IN0310 / 340-Acre Tract City/County: Petersburg / Pike Sampling Date: 5/23/2016
 Applicant/Owner: Pike County Economic Development Corporation State: IN Sampling Point: S-22
 Investigator(s): Alt & Witzig Consulting Services Section, Township, Range: Sec. 2, T 1 S, R 8 W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 38.27528 N Long: -87.16178 W Datum: _____
 Soil Map Unit Name: Faripoint silt loam, reclaimed NWI or WMI classification: None

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

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

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

VEGETATION – Use scientific names of plants.

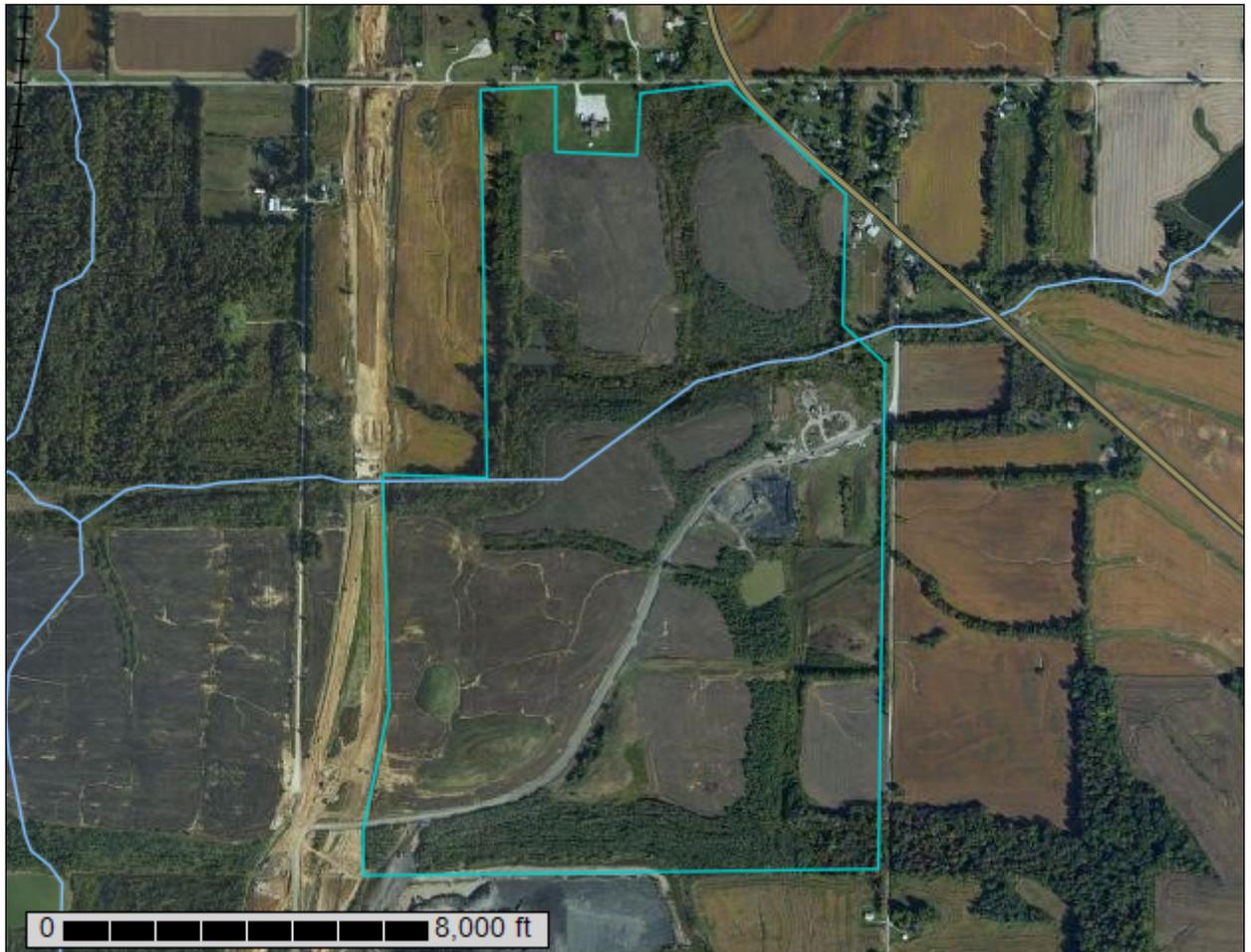
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				Prevalence Index worksheet:
1. <u>None</u>	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = <u>0</u>
3. _____	_____	_____	_____	FACW species <u>10</u> x 2 = <u>20</u>
4. _____	_____	_____	_____	FAC species _____ x 3 = <u>0</u>
5. _____	_____	_____	_____	FACU species <u>60</u> x 4 = <u>240</u>
_____ = Total Cover				UPL species _____ x 5 = <u>0</u>
				Column Totals: <u>70</u> (A) <u>260</u> (B)
				Prevalence Index = B/A = <u>3.71</u>
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators:
1. <u>Andropogon Virginicus</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	___ Dominance Test is >50%
2. <u>Packera glabella</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	___ Prevalence Index is ≤3.0 ¹
3. _____	_____	_____	_____	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present?
1. <u>None</u>	_____	_____	_____	Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)
 The Site area consists of an approximately 340-acre tract of reclaimed mine land. Evidence collected during the course of the Site reconnaissance indicated that the majority of the herbaceous and tree stratum vegetation located on the Site was intentionally planted as part of the strip mine reclamation process. Therefore, it is Alt & Witzig's opinion that the majority of the vegetation on the Site is considered problematic.

APPENDIX C

Soil Report

Custom Soil Resource Report for **Pike County, Indiana**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	7
Soil Map.....	8
Legend.....	9
Map Unit Legend.....	10
Map Unit Descriptions.....	10
Pike County, Indiana.....	13
AdB2—Alford silt loam, 2 to 6 percent slopes, eroded.....	13
AdC2—Alford silt loam, 6 to 12 percent slopes, eroded.....	14
Bg—Belknap silt loam, 0 to 2 percent slopes, frequently flooded.....	15
Bo—Bonnie silt loam, 0 to 2 percent slopes, frequently flooded.....	16
CIF—Chetwynd silt loam, 25 to 50 percent slopes.....	17
Du—Dumps, mine.....	18
FaB—Fairpoint silt loam, reclaimed, 1 to 15 percent slopes.....	19
FbG—Fairpoint-Bethesda complex, 25 to 70 percent slopes.....	20
HoB2—Hosmer silt loam, 2 to 6 percent slopes, eroded.....	21
HoC3—Hosmer silt loam, 6 to 12 percent slopes, severely eroded.....	22
HoD3—Hosmer silt loam, 12 to 18 percent slopes, severely eroded.....	23
W—Water.....	24
Wa—Wakeland silt loam, frequently flooded.....	24
WeE—Wellston silt loam, 15 to 30 percent slopes.....	25
ZaD3—Zanesville silt loam, 12 to 18 percent slopes, severely eroded.....	26
References	28

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

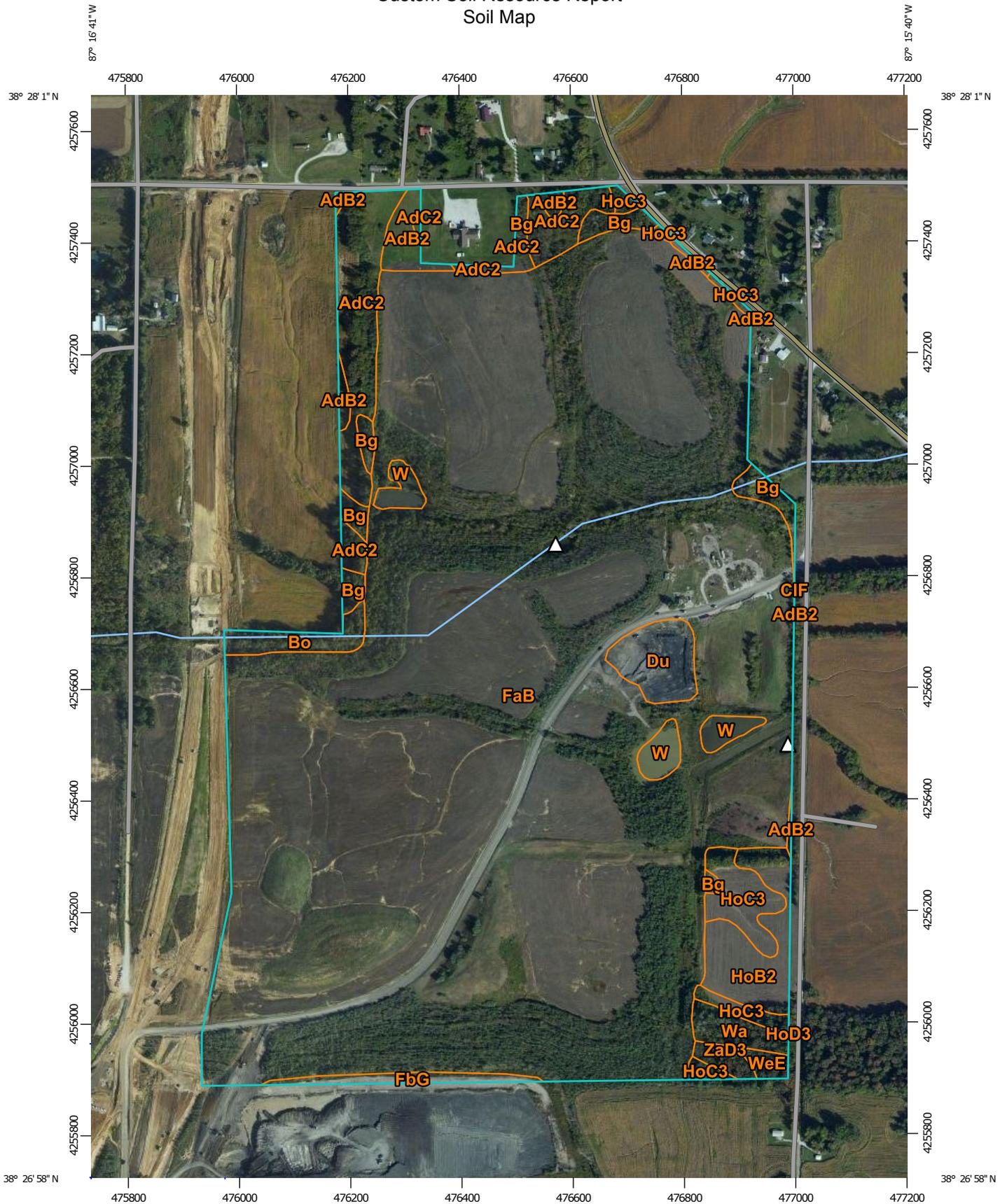
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

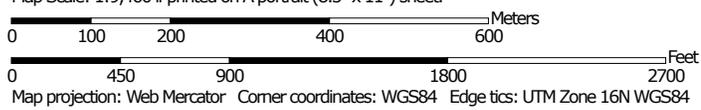
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:9,460 if printed on A portrait (8.5" x 11") sheet.



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pike County, Indiana
 Survey Area Data: Version 16, Sep 10, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 27, 2011—Oct 5, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Pike County, Indiana (IN125)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdB2	Alford silt loam, 2 to 6 percent slopes, eroded	3.5	1.0%
AdC2	Alford silt loam, 6 to 12 percent slopes, eroded	13.1	3.8%
Bg	Belknap silt loam, 0 to 2 percent slopes, frequently flooded	5.6	1.6%
Bo	Bonnie silt loam, 0 to 2 percent slopes, frequently flooded	2.7	0.8%
CIF	Chetwynd silt loam, 25 to 50 percent slopes	0.0	0.0%
Du	Dumps, mine	4.4	1.3%
FaB	Fairpoint silt loam, reclaimed, 1 to 15 percent slopes	291.2	84.8%
FbG	Fairpoint-Bethesda complex, 25 to 70 percent slopes	1.9	0.5%
HoB2	Hosmer silt loam, 2 to 6 percent slopes, eroded	6.8	2.0%
HoC3	Hosmer silt loam, 6 to 12 percent slopes, severely eroded	6.1	1.8%
HoD3	Hosmer silt loam, 12 to 18 percent slopes, severely eroded	0.0	0.0%
W	Water	3.8	1.1%
Wa	Wakeland silt loam, frequently flooded	2.4	0.7%
WeE	Wellston silt loam, 15 to 30 percent slopes	0.8	0.2%
ZaD3	Zanesville silt loam, 12 to 18 percent slopes, severely eroded	1.1	0.3%
Totals for Area of Interest		343.4	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability

Custom Soil Resource Report

of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and

Custom Soil Resource Report

relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Pike County, Indiana

AdB2—Alford silt loam, 2 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2tbsl
Elevation: 330 to 850 feet
Mean annual precipitation: 41 to 48 inches
Mean annual air temperature: 52 to 59 degrees F
Frost-free period: 170 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Alford, eroded, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alford, Eroded

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess over gritty loess

Typical profile

Ap - 0 to 6 inches: silt loam
Bt1 - 6 to 26 inches: silty clay loam
Bt2 - 26 to 73 inches: silt loam
2BC - 73 to 79 inches: silt loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

Minor Components

Hosmer, eroded

Percent of map unit: 5 percent
Landform: Ridges

Custom Soil Resource Report

Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear

AdC2—Alford silt loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 5fg2
Elevation: 340 to 700 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 170 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Alford and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alford

Setting

Landform: Loess hills
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 6 inches: silt loam
Bt1 - 6 to 22 inches: silty clay loam
Bt2 - 22 to 72 inches: silt loam
2BC - 72 to 80 inches: silt loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Custom Soil Resource Report

Other vegetative classification: Trees/Timber (Woody Vegetation)

Bg—Belknap silt loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2tbrv

Elevation: 330 to 490 feet

Mean annual precipitation: 35 to 46 inches

Mean annual air temperature: 54 to 57 degrees F

Frost-free period: 175 to 200 days

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Belknap, frequently flooded, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Belknap, Frequently Flooded

Setting

Landform: Flood plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Silty alluvium

Typical profile

Ap - 0 to 7 inches: silt loam

Bw - 7 to 59 inches: silt loam

Bg - 59 to 79 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 6 to 24 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Very high (about 12.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Minor Components

Piopolis, frequently flooded

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear

Bonnie, frequently flooded

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear

Bo—Bonnie silt loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2tbr
Elevation: 330 to 490 feet
Mean annual precipitation: 35 to 46 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 175 to 195 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Bonnie, frequently flooded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bonnie, Frequently Flooded

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 10 inches: silt loam
Cg1 - 10 to 27 inches: silt loam
Cg2 - 27 to 79 inches: silt loam

Custom Soil Resource Report

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: Frequent

Frequency of ponding: Frequent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Very high (about 12.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Minor Components

Belknap

Percent of map unit: 10 percent

Landform: Flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

CIF—Chetwynd silt loam, 25 to 50 percent slopes

Map Unit Setting

National map unit symbol: 5fgj

Elevation: 340 to 700 feet

Mean annual precipitation: 40 to 46 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 170 to 210 days

Farmland classification: Not prime farmland

Map Unit Composition

Chetwynd and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chetwynd

Setting

Landform: Outwash plains

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loess over loamy outwash

Custom Soil Resource Report

Typical profile

A - 0 to 7 inches: silt loam
Bt1 - 7 to 48 inches: sandy clay loam
Bt2 - 48 to 56 inches: sandy loam
2CB&2Bt - 56 to 80 inches: loamy sand

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Other vegetative classification: Trees/Timber (Woody Vegetation)

Du—Dumps, mine

Map Unit Setting

National map unit symbol: 5fgl
Elevation: 350 to 1,000 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 170 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Dumps: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dumps

Setting

Parent material: Coal extraction mine spoil

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Other vegetative classification: Trees/Timber (Woody Vegetation)

FaB—Fairpoint silt loam, reclaimed, 1 to 15 percent slopes

Map Unit Setting

National map unit symbol: 5fgn
Elevation: 340 to 1,000 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 170 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Fairpoint and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fairpoint

Setting

Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coal extraction mine spoil

Typical profile

Ap - 0 to 2 inches: silt loam
CA - 2 to 5 inches: silt loam
Cd - 5 to 27 inches: silt loam
2C - 27 to 80 inches: very parachannery silt loam

Properties and qualities

Slope: 1 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.01 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Other vegetative classification: Trees/Timber (Woody Vegetation)

FbG—Fairpoint-Bethesda complex, 25 to 70 percent slopes

Map Unit Setting

National map unit symbol: 5fgq
Elevation: 340 to 1,000 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 170 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Fairpoint and similar soils: 60 percent
Bethesda and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fairpoint

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coal extraction mine spoil

Typical profile

A - 0 to 3 inches: very parachannery silty clay loam
C - 3 to 60 inches: very parachannery loam

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Other vegetative classification: Trees/Timber (Woody Vegetation)

Description of Bethesda

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex

Custom Soil Resource Report

Across-slope shape: Linear
Parent material: Coal extraction mine spoil

Typical profile

A - 0 to 3 inches: parachannery silt loam
C - 3 to 60 inches: very parachannery loam

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Other vegetative classification: Trees/Timber (Woody Vegetation)

HoB2—Hosmer silt loam, 2 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 5fh0
Elevation: 340 to 1,000 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 170 to 210 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hosmer and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hosmer

Setting

Landform: Loess hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 8 inches: silt loam

Custom Soil Resource Report

Bt - 8 to 23 inches: silt loam
Btx - 23 to 50 inches: silt loam
2Btx - 50 to 80 inches: silt loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 36 inches to fragipan
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high
(0.01 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Other vegetative classification: Trees/Timber (Woody Vegetation)

HoC3—Hosmer silt loam, 6 to 12 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 5fh1
Elevation: 340 to 700 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 170 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Hosmer, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hosmer, Severely Eroded

Setting

Landform: Loess hills
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 5 inches: silt loam
Bt - 5 to 15 inches: silt loam
Btx - 15 to 39 inches: silt loam
2BC - 39 to 80 inches: silt loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: 10 to 26 inches to fragipan
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Other vegetative classification: Trees/Timber (Woody Vegetation)

HoD3—Hosmer silt loam, 12 to 18 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 5fh2
Elevation: 340 to 700 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 170 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Hosmer, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hosmer, Severely Eroded

Setting

Landform: Loess hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 5 inches: silt loam
Bt - 5 to 15 inches: silt loam
Btx - 15 to 39 inches: silt loam
2BC - 39 to 80 inches: silt loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: 10 to 26 inches to fragipan
Natural drainage class: Moderately well drained

Custom Soil Resource Report

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high
(0.01 to 0.20 in/hr)

Depth to water table: About 12 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Other vegetative classification: Trees/Timber (Woody Vegetation)

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified

Other vegetative classification: Trees/Timber (Woody Vegetation)

Wa—Wakeland silt loam, frequently flooded

Map Unit Setting

National map unit symbol: 5fj1

Elevation: 340 to 700 feet

Mean annual precipitation: 40 to 46 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 170 to 210 days

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Wakeland and similar soils: 97 percent

Minor components: 3 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wakeland

Setting

Landform: Flood plains

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear
Parent material: Silty alluvium

Typical profile

Ap - 0 to 7 inches: silt loam
Cg1 - 7 to 29 inches: silt loam
Cg2 - 29 to 60 inches: stratified silt loam to loam to sandy loam to fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Very high (about 12.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Other vegetative classification: Trees/Timber (Woody Vegetation)

Minor Components

Birds

Percent of map unit: 3 percent
Landform: Backswamps on flood plains
Other vegetative classification: Trees/Timber (Woody Vegetation)

WeE—Wellston silt loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 5fj2
Elevation: 340 to 1,000 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 170 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Wellston and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wellston

Setting

Landform: Structural benches, hills

Custom Soil Resource Report

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loess over loamy residuum over shale

Typical profile

A - 0 to 8 inches: silt loam

Bt - 8 to 26 inches: silt loam

2Bt - 26 to 41 inches: loam

2BC - 41 to 54 inches: parachannery fine sandy loam

2Cr - 54 to 60 inches: weathered bedrock

Properties and qualities

Slope: 15 to 30 percent

Depth to restrictive feature: 40 to 60 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Other vegetative classification: Trees/Timber (Woody Vegetation)

ZaD3—Zanesville silt loam, 12 to 18 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 5fj6

Elevation: 340 to 1,000 feet

Mean annual precipitation: 40 to 46 inches

Mean annual air temperature: 52 to 57 degrees F

Frost-free period: 170 to 200 days

Farmland classification: Not prime farmland

Map Unit Composition

Zanesville, severely eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zanesville, Severely Eroded

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Loess over loamy residuum over shale

Typical profile

Ap - 0 to 4 inches: silt loam

Bt - 4 to 19 inches: silty clay loam

Btx1 - 19 to 28 inches: silty clay loam

2Btx2 - 28 to 42 inches: silt loam

2Bt - 42 to 68 inches: loam

2Cr - 68 to 80 inches: weathered bedrock

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: 12 to 24 inches to fragipan; 60 to 80 inches to paralithic bedrock

Natural drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: About 18 to 30 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Other vegetative classification: Trees/Timber (Woody Vegetation)

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

APPENDIX D

Site Photographs



Photograph # 1	Description: Viewing Pond 1 located on the northeastern portion of the Site.	
Project # 16IN0310	Project Name: 340-Acre Tract	Date: 5/17/2016



Photograph # 2	Description: Viewing Drainage Feature 1 located on the northwest portion of the Site.	
Project # 16IN0310	Project Name: 340-Acre Tract	Date: 5/17/2016



Photograph # 3

Description: Viewing Pond 2 located on the western portion of the Site.

Project # 16IN0310

Project Name: 340-Acre Tract

Date: 5/17/2016



Photograph # 4

Description: Viewing Pond 9 located on the southeast portion of the Site.

Project # 16IN0310

Project Name: 340-Acre Tract

Date: 5/17/2016



Photograph # 5

Description: Viewing Unnamed Tributary 1 located on the central portion of the Site.

Project # 16IN0310

Project Name: 340-Acre Tract

Date: 5/17/2016



Photograph # 6

Description: Viewing Unnamed Tributary 3 located on the southeast portion of the Site.

Project # 16IN0310

Project Name: 340-Acre Tract

Date: 5/17/2016



Photograph # 7

Description: Viewing Pond 10 located on the southeast portion of the Site.

Project # 16IN0310

Project Name: 340-Acre Tract

Date: 5/17/2016



Photograph # 8

Description: Viewing Unnamed Tributary 4 located on the southern portion of the Site.

Project # 16IN0310

Project Name: 340-Acre Tract

Date: 5/17/2016



Photograph # 9	Description: Viewing Pond 5 located on the eastern portion of the Site.	
Project # 16IN0310	Project Name: 340-Acre Tract	Date: 5/17/2016



Photograph # 10	Description: Viewing Pond 6 located on the eastern portion of the Site.	
Project # 16IN0310	Project Name: 340-Acre Tract	Date: 5/17/2016