WETLAND DELINEATION REPORT
FOR THE MALIN ROAD PROPERTIES

East Whiteland Township
Chester County, Pennsylvania

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By

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1.0 INTRODUCTION

Malin Road Properties, LLC. is proposing the development of a 23.2-acre parcel of ground located on the western side of Malin Road in East Whiteland Township, Chester County, PA. At the request of Inland Design, Great Valley Environmental, Inc. (GVE) delineated Wetlands and Regulated Waters of the U.S. on the property (See Figure1) on 6/26/14, 6/30/14, 7/2/14 and 7/7/14. Wetlands/Waters were flagged in the field and surveyed by Inland Design. The enclosed Plan of Property depicts the on-site wetlands/waters, soil types, photographs, data point locations, topography, and existing site features.

2.0 GENERAL SITE DESCRIPTION

The property is generally rectangular in shape. Access is provided by Malin Road. Approximately half the site is wooded to the south with abandoned industrial buildings and macadam parking to the north. Wetlands and a stream are situated along the eastern part of the property. Topography on the site slopes steeply in the forested southern portion becoming relatively level in the developed northern half.

3.0 REGULATORY BACKGROUND AND DEFINITIONS

Activities in wetlands are regulated at both the Federal and State level in Pennsylvania. The Pennsylvania Department of Environmental Protection (PADEP) regulates activities in wetlands under the authority of the Dam Safety and Encroachments Act (act) (32 P.S. 693.1-693.28) of the Chapter 105 Dam and Waterway Management Program. The Army Corps of Engineers (ACOE) also regulates wetland-filling activities under Section 404 of the Clean Water Act. Recognizing the potential for continued or accelerated degradation of the Nation’s waters, the United States Congress enacted the Clean Water Act (Act). The objective of the Act is to maintain and restore the chemical, physical, and biological integrity of the waters of the United States. Section 404 of the Act authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into the waters of the United States, including wetlands.

4.0 METHODOLOGY

Wetlands are areas that are inundated or saturated by surface water 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 including swamps, marshes, bogs and similar areas. Diagnostic environmental characteristics of wetlands include vegetation, soils, and hydrology. By applying the principles outlined in the 2009 Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, the 1987 Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1) with guidance provided by the ACOE memorandum dated 6 March 1992, Clarification and Interpretation of the 1987 Manual, wetlands are identified in the field using the three parameter approach which requires investigation of vegetation, soils, and
hydrology. A minimum of one positive wetland indicator from each parameter must be found in order to make a positive wetland determination. Under certain circumstances, where one or more criterion is absent or disturbed the manual provides additional techniques used to identify wetlands.

Diagnostic environmental characteristics of wetlands include vegetation, soils, and hydrology. Wetlands have the following general characteristics:

**Vegetation:** The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in the preceding definition of “wetlands.” Hydrophytic species, due to morphological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soils conditions.

**Soil:** Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing conditions.

**Hydrology:** The area is inundated either permanently or periodically at mean water depths < 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

A Chapter 105 Water Obstruction and Encroachment permit is needed for any structure or activity which changes, expands or diminishes the course, current or cross section of a watercourse, floodway, or body of water. Bodies of water include both natural and artificial lakes, ponds, reservoirs, swamps, marshes, and wetlands. Under the Departments Chapter 106 Rules and Regulations additional permit requirements are placed upon activities within the Commonwealths floodplains. All of these activities are either waived or permitted at the state and federal level. A small projects permit is granted for activities with minimal impact to floodplains, they are not applicable for projects in wetlands. General permits are issued for ten types of activities that occur fairly commonly (minor road crossings, utility line crossings, etc.) and also have limited environmental impacts. A Joint Permit is required for larger projects involving impacts that are not considered minor. This is submitted jointly to the PADEP and the ACOE. An Environmental Assessment is required as a component of the joint permit or it may be required independently of any associated permit (i.e., as supporting documentation for certain waivers).

**4.1 HYDROPHYTIC VEGETATION**

Hydrophytic Vegetation is the sum total of macrophyte plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. A macrophyte is any plant species that can be readily observed without the aid of optical magnification. This includes all vascular plant species and mosses, as well as large algae. When the dominant species in a plant community are typically adapted for life in anaerobic soil
conditions, a hydrophytic plant community is present. Dominant plant species are those that contribute more to the character of a plant community than other species present, as estimated or measured in terms of various ecological parameters. Anaerobic conditions exist when molecular oxygen is absent (or effectively so) from the environment.

The US Army Corps of Engineers, Cold Regions Research and Engineering Laboratory, Eastern Mountains and Piedmont Region – NWPL Final Draft Ratings (2012), rates species of macrophytes based on their affinity or avoidance for/of anaerobic soils as follows:

### Plant Indicator Status Categories

<table>
<thead>
<tr>
<th>Indicator Category</th>
<th>Indicator Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obligate Wetland Plants</td>
<td>OBL</td>
<td>Plants that occur almost always (estimated probability 99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability 1%) in nonwetlands.</td>
</tr>
<tr>
<td>Facultative Wetland Plants</td>
<td>FACW</td>
<td>Plants that occur usually (estimated probability 67% to 99%) in wetlands, but also occur (estimated probability 1% to 33%) in nonwetlands.</td>
</tr>
<tr>
<td>Facultative Plants</td>
<td>FAC</td>
<td>Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and nonwetlands.</td>
</tr>
<tr>
<td>Facultative Upland Plants</td>
<td>FACU</td>
<td>Plants that occur sometimes (estimated probability 1% to 33%) in wetlands, but occur more often (estimated probability 67% to 99%) in nonwetlands.</td>
</tr>
<tr>
<td>Obligate Upland Plants</td>
<td>UPL</td>
<td>Plants that rarely occur (estimated probability 1%) in wetlands, but occur almost always (estimated probability 99%) in nonwetlands under natural conditions.</td>
</tr>
</tbody>
</table>

A plant community is considered hydrophytic if greater than 50% of the dominant plants from all strata (herb, shrub, woody vine, or tree) are rated OBL, FACW, or FAC. If a plant community is dominated by FAC species, non-dominant species must be considered. The plant community is considered hydrophytic if more than 50% of the dominant from all strata are OBL, FACW, or FAC (excluding FAC-).

The most common form of wetland evaluation is referred to as the Routine Determination. After determining, through best professional judgment, that normal circumstances prevail on a
site, a characterization of plant community types is visually performed. Each stratum is evaluated and dominant plants are listed and assigned respective indicator status ratings. Again, the plant community is considered hydrophytic if more than 50% of all species present are wetter than FAC, otherwise the area is nonwetland. This is the methodology that was applied on this project.

4.2 HYDRIC SOILS

Hydric soils are defined as a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation. Hydric soils that occur in areas having positive indicators of hydrophytic vegetation and wetland hydrology are wetland soils.

Field investigation of soils are conducted by obtaining a soil sample which penetrates below the A horizon, or to a depth of ten inches (whichever is shallower). (GVE typically evaluates soils to a depth of at least 24 inches throughout the investigation area). The soil is examined for hydric soil indicators with soil color being the primary indicator of a hydric condition. Soil color is characterized by three features: hue, value, and chroma. Hue refers to the soil color in relation to red, yellow, blue, etc. Value refers to the lightness of the hue, and chroma refers to the strength of the color. Soil colors are determined by use of a Munsell (Munsell Color, 1994). Each Munsell Color Book has color charts of different hues ranging from 10R to 5Y. Each page of hue has color chips that show values and chromas. Values are shown in columns down the page from as low as 0 to as much as 8, and chromas are shown in rows across the page from as low as 0 to as high as 8. In writing the color notations, the sequence is always hue, value, and chroma (e.g., 10YR5/2). The soil is matched to the closest soil color chip in the Munsell book. Mineral hydric soils usually have one of the following color features immediately below the A-horizon or 10 inches (whichever is shallower). If the predominant color (matrix) is found on the gley pages, the soil is hydric. If the soil is nongleyed and the matrix chroma is 0 or 1, the soil is hydric. If the matrix chroma is 2 and other colors (mottles) are present within the matrix, the soil is hydric. Soils with matrix chromas of 3 or greater are nonhydric.

4.3 WETLAND HYDROLOGY

Wetland hydrology is present when the area is inundated either permanently or periodically at mean water depths <6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation. Hydrology is often the least exact of the parameters, and indicators of wetland hydrology are often difficult to find in the field. It is essential to establish that a wetland area is periodically inundated or has saturated soils during the growing season. Indicators of wetland hydrology may include: drainage patterns, drift lines, sediment deposition, watermarks, stream gage data and flood predictions, historic records, visual observation of saturated soils, and visual observation of inundation.

5.0 SITE VEGETATION

A Palustrine scrub/shrub/forested wetland was identified along the eastern portion of the property.
which includes sections of non-wetland Regulated Waters with well-defined streambanks
delineated in the field by orange flags. Details of these features are included on the enclosed data
forms.

The mucky forested wetland substrates were dominated by skunk cabbage, jewelweed, sedges
and grasses. Trees and shrubs were dominated by red maple and spicebush. These areas are
depicted on photographs E, F, G, H, I, J, and L located in Appendix A. Data forms 3, 5, 7 and 9
in Appendix B documents hydrology, vegetation and soils in the wetlands.

The Regulated Waters are depicted on photographs A, B, Q, R, and S located in Appendix A.
Data form 1 in Appendix B documents hydrology, vegetation and soils in the Regulated Waters.

The majority of the site is non-wetland deciduous forest and abandoned industrial facilities.
These areas are depicted on photographs C, D, M, N, O, P and T, located in Appendix A. Data
forms 2, 4, 6, 8, 10, 11, 12 and 13 in Appendix B document hydrology, vegetation and soils at
representative nonwetland areas within the site.

"MALIN ROAD PROPERTIES" MASTER PLANT LIST

HERBACEOUS PLANTS

clearweed (*Pilea pumila, FACW*)
soft rush (*Juncus effusus, FACW*)
broad-leaved cattail (*Typha latifolia, OBL*)
jewelweed (*Impatiens capensis, FACW*)
skunk cabbage (*Symplocarpus foetidus, OBL*)
wool grass (*Scirpus cyperinus, FACW*)
path rush (*Juncus tenuis, FAC*)
phragmites (*Phragmites australis, FACW*)
boneset (*Eupatorium perfoliatum, FACW*)
water plantain (*Alisma subcordata, OBL*)
teasel (*Dipsacus sylvestris, FAC*)
marsh fern (*Thelypteris palustris, FACW*)
stilt grass (*Microstegium vimineum, FAC*)
Kentucky bluegrass (*Poa pratensis, FACU*)
deertongue panic grass (*Panicum clandestinum, NL*)
path rush (*Juncus tenuis, FAC*)
Canada goldenrod (*Solidago canadensis, FACU*)
yellow rocket (*Barbarea vulgaris, FACU*)
gill-over-the-ground (*Gleocoma hederacea, FACU*)
field mustard (*Brassica rapa, NL*)
garlic mustard (*Alliaria petiolata, FACU*)
hay-scented fern (*Dennstaedtia punctilobula, UPL*)
English plantain (*Plantago lanceolata, UPL*)
common plantain (Plantago major, FACU)
pokeweed (Phytolacca americana, FACU+)
Asiatic tearthumb (Polygonum perforiatum, FAC)
Canadian thistle (Cirsium arvense, FACU)
Enchanter’s nightshade (Circeae lutetiana, FACU)
Trillium (Trillium cernuum, FACW)
Common ragweed (Ambrosia artemisiifolia, FACU)
Solomon’s seal (Polygonatum biflorum, FACU)
Common burdock (Arctium minus, FACU)

SHRUBS

spicebush (Lindera benzoin, FAC)
arrowwood (Viburnum dentatum, FAC)
witch hazel (Hamamelis virginiana, FAC-)
European privet (Ligustrum vulgare, FACU)
multiflora rose (Rosa multiflora, FACU)
raspberry (Rubus ideaus, FAC)
wineberry (Rubus phoenicolasus, UPL)
bush honeysuckle (Lonicera macckii, NL)
smooth sumac (Rhus glabra, NL)
Staghorn sumac (Rhus typhina, NL)

VINES

Japanese honeysuckle (Lonicera japonica, FAC)
Summer grape (Vitis aestivalis, FACU)
Asian bittersweet (Celastrus orbiculatus, UPL)
poison ivy (Toxicodendron radicans, FAC)
Virginia creeper (Parthenocissus quinquefolia, FACU)

TREES

green ash (Fraxinus pennsylvanica, FACW)
black willow (Salix nigra, FACW)
sycamore (Platanus occidentalis, FACW)
red maple (Acer rubrum, FAC)
box elder (Acer negundo, FAC)
ironwood (Carpinus carolineana, FAC)
Chestnut oak (Quercus prinus, UPL, FACU)
Eastern red cedar (Juniperus virginiana, FACU)
black cherry (Prunus serotina, FACU)
American beech (Fagus grandifolia, FACU)
tulip poplar (Liriodendron tulipifera, FACU)
Northern red oak (Quercus rubra, FACU)
black cherry (Prunus serotina, FACU)
black walnut (Juglans nigra, FACU)
black oak (Quercus velutina, NL)
Norway maple (Acer platanoides, UPL)
Northern Catalpa (Catalpa speciosa, FAC)
Mockernut hickory (Carya tomentosa, NL)

6.0 SITE SOILS

The U. S. Department of Agriculture, Natural Resources Conservation Services (2014) “Web Soil Survey of Chester County” classifies and characterizes the soils on the site. (See Figure 2).

There are no hydric soils mapped within the site according to the soil survey (See figure 3).
Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaB</td>
<td>Manor loam, 3 to 8 percent slopes</td>
<td>0.1</td>
<td>0.5%</td>
</tr>
<tr>
<td>MaD</td>
<td>Manor loam, 15 to 25 percent slopes</td>
<td>13.1</td>
<td>48.7%</td>
</tr>
<tr>
<td>MaE</td>
<td>Manor loam, 25 to 35 percent slopes</td>
<td>0.7</td>
<td>2.7%</td>
</tr>
<tr>
<td>UrgD</td>
<td>Urban land-Conestoga complex, 8 to 25 percent slopes</td>
<td>11.5</td>
<td>43.0%</td>
</tr>
<tr>
<td>UugD</td>
<td>Urban land-Udorthents, schist and gneiss complex, 8 to 25 percent slopes</td>
<td>1.3</td>
<td>5.0%</td>
</tr>
<tr>
<td>Totals for Area of Interest</td>
<td></td>
<td>26.8</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

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 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
Custom Soil Resource Report

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 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.
Chester County, Pennsylvania

MaB—Manor loam, 3 to 8 percent slopes

Map Unit Setting
- National map unit symbol: 
- Elevation: 200 to 1,000 feet
- Mean annual precipitation: 35 to 50 inches
- Mean annual air temperature: 48 to 57 degrees F
- Frost-free period: 140 to 220 days
- Farmland classification: All areas are prime farmland

Map Unit Composition
- Manor and similar soils: 95 percent
- Minor components: 5 percent
- Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Manor

Setting
- Landform: Hillslopes
- Landform position (two-dimensional): Summit, shoulder, backslope
- Landform position (three-dimensional): Interfluve, side slope, nose slope
- Down-slope shape: Linear, convex
- Across-slope shape: Convex, linear
- Parent material: Residuum weathered from mica schist

Typical profile
- Ap - 0 to 8 inches: loam
- Bw - 8 to 23 inches: channery loam
- C - 23 to 60 inches: very fine sandy loam

Properties and qualities
- Slope: 3 to 8 percent
- Depth to restrictive feature: 72 to 99 inches to paralithic bedrock
- 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 9.6 inches)

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

Minor Components

Glenville
- Percent of map unit: 3 percent
- Landform: Hillslopes
- Landform position (two-dimensional): Footslope, backslope
- Landform position (three-dimensional): Side slope, head slope
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Down-slope shape: Linear, concave
Across-slope shape: Concave, linear

Hatboro
Percent of map unit: 2 percent
Landform: Flood plains
Landform position (two-dimensional): Toe slope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear

MaD—Manor loam, 15 to 25 percent slopes

Map Unit Setting
National map unit symbol: pjlB
Elevation: 200 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 150 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition
Manor and similar soils: 97 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the map unit.

Description of Manor

Setting
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Residuum weathered from mica schist

Typical profile
A - 0 to 7 inches: loam
Bw - 7 to 20 inches: channery loam
C - 20 to 60 inches: very fine sandy loam

Properties and qualities
Slope: 15 to 25 percent
Depth to restrictive feature: 72 to 99 inches to paralithic bedrock
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
Custom Soil Resource Report

Available water storage in profile: High (about 9.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B

Minor Components

Glenville
Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear

MaE—Manor loam, 25 to 35 percent slopes

Map Unit Setting
National map unit symbol: pjlc
Elevation: 200 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 150 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition
Manor and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the map unit.

Description of Manor

Setting
Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Residuum weathered from mica schist

Typical profile
A - 0 to 4 inches: loam
Bw - 4 to 19 inches: channery loam
C - 19 to 60 inches: very fine sandy loam

Properties and qualities
Slope: 25 to 35 percent
Depth to restrictive feature: 72 to 99 inches to paralithic bedrock
Natural drainage class: Well drained
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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 9.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Minor Components

Glenville
Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear

UrgD—Urban land-Conestoga complex, 8 to 25 percent slopes

Map Unit Setting
National map unit symbol: jpn8
Elevation: 400 to 1,600 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 170 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition
Urban land: 50 percent
Conestoga and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the map unit.

Description of Urban Land

Setting
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Variable

Typical profile
C - 0 to 6 inches: variable
Properties and qualities
Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 99 inches to lithic bedrock
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Description of Conestoga
Setting
Landform: Hillsides
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone and/or residuum weathered from schist

Typical profile
A - 0 to 8 inches: silt loam
Bt - 8 to 40 inches: silty clay loam
C - 40 to 60 inches: channery fine sandy loam

Properties and qualities
Slope: 8 to 25 percent
Depth to restrictive feature: 60 to 99 inches to lithic bedrock
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: Moderate (about 7.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B

UugD—Urban land-Udorthents, schist and gneiss complex, 8 to 25 percent slopes

Map Unit Setting
National map unit symbol: pjnz
Elevation: 200 to 2,000 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 45 to 61 degrees F
Frost-free period: 110 to 235 days
Farmland classification: Not prime farmland

Map Unit Composition
Urban land: 80 percent
Udorthents, schist and gneiss, and similar soils: 15 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land
Setting
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Pavement, buildings and other artificially covered areas

Typical profile
C - 0 to 6 inches: variable

Properties and qualities
Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 99 inches to lithic bedrock
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Description of Udorthents, Schist And Gneiss
Setting
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Graded areas of schist and/or gneiss

Typical profile
Ap - 0 to 6 inches: loam
C - 6 to 40 inches: silty clay loam
R - 40 to 60 inches: bedrock

Properties and qualities
Slope: 8 to 25 percent
Depth to restrictive feature: 20 to 70 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 60 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.8 inches)
Interpretive groups
- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 7e
- Hydrologic Soil Group: C

Minor Components

Edgemont
- Percent of map unit: 1 percent
- Landform: Ridges
- Landform position (two-dimensional): Summit
- Landform position (three-dimensional): Mountaintop
- Down-slope shape: Convex, linear
- Across-slope shape: Linear, convex

Gladstone
- Percent of map unit: 1 percent
- Landform: Hillslopes
- Landform position (two-dimensional): Summit, shoulder
- Landform position (three-dimensional): Nose slope, side slope
- Down-slope shape: Linear, convex
- Across-slope shape: Linear, convex

Glenelg
- Percent of map unit: 1 percent
- Landform: Hillslopes
- Landform position (two-dimensional): Summit, shoulder, backslope
- Landform position (three-dimensional): Interfluve, side slope, nose slope
- Down-slope shape: Linear, convex
- Across-slope shape: Convex, linear

Glenville
- Percent of map unit: 1 percent
- Landform: Hillslopes
- Landform position (two-dimensional): Footslope, backslope
- Landform position (three-dimensional): Side slope, head slope
- Down-slope shape: Linear, concave
- Across-slope shape: Concave, linear

Baile
- Percent of map unit: 1 percent
- Landform: Depressions
- Landform position (two-dimensional): Footslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave, linear
- Across-slope shape: Concave, linear
## Hydric Rating by Map Unit

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaB</td>
<td>Manor loam, 3 to 8 percent slopes</td>
<td>2</td>
<td>0.1</td>
<td>0.5%</td>
</tr>
<tr>
<td>MaD</td>
<td>Manor loam, 15 to 25 percent slopes</td>
<td>0</td>
<td>13.1</td>
<td>48.7%</td>
</tr>
<tr>
<td>MaE</td>
<td>Manor loam, 25 to 35 percent slopes</td>
<td>0</td>
<td>0.7</td>
<td>2.7%</td>
</tr>
<tr>
<td>UrgD</td>
<td>Urban land-Conestoga complex, 8 to 25 percent slopes</td>
<td>0</td>
<td>11.5</td>
<td>43.0%</td>
</tr>
<tr>
<td>UrgD</td>
<td>Urban land-Udorthents, schist and gneiss complex, 8 to 25 percent slopes</td>
<td>1</td>
<td>1.3</td>
<td>5.0%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td>26.8</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Description

This rating indicates the percentage of map units that meet the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:


**Rating Options**

*Aggregation Method:* Percent Present  
*Component Percent Cutoff:* None Specified  
*Tie-break Rule:* Lower
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 specific data should be used in accordance with the layer metadata found on the Wetlands Mapper website.
7.0 SITE HYDROLOGY

The site is drained by Little Valley Creek which enters the property in the southeast corner via a culvert under the Penn Central Amtrack railroad line just south of the property as Regulated Waters which become forested wetlands and then scrub shrub wetlands and then into Regulated Waters as it flows off site. Flowing north then east into Valley Creek which flows into the Schuylkill River at Valley Forge, PA and ultimately to the Delaware River at Philadelphia, PA. Valley Creek is classified as EV/MF – Exceptional Value and Migratory Fisheries, PADEP Chapter 93 - Water Quality Standards.

The National Wetlands Inventory Map (Figure 4) depicts no wetlands on the property. This information is derived from aerial photographs and typically only depicts wetlands of five acres or more.

8.0 SUMMARY AND CONCLUSIONS

At the request of Inland Design, Great Valley Environmental, Inc. (GVE) delineated wetlands/waters on the proposed “Malin Road Properties” located in East Whiteland Township, Chester County, PA. Specifically, GVE delineated “Waters of the United States, including Federally Regulated Wetlands” on the site. Wetlands were flagged in the field and surveyed by Inland Design. The enclosed Plan of Property depicts the on-site wetlands/waters, photographs, topography, and existing site features. This delineation report and the surveyed wetland boundary partially fulfill the requirements for obtaining a Jurisdictional Determination (JD) from the Army Corps of Engineers (ACOE). The JD serves to officially approve the delineation as accurate.

9.0 REFERENCES


USGS, 7.5-Minute Topographic Quad, Malvern, PA.
USFWS, National Wetlands Inventory Quad (2014).
APPENDIX A
Site Photographs – 7/2/14

A. View looking north into Regulated Waters.
B. View looking south into Regulated Waters where Little Valley Creek flows into the site.
C. Box turtle in uplands.
D. View of the uplands at Data Point 11.
E. View looking north into forested wetlands.
F. View looking north into forested wetlands.
G. View looking northeast into forested wetlands.
H. Looking from wetlands toward uplands.
I. View looking into wetlands from upland edge.
J. Looking into Regulated Waters where old pipe structure crosses creek.
K. Hydric soil sample.
L. View from upland into forested wetlands.
M. Typical view of forested uplands.
N. Non-hydric soil sample.
O. View into low-lying area, which does not fulfill wetland soil/hydrology criteria.
P. Typical view of abandoned industrial facility on-site.
Q. View of Regulated Waters in tunnel in northeastern corner of the site.
R. Another view of Regulated Waters in tunnel in northeastern corner of the site.
S. Regulated Waters entering stream enclosure in northeastern corner of the site.
T. Groundwater monitoring well.
APPENDIX B Site Data Forms
**WETLAND DETERMINATION DATA FORM** – Eastern Mountains and Piedmont

Project/Site: Main Road Properties
Applicant/Owner: Main Road Development LLC
Investigator: Christopher Muysey

City/County: Chester
State: PA
Sampling Point:

Lat: 40° 02' 54" N
Long: 75° 32' 3.6" W
Datum:

Landform (Hillside, terrace, etc.): Concave
Local relief (concave, convex, none): Concave
Slope (%):

Subregion (LN or MLRA):

Soil Map Unit Name: Manor Farm (MD)

SW classification: Regulated Water

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.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydic Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

| Is the Sampled Area within a Wetland? | Yes | No |

Remarks:

**HYDROLOGY**

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Aquatic Fauna (B15)

Secondary indicators (minimum of two required):

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquifer (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

**Field Observations:**

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

*Includes capillary fringe*

| Depth (inches): | 6 |

Wetland Hydrology Present? Yes No

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

Remarks: Permanently Flowing Stream
**VEGETATION (Four Strata) – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Acer negundo</em></td>
<td></td>
<td></td>
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<td>8.</td>
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<td></td>
</tr>
</tbody>
</table>

**Sampling Stratum (Plot size: )**

<table>
<thead>
<tr>
<th>Species</th>
<th>Cover Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Conifera occidentalis</em></td>
<td>X FAC</td>
</tr>
<tr>
<td><em>Ledum decumbens</em></td>
<td></td>
</tr>
<tr>
<td><em>Rosa multiflora</em></td>
<td>X FAC</td>
</tr>
<tr>
<td><em>Pulvis phlomoides</em></td>
<td>X UPL</td>
</tr>
</tbody>
</table>

= Total Cover

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Total % Cover</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBL species</strong></td>
<td>x1 =</td>
</tr>
<tr>
<td><strong>FACW species</strong></td>
<td>x2 =</td>
</tr>
<tr>
<td><strong>FAC species</strong></td>
<td>x3 =</td>
</tr>
<tr>
<td><strong>FACU species</strong></td>
<td>x4 =</td>
</tr>
<tr>
<td><strong>UPL species</strong></td>
<td>x5 =</td>
</tr>
<tr>
<td>Column Totals</td>
<td>(A)</td>
</tr>
</tbody>
</table>

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index ≥ 0.6
4. Morphological Adaptations
   (Provide supporting data in Remarks or on a separate sheet)
   - Problematic Hydrophytic Vegetation

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

**Definitions of Four Vegetation Strata:**

- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**

- Yes [ ]
- No [x]
SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist)</td>
<td>%</td>
</tr>
</tbody>
</table>

| Remarks |

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

Hydric Soil Indicators:
- Histosol (A1)
- Histie Epipedon (A2)
- Black Histie (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalent Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Lomny Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Umbric Surface (F13) (MLRA 135, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16)
- Piedmont Floodplain Soils (F19) (MLRA 135, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Hydric Soil Present? Yes X No

Restrictive Layer (if observed):
Type: 
Depth (inches): 

Remarks:
No true soils, streamed consist of microlite sand
gravel, cobbles, boulders, boulder
WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont 4.5.2012

Project/Site: Malin Road Properties City: Chester State: PA
Applicant/Owner: 9 Malin Road Development LLC. County: Chester Sampling Date: 7/2/14
Investigating(s): Christopher Mulvey Section/Township/Range: East Whiteland
Landform (hillocks, terraces, etc.): LRRS 447,148 Local relief (concave, convex, none): ""
Subregion (LLN or MLRA): Subregion 147,148 Lat. 40°02' 54"N Long. 75°32' 3.68"W Datum: ""
Soil Map Unit Number: "" NWI classification: ""

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

Are Vegetation, Soil, or Hydrology significantly disturbed? Yes __ No __""
Are Vegetation, Soil, or Hydrology naturally problematic? Yes __ No __ (If needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes _ No _</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes _ No _</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes _ No _</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes _ No _</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

HYDROLOGY

Wetland hydrology indicators:

<table>
<thead>
<tr>
<th>Primary indicators (minimum of one is required; check all that apply)</th>
<th>Secondary indicators (minimum of two required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Surface Soil Cracks (B6)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td>Sparsely Vegetated Concave Surfaces (B6)</td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>Drainage Patterns (B10)</td>
</tr>
<tr>
<td>Water marks (B1)</td>
<td>Moss Tufa Lines (B13)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Dry-Season Water Table (C3)</td>
</tr>
<tr>
<td>Duff Deposits (B3)</td>
<td>Grayish Burnouts (C3)</td>
</tr>
<tr>
<td>Algal Mats or Crust (B4)</td>
<td>Sediment fills on aerial imagery (C7)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Stunted or Stressed Plants (C7)</td>
</tr>
<tr>
<td>Imannulation Vivid on Aerial Imagery (B7)</td>
<td>Geomorphic Position (T2)</td>
</tr>
<tr>
<td>Water-Stained Leaves (B9)</td>
<td>Shallow Aquifers (T3)</td>
</tr>
<tr>
<td>Aquatic Fauna (B13)</td>
<td>Microscopic Relief (K4)</td>
</tr>
<tr>
<td></td>
<td>FAC-Neutral Tool (K6)</td>
</tr>
</tbody>
</table>

Field observations:

| Surface Water Present?     | Yes _ No _ | Depth (inches): |
| Water Table Present?       | Yes _ No _ | Depth (inches): |
| Saturation Present?        | Yes _ No _ | Depth (inches): |
| (includes capillary fringe) |                           | Wetland Hydrology Present? Yes _ No _ |

Remarks:

Upland includes earth road.
VEGETATION (Four Strata) – Use scientific names of plants.

### Tree Stratum (Plot size: )

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Acer platanoides</em></td>
<td>X</td>
<td>UPL</td>
<td></td>
</tr>
<tr>
<td>2. <em>Celtis occidentalis</em></td>
<td>X</td>
<td>FACU</td>
<td></td>
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<tr>
<td>3.</td>
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<td>8.</td>
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</tr>
</tbody>
</table>

### Sapling/Shrub Stratum (Plot size: )

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Prunus serotina</em></td>
<td>X</td>
<td>UPL</td>
<td></td>
</tr>
<tr>
<td>2. <em>Poa pratensis</em></td>
<td>X</td>
<td>FACU</td>
<td></td>
</tr>
<tr>
<td>3. <em>D. dura heinertii</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. <em>Coreopsis occidentalis</em></td>
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<td>8.</td>
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</tbody>
</table>

### Herb Stratum (Plot size: )

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Carex geophorum</em></td>
<td></td>
<td>FACU</td>
<td></td>
</tr>
<tr>
<td>2. <em>Fragaria virginiana</em></td>
<td></td>
<td>FACU</td>
<td></td>
</tr>
<tr>
<td>3. <em>Euphorbia punctata</em></td>
<td>X</td>
<td>UPL</td>
<td></td>
</tr>
<tr>
<td>4. <em>Euphorbia palustris</em></td>
<td></td>
<td>FACU</td>
<td></td>
</tr>
<tr>
<td>5. <em>Artamus virginicus</em></td>
<td>X</td>
<td>UPL</td>
<td></td>
</tr>
<tr>
<td>6. <em>Plantago major</em></td>
<td></td>
<td>FACU</td>
<td></td>
</tr>
<tr>
<td>7. <em>Phalaris vulgaris</em></td>
<td></td>
<td>FACU</td>
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<td>9.</td>
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<td>12.</td>
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</tr>
</tbody>
</table>

### Woody Vine Stratum (Plot size: )

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Tribulus terrestris</em></td>
<td></td>
<td>FAC</td>
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<td>2.</td>
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<td>6.</td>
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</tbody>
</table>

### Dominance Test worksheet:

- Number of Dominant Species That Are OBL, FACW, or FAC: \( \text{[2]} \) (A)
- Total Number of Dominant Species Across All Strata: \( \text{[1]} \) (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: \( \text{[0]} \) (A/B)

### Prevalence Index worksheet:

- Total % Cover of OBL species: \( x 1 = \)  (E)
- Total % Cover of FACW species: \( x 2 = \)  (E)
- Total % Cover of FAC species: \( x 3 = \)  (E)
- Total % Cover of FACU species: \( x 4 = \)  (E)
- Total % Cover of UPL species: \( x 5 = \)  (E)

### Hydropathy Vegetation Indicators:

1. Rapid Test for Hydropathic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is <3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

### Definitions of Four Vegetation Strata:

- Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- Woody Vine – All woody vines greater than 3.28 ft in height.

### Hydrophytic Vegetation Present?

- Yes: \( \checkmark \)
- No: \( \times \)

Remarks: (Include photo numbers here or on a separate sheet.)
<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>%</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

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

**Location:** PL=Pore Lining, RM=Matrix

**Hydric Soil Indicators:**
- Histosol (A1)
- Histic Epepedon (A2)
- Black Hist (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

**Indicators for Problematic Hydric Soils:**
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 138)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

**Restrictive Layer (if observed):**
- Type: __________________
- Depth (inches): __________________

**Hydric Soil Present?** Yes [ ] No [x]

**Remarks:**

No available soils - area is gravel fill.
**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont**

- **Project/Site:** Malin Road Properties, City/County: Chester
- **Applicant/Owner:** Malin Road Development LLC, State: PA
- **Investigator(s):** Christopher Mulvey, Section/Township/Range: East Whiteland
- **Landform (hillslope, terrace, etc.):** Flat
- **Subregion (LRR or MLM):** LRR
- **Long: 75° 32' 3.68" W**
- **Datum:**
- **Soil Map Unit Name:** Monroevan Mo 8
- **NRM classification:** PFO

**SUMMARY OF FINDINGS**

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes □ No □</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes □ No □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes □ No □</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**HYDROLOGY**

- **Primary Indicators (minimum of one is required; check all that apply):**
  - Surface Water (A1)
  - High Water Table (A2)
  - Saturation (A3)
  - Water Marks (B1)
  - Sediment Deposits (B2)
  - Drift Deposits (B3)
  - Algal Mat or Crust (B4)
  - Iron Deposition (B5)
  - Inundation Visible on Aerial Imagery (B7)
  - Water Stained Leaves (B9)
  - Aquatic Fauna (B/3)

- **Secondary Indicators (minimum of two required):**
  - Surface Soil Cracks (B6)
  - Sparsely Vegetated Concave Surface (B8)
  - Drainage Pattern (B10)
  - Mass Trim Lines (B16)
  - Dry Season Water Table (C2)
  - Crayfish Burrows (C9)
  - Saturation Visible on Aerial Imagery (C0)
  - Stunted or Stressed Plants (D1)
  - Geomorphic Position (D2)
  - Shallow Aquifer (D3)
  - Microtopographic Relief (D4)
  - FAC-Neutral Test (D5)

**Field Observations:**

- **Surface Water Present?** Yes □ No □ Depth (inches): 0" Wetland Hydrology Present? Yes □ No □
- **Water Table Present?** Yes □ No □ Depth (inches): 0.5:
- **Saturation Present?** Yes □ No □ Depth (inches): 0.5:

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

**Remarks:**

*Spring head area with channels*
### Vegetation (Four Strata) - Use scientific names of plants.

#### Sampling Point: 3

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ...)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Eugenia Fabri</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. <strong>Carpinus caroliniana</strong></td>
<td><strong>X</strong></td>
<td><strong>FAC</strong></td>
<td></td>
</tr>
<tr>
<td>3. <strong>Fraxinus pennsylvanica</strong></td>
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<td>6.</td>
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<tr>
<td>7.</td>
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<tr>
<td>8.</td>
<td><strong>= Total Cover</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Sapling/Shrub Stratum (Plot size: ...)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Lindera Speciosa</strong></td>
<td><strong>X</strong></td>
<td><strong>FAC</strong></td>
<td></td>
</tr>
<tr>
<td>2. <strong>Viburnum dentatum</strong></td>
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<td>3.</td>
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<td>6.</td>
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<tr>
<td>7.</td>
<td><strong>= Total Cover</strong></td>
<td></td>
<td></td>
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</tbody>
</table>

#### Herb Stratum (Plot size: ...)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Symphoricarpus foetidus</strong></td>
<td><strong>X</strong></td>
<td><strong>OBL</strong></td>
<td></td>
</tr>
<tr>
<td>2. <strong>Hypopitys polystachya</strong></td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
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<tr>
<td>4.</td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td><strong>= Total Cover</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Woody Vine Stratum (Plot size: ...)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>5.</td>
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<tr>
<td>6.</td>
<td><strong>= Total Cover</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Dominance Test Worksheet:

- Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)
- Total Number of Dominant Species Across All Strata: 7 (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

#### Prevalence Index Worksheet:

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5</td>
</tr>
<tr>
<td>Column Totals</td>
<td>(A)</td>
</tr>
</tbody>
</table>

Prevalence Index = B/A =

#### Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤ 3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Problematic Hydrophytic Vegetation (Explain)

#### Definitions of Four Vegetation Strata:

- **Tree**: Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub**: Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb**: All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody Vine**: All woody vines greater than 3.28 ft in height.

#### Hydrophytic Vegetation Present?:

- Yes **X**
- No

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

**Photo C7**

US Army Corps of Engineers
### Profile Description:
(Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td>10YR 2/1</td>
<td>10a</td>
<td></td>
<td>gravelly sandy</td>
</tr>
</tbody>
</table>

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

**Hydric Soil Indicators:**
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

**Indicators for Problematic Hydric Soils:**
- Dark Surface (S7)
- Polyvalue Below Surface (S9) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if observed):**

- Type: 
- Depth (inches): 

**Hydric Soil Present?** Yes X No 

**Remarks:**
### WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

**Project/Site:** Malem Road Properties City/County: Chester

**Applicant/Owner:** Malem Road Development LLC

**State:** PA

**Investigator(s):** Christopher Mulvey

**Section/Township/Range:** East Whiteland

**Landform (plain, terrace, etc.):**

**Local relief (concave, convex, none):**

**Slope (%):** 30

**Subregion (CHPR or MLRA):** 147.148

**Lat:** 40° 02' 54"N

**Long:** 75° 32' 3.68"W

**Datum:**

**Soil Map Unit Name:**

**NWI classification:**

**Are climatic/hydrologic conditions on the site typical for this time of year?** Yes [X] No

**Are Vegetation, Soil, or Hydrology significantly disturbed?**

**Are "Normal Circumstances" present?** Yes [X] No

**Are Vegetation, Soil, or Hydrology naturally problematic?**

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No [X]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No [X]</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No [X]</td>
</tr>
</tbody>
</table>

**Is the Sampled Area within a Wetland?** Yes | No [X]

**Remarks:**

#### HYDROLOGY

**Wetland Hydrology Indicators:**

- **Surface Water (A1)**
- **High Water Table (A2)**
- **Saturation (A3)**
- **Water Marks (B1)**
- **Sediment Deposit (B2)**
- **Drift Deposits (B3)**
- **Algal Mat or Crust (B4)**
- **Iron Deposits (B3)**
- **Inundation Visible on Aerial Imagery (B7)**
- **Water-Stained Leaves (B8)**
- **Aquatic Fauna (B13)**
- **True Aquatic Plants (B14)**
- **Hydrogen Sulphide Odor (C1)**
- **Oxidized Pheospheres on Living Roots (C5)**
- **Presence of Reduced Iron (C4)**
- **Recent Iron Reduction in Tilled Soils (C6)**
- **Thin Muck Surface (C7)**
- **Other (Explain in Remarks)**

**Secondary Indicators (minimum of two required):**

- **Surface Soil Cracks (R6)**
- **Sparsely Vegetated Concave Surface (R8)**
- **Drainage Patterns (B10)**
- **Moss Trim Lines (B18)**
- **Dry-Season Water Table (C2)**
- **Crayfish Burrows (G9)**
- **Saturation Visible on Aerial Imagery (C9)**
- **Stunted or Stressed Plants (D1)**
- **Geomorphic Position (D2)**
- **Shallow Aquifer (D3)**
- **Microtopographic Relief (LX)**
- **FAC-Neutral Test (DS)**

**Field Observations:**

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depth (inches):</strong></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Table Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depth (inches):</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Saturation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depth (inches):</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

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

**Remarks:**

---

Eastern Mountains and Piedmont - Interim Version
## VEGETATION (Four Strata) - Use scientific names of plants.

### Sampling Point:

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size:)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Fagus grandifolia</em></td>
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<tr>
<td>2. <em>Acer rubrum</em></td>
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<tr>
<td>3. <em>Porosa elegans</em></td>
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<tr>
<td>4. <em>Prunus serotina</em></td>
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<tr>
<td>5. <em>Leucodendron tulipifera</em></td>
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<tr>
<td>6. <em>Gymnocladus dioica</em></td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size:)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Viburnum quinquefolium</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. <em>Lonicera canadensis</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Total Cover:

- Total Cover = 100%

### Prevalence Index Worksheet:

- Total % Cover of:
  - OBL species: 10% x 1 =
  - FACW species: 20% x 2 =
  - FAC species: 30% x 3 =
  - FACU species: 40% x 4 =
  - UPL species: 50% x 5 =

- Column Totals: (A) (B)

- Hydrophytic Vegetation Indicators:
  1. Rapid Test for Hydrophytic Vegetation
  2. Dominance Test is >50%
  3. Prevalence Index is ≤3.0
  4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

- Problematic Hydrophytic Vegetation² (Explain)

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

### Definitions of Four Vegetation Strata:

- **Tree** - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.26 ft (1 m) tall.
- **Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.26 ft tall.
- **Woody vine** - All woody vines greater than 3.26 ft in height.

### Hydrophytic Vegetation

<table>
<thead>
<tr>
<th>Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

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

[Signature]

US Army Corps of Engineers

Eastern Mountains and Piedmont – Interim Version
## Soil Profile Description

(Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>10YR 2/2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-6</td>
<td>10YR 3/4</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6+</td>
<td>5YR 3/6</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Location:** PL=Pore Lining, M=Matrix

### Hydric Soil Indicators:
- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

### Indicators for Problematic Hydric Soils:
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Moist (F12) (LRR N, MLRA 136)
- Umbre Surface (F13) (MLRA 126, 122)
- Piedmont Floodplain Soils (F16) (MLRA 148)
- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

### Restrictive Layer (if observed):
- Type: 
- Depth (inches): 

### Hydric Soil Present?
- Yes [X]  
- No [ ]

### Remarks:
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Malin Road Properties City/County: Chester State: PA Sampling Date: 7/2/14
Applicant/Owner: Malin Road Development LLC. Sampling Point: S
Investigator(s): Christopher Mulvey Section/Township/Range: East Whiteland
Landform (e.g., basin, terrace, etc.): Local relief (concave, convex, none): Slope (%): 5
Subregion (LEF or MLFA): 147,148 Lat: 40° 02' 54" N Long: 75° 32' 3.68" W Datum:
Soil Map Unit Name: Mariners I drain (Ma D) NWI classification: PF0

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 (If needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes No</th>
<th>In the Sampled Area within a Wetland?</th>
<th>Yes No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)
- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☒ Water Cracks (B1)
- ☒ Sediment Deposits (B2)
- ☒ Drift Deposits (B3)
- ☒ Algal Mat or Crust (B4)
- ☒ Iron Deposits (B5)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☒ Water-Stained Leaves (B9)
- ☒ Aquatic Fauna (B13)
- ☒ True Aquatic Plants (B14)
- ☒ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres on Living Roots (C3)
- ☒ Presence of Reduced Iron (C4)
- ☒ Recent Iron Reduction in Tilled Soils (C5)
- ☒ Thin Muck Surface (C7)
- ☒ Other (Explain in Remarks)

Secondary Indicators (minimum of two required):
- ☒ Surface Soil Cracks (B16)
- ☒ Sperately Vegetated Concave Surface (B16)
- ☒ Drainage Patterns (B16)
- ☒ Moss Tracts (S16)
- ☒ Dry-Season Water Table (C2)
- ☒ Clayey Burrows (C5)
- ☒ Saturation Visible on Aerial Imagery (C7)
- ☒ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ Shallow Aquifer (D3)
- ☒ Microtopographic Relief (D4)
- ☒ FAC-Neutral Test (D5)

Field Observations:
- ☒ Surface Water Present? Yes No Depth (inches): 1
- ☒ Water Table Present? Yes No Depth (inches): 1
- ☒ Saturation Present? Yes No Depth (inches): 1

Wetland Hydrology Present? Yes No

Remarks: Spring head zone

US Army Corps of Engineers

Eastern Mountain and Piedmont - Internal Version
### VEGETATION (Four Strata) – Use scientific names of plants.

#### Tree Stratum (Plot size: ____________)
1. *Carpinus caroliniana*  
2.  
3.  
4.  
5.  
6.  
7.  
8.  
9.  
10.  

#### Sapling/Shrub Stratum (Plot size: ____________)
1. *Liriodendron tulipifera*  
2.  
3.  
4.  
5.  
6.  
7.  
8.  
9.  
10.  

#### Herb Stratum (Plot size: ____________)
1. *Sphagnum fuscum*  
2.  
3.  
4.  
5.  
6.  
7.  
8.  
9.  
10.  

#### Woody Vine Stratum (Plot size: ____________)
1.  
2.  
3.  
4.  
5.  
6.  

---

#### Dominance Test worksheet:
- Number of Dominant Species That Are OBL, FACW, or FAC: 2  
- Total Number of Dominant Species Across All Strata: 3  
- Percent of Dominant Species That Are OBL, FACW, or FAC: 66%  

#### Prevalence Index worksheet:

<table>
<thead>
<tr>
<th>Total % Cover</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
<tr>
<td>Column Totals</td>
<td>(A)</td>
</tr>
</tbody>
</table>

**Prevalence Index = B/A =**

#### Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≥3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

#### Definitions of Four Vegetation Strata:
- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vine** – All woody vines greater than 3.28 ft in height.

#### Hydrophytic Vegetation Present? Yes ☑ No

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

Photos: L, L

US Army Corps of Engineers
Eastern Mountains and Piedmont - Initial Version
### SOIL

**Profile Description:** (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5</td>
<td>10YR 2/1</td>
<td>100</td>
<td>Sol.</td>
<td>w/ gravel, sand</td>
</tr>
<tr>
<td>5+</td>
<td>yellow</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

#### Hydric Soil Indicators:
- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

#### Restrictive Layer (if observed):
- Type: 
- Depth (inches): 

#### Hydric Soil Present?
- Yes [X] No

**Remarks:**

Indicators for Problematic Hydric Soils:
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Lowny Gleyed Matrix (F2)
- Deplated Matrix (F3)
- Redox Dark Surface (F6)
- Deplated Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Malin Road Properties City/County: Chester
Applicant/Owner: Malin Road Development LLC. State: PA
Investigator(s): Christopher Mulvey Section: [redacted]
Landform (hilltop, terrace, etc.): [redacted] Local relief (concave, convex, none): [redacted]
Subregion (LRA or MLRA): 147.148 Let: 40°02'54"N Long: 75°32'3.68"W
Soil Map Unit Name: Monroe Loam (MaD) NMI classification: [redacted]

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

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mats or Crusts (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Lenses (B8)
- Aquatic Fauna (B9)
- True Aquatic Plants (B14)
- Hydrogen Sulphide Odor (C1)
- Oxidized Rhyolithes on Living Roots (C3)
- Presence of Reduced iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required):

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Clayfish Burrows (C9)
- Saturation Visible on Aerial Imagery (C8)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquifer (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): [redacted]
Water Table Present? Yes No Depth (inches): [redacted]
Saturation Present? Yes No Depth (inches): [redacted]

Wetland Hydrology Present? Yes No [redacted]

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

Remarks:
<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acer rubrum</td>
<td></td>
<td>X</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Fraxinus consprifusa</td>
<td></td>
<td></td>
<td>FAC</td>
</tr>
<tr>
<td>3. Larrea occidentalis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
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<td></td>
<td></td>
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<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sapling/Shrub Stratum (Plot size: )</td>
<td>= Total Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
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<td></td>
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<tr>
<td>4.</td>
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<td>5.</td>
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<tr>
<td>6.</td>
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<td>7.</td>
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<tr>
<td>8.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herb Stratum (Plot size: )</td>
<td>= Total Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Andropogon gerardii</td>
<td>X</td>
<td>UPL</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
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<tr>
<td>6.</td>
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<tr>
<td>7.</td>
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<td>8.</td>
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<td></td>
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<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Woody Vine Stratum (Plot size: ) | = Total Cover |
| 1. Parthenocissus quinquefolia | X                | FAC              |
| 2. Vitis aestivalis            | X                | FAC              |
| 3.                       |                  |                   |                 |
| 4.                       |                  |                   |                 |
| 5.                       |                  |                   |                 |
| 6.                       |                  |                   |                 |

**Dominance Test Worksheet:**
- Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
- Total Number of Dominant Species Across All Strata: 6 (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index Worksheet:**
- Total % Cover of: Multiply by:
  - OBL species x 1 =
  - FACW species x 2 =
  - FAC species x 3 =
  - FACU species x 4 =
  - UPL species x 5 =
- Column Totals: (A) (B)

Prevalence Index = B/A

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≥3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Problematic Hydrophytic Vegetation (Explain)

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

**Definitions of Four Vegetation Strata:**
- Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- Woody Vine - All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes X No

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

Phelps: X N

US Army Corps of Engineers

Eastern Mountains and Piedmont – Interim Version
### Profile Description:

(Describe to the depth needed to document the Indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>Dark Surface (S7)</td>
<td>Polyvalue Below Surface (S6) (MLRA 147, 148)</td>
<td>S. p.</td>
<td>Typical</td>
</tr>
<tr>
<td>3-7</td>
<td>Thin Dark Surface (S9) (MLRA 147, 148)</td>
<td>Loamy Gleyed Matrix (F2)</td>
<td>P.</td>
<td></td>
</tr>
<tr>
<td>7+</td>
<td>Depleted Matrix (F3)</td>
<td>Redox Gleyed Matrix (F6)</td>
<td>M</td>
<td></td>
</tr>
</tbody>
</table>

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

**Location:** PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S6)
- Stripped Matrix (S6)

### Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 135, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

### Restrictive Layer (if observed):

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
</tr>
</thead>
</table>

**Hydric Soil Present?** Yes [ ] No [X]
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Main Road Properties
City/County: Chester
State: PA
Sampling Date: 7/3/14
Applicant/Owner: Main Road Development LLC
Investigator(s): Christopher Mulvey
Section/Range: East Whiteland
Landform (hillslope, terrace, etc.): Stream channel
Local relief (concave, convex, none): Slope (%): 7
Subregion (LRR or MRR): Lat: 40°02'54"N Long: 75°32'3.68"W
Soil Map Unit Name: Mansions (Mud)
NWI classification: PFO

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 (If needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Is the Sampled Area within a Wetland? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)

Secondary Indicators (minimum of two required):

- True Aquatic Plants (B14)
- Hydrogen Sulphide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C5)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Surface Soil Cracks (B6)
Sparsely Vegetated Concave Surface (B6)
Drainage Patterns (B10)
Moss Tran Lines (B13)
Dry-Season Water Table (C2)
Crayfish Burrows (C5)
Saturation Visibility on Aerial Imagery (C9)
Stunted or Stressed Plants (D1)
Geomorphic Position (D2)
Shallow Aquifer (D3)
Microtopographic Relief (D4)
FAC Neutrality Test (D5)

Field Observations:

- Surface Water Present? Yes No Depth (inches): 1
- Water Table Present? Yes No Depth (inches): 
- Saturation Present? Yes No Depth (inches): (Includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:
**VEGETATION (Four Strata) – Use scientific names of plants.**

**Sampling Point:** 7

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Acer rubrum</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
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<tr>
<td>5.</td>
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<tr>
<td>6.</td>
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<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tree Stratum (_Plot size: _)**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Populus grandidentata</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. <em>Corylus avellana</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
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<tr>
<td>5.</td>
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<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Prevalence index worksheet:**

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
</tbody>
</table>

**Column Totals:** (A) (B)

**Prevalence Index = B/A =**

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index < 3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Problematic Hydrophytic Vegetation (Explain)

**Definitions of Four Vegetation Strata:**

- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Vine** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall
- ** Woody vine** – All woody vines greater than 3.28 ft in height.

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

**Hydrophytic Vegetation Present?** Yes _X_ No
SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (Matrix)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>10 YR 3/1</td>
<td>100</td>
<td></td>
<td></td>
<td>W silty gravel</td>
<td></td>
</tr>
<tr>
<td>7+</td>
<td>roc'e</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Location: PL=Pure Lining, M=Matrix

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 135, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10) (MLRA 147)
- Coastal Prairie Redox (A16)
- Piedmont Floodplain Soils (F19)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Restrictive Layer (if observed):

Type: ____________________________

Depth (inches): ____________________________

Hydric Soil Present? Yes ☒ No ____________________________

Remarks: ____________________________
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Malin Road Properties City/County: Chester
Applicant/Owner: Malin Road Development LLC
State: PA
Investigator(s): Christopher Mulvoy Section/City/Range: East Whiteland

Landform (abutment, terrace, etc.): Local relief (concave, convex, none): Flat
Subregion (LHN or MLRA): 147.148 Lat: 40° 02' 54" N Long: 75° 32' 3.68" W Datum:

Soil Map Unit Name: Memlos loam (MaD) N/A classification: 

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Yes X 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.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No X</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Fill soils along stream with garbage, tires, bottles, pallet, basketball.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Levees (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rztherosmin on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Mack Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)
- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Grayish Burrows (C6)
- Saturated Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (L2)
- Shallow Aquifer (D5)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:
- Surface Water Present? Yes X No Depth (inches): 
- Water Table Present? Yes X No Depth (inches): 
- Saturation Present? Yes X No Depth (inches): 

Wetland Hydrology Present? Yes X No

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

Remarks: Fill soils are drained to creek via 4" PVC.
**VEGETATION (Four Strata) – Use scientific names of plants.**

### Tree Stratum (Plot size: )
1. **Juglans nigra**
2.  
3.  
4.  
5.  
6.  
7.  
8.  

### Sapling/Shrub Stratum (Plot size: )
1. **Ligustrum vulgare**
2.  
3.  
4.  
5.  
6.  
7.  
8.  

### Herb Stratum (Plot size: )
1. **Poa pratensis**
2. **Lupinus perennis**
3.  
4.  
5.  
6.  
7.  
8.  
9.  
10.  

### Woody Vine Stratum (Plot size: )
1. **Vitis aestivalis**
2.  
3.  
4.  
5.  
6.  

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

<table>
<thead>
<tr>
<th>Dominance Test worksheet:</th>
<th>Prevalence Index worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Dominant Species That Are OBL, FACW, or FAC:</td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>Total Number of Dominant Species Across All Strata:</td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
<td><strong>X</strong></td>
</tr>
</tbody>
</table>

**Hydrophytic Vegetation Indicators:**
- Rapid Test for Hydrophytic Vegetation
- Dominance Test is >50%
- Prevalence Index is ≤3.0
- Morphological Adaptations
- Problematic Hydrophytic Vegetation

**Definitions of Four Vegetation Strata:**
- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**

| Yes | No | **X** |
SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix Color (moist)</th>
<th>Redox Features Color (moist)</th>
<th>Type1</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>10YR 3/2</td>
<td>100</td>
<td></td>
<td></td>
<td>Loose fill</td>
</tr>
</tbody>
</table>

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

Hydric Soil Indicators:
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

Indicators for Problematic Hydric Soils:
- Dark Surface (S7)
- Polysulfide Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Restrictive Layer (if observed):
- Type: ______________________
- Depth (Inches): _____________

Hydric Soil Present? Yes ___ No X

Remarks:

US Army Corps of Engineers

Eastern Mountains and Piedmont – Interim Version
**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont**

**Project/Site:** Malin Road Properties  
**City/County:** Chester  
**Applicant/Owner:** Malin Road Development LLC  
**Investigator(s):** Christopher Mulvey  
**Landform (hillocks, terraces, etc.):** 
**Subregion (CRR or MLRA):** 147.148  
**Soil Map Unit Name:** Urban Land Use/Soil & Groundwater Complex: PSS  
**Datum:** 

**HYDROLOGY**

**Primary Indicators**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Present?</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water</td>
<td>No</td>
<td>True Aquatic Plants (B14)</td>
</tr>
<tr>
<td>Hydrogen Sulfide Odor</td>
<td>No</td>
<td>Oxidized Rhizospheres on Living Roots (C3)</td>
</tr>
<tr>
<td>Presence of Reduced Iron</td>
<td>No</td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>Thin Muck Surface</td>
<td>No</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Other (Explain in Remarks)</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Secondary Indicators**

- Vegetated Convey Surface (88)
- Drainage Patterns (B10)
- Moss Trimmings (B18)
- Dry-Season Water Table (C2)
- Grayish Burrows (C6)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D11)
- Geomorphic Position (D2)
- Shallow Aquifer (C3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D6)

**Field Observations**

- **Surface Water Present?** Yes | No |  
- **Water Table Present?** Yes | No |  
- **Saturation Present?** Yes | No |  
- **Aquatic Fauna? (B13)**

**Remark:** Area underlain with seven water lines.

**SUMMARY OF FINDINGS**

- **Hydrophytic Vegetation Present?** Yes | No |  
- **Hydric Soil Present?** Yes | No |  
- **Wetland Hydrology Present?** Yes | No |  
- **Is the Sampled Area within a Wetland?** Yes | No |  

**Remarks:**

**Project/Site:** Malin Road Properties  
**City/County:** Chester  
**Applicant/Owner:** Malin Road Development LLC  
**Investigator(s):** Christopher Mulvey  
**Landform (hillocks, terraces, etc.):** 
**Subregion (CRR or MLRA):** 147.148  
**Soil Map Unit Name:** Urban Land Use/Soil & Groundwater Complex: PSS  
**Datum:** 

**HYDROLOGY**

**Primary Indicators**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Present?</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water</td>
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</tr>
<tr>
<td>Hydrogen Sulfide Odor</td>
<td>No</td>
<td>Oxidized Rhizospheres on Living Roots (C3)</td>
</tr>
<tr>
<td>Presence of Reduced Iron</td>
<td>No</td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>Thin Muck Surface</td>
<td>No</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Other (Explain in Remarks)</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Secondary Indicators**

- Vegetated Convey Surface (88)
- Drainage Patterns (B10)
- Moss Trimmings (B18)
- Dry-Season Water Table (C2)
- Grayish Burrows (C6)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D11)
- Geomorphic Position (D2)
- Shallow Aquifer (C3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D6)

**Field Observations**

- **Surface Water Present?** Yes | No |  
- **Water Table Present?** Yes | No |  
- **Saturation Present?** Yes | No |  
- **Aquatic Fauna? (B13)**

**Remark:** Area underlain with seven water lines.

**Project/Site:** Malin Road Properties  
**City/County:** Chester  
**Applicant/Owner:** Malin Road Development LLC  
**Investigator(s):** Christopher Mulvey  
**Landform (hillocks, terraces, etc.):** 
**Subregion (CRR or MLRA):** 147.148  
**Soil Map Unit Name:** Urban Land Use/Soil & Groundwater Complex: PSS  
**Datum:** 

**HYDROLOGY**

**Primary Indicators**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Present?</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water</td>
<td>No</td>
<td>True Aquatic Plants (B14)</td>
</tr>
<tr>
<td>Hydrogen Sulfide Odor</td>
<td>No</td>
<td>Oxidized Rhizospheres on Living Roots (C3)</td>
</tr>
<tr>
<td>Presence of Reduced Iron</td>
<td>No</td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>Thin Muck Surface</td>
<td>No</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Other (Explain in Remarks)</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Secondary Indicators**

- Vegetated Convey Surface (88)
- Drainage Patterns (B10)
- Moss Trimmings (B18)
- Dry-Season Water Table (C2)
- Grayish Burrows (C6)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D11)
- Geomorphic Position (D2)
- Shallow Aquifer (C3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D6)

**Field Observations**

- **Surface Water Present?** Yes | No |  
- **Water Table Present?** Yes | No |  
- **Saturation Present?** Yes | No |  
- **Aquatic Fauna? (B13)**

**Remark:** Area underlain with seven water lines.
VEGETATION (Four Strata) – Use scientific names of plants.

### Tree Stratum (Plot size: __________)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salix nigra</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Fagus grandifolia</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Acer rubrum</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Platanus occidentalis</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Total Cover = ________

### Sapling/Shrub Stratum (Plot size: __________)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Lindera benzoin</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Total Cover = ________

### Herb Stratum (Plot size: __________)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Alnus rubra</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Phasmatem austriaca</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Populus tremuloides</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Thuja occidentalis</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Juniperus virginiana</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Fagus sylvatica</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Total Cover = ________

### Woody Vine Stratum (Plot size: __________)

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Celastrus orbiculata</em></td>
<td></td>
<td></td>
<td>UPL</td>
</tr>
</tbody>
</table>

Total Cover = ________

### Dominance Test worksheet:

- Number of Dominant Species That Are OBL, FACW, or FAC: ________ (A)
- Total Number of Dominant Species Across All Strata: ________ (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: ________ (A/B)

### Prevalence Index worksheet:

- Total % Cover of: Multiply by:
  - OBL species ________ x 1 = ________
  - FACW species ________ x 2 = ________
  - FAC species ________ x 3 = ________
  - FACU species ________ x 4 = ________
  - UPL species ________ x 5 = ________
- Column Totals: ________ (A) ________ (B)

Prevalence Index = B/A = ________

### Hydrophytic Vegetation Indicators:

- 1. Rapid Test for Hydrophytic Vegetation
- 2. Dominance Test is >50%
- 3. Prevalence Index is ≤3.0
- 4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- 5. Problematic Hydrophytic Vegetation (Explain)

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

### Definitions of Four Vegetation Strata:

- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vine** – All woody vines greater than 3.28 ft in height.

### Hydrophytic Vegetation Present?

- Yes [X] No

Remarks: (Include photo numbers here or on a separate sheet.)
<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Color (moist)</th>
<th>Redox Features Color (moist)</th>
<th>% Type</th>
<th>Loc'</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>10YR 2.5/1</td>
<td></td>
<td>10%</td>
<td>D</td>
<td>Loamy</td>
<td>muck</td>
</tr>
<tr>
<td>10 - 20</td>
<td>5/10Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Hydric Soil Indicators:
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Grayed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 147)
- Umbre Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Rod Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Hydric Soil Present? Yes X No

Restrictive Layer (if observed):
- Type:
- Depth (inches):

Remarks: Grayed soils
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont 4

Project/Site: Malin Road Properties City/County: Chester  Sampling Date: 7/2/14
Applicant/Owner: Malin Road Development LLC.  State: PA  Sampling Point: 10
Investigator(s): Christopher Mulvey  Section/Township/Range: East Whiteland
Landform (hillslope, terrace, etc.): Road edge  Local relief (concave, convex, none): Flat
Subregion (LR or MLRA): 4884  Lat.: 40°02'54"N  Long: 75°32'3.68"W  Datum:
Soil Map Unit Name:  Urban land-Wetland, select I guess apply
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  (if needed, explain any answers in Remarks.)
Are Vegetation, Soil, or Hydrology naturally problematic?

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:
Sample taken at edge of Village Way wetlands.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required, check all that apply)  Secondary Indicators (minimum of two required)
- Surface Water (A1)  - Surface Soil Cracks (B6)
- High Water Table (A2)  - Sparserly Vegetated Concave Surface (68)
- Saturation (A3)  - Drainage Patterns (B10)
- Water Marks (B1)  - Moss Trim Lines (B10)
- Sediment Deposits (B2)  - Dry-Season Water Toles (C2)
- Drift Deposits (B3)  - Crayfish Burrows (C6)
- Algal Mats or Crusts (B4)  - Saturation Visible on Aerial Imagery (C8)
- Iron Deposits (B5)  - Stunted or Stressed Plants (D1)
- Inundation Visible on Aerial Imagery (B7)  - Geomorphic Position (D2)
- Water-Stained Leaves (B8)  - Shallow Aquifer (D3)
- Aquatic Fauna (B13)  - Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes</th>
<th>No</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No</td>
<td>Depth (inches):</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No</td>
<td>Depth (inches):</td>
</tr>
</tbody>
</table>

Wetland Hydrology Present? Yes  No

Remarks:
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available.
### VEGETATION (Four Strata) – Use scientific names of plants.

#### Tree Stratum

<table>
<thead>
<tr>
<th>Plot size:</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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<tr>
<td>7.</td>
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<tr>
<td>8.</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Sapling/Shrub Stratum

<table>
<thead>
<tr>
<th>Plot size:</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<tr>
<td>2.</td>
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<td>3.</td>
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<td>8.</td>
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<tr>
<td>9.</td>
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<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Herb Stratum

<table>
<thead>
<tr>
<th>Plot size:</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>2.</td>
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<td>8.</td>
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<tr>
<td>9.</td>
<td></td>
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<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Woody Vine Stratum

<table>
<thead>
<tr>
<th>Plot size:</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>2.</td>
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<td>5.</td>
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<tr>
<td>6.</td>
<td></td>
</tr>
</tbody>
</table>

---

### Dominance Test Worksheet

- **Number of Dominant Species That Are OBL, FACW, or FAC:**
  - 1

- **Total Number of Dominant Species Across All Strata:**
  - 4

- **Percent of Dominant Species That Are OBL, FACW, or FAC:**
  - 25

### Prevalence Index Worksheet

- **Total % Cover of:**
  - OBL species
  - FACV species
  - FAC species
  - FACU species
  - UPL species

- **Multiply by:**
  - 1 x
  - 2 x
  - 3 x
  - 4 x
  - 5 x

- **Column Totals:**
  - (A)

- **Prevalence Index = B/A =**

---

### Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
5. Problematic Hydrophytic Vegetation (Explain)

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

### Definitions of Four Vegetation Strata:

- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vine** – All woody vines greater than 3.28 ft in height.

---

**Hydrophytic Vegetation Present?**

- Yes
- No

---

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

---

**US Army Corps of Engineers**

**Eastern Mountains and Piedmont – Informal Version**
Profile Description: (Describe the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

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

Hydric Soil Indicators:
- Histosol (A1)
- Histitic Epepid (A2)
- Black Histic (A3)
- Hydrogen Sulphide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S6)
- Stripped Matrix (S6)

Stratified Layers (A5)

2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F 19) (MLRA 135, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Indicators for Problematic Hydric Soils:

Restrictive Layer (if observed):
- Type: __________
- Depth (inches): __________

Hydric Soil Present? Yes _____ No ✗

Remarks:

No soils - gravel and macadam.
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Malin Road Properties City/County: Chester
Applicant/Owner: Malin Road Development LLC. State: PA
Investigator(s): Christopher Mulvey Section: East Whiteland
Landform (flats, terrace, etc.): Local relief (concave, convex ramp): Slope (%): 20
Subregion (LRR or MLHA): Lat: 40°02'54" N Long: 75°32'3.18" W Datum: 
Soil Map Unit Name: Minor loam (Ma D) NWI classification: U

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Is the Sampled Area within a Wetland? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply):
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drainage Bases (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B8)
- Aquatic Fauna (B13)
- Tru Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)
- Surface Soil Cracks (B6)
- Sparserly Vegetated Concealed Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Clay/Loam Soils (C3)
- Saturation Visible on Aerial Imagery (C6)
- Stoned or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes</th>
<th>No</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No</td>
<td>Depth (inches):</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No</td>
<td>Depth (inches):</td>
</tr>
</tbody>
</table>

Wetland Hydrology Present? Yes No

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

Remarks:
### VEGETATION (Four Strata) – Use scientific names of plants.

#### Sampling Point: 11

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Pinus ponderosa</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. <em>Pseudotsuga menziesii</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. <em>Xanthocyparis chrysoleuca</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. <em>Ephedra viridis</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. <em>Fagus grandifolia</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**= Total Cover

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Pseudotsuga menziesii</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. <em>Pseudotsuga menziesii</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. <em>Pinus contorta</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. <em>Picea engelmannii</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**= Total Cover

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Polystichum leucotomum</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. <em>Cirsium altissimum</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. <em>Equisetum arvense</em></td>
<td></td>
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</tr>
</tbody>
</table>

**= Total Cover

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Rubus pedatus</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. <em>Vitis riparia</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**= Total Cover

#### Dominance Test worksheet:
- Number of Dominant Species: 2 (A)
- Total Number of Dominant Species Across All Strata: 11 (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: [Value] (AVB)

#### Prevalence Index worksheet:
- Total % Cover of: OBL species, FACW species, FAC species, FACU species, UPL species
- Multiply by: 1, 2, 3, 4, 5
- Column Totals: [Value] (A)
- Prevalence Index = B/A = [Value]

#### Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
   - 1. Dominance Test is >50%
   - 3. Prevalence Index is <3.0
   - 4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

#### Definitions of Four Vegetation Strata:
- Tree: Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- Sapling/Shrub: Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- Herb: All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- Woody vine: All woody vines greater than 3.28 ft in height.

#### Hydrophytic Vegetation Present?
- Yes: [Mark] No: [Mark] (Marked as No)

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

Photos: C, D
<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 3</td>
<td>10 YR 3/1</td>
<td>100</td>
<td>s.f.</td>
<td>topsoil</td>
</tr>
<tr>
<td>3 - 6</td>
<td>10 YR 5/6</td>
<td></td>
<td>s. f.</td>
<td></td>
</tr>
<tr>
<td>6 +</td>
<td>rock</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Profile Description:** (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

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

**Hydric Soil Indicators:**
- Histosol (A1)
- Histic Epeipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N,MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N,MLRA 138)
- Umbriic Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

**Indicators for Problematic Hydric Soils:**
- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16)
- (MLRA 147, 148)
- Piedmont Floodplain Soils (F19)
- (MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if observed):**
- Type: ____________________________
- Depth (inches): ____________________

**Hydric Soil Present?** Yes.No X

**Remarks:**
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Malin Road Properties
City/County: Chester
State: PA
Sampling Date: 1/2/14
Sampling Point:

Applicant/Owner: Malin Road Development LLC
Investigator(s): Christopher Muller
Section: Township: Range: East Whiteland

Landform (mountains, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LN or MLR): 147,148 Lat.: 40°02'54" N Long.: 75°32'3.68" W Datum: 

Soil Map Unit Name: Mako Corn (Ma D) NWI classification: 

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

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)

Secondary Indicators (minimum of two required)
- Surface Soil Cracks (B5)
- Sparsely Vegetated Concave Surface (B4)
- Drainage Patterns (B10)
- Moss Truff Lines (B15)
- Dry-Season Water Table (B2)
- Clayish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquifer (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

- Surface Water Present? Yes No
- Water Table Present? Yes No
- Saturation Present? Yes No

(Include capillary fringe)

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

Remarks:

Well drained hillside.
### VEGETATION (Four Strata) – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size:</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liriodendron tulipifera</td>
<td></td>
<td>K</td>
<td>FAC</td>
</tr>
<tr>
<td>Acer saccharum</td>
<td></td>
<td>K</td>
<td>FAC</td>
</tr>
<tr>
<td>Catalpa speciosa</td>
<td></td>
<td>K</td>
<td>FAC</td>
</tr>
<tr>
<td>Pinus resinosa</td>
<td></td>
<td>K</td>
<td>FAC</td>
</tr>
<tr>
<td>Quercus prinus</td>
<td></td>
<td></td>
<td>NL</td>
</tr>
<tr>
<td>Carya integera</td>
<td></td>
<td></td>
<td>NL</td>
</tr>
</tbody>
</table>

### Sampling Point: 12

<table>
<thead>
<tr>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 1</td>
</tr>
<tr>
<td>Total Number of Dominant Species Across All Strata: 13</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 30</td>
</tr>
</tbody>
</table>

### Prevalence Index worksheet:

<table>
<thead>
<tr>
<th>Species</th>
<th>Multiply by</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5</td>
</tr>
<tr>
<td>Column Totals</td>
<td></td>
</tr>
</tbody>
</table>

- Prevalence Index = B/A = ...

### Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≥3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

### Definitions of Four Vegetation Strata:

- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vine** – All woody vines greater than 3.28 ft in height.

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

- Yes
- No
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>10YR 3/1</td>
<td></td>
<td>S.F.</td>
<td></td>
</tr>
<tr>
<td>2-4</td>
<td>10YR 4/6</td>
<td></td>
<td>L.C.</td>
<td></td>
</tr>
<tr>
<td>4-12</td>
<td>2.5Y 2/6</td>
<td></td>
<td>G.</td>
<td></td>
</tr>
</tbody>
</table>

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

Location: PL=Peri Lining, M=Matrix.

Hydric Soil Indicators:
- Histosol (A1)
- Histacid Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 3 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Greyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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 __ No X

Remarks:
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Malin Road Properties City/County: Chester Sampling Date: 12/04
Applicant/Owner: Malin Road Development LLC State: PA Sampling Point: 13
Investigator(s): Christopher Mulvey Section: Township: Range: East Whiteland
Landform (e.g., terrace, etc.): Perk. Lat. 40°02'54"N Long 75°32'3.68"W Datum: L98
Local relief (concave, convex, none): Flat Subregion (JRR or MLRA): Lat. 40°02'54"N Long 75°32'3.68"W Datum: L98
Subregion (JRR or MLRA): Lat. 40°02'54"N Long 75°32'3.68"W Datum: L98
Soil Map Unit Name: East Whiteland NWI classification: 

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

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes X</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>X</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Is the Sampled Area within a Wetland?</td>
<td>Yes</td>
<td>X</td>
</tr>
<tr>
<td>Remarks:</td>
<td>Paved area with vegetation</td>
<td></td>
</tr>
</tbody>
</table>

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)
- Surface Soil Cracks (B3)
- Sparsely Vegetated Concave Surface (B10)
- Moss Trim Lines (B18)
- Dry-Season Water Table (C2)
- Clayish Burrows (C6)
- Saturation Visible on Aerial Imagery (C3)
- Stunted or Stressed Plants (C1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes</th>
<th>No X</th>
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</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No X</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No X</td>
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<tr>
<td>(Includes capillary fringe)</td>
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<tr>
<td>Depth (inches):</td>
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</tbody>
</table>

Wetland Hydrology Present? Yes X

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

Remarks:

Area receives runoff from up-slope areas; water collects at base of slope during wet periods
### VEGETATION (Four Strata) – Use scientific names of plants.

**Tree Stratum** (Plot size: ________)

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**Sapling/Shrub Stratum** (Plot size: ________)

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**Herb Stratum** (Plot size: ________)

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</table>

**Woody Vine Stratum** (Plot size: ________)

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<table>
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</tbody>
</table>

### Dominance Test worksheet:

- **Number of Dominant Species That Are OBL, FACW, or FAC:** ________ (A)
- **Total Number of Dominant Species Across All Strata:** ________ (B)
- **Percent of Dominant Species That Are OBL, FACW, or FAC:** ________ (B)

### Prevalence Index worksheet:

- **Total % Cover of:** ________ 
- **Multiply by:**
  - OBL species ________ x 1 = ________
  - FACW species ________ x 2 = ________
  - FAC species ________ x 3 = ________
  - FACU species ________ x 4 = ________
  - UPL species ________ x 5 = ________
- **Column Totals:** ________ (A) ________ (B)
- **Prevalence Index = B/A =** ________

### Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
   - Problematic Hydrophytic Vegetation² (Explain)
   - Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

### Definitions of Four Vegetation Strata:

- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vine** – All woody vines greater than 3.28 ft in height.

### Remarks:

(include photo numbers here or on a separate sheet.)

**Photo:** 0
## Soil Profile Description

(Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist)</td>
<td>Color (moist)</td>
<td>% Type</td>
<td>Loc</td>
</tr>
</tbody>
</table>

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

### Hydric Soil Indicators:
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (AS)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S6)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Puffyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F8)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 135)
- Umbric Surface (F12) (MLRA 135, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

### Indicators for Problematic Hydric Soils
- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 135, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

### Restrictive Layer (if observed):
- **Type:**
- **Depth (inches):**

### Hydric Soil Present?
- **Yes**
- **No**

### Remarks:

No soils - mastication parking area.

Photo: O